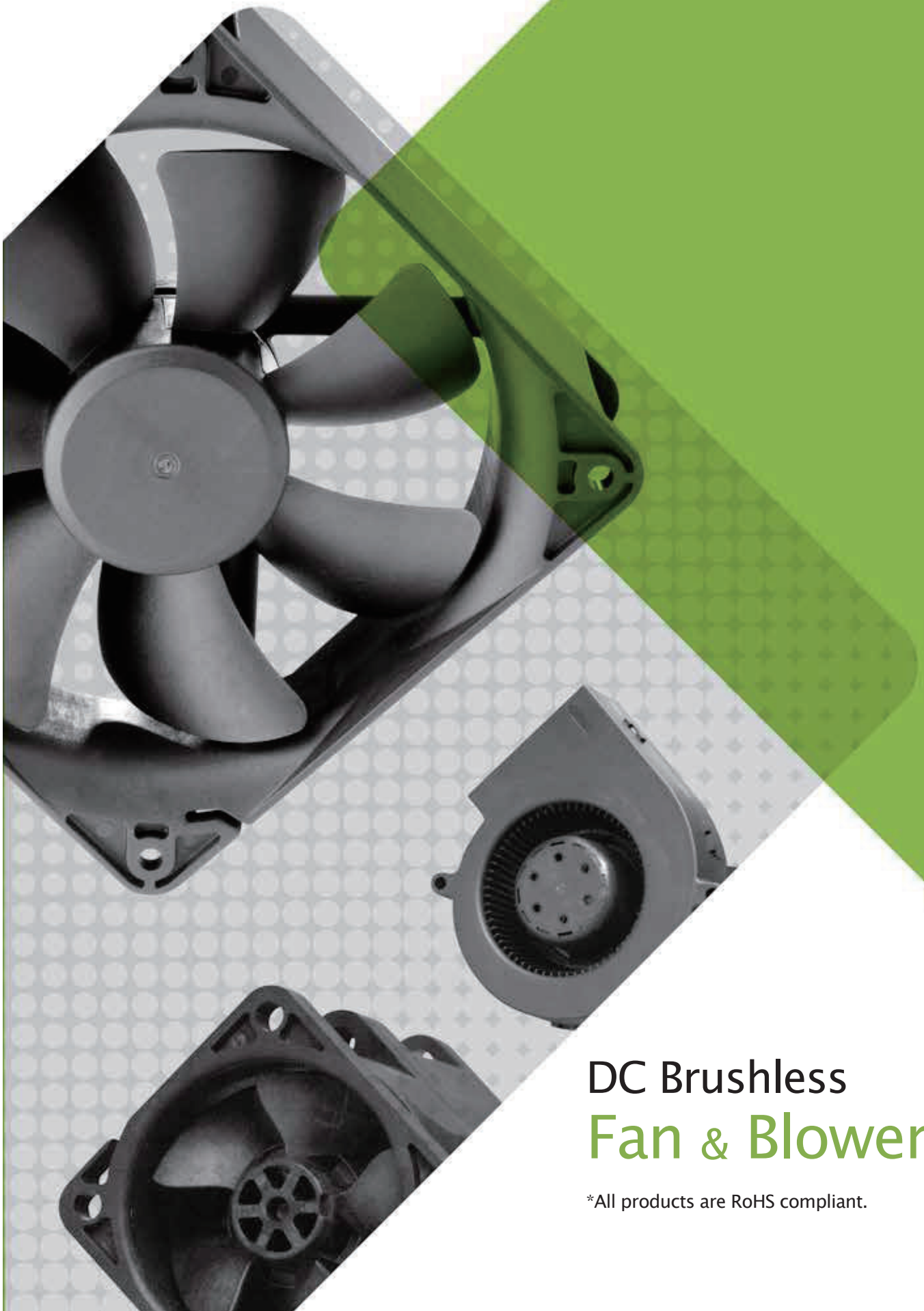
SUNON®



# DC Brushless
# Fan & Blower

*All products are RoHS compliant.

SUNON®

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## DC Fan


| | |
|---|---|
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| DC Fan Old Model Numbering System | 13 |


| Size (mm) | Air Flow (CFM) | Page |
|---|---|---|
| 17 x 17 x 8 | 0.7 ~ 0.9 | 14 |
| 20 x 20 x 8 | 1.3 ~ 1.6 | 16 |
| 20 x 20 x 10 | 1.5 ~ 1.9 | 18 |
| 25 x 25 x 6 | 2.2 ~ 3.0 | 20 |
| 25 x 25 x 10 | 1.2 ~ 3.8 | 22 |
| 25 x 25 x 15 | 1.3 ~ 3.1 | 24 |
| 30 x 30 x 6 | 3.7 ~ 4.9 | 26 |
| 30 x 30 x 10 | 2.5 ~ 5.5 | 28 |
| 35 x 35 x 15 | 2.7 ~ 6.0 | 32 |
| 35 x 35 x 6 | 4.3 ~ 5.5 | 34 |
| 35 x 35 x 10 | 3.6 ~ 7.2 | 36 |
| 36 x 36 x 28 | 18.1 ~ 22.8 | 38 |
| 38 x 38 x 28 | 11.3 ~ 24.2 | 40 |
| 38 x 38 x 56 | 31.2 | 46 |
| 40 x 40 x 6 | 5.5 ~ 6.3 | 48 |
| 40 x 40 x 10 | 5.4~10.0 | 50 |
| 40 x 40 x 20 | 5.5 ~ 11.0 | 58 |
| 40 x 40 x 28 | 12.8 ~ 31.5 | 66 |
| 40 x 40 x 28 (IP) | 14.1 ~ 23.9 | 72 |
| 40 x 40 x 56 | 19.7 ~ 31.7 | 74 |
| 45 x 45 x 10 | 9.2 ~ 11.8 | 78 |
| 50 x 50 x 10 | 8.4 ~ 13.8 | 82 |
| 50 x 50 x 15 | 7.7 ~ 18.6 | 84 |
| 60 x 60 x 10 | 12.2 ~ 16.3 | 88 |
| 60 x 60 x 15 | 12.7 ~ 30.4 | 90 |
| 60 x 60 x 15 (IP) | 10.6 ~ 21.3 | 94 |
| 60 x 60 x 20 | 14.1 ~ 30.5 | 96 |
| 60 x 60 x 25 (IP) | 26.9 ~ 54.8 | 104 |
| 60 x 60 x 25 | 13.8 ~ 40.0 | 106 |
| 60 x 60 x 38 | 41.5 ~ 75.2 | 114 |
| 60 x 60 x 56 | 58.5 ~ 72.9 | 120 |
| 60 x 60 x 76 | 58.7 ~ 73.2 | 122 |
| 70 x 70 x 15 | 19.0 ~ 27.0 | 124 |
| 70 x 70 x 25 | 40.0 ~ 49.0 | 126 |
| 80 x 80 x 15 | 30.0 ~ 37.0 | 128 |
| 80 x 80 x 25 | 23.9 ~ 60.0 | 130 |
| 80 x 80 x 25 (IP) | 33.0 ~ 60.0 | 140 |
| 80 x 80 x 32 (IP) | 50.3 ~ 59.4 | 146 |
| 80 x 80 x 38 | 59.5 ~ 141.9 | 148 |
| 80 x 80 x 80 | 122.0 ~ 151.5 | 154 |
| 92 x 92 x 25 | 28.4 ~ 75.0 | 156 |
| 92 x 92 x 25 (IP) | 39.5 ~ 75.0 | 168 |
| 92 x 92 x 38 | 91.7 ~ 182.4 | 172 |
| 120 x 120 x 25 | 55.1 ~ 150.0 | 176 |
| 120 x 120 x 38 | 170.0 ~ 301.7 | 182 |
| 140 x 140 x 38 | 238.5 ~ 297.9 | 188 |
| 140 x 140 x 51 | 250.3 | 192 |

## DC Blower


| | |
|---|---|
| DC Blower New Model Numbering System | 194 |
| DC Blower Old Model Numbering System | 195 |


| Size (mm) | Air Flow (CFM) | Page |
|---|---|---|
| 50 x 50 x 15 | 2.6 ~ 5.4 | 196 |
| 50 x 50 x 20 | 4.8 ~ 5.7 | 200 |
| 60 x 60 x 15 | 5.1 ~ 6.2 | 202 |
| 75 x 75 x 30 | 10.8 ~ 15.5 | 204 |
| 97 x 94 x 33 | 22.4 ~ 30.5 | 206 |
| 97 x 95 x 33 | 44.2 ~ 54.7 | 208 |
| 100 x 100 x 25 | 18.4 | 210 |
| 120 x 120 x 32 | 31.4 ~ 35.9 | 212 |

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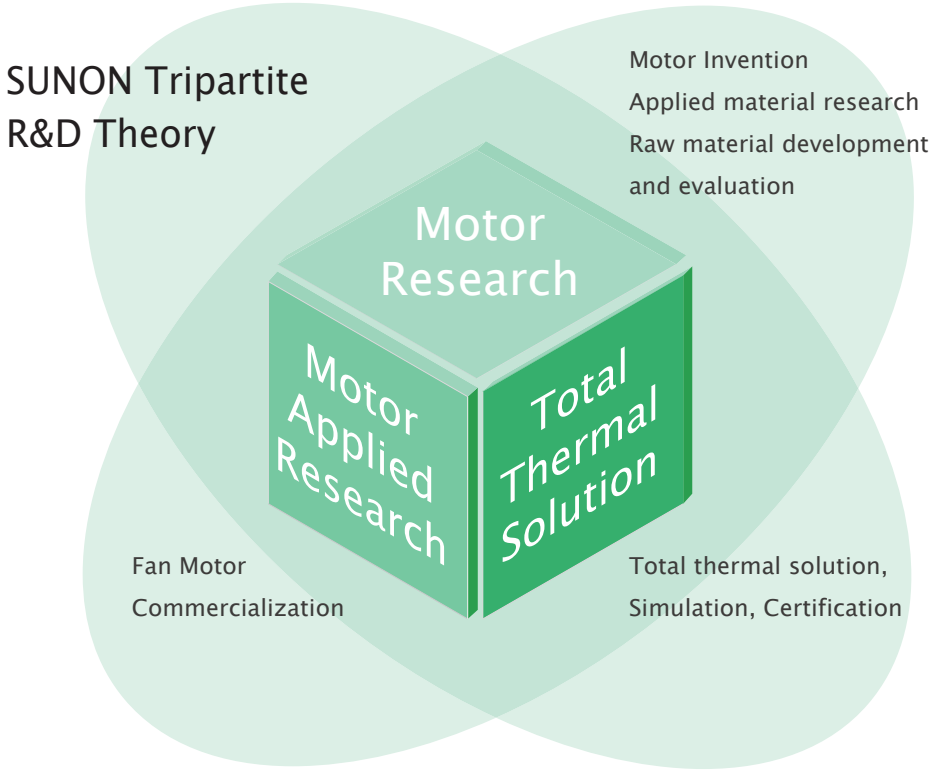
# SUNON RESEARCH CENTER

## about SUNON

SUNON was founded in 1980 and has always upheld the philosophy of "Brand, Innovation, and Value" for their business operations. From the start, the SUNON name has become an international trademark that is well recognized and featured on products sold worldwide. Over the years, SUNON has continuously focused on developing and making innovations for their core motor technology, leading the industry in product trends for motors, cooling fans, and cooling modules. SUNON is one of the few operations in the world with a motor R&D team and is fully capable of developing innovative new motor designs. Examples for the R&D efforts are the world's first MagLev design and SUNON Mighty Mini series, featuring a compact sub-centimeter size that is the world's smallest and thinnest fan. Today, SUNON is the worldwide leader in precision motors and micro miniature fans, and is widely recognized by the industry as the designated partner for various multinational corporations. SUNON products are widely used in various applications and industries such as information technology, network communications, optoelectronics, and automobile electronics industries, as well as in industrial production equipment, medical equipment, home applications, OA machines, and others.

## SUNON Research Center the Driving Engine for Inventions and Innovations

SUNON established the "SUNON Research Center" in Kaohsiung in 2002 to promote and execute the innovation blueprint for SUNON Group. Research labs and engineers from Europe, America, Japan, and China are centralized to form a worldwide technological service network for quick and efficient services.



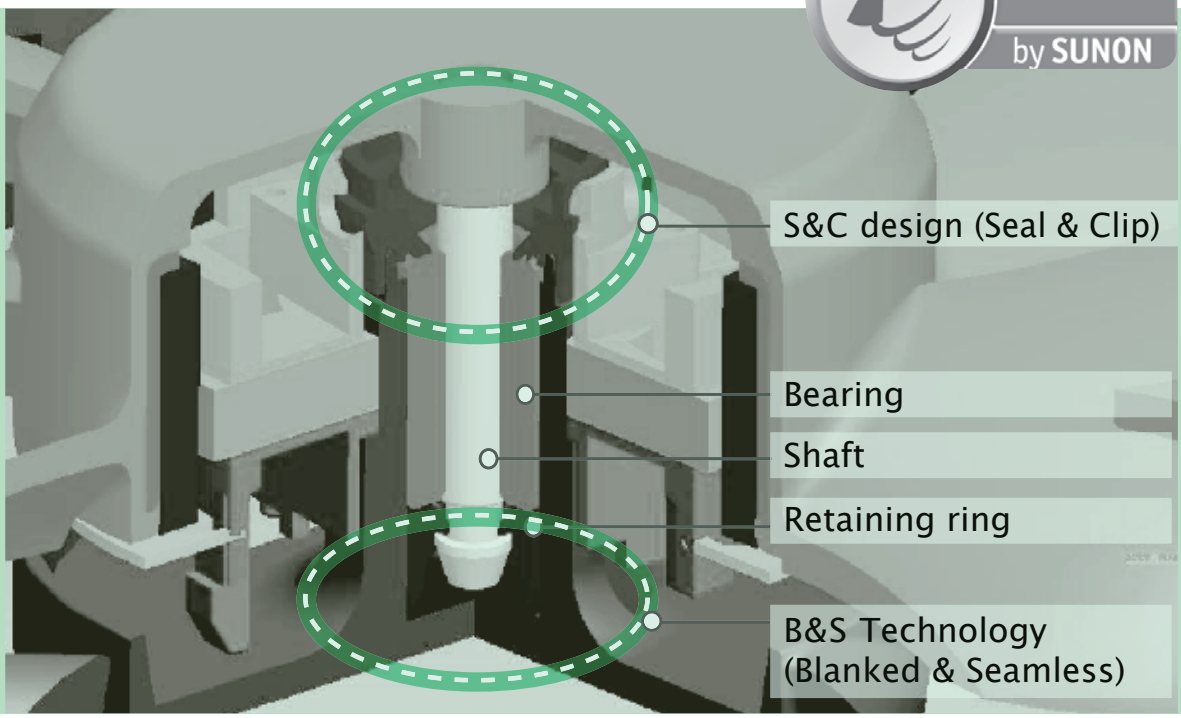

## Key Modules for Innovating Core Motor Technology

SUNON has been researching their motor technology for over 40 years and adhering to the SUNON R&D Trinity as their innovation roadmap, focusing on the three major technology fields of "Motor Research," "Motor Applied Research," and "Total Thermal Solution." SUNON strives to expand the endless possibilities and optimization of motor applications and will continue to make breakthroughs and product innovations. The efforts will push SUNON to the front of the technology curve and clients will be able to realize their future dream products with the three key SUNON products of motors, cooling fans, and cooling modules.

SUNON has the capacity to design and implement the complete magnetic, mechanical, and driving circuit of a motor to conform to client design specifications. With the efforts of the mechanism and electrical circuit engineering teams, SUNON recognizes the needs of their clients regarding cooling modules and can provide flexible designs for high performance and high quality cooling fans. SUNON utilizes advanced simulation systems and analysis projects that result in an even more accurate heat analysis and heat dissipation design for the system. Subsequently the most efficient total thermal solution can be provided to the client.

# DR MagLev (Dust-Resistance MagLev)

The two innovative design concepts of DR MagLev development are B&S (Blanked & Seamless) Technology and S&C (Seal & Clip) Design. These innovative designs bring excellent efficiencies to extend fan life.




※ Note: The design concepts of DR MagLev Motor are suitable for every kind of motor and product size. The structures are different from the above picture, which was made when the DR MagLev design was applied to different motors.

## 1

DR MagLev provides the best resistance to dust invasion.It can solve the moving problem of the motor's components, provide better dust-resistance.

## 2

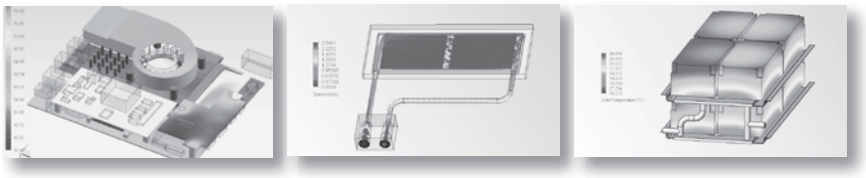
DR MagLev's one-piece structure with the B&S Technology and S&C Design provides the better sealed bearing system.

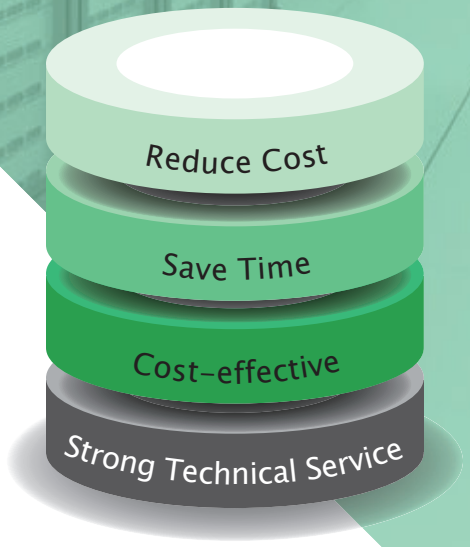
## 3

The S&C Design strengthens the locked position of both motor and stator to avoid stator and impellor from moving due to temperature changes. This allows the product to be more stable and run longer.

# TOTAL THERMAL SOLUTION

- ☑ Increases product profitability
- ☑ Reduces development costs and increases profits
- ☑ Decreases prototype development time
- ☑ Provides the most economic design solution






## Thermal Solution & Simulation Analysis

- Individual module / system thermal analysis
- Vent Optimization
- Temperature distribution
- Velocity profile
- Pressure distribution

## Sophisticated Tools Strengthen Design and Quality

Apart from optimized design and superior R&D, we use infrared (IR) thermal imagers in module design work to make precise measurements of module temperatures, thereby avoiding the use of conventional thermocouples to measure temperatures. Our R&D personnel can instead rely on IR images to get a clear understanding of system temperature distribution. The data from our thermal imaging reports allow us to provide a clear system-wide thermal and cooling design analysis. In order to give customers the best quality guarantee, we go well beyond industry standards in production, assembly, inspection equipment design and deployment. We have also committed large amounts of manpower and material resources, and adopted the newest hardware and software equipment in our quest for quality. For instance, our thermal inspection systems can fully simulate thermal resistance measurements and pressure settings within systems and measure thermal resistance simultaneously at six different points. Precise measurements of pressure settings enable simulation of pressure within the system, making measurements even more accurate and protecting product quality by ensuring that excessive pressure doesn't cause product deformation. Furthermore, independent bar codes on each product ensure effective product tracking and improve the quality of after-sales service. We can satisfy our customers' needs for various types of customized cooling modules while meeting the highest quality requirements.

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# INVENTION INNOVATION CENTER

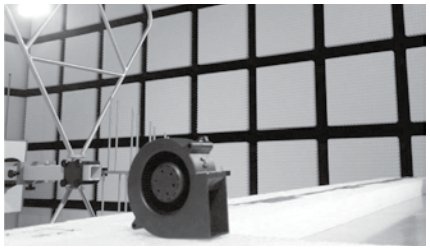
To ensure the high reliability of product quality, SUNON has various verification labs with strict standards for materials, testing, verification and product launch. SUNON's labs can perform material analysis, acoustic performance tests, EMC / EMI verification, product reliability verification, and UL-certified safety testing which accelerates the safety certification process.

## Precision Measurements & Material Analysis

As products become more and more sophisticated and diversified, SUNON materials lab is committed to finding the key factors to improve the bearing system lifespan and materials accuracy of fan products. Besides, SUNON also aims at fixing noise, vibration and temperature rise to make motor systems more stable and improve fan products' performance. This lab also works to provide more accurate data for product development, customer projects, and product abnormalities analysis.

## Acoustic Performance Experiment

The sound quality project was introduced in 2000. Through the HEAD Measurement System (HMS) of German Head Acoustics, SUNON has recorded and simulated human hearing sensation, and has measured sound, vibration, rotational speed and electrical appliances signal information to improve sound quality. Besides, SUNON has also used Artemis software to acquire time-domain spectroscopy, psychoacoustic parameters, and diversified sound analysis. As a result, the sound quality of SUNON's products is always pleasant and more human-friendly.



## EMC / EMI
## Electromagnetic Compatibility Verification

The purpose of electromagnetic compatibility experiments is to ensure that all electronic products can operate normally in the same space without interfering with each other, especially crucial in the automotive field and electronic products for users' safety.

---

## Product Reliability Verification

From design, trial production to mass production, SUNON accurately assesses product reliability through a series of rigorous testing by computer-controlled verification systems. We will, in response to the requirements of product development for various industries, continue to renew and upgrade our equipment to ensure that all stages of our production are supported with all necessary tools, whether it is in the simulation stage, the testing stage, or the production stage.

- High-temperature life testing
- High/low-temp. cycle testing
- Locked power-off testing
- Package drop testing
- Mechanical stress testing
- Environmental & reliability verification

---

## Safety Testing and Certification

SUNON safety testing lab has enhanced the safety testing of DC, AC, EC products o development phase, and has accelerated certification awarding process to ensure product safety. We have obtained approval from UL recognized WTDP Lab, so the testing reports can be validated as safety certification reports. We have also completed some product verifications regarding energy-efficiency and explosion-proof.

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# PRODUCTION NETWORK

## SUNON Production Network

To ensure sufficient capacity for mass produced parts, SUNON has established four professional production facilities in the following locations: Kaohsiung, Taiwan; Foshan (Guangdong), China; Kunshan (Jiangsu), China; and Beihai (Guangxi), China. From these four locations, SUNON is capable of producing AC and DC fan and motor models that range in size from 8mm to 250mm, as well as a variety of thermal modules. Our ERP system gives us the flexibility to meet our clients' demands and our monthly production capacity.

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## Quality Management System

SUNON is convinced that the quality of products, as well as pursuing the technical capabilities, is the key factor for expanding product lifespan. Thus, in early 2010, SUNON endeavored to develop automation equipment, which not only enhances the stability of product quality, but also controls output efficiency more accurately. Moreover, the adoption of digital management and product quality tracking system becomes an important milestone for SUNON.

## Green Product Management System

SUNON has obtained ISO 14001, ISO45001, and IECQ QC080000 certification for the environmental management system of its facilities in Kaohsiung, Taiwan, Kunshan, China, and Foshan, China. The appeal of SUNON's product design and development is environmental protection and energy-savings, and we have invested in green designs that will reduce material consumption and save electricity. In the production process, we have asked our suppliers to comply with the provisions of the RoHS Directives in their manufacturing process by not using prohibited materials, and the process of product development should also meet the requirements for environmental protection.

Furthermore, we also pay close attention to various international issues on the protection of the environment and the use of energy and have promoted the standardization of halogen-free to ensure that its products are fully compliant with the green environmental provisions in new chemical policies as stipulated in RoHS Directives and REACH. As a responsible corporate citizen of the world, SUNON is an advocate in the prevention of abuses and hostilities in the exploitation and trade of these conflict resources that result in serious violation of international human rights. SUNON promise to reject metals and materials obtained from the conflict mining regions.

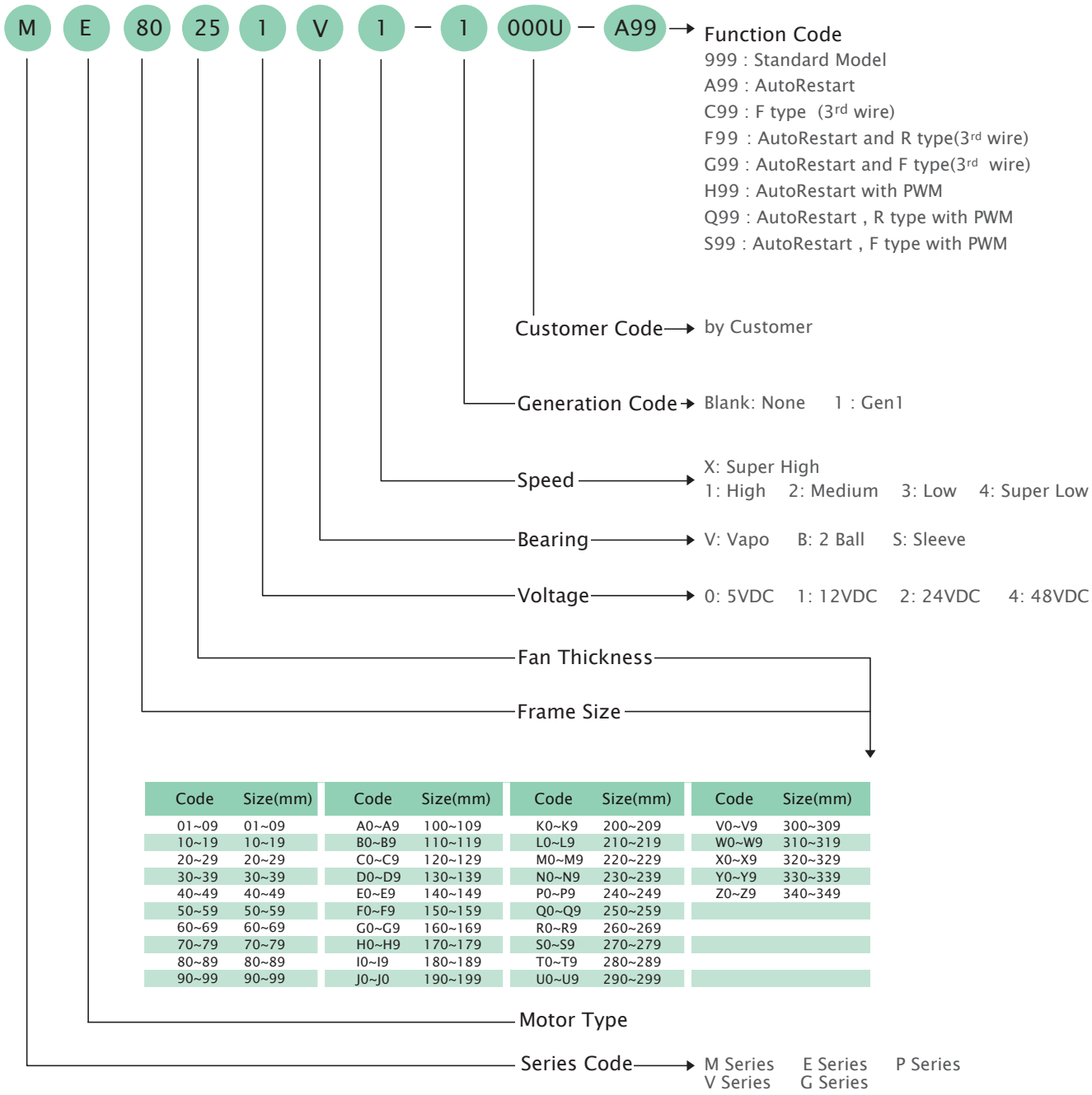
We will protect our employees, the customers we serve, and the environments in which we operate. Moreover, SUNON has also educated its employees to make them realize the importance of environmental protection and energy saving. In addition to the establishment of a process and system for the computerization of documents, we also vigorously promote the 6S policies (Sort, Set, Shine, Standardize, Sustain, and Safety), hoping that SUNON can serve as a good example and unite more people to improve the environment of the earth in which we live in! We expect to forge An Entirely Green SUNON .

Declaration of Conflict-Free Minerals

Declaration of REACH Compliance

Declaration of RoHS Compliance

## DC Fan New Model Numbering System




| Code | Size(mm) | Code | Size(mm) | Code | Size(mm) | Code | Size(mm) |
|---|---|---|---|---|---|---|---|
| 01~09 | 01~09 | A0~A9 | 100~109 | K0~K9 | 200~209 | V0~V9 | 300~309 |
| 10~19 | 10~19 | B0~B9 | 110~119 | L0~L9 | 210~219 | W0~W9 | 310~319 |
| 20~29 | 20~29 | C0~C9 | 120~129 | M0~M9 | 220~229 | X0~X9 | 320~329 |
| 30~39 | 30~39 | D0~D9 | 130~139 | N0~N9 | 230~239 | Y0~Y9 | 330~339 |
| 40~49 | 40~49 | E0~E9 | 140~149 | P0~P9 | 240~249 | Z0~Z9 | 340~349 |
| 50~59 | 50~59 | F0~F9 | 150~159 | Q0~Q9 | 250~259 | | |
| 60~69 | 60~69 | G0~G9 | 160~169 | R0~R9 | 260~269 | | |
| 70~79 | 70~79 | H0~H9 | 170~179 | S0~S9 | 270~279 | | |
| 80~89 | 80~89 | I0~I9 | 180~189 | T0~T9 | 280~289 | | |
| 90~99 | 90~99 | J0~J0 | 190~199 | U0~U9 | 290~299 | | |

## Certification

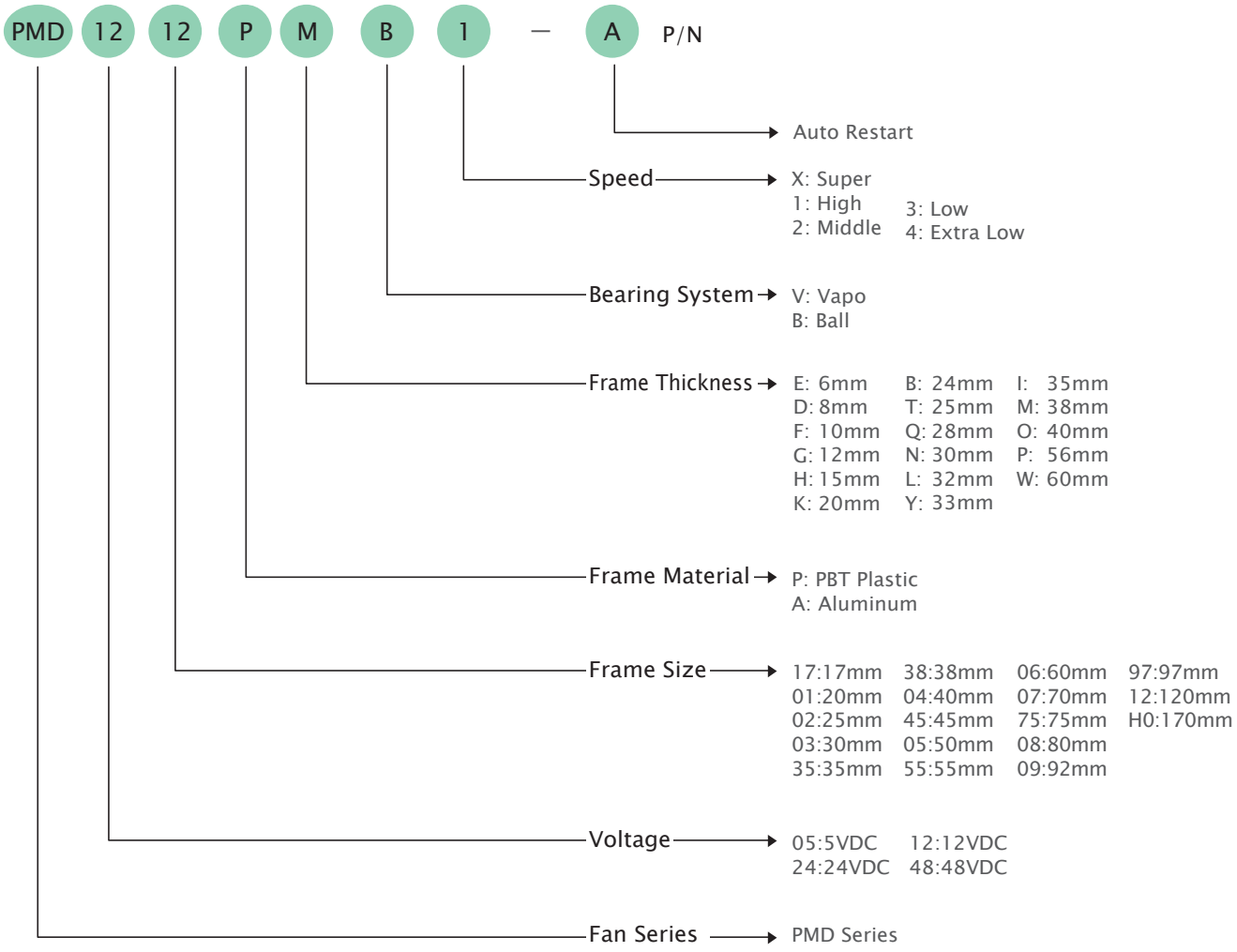
QC 080000 IECQ HSPM

## Safety

※ Note: For critical or extreme environments, including non stop operation, please contact SUNON and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.

※ Note: The “Life Expectancy” of the fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports(L10 and MTTF Report) that relate to the fan are only for reference.

## DC Fan Old Model Numbering System




### P/N

Example: PMD1212PMB1-A P/N: (2).GN

- (2) Two ball bearing
- A Auto restart
- F 3rd wire with frequency generation waveform
- R 3rd wire with rotation detector waveform
- Z Specific RPM
- PWM with PWM function
- GN RoHS compliance

## Certification

QC 080000 IECQ HSPM

## Safety

※ Note: For critical or extreme environments, including non stop operation, please contact SUNON and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.

※ Note: The "Life Expectancy" of the fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports(L10 and MTTF Report) that relate to the fan are only for reference.

# 17x17x8 mm

## 0.7~0.9 CFM

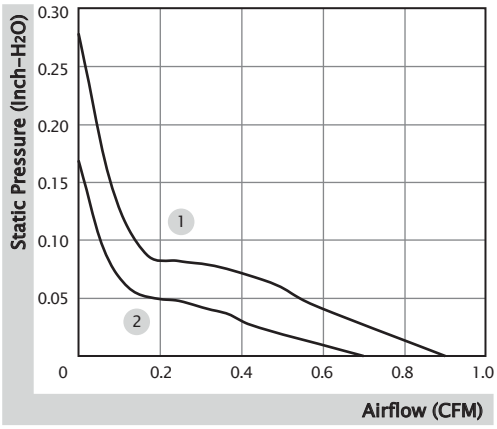
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF17080V1-1000U-A99 | ● | 5 | 93 | 0.47 | 21000 | 0.9 | 0.28 | 21.5 | 3.9 | 1 |
| MF17080V2-1000U-A99 | ● | 5 | 66 | 0.33 | 16500 | 0.7 | 0.17 | 14.2 | 3.9 | 2 |

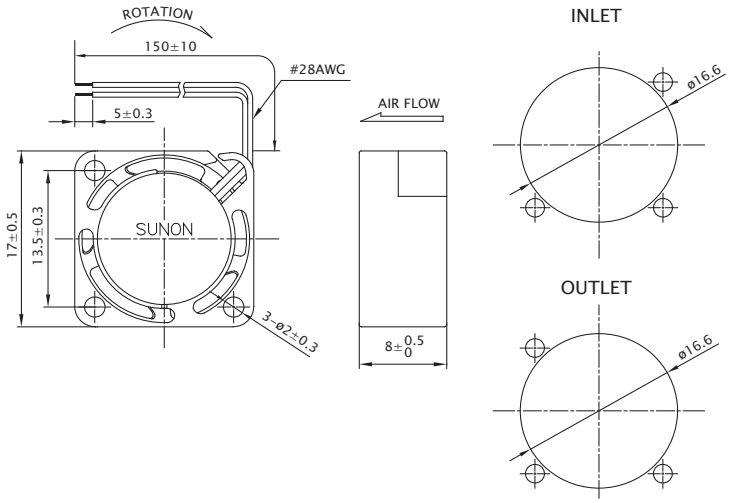
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



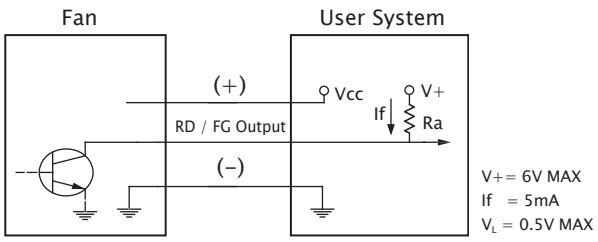

### External Dimensions(mm)



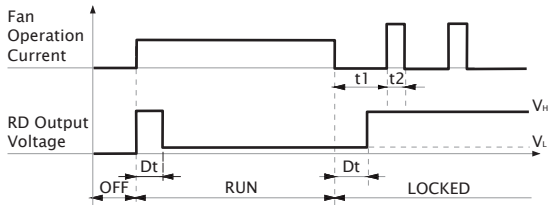

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

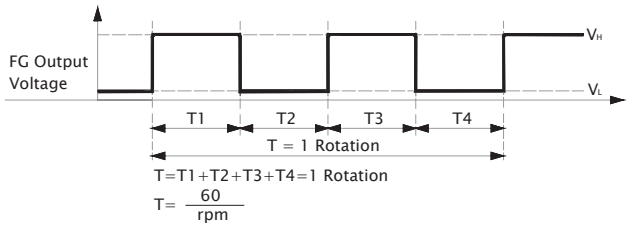
## RD / FG Output Signal

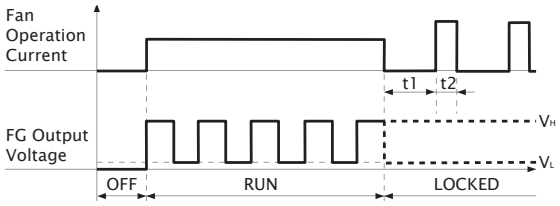



**[ RD Signal ]**

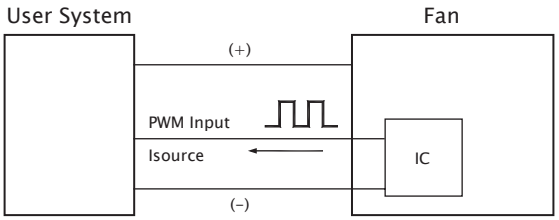



**[ FG Signal ]**




## PWM Input Signal

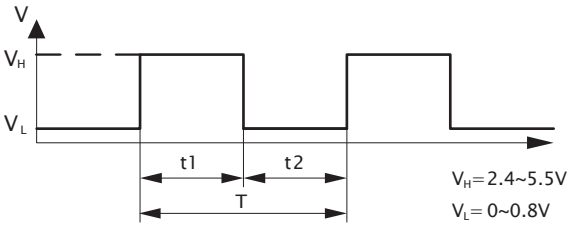



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

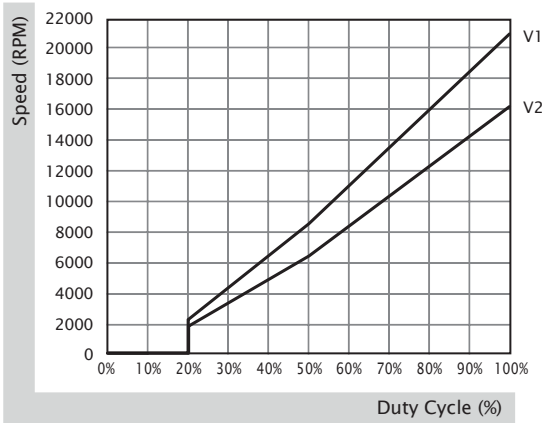
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 20x20x8 mm

## 1.3~1.6 CFM

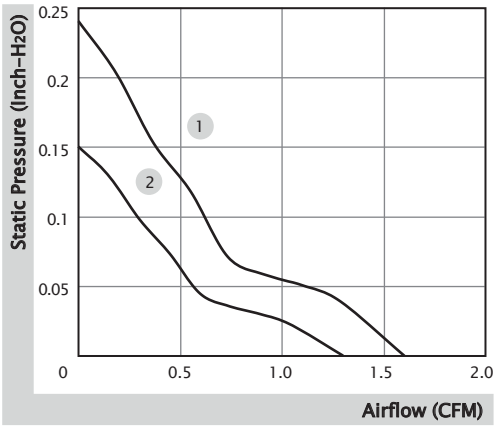
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF20080V1-1000U-A99 | ● | 5 | 90 | 0.45 | 15000 | 1.6 | 0.24 | 23.0 | 4.0 | 1 |
| MF20080V2-1000U-A99 | ● | 5 | 68 | 0.34 | 12000 | 1.3 | 0.15 | 21.0 | 4.0 | 2 |

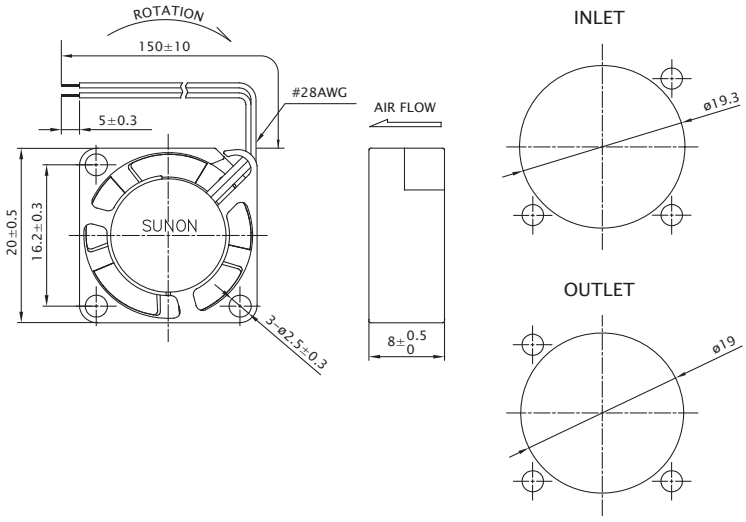
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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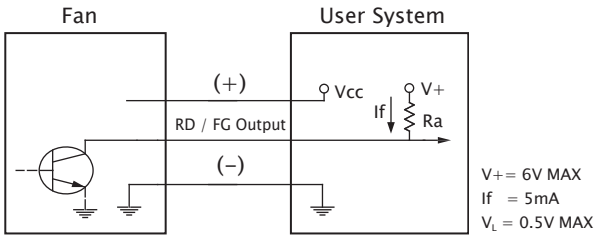
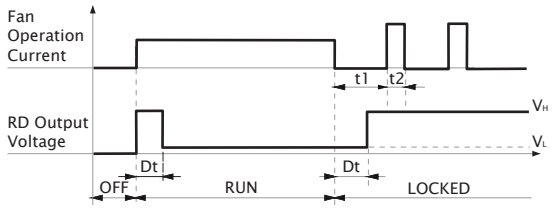
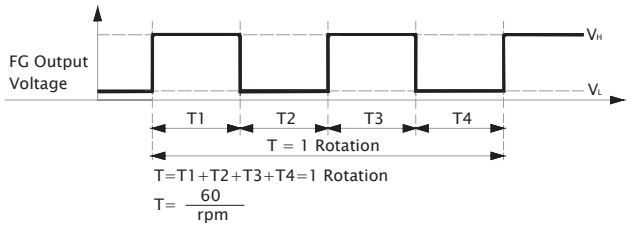
## RD / FG Output Signal

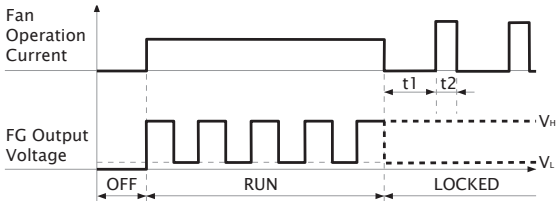



**[ RD Signal ]**

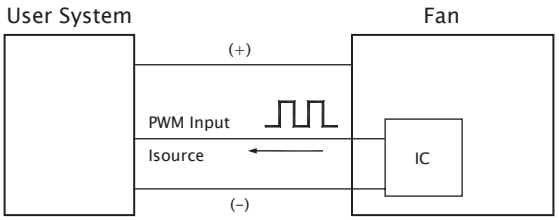



**[ FG Signal ]**




## PWM Input Signal



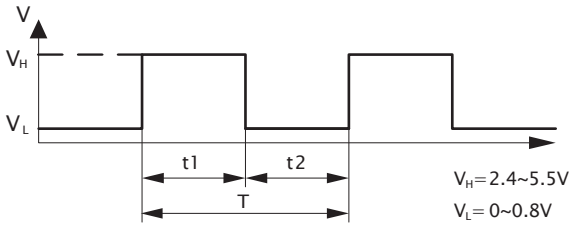

PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

V1 Min. start up duty cycle is 20%.

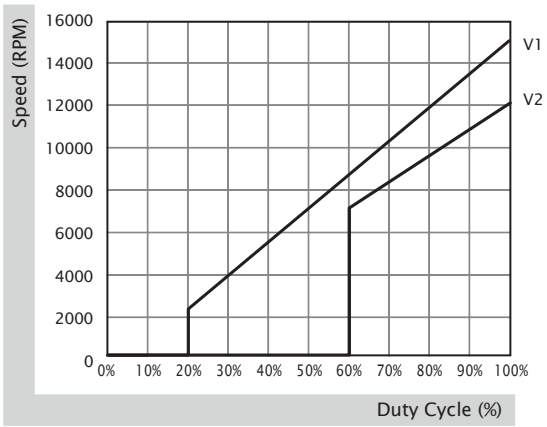
V2 Min. start up duty cycle is 60%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 20x20x10 mm

## 1.5~1.9 CFM

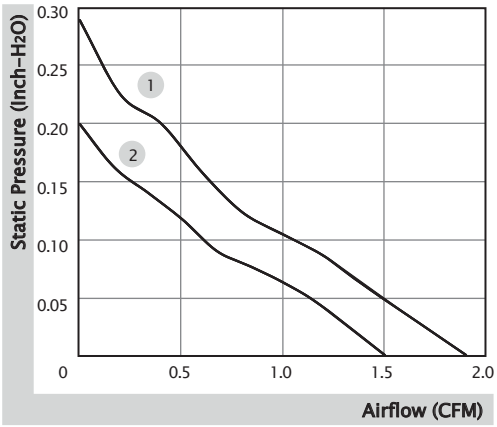
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF20100V1-1000U-A99 | ● | 5 | 106 | 0.53 | 16500 | 1.9 | 0.29 | 25.0 | 4.65 | 1 |
| MF20100V2-1000U-A99 | ● | 5 | 80 | 0.40 | 14000 | 1.5 | 0.20 | 20.0 | 4.65 | 2 |

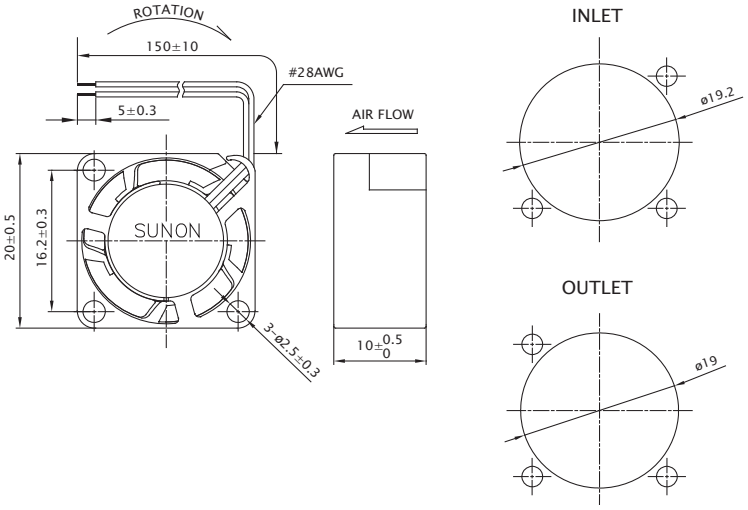
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



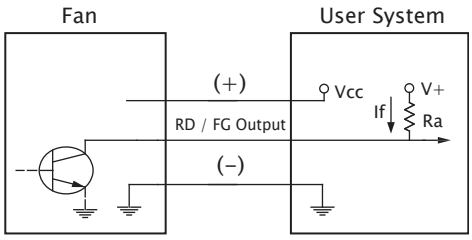

### External Dimensions(mm)



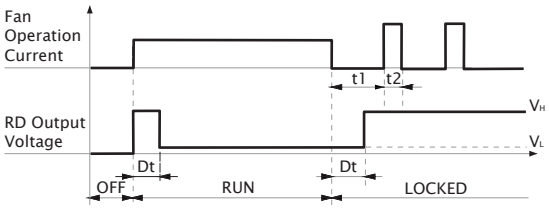

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

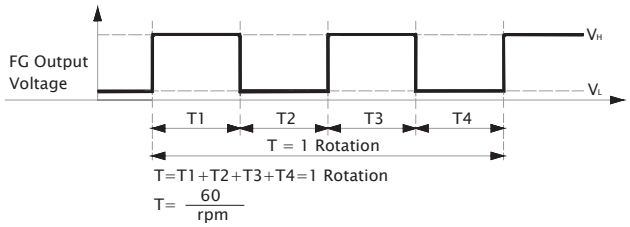
## RD / FG Output Signal

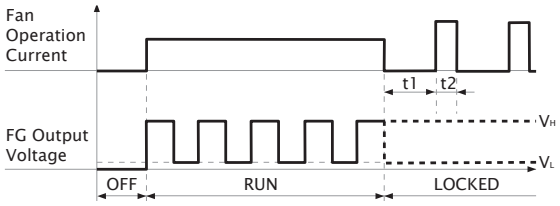



**[ RD Signal ]**

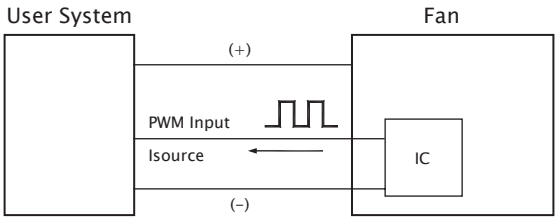



**[ FG Signal ]**




## PWM Input Signal

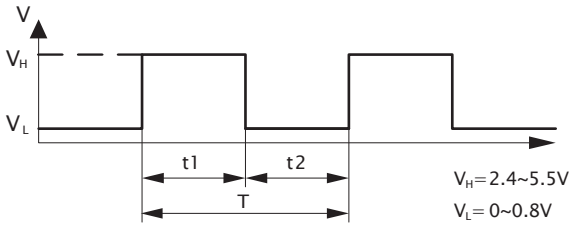



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

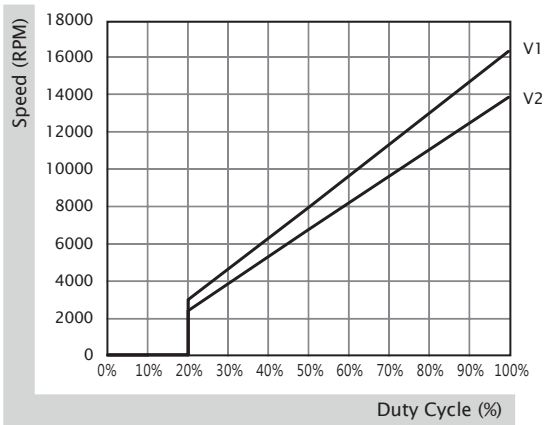
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 25x25x6 mm

## 2.2~3.0 CFM

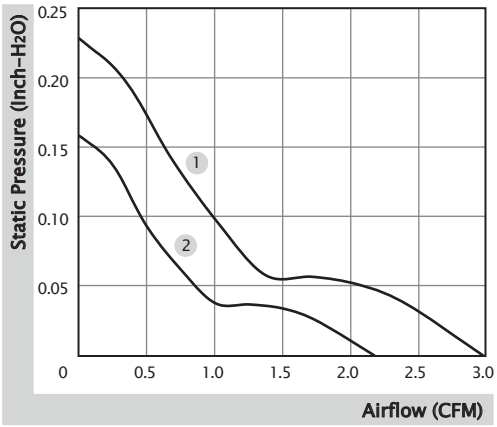
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF25060V1-1000U-A99 | ● | 5 | 115 | 0.58 | 13000 | 3.0 | 0.23 | 24.8 | 5.0 | 1 |
| MF25060V2-1000U-A99 | ● | 5 | 75 | 0.38 | 10000 | 2.2 | 0.16 | 18.0 | 5.0 | 2 |

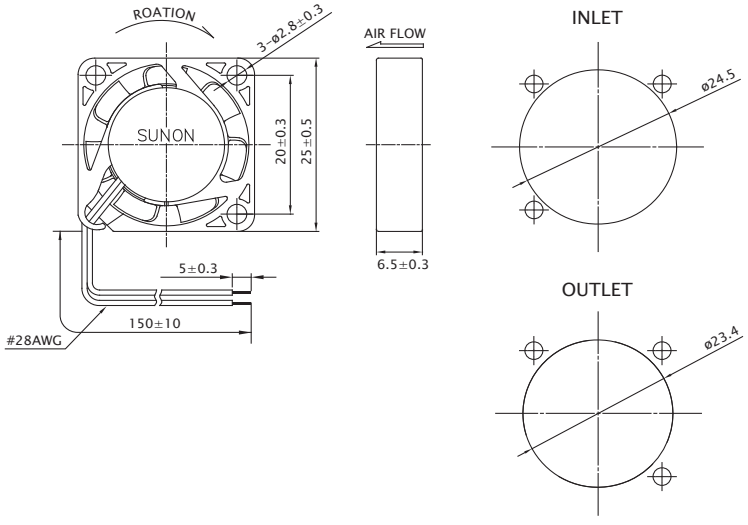
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



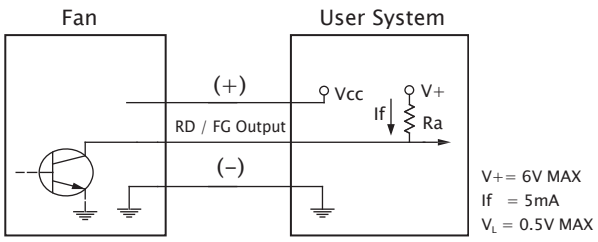

### External Dimensions(mm)



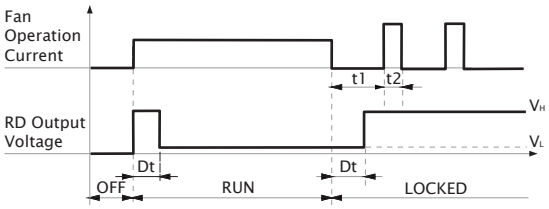

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

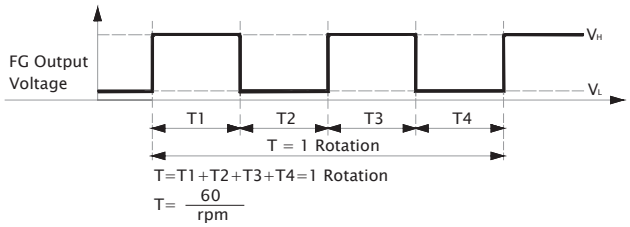
## RD / FG Output Signal

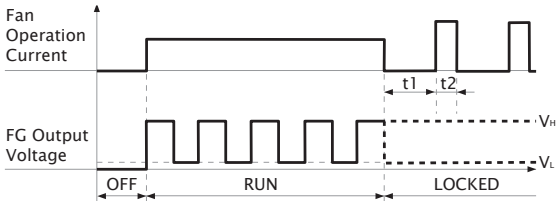



**[ RD Signal ]**




**[ FG Signal ]**



# 25x25x10 mm

## 1.2~3.8 CFM

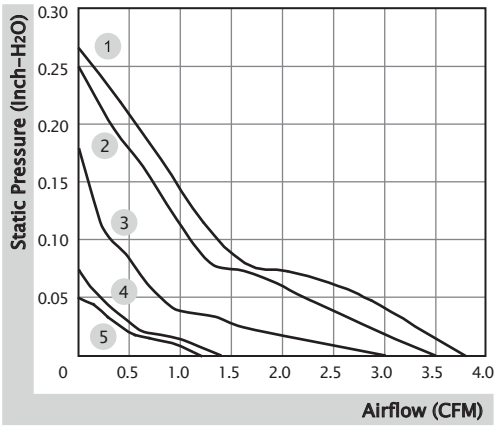
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF25100V1-1000U-A99 | ● | 5 | 105 | 0.53 | 13000 | 3.5 | 0.25 | 23.0 | 6.9 | 2 |
| MF25100V2-1000U-A99 | ● | 5 | 65 | 0.33 | 9800 | 3.0 | 0.18 | 16.0 | 6.9 | 3 |
| MF25100V3-1000U-A99 | ● | 5 | 40 | 0.20 | 6800 | 1.3 | 0.07 | 8.8 | 6.9 | 4 |
| MF25101V1-1000U-A99 | ● | 12 | 50 | 0.60 | 14000 | 3.8 | 0.27 | 26.0 | 6.8 | 1 |
| MF25101V2-1000U-A99 | ● | 12 | 30 | 0.36 | 9600 | 3.0 | 0.18 | 16.0 | 6.8 | 3 |
| MF25101V3-1000U-A99 | ● | 12 | 17 | 0.21 | 6000 | 1.2 | 0.05 | 4.8 | 6.8 | 5 |

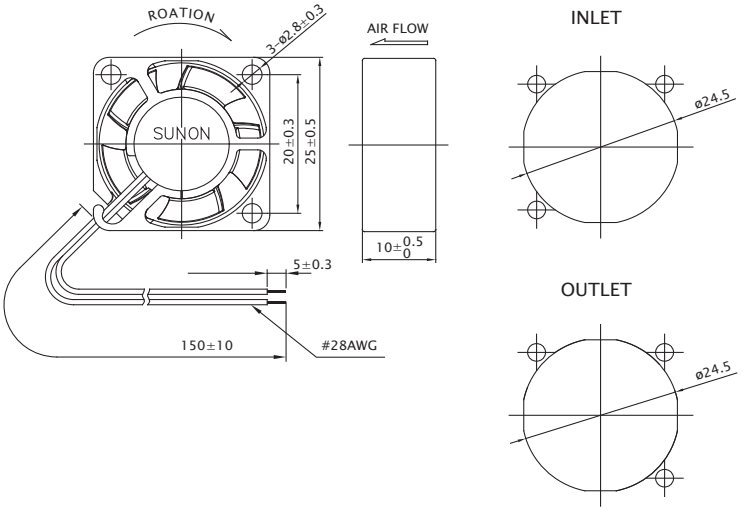
### Function

( 5V ) R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99
(12V) R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics

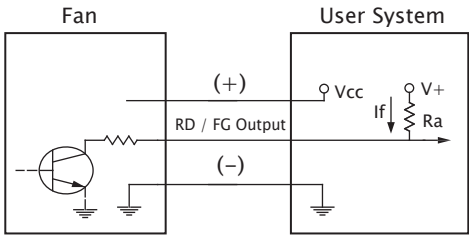



### External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

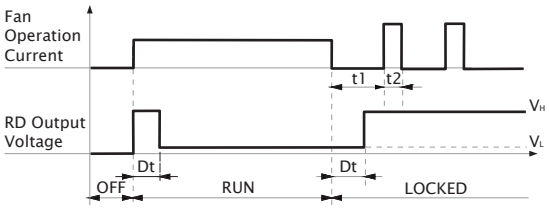
## RD / FG Output Signal



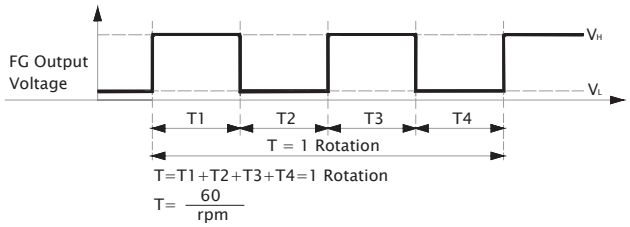

(5V)
V+= 6 V MAX
If = 5mA
$V_L$ = 0.5V MAX

(12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.7V MAX

**[ RD Signal ]**

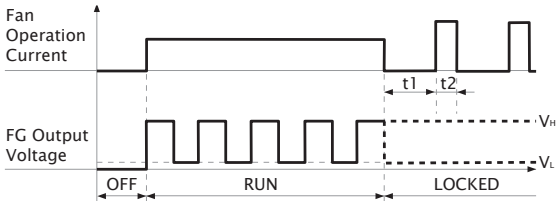



**[ FG Signal ]**

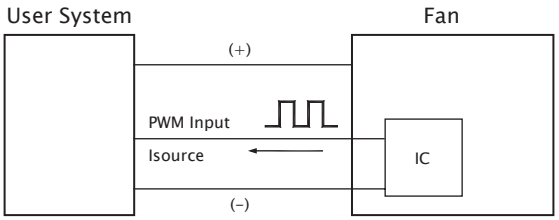



T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$




## PWM Input Signal

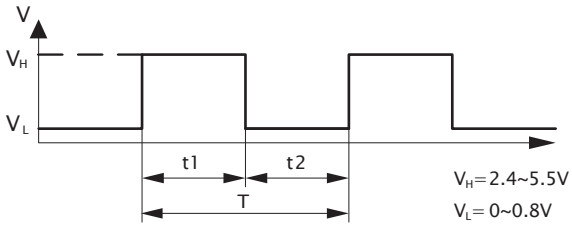



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

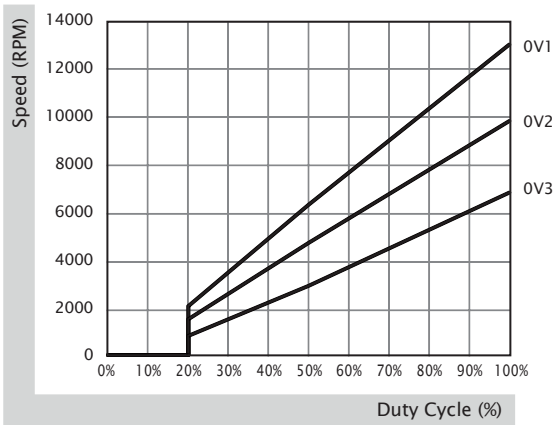
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

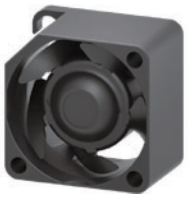
2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 25x25x15 mm

## 1.3~3.1 CFM



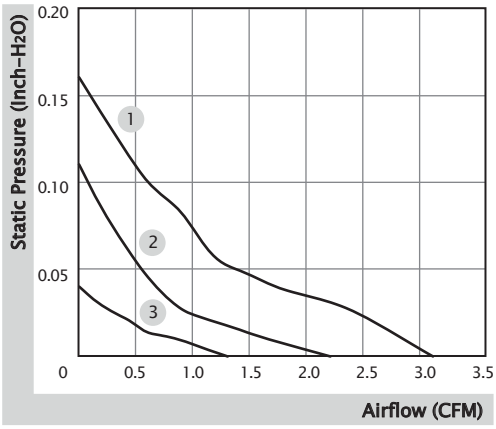
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF25150V1-1000U-A99 | ● | 5 | 85 | 0.43 | 10000 | 3.1 | 0.16 | 20.0 | 9.4 | 1 |
| MF25150V2-1000U-A99 | ● | 5 | 46 | 0.23 | 6800 | 2.2 | 0.11 | 11.3 | 9.4 | 2 |
| MF25150V3-1000U-A99 | ● | 5 | 35 | 0.18 | 5300 | 1.3 | 0.04 | 4.5 | 9.4 | 3 |

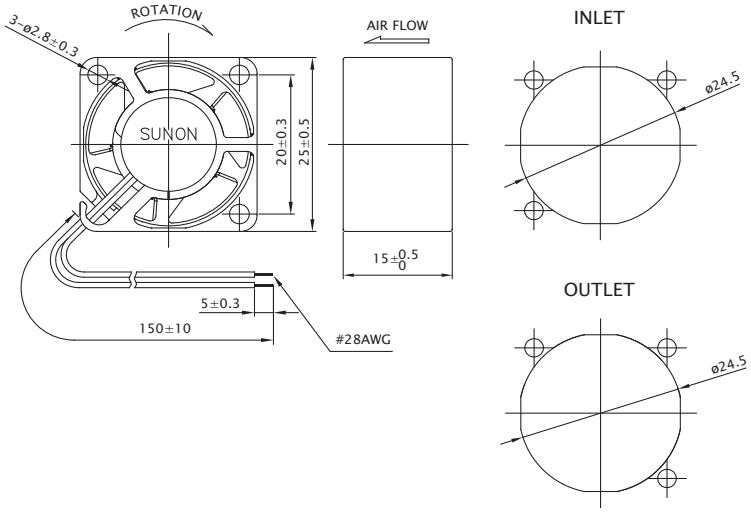
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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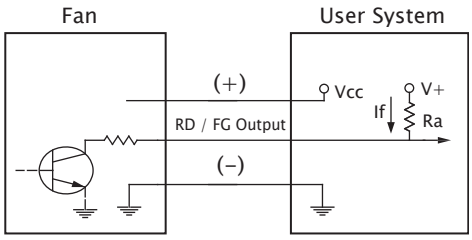
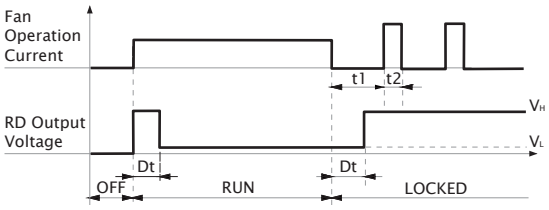
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

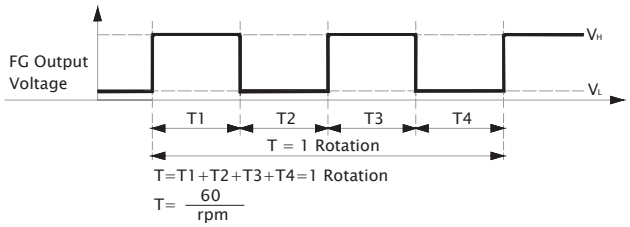
## RD / FG Output Signal

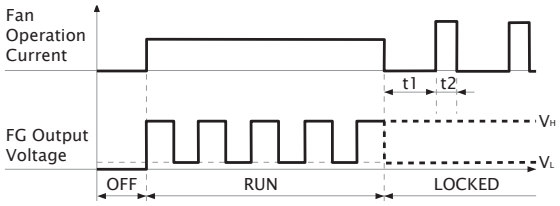



**[ RD Signal ]**

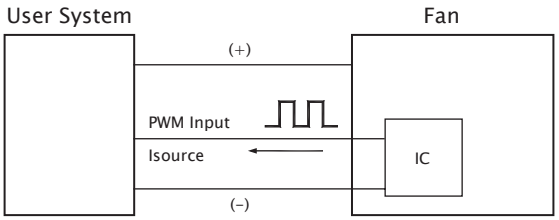



**[ FG Signal ]**




## PWM Input Signal



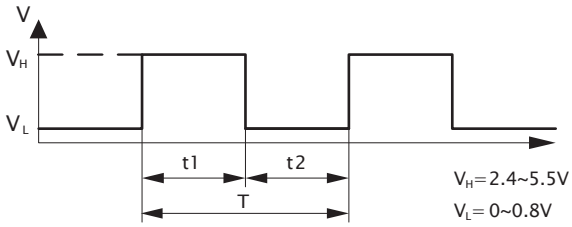

PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

V1, V2 Min. start up duty cycle is 20%.

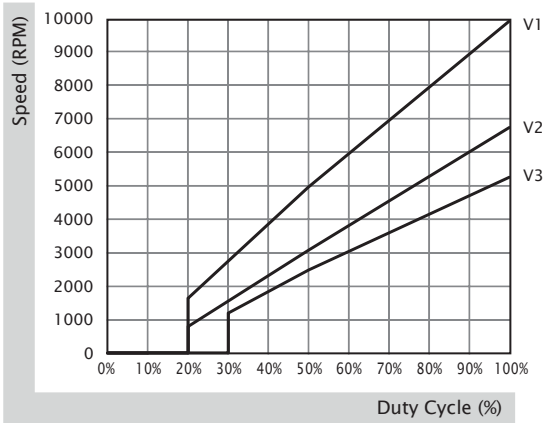
V3 Min. start up duty cycle is 30%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 30x30x6 mm

## 3.7~4.9 CFM

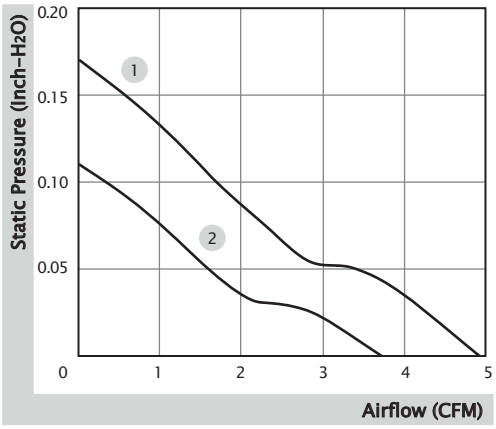
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF30060V1-1000U-A99 | ● | 5 | 112 | 0.56 | 9100 | 4.9 | 0.17 | 23.6 | 6.0 | 1 |
| MF30060V2-1000U-A99 | ● | 5 | 72 | 0.36 | 7100 | 3.7 | 0.11 | 15.7 | 6.0 | 2 |

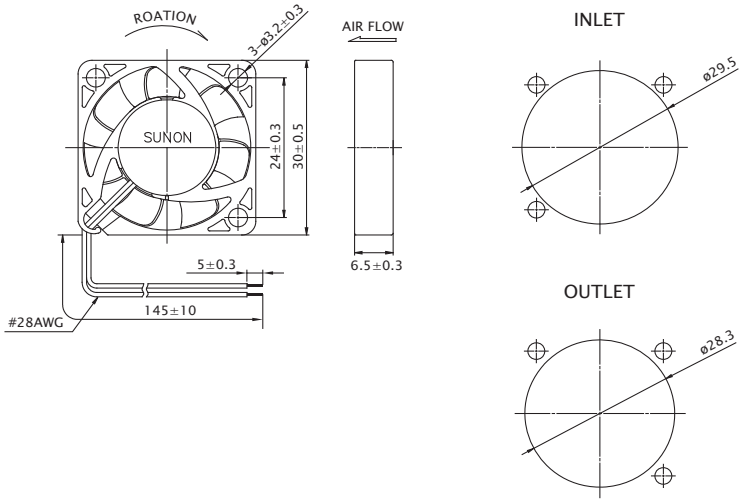
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



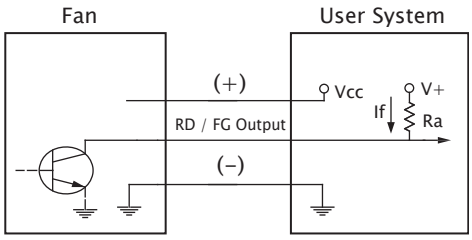

### External Dimensions(mm)



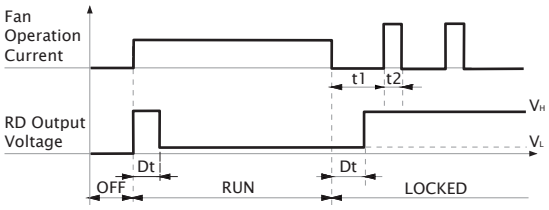

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

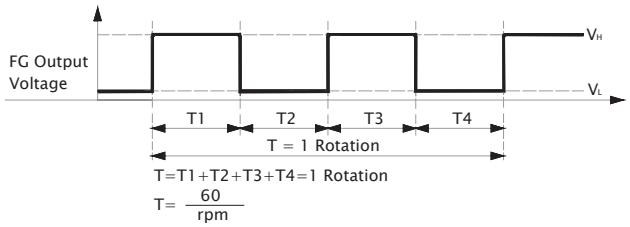
## RD / FG Output Signal

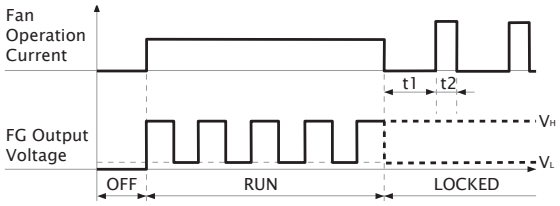



**[ RD Signal ]**

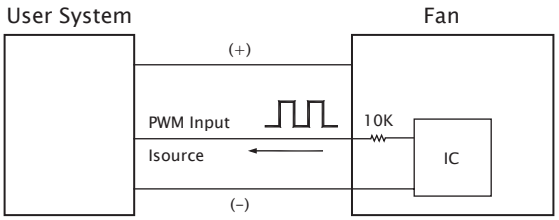



**[ FG Signal ]**




## PWM Input Signal

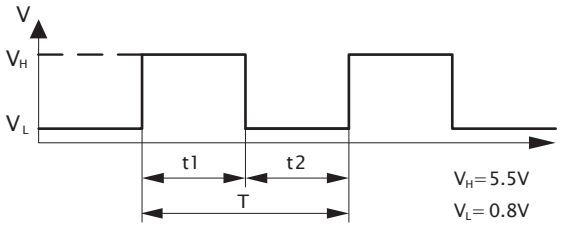



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

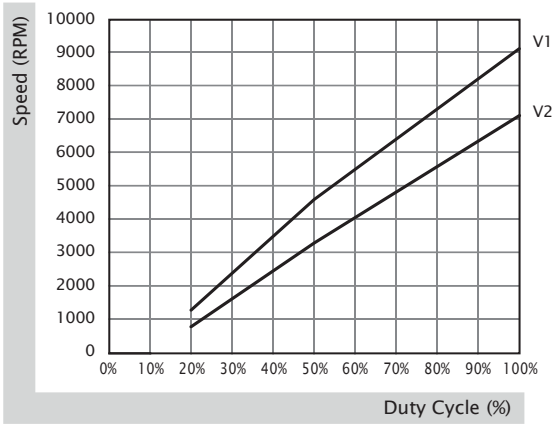
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 30x30x10 mm

## 2.5~5.5 CFM

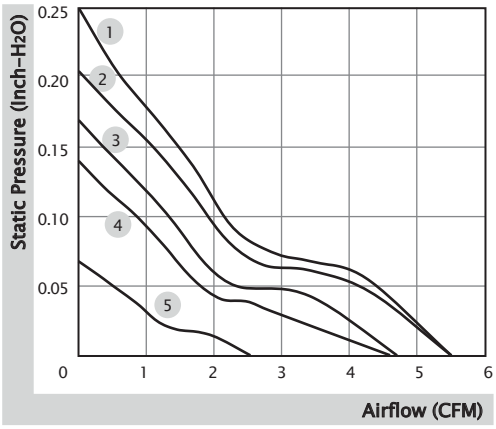
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF30100V1-1000U-A99 | ● | 5 | 120 | 0.60 | 11000 | 5.5 | 0.20 | 23.0 | 7.8 | 2 |
| MF30100V2-1000U-A99 | ● | 5 | 80 | 0.40 | 9500 | 4.7 | 0.17 | 21.0 | 7.8 | 3 |
| MF30100V3-1000U-A99 | ● | 5 | 45 | 0.23 | 6000 | 2.5 | 0.07 | 10.2 | 7.8 | 5 |
| MF30101V1-1000U-A99 | ● | 12 | 55 | 0.66 | 11500 | 5.5 | 0.25 | 23.0 | 7.8 | 1 |
| MF30101V2-1000U-A99 | ● | 12 | 32 | 0.39 | 8600 | 4.6 | 0.14 | 20.0 | 7.8 | 4 |

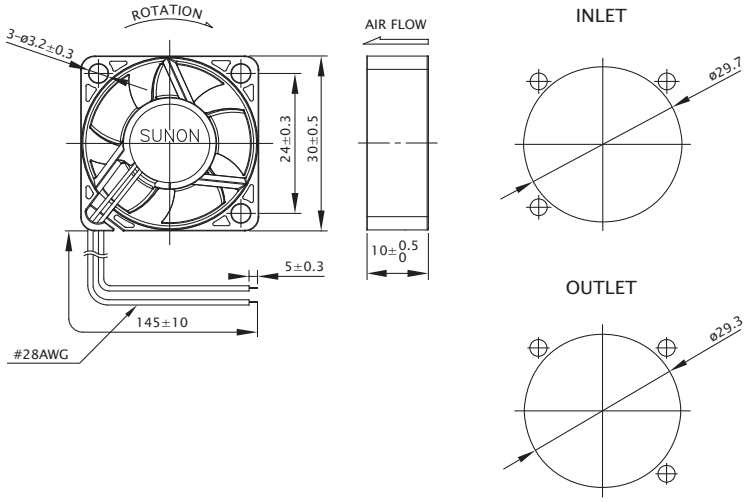
### Function

( 5V ) R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99
(12V) R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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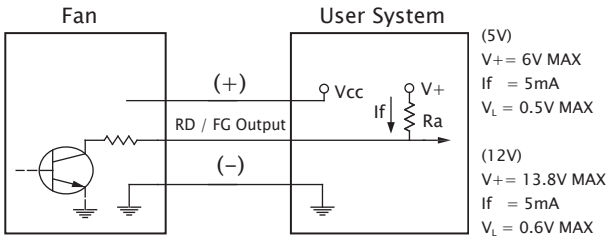
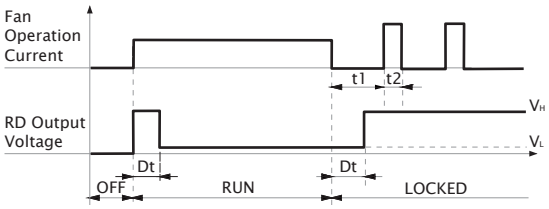
## RD / FG Output Signal



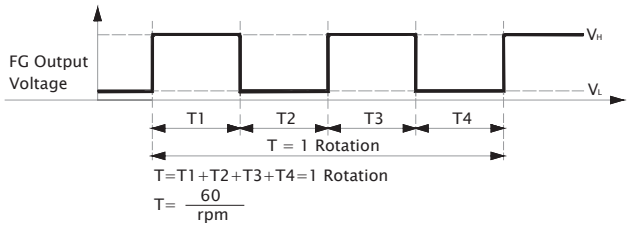

(5V)
V+= 6V MAX
If = 5mA
$V_L$ = 0.5V MAX

(12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.6V MAX

**[ RD Signal ]**

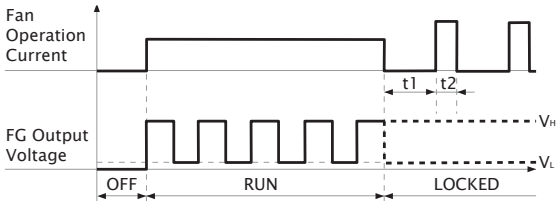



**[ FG Signal ]**

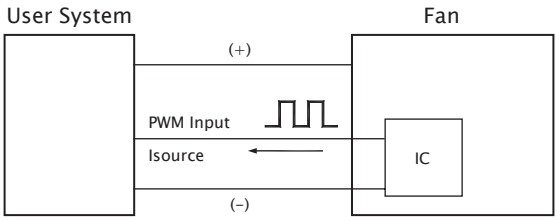



T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$




## PWM Input Signal

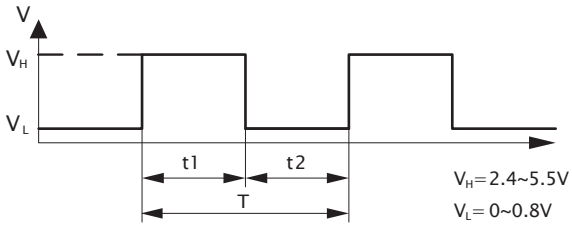



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

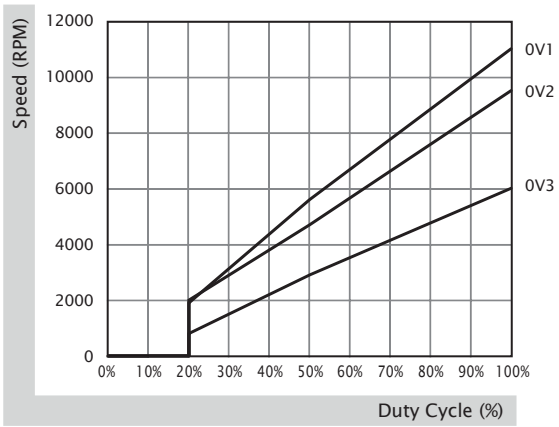
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 30x30x10 mm

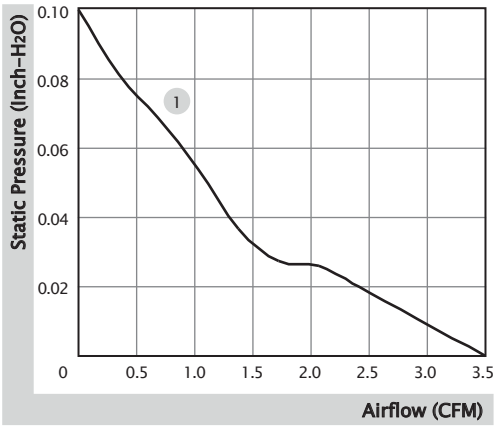
## 3.5 CFM

### Specification

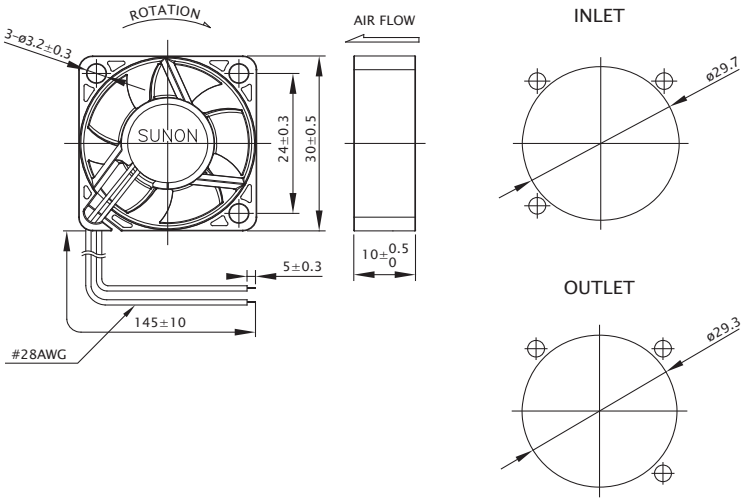
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA30101V3-1000U-A99 | ● | 12 | 25 | 0.30 | 7000 | 3.5 | 0.10 | 15.1 | 7.8 | 1 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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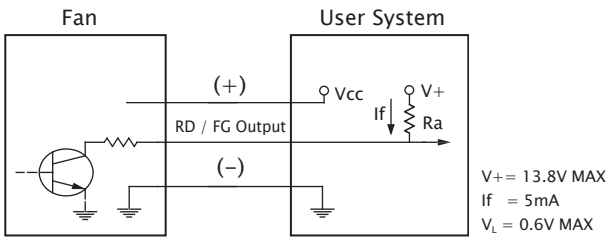
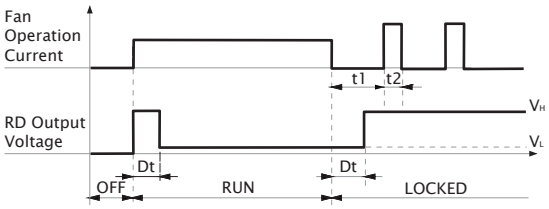
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

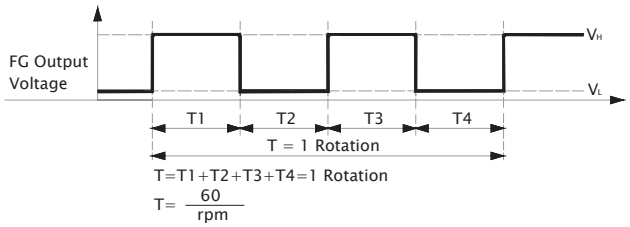
## RD / FG Output Signal

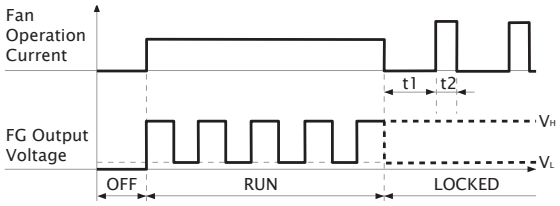



**[ RD Signal ]**




**[ FG Signal ]**



# 30x30x15 mm

## 2.7~6.0 CFM

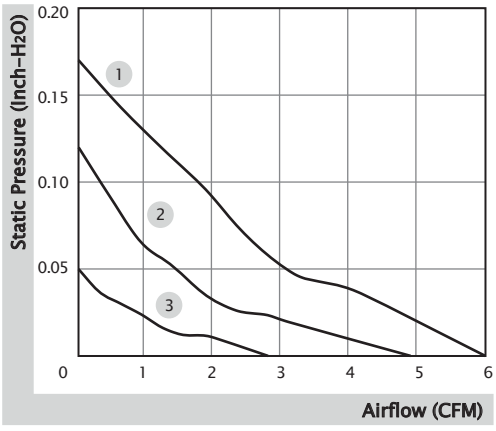
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF30150V1-1000U-A99 | ● | 5 | 140 | 0.70 | 9500 | 6.0 | 0.17 | 27.0 | 9.7 | 1 |
| MF30150V2-1000U-A99 | ● | 5 | 80 | 0.40 | 7300 | 4.9 | 0.12 | 20.0 | 9.7 | 2 |
| MF30150V3-1000U-A99 | ● | 5 | 45 | 0.23 | 5200 | 2.8 | 0.05 | 9.8 | 9.7 | 3 |
| MF30151V1-1000U-A99 | ● | 12 | 65 | 0.78 | 9500 | 6.0 | 0.17 | 27.0 | 9.7 | 1 |
| MF30151V2-1000U-A99 | ● | 12 | 35 | 0.42 | 7000 | 4.8 | 0.12 | 19.0 | 9.7 | 2 |
| MF30151V3-1000U-A99 | ● | 12 | 20 | 0.24 | 4600 | 2.7 | 0.05 | 7.8 | 9.7 | 3 |

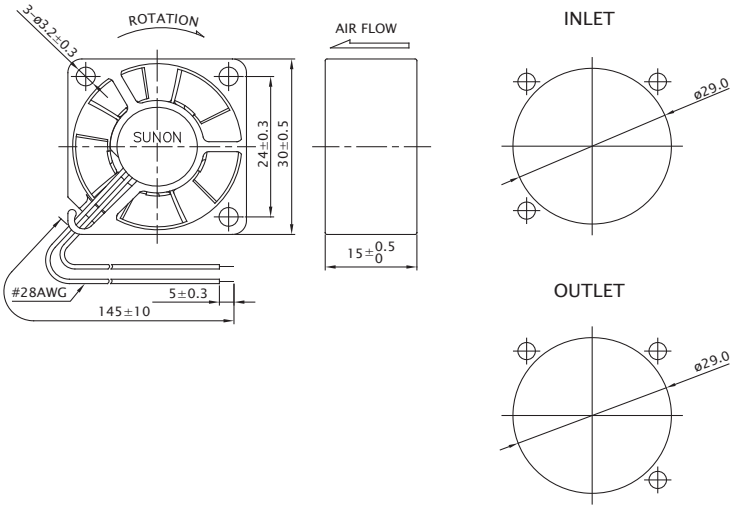
### Function

( 5V ) R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99
(12V) R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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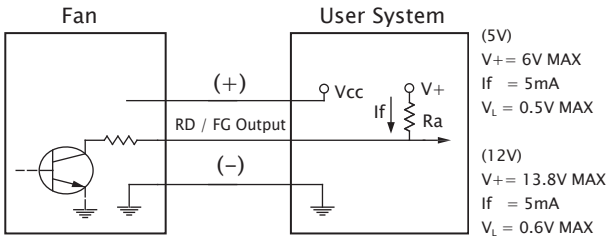
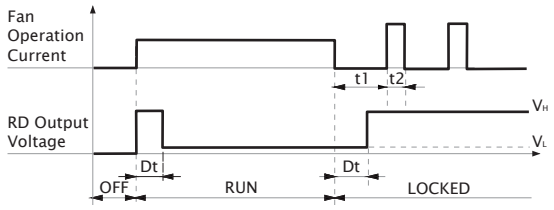
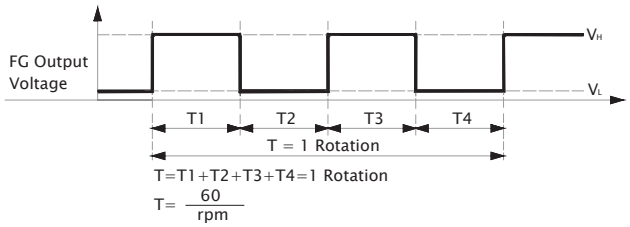
## RD / FG Output Signal

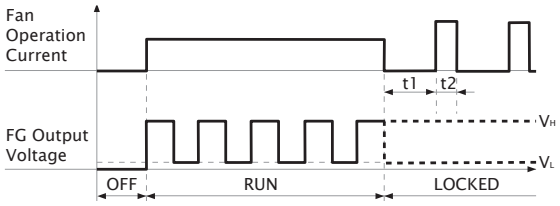



**[ RD Signal ]**

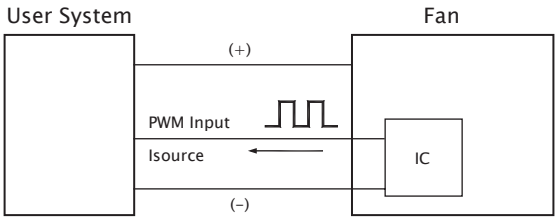



**[ FG Signal ]**




## PWM Input Signal

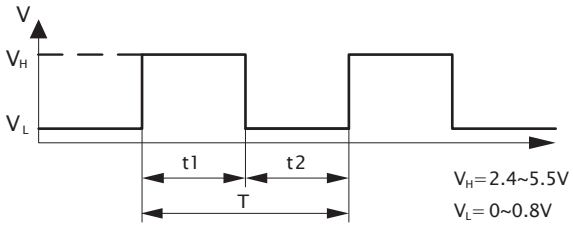



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

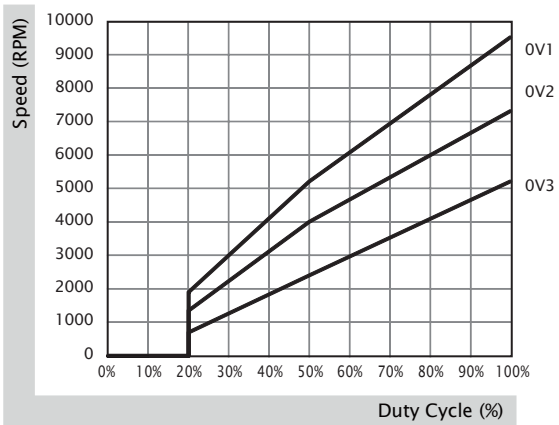
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 35x35x6 mm

## 4.3~5.5 CFM

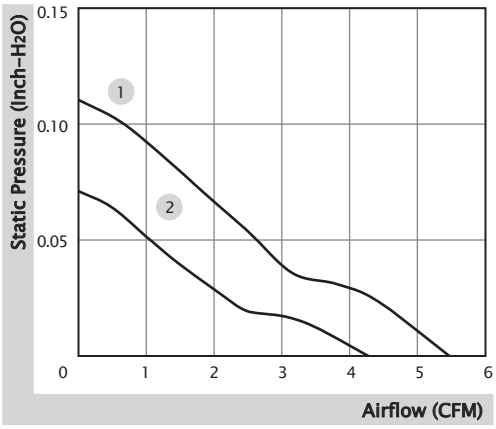
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF35060V1-1000U-A99 | ● | 5 | 120 | 0.60 | 7600 | 5.5 | 0.11 | 26.0 | 7.0 | 1 |
| MF35060V2-1000U-A99 | ● | 5 | 66 | 0.33 | 5800 | 4.3 | 0.07 | 18.3 | 7.0 | 2 |

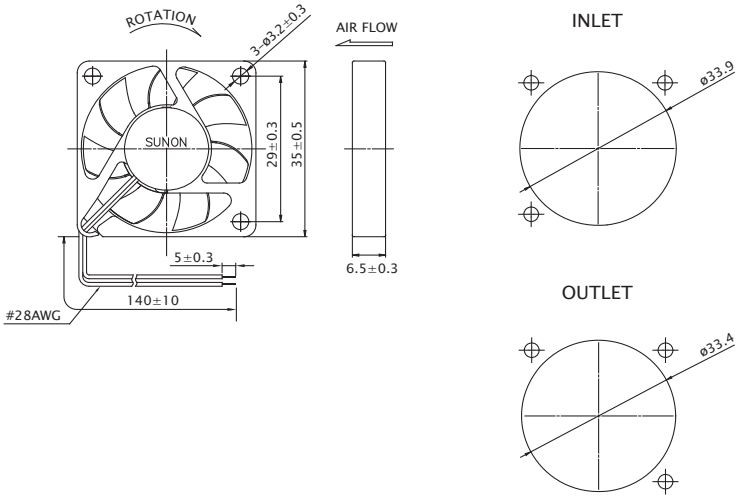
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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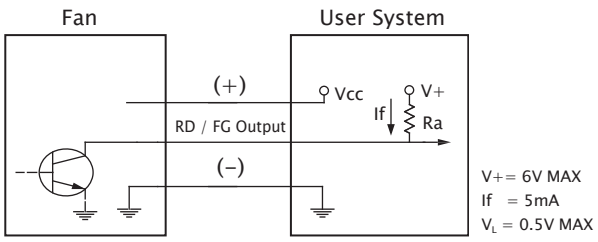
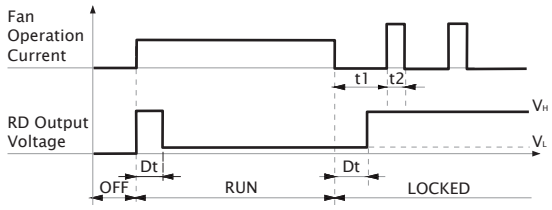
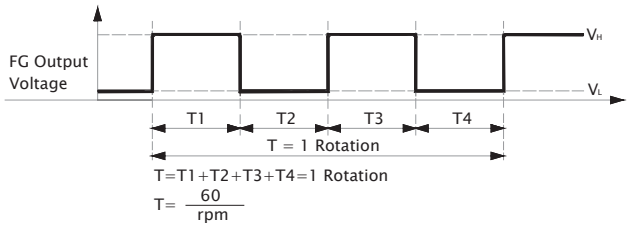
## RD / FG Output Signal

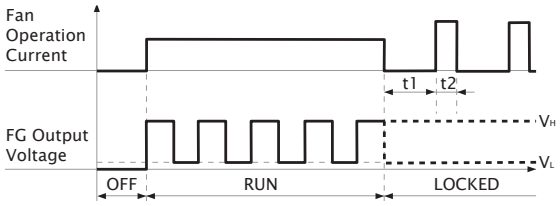



**[ RD Signal ]**

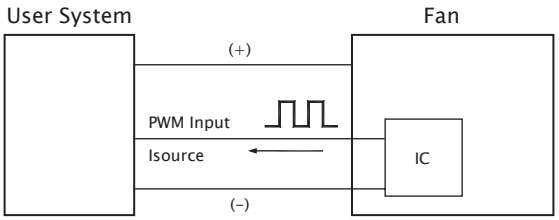



**[ FG Signal ]**




## PWM Input Signal

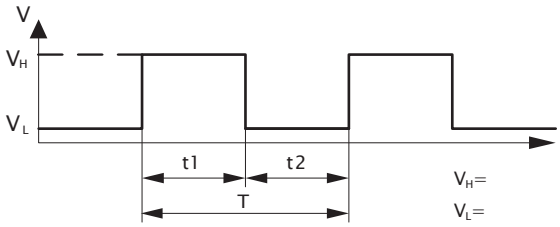



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

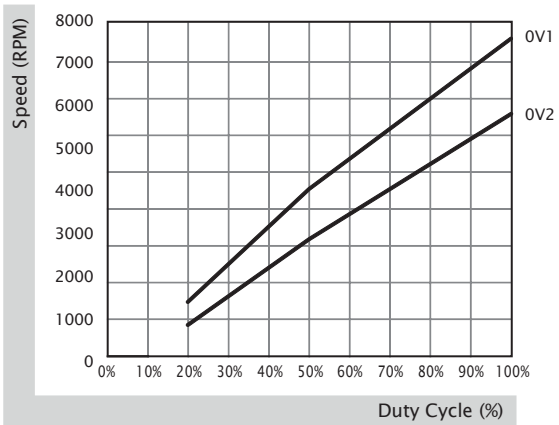
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 35x35x10 mm

## 3.6~7.2 CFM

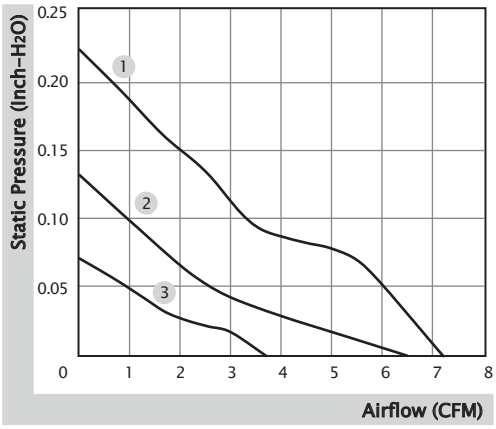
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF35100V1-1000U-A99 | ● | 5 | 135 | 0.68 | 10000 | 7.2 | 0.22 | 28.0 | 10.5 | 1 |
| MF35100V2-1000U-A99 | ● | 5 | 80 | 0.40 | 7500 | 6.5 | 0.13 | 21.8 | 10.5 | 2 |
| MF35100V3-1000U-A99 | ● | 5 | 45 | 0.23 | 5300 | 3.7 | 0.07 | 13.1 | 10.5 | 3 |
| MF35101V1-1000U-A99 | ● | 12 | 60 | 0.72 | 10000 | 7.2 | 0.22 | 28.0 | 10.5 | 1 |
| MF35101V2-1000U-A99 | ● | 12 | 35 | 0.42 | 7500 | 6.5 | 0.13 | 21.8 | 10.5 | 2 |
| MF35101V3-1000U-A99 | ● | 12 | 20 | 0.24 | 5000 | 3.6 | 0.07 | 12.0 | 10.5 | 3 |

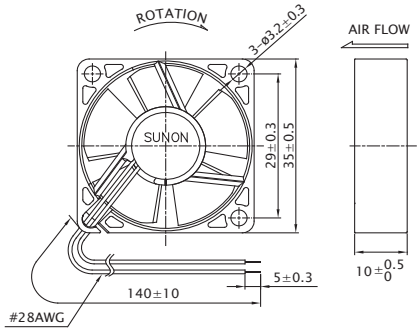
### Function

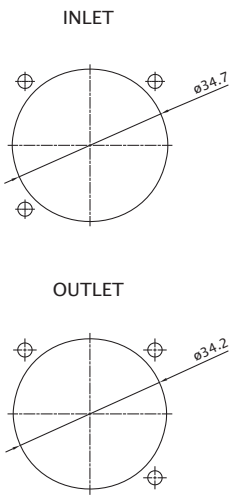
( 5V ) R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99
(12V) R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



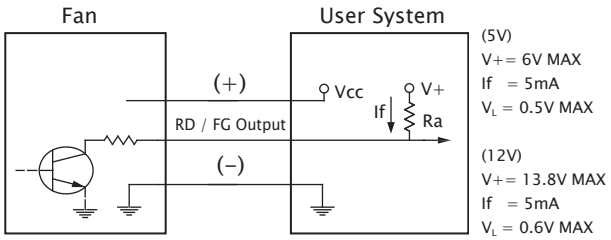

### External Dimensions(mm)



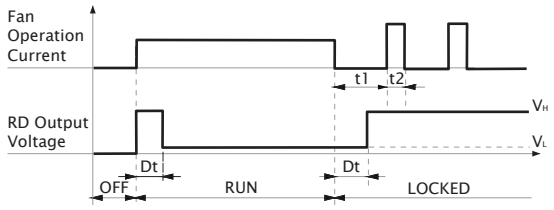




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

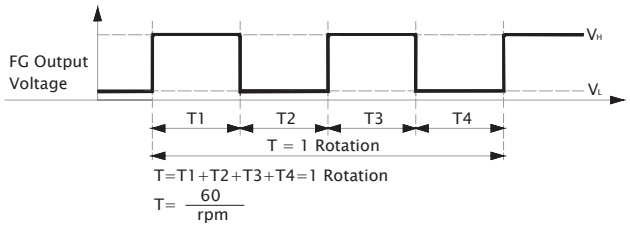
## RD / FG Output Signal

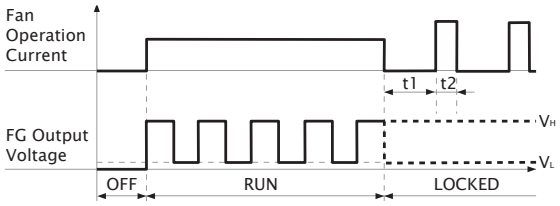



**[ RD Signal ]**

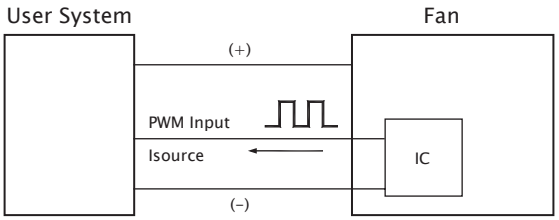



**[ FG Signal ]**




## PWM Input Signal

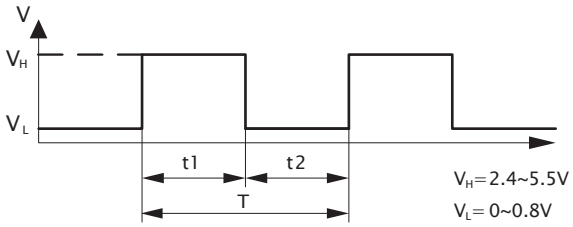



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

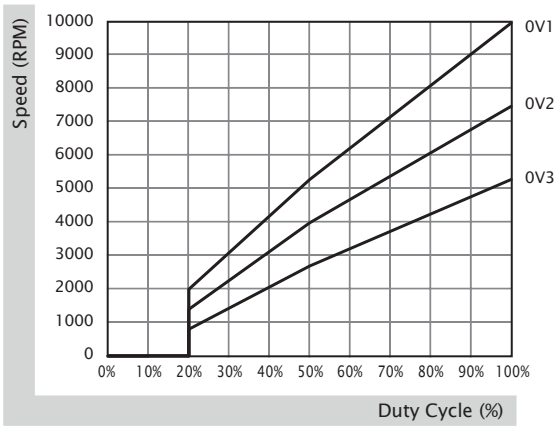
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 36x36x28 mm

## 18.1~22.8 CFM

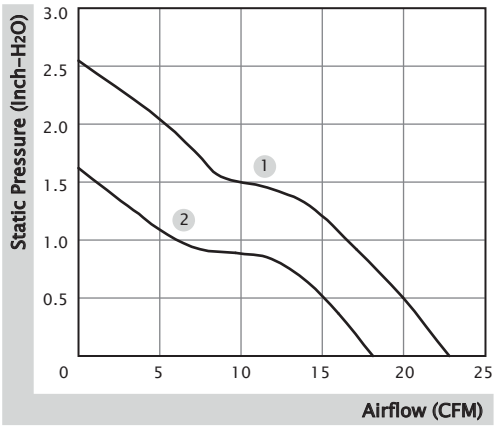
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF36281BX-000U-A99 | ◉ | 12 | 800 | 9.60 | 23000 | 22.8 | 2.55 | 61.9 | 40.5 | 1 |
| PF36281B1-000U-A99 | ◉ | 12 | 450 | 5.40 | 18400 | 18.1 | 1.62 | 55.7 | 40.5 | 2 |

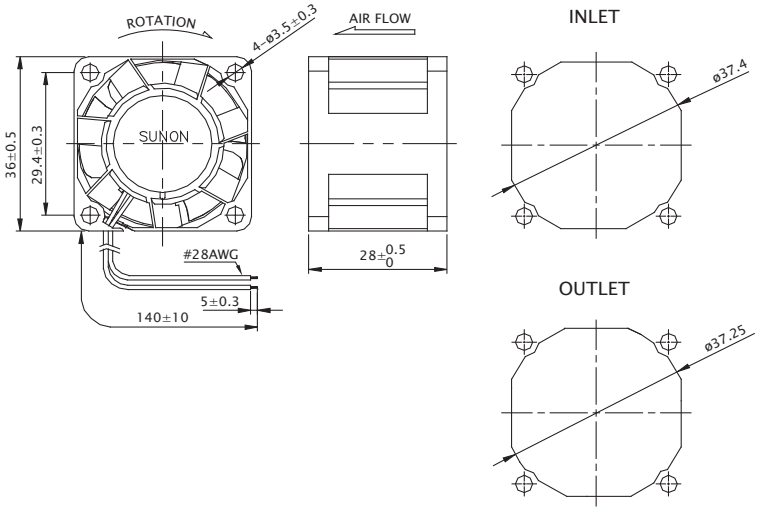
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



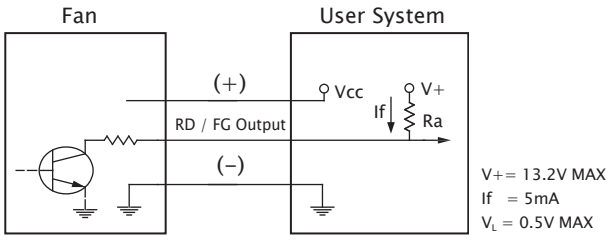

### External Dimensions(mm)



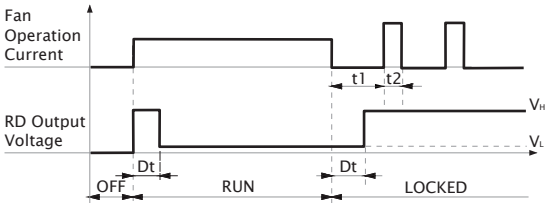

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

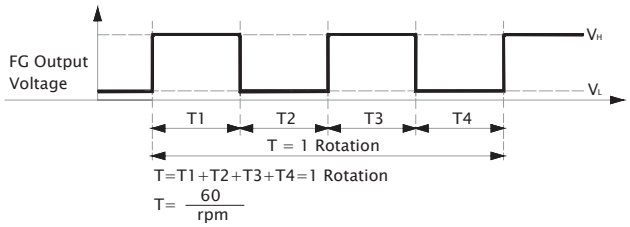
## RD / FG Output Signal

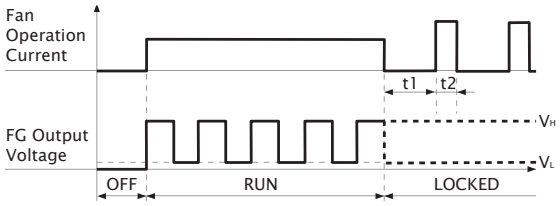



**[ RD Signal ]**

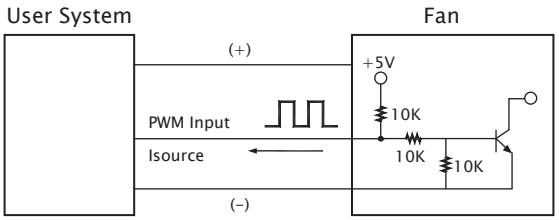



**[ FG Signal ]**




## PWM Input Signal

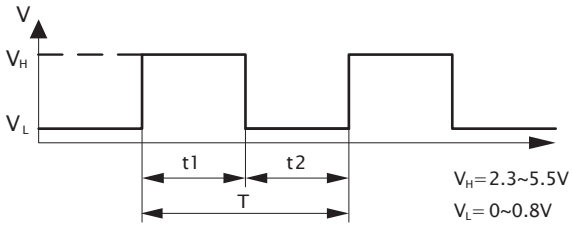



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

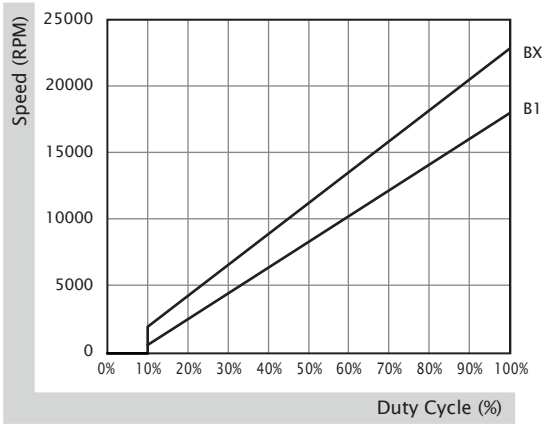
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 38x38x28 mm

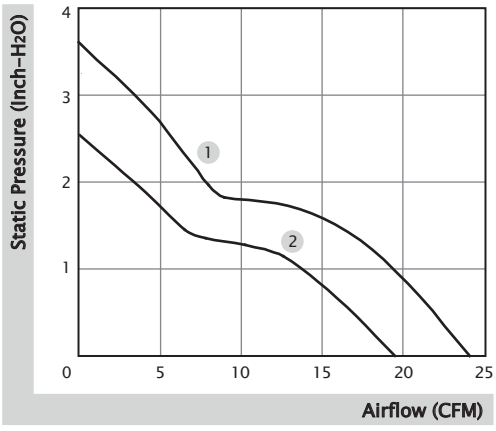
## 18.9~24.2 CFM

## Specification

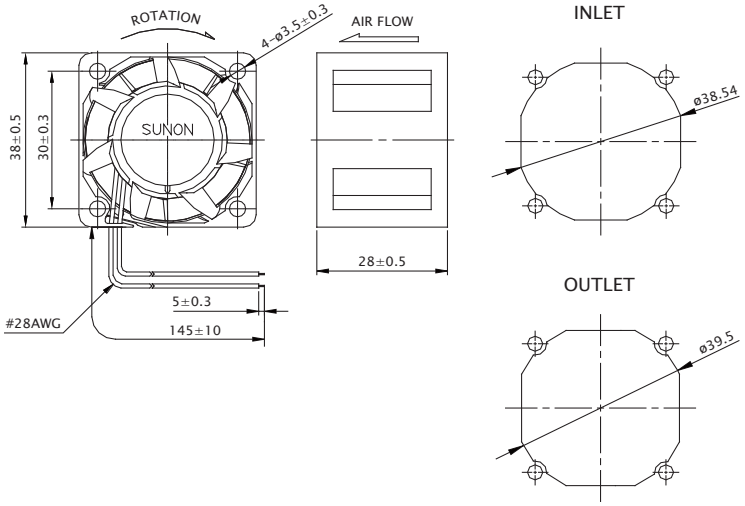
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| VF38281BX-000U-A9H | ◉ | 12 | 870 | 10.44 | 27000 | 24.2 | 3.56 | 61.6 | 44.0 | 1 |
| VF38281B1-000U-A9H | ◉ | 12 | 475 | 5.70 | 21600 | 18.9 | 2.50 | 58.1 | 44.0 | 2 |

## Function F Type : G9H ／ PWM : S9H

## Air Flow-Static Pressure Characteristics



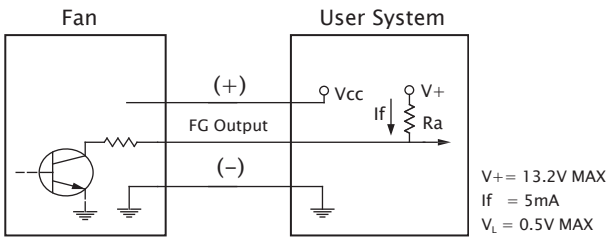

## External Dimensions(mm)



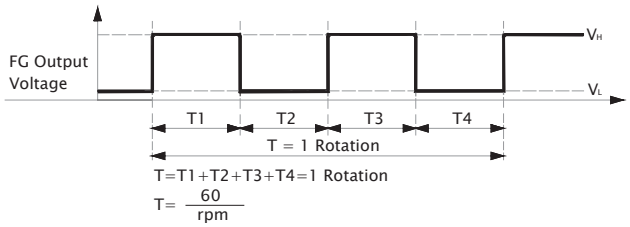

※ All model could be customized. Please contact with Sunon Sales.

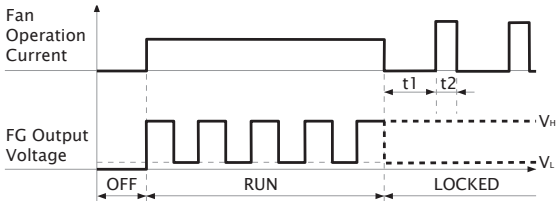
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

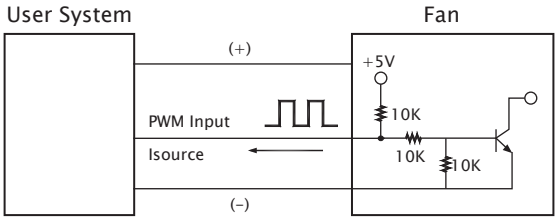



**[ FG Signal ]**




## PWM Input Signal

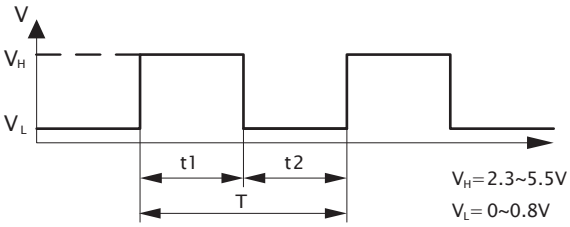



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

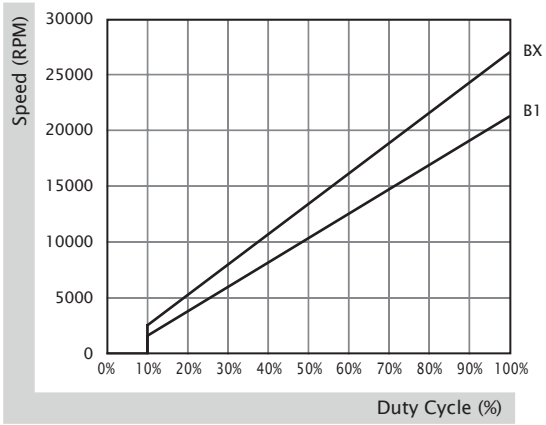
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 38x38x28 mm

## 11.3~23.0 CFM

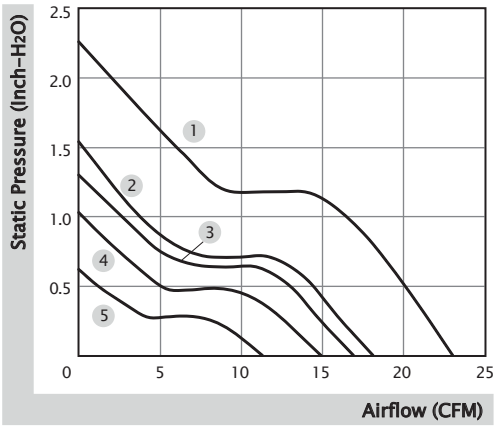
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF38281BX-1000U-A9H | ● | 12 | 570 | 6.84 | 20000 | 23.0 | 2.26 | 57.0 | 41.0 | 1 |
| PF38281B1-1000U-A9H | ● | 12 | 315 | 3.78 | 16000 | 18.1 | 1.54 | 51.8 | 41.0 | 2 |
| PF38281B2-1000U-A9H | ● | 12 | 265 | 3.18 | 15000 | 16.9 | 1.30 | 51.0 | 41.0 | 3 |
| PF38281B3-1000U-A9H | ● | 12 | 180 | 2.16 | 13000 | 14.9 | 1.03 | 47.3 | 41.0 | 4 |
| PF38281B4-1000U-A9H | ● | 12 | 95 | 1.14 | 10000 | 11.3 | 0.62 | 40.8 | 41.0 | 5 |

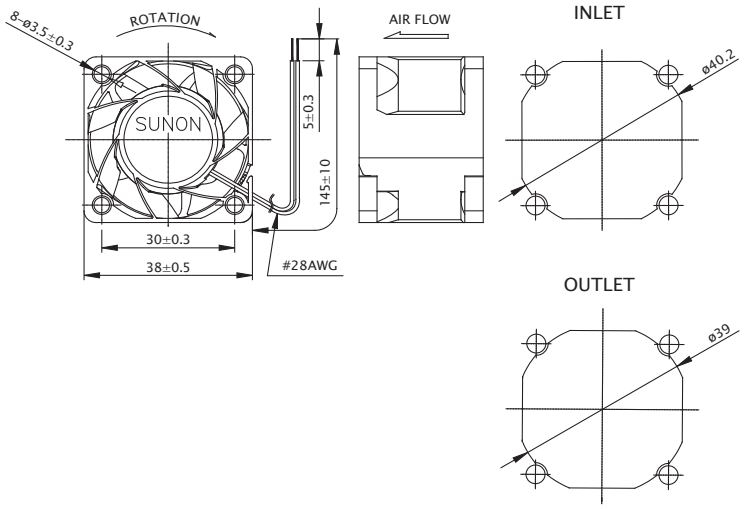
### Function

R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H

### Air Flow-Static Pressure Characteristics



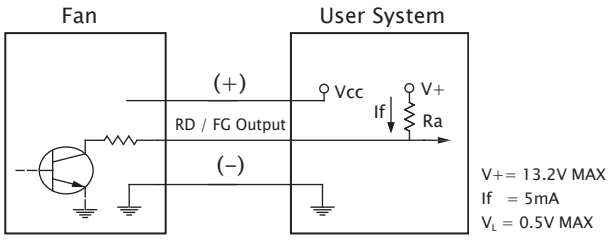

### External Dimensions(mm)



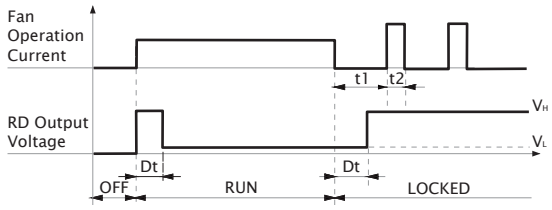

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

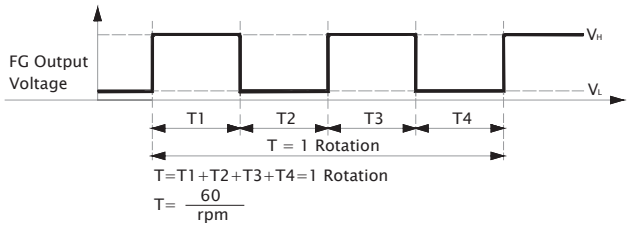
## RD / FG Output Signal

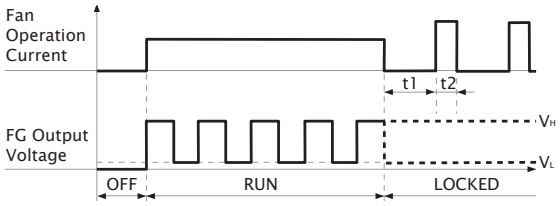



**[ RD Signal ]**

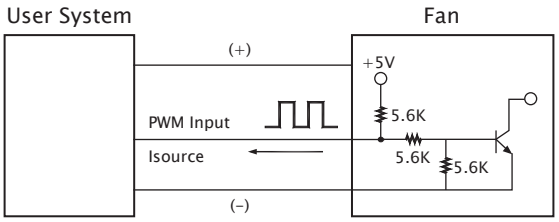



**[ FG Signal ]**




## PWM Input Signal

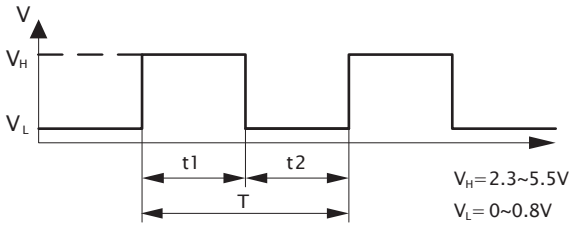



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

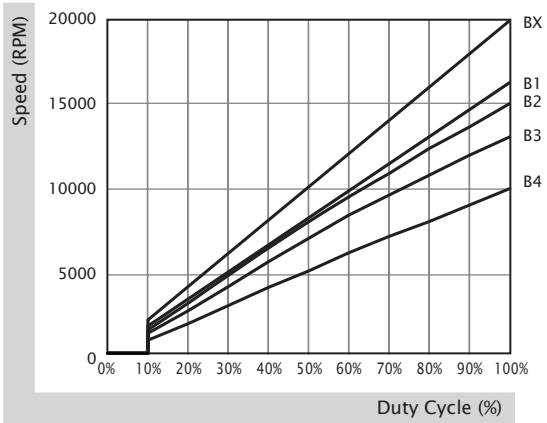
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 38x38x28 mm

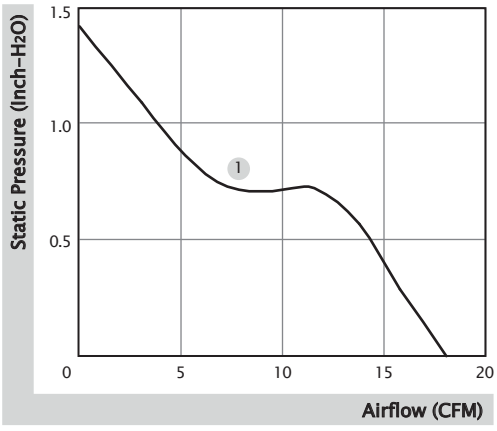
## 18.1 CFM

### Specification

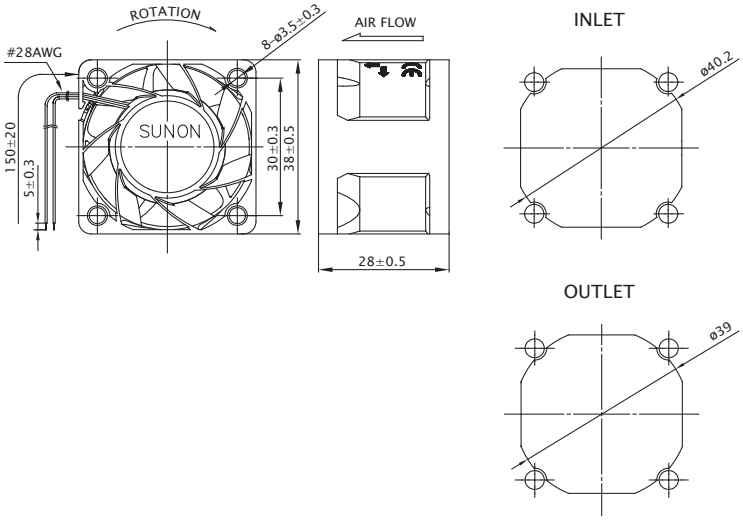
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF38281V1-000U-A99 | ● | 12 | 574 | 6.89 | 16000 | 18.1 | 1.42 | 51.8 | 43.0 | 1 |

### Function F Type : G99 ／ PWM : S99

### Air Flow-Static Pressure Characteristics



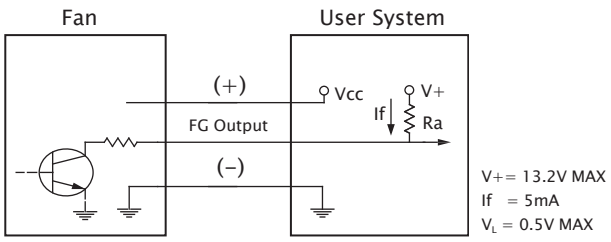

### External Dimensions(mm)



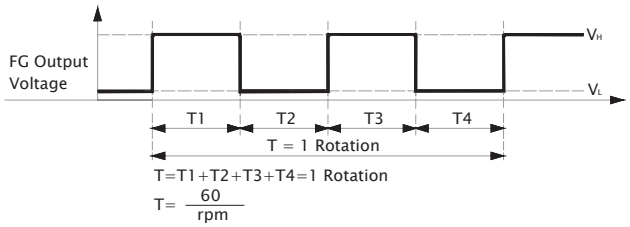

※ All model could be customized. Please contact with Sunon Sales.

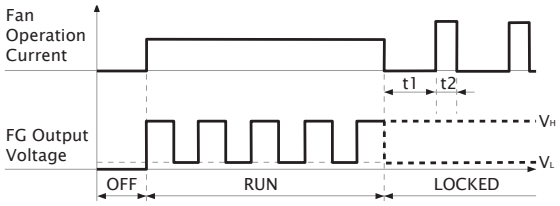
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

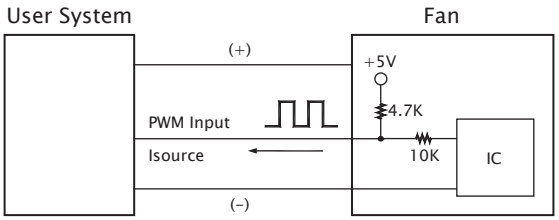



**[ FG Signal ]**




## PWM Input Signal

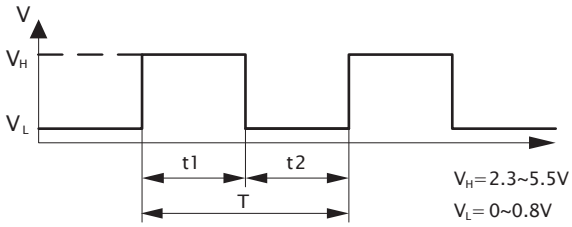



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

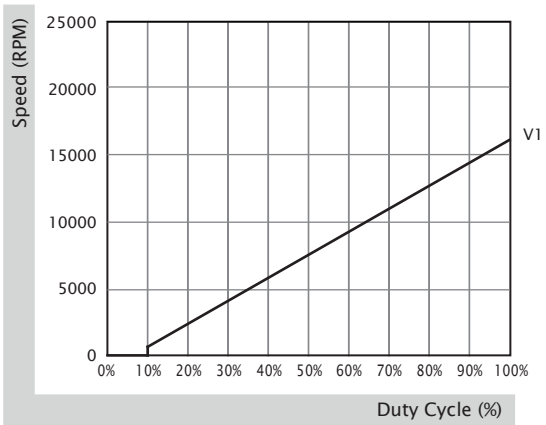
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 38x38x56 mm

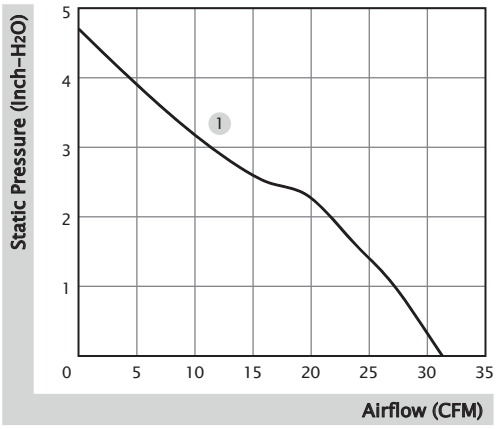
## 31.2 CFM

### Specification

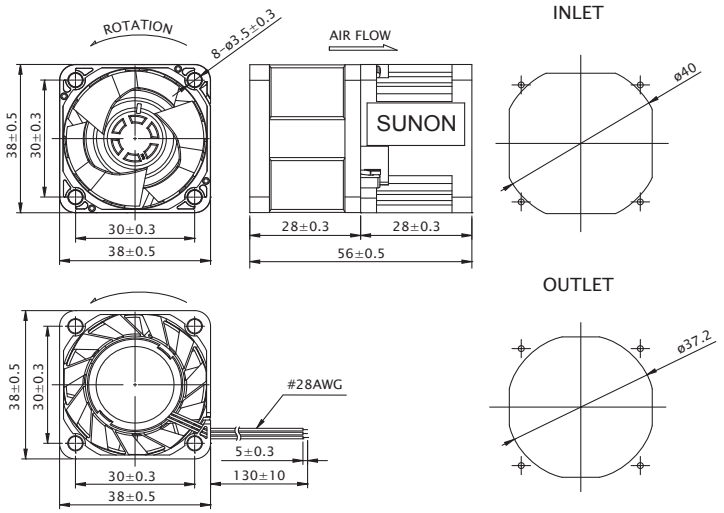
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| VF38561BX-1000U-A9T | ◉ | 12 | 1200 | 14.40 | 29300 | 31.2 | 4.60 | 61.6 | 66.0 | 1 |

### Function F Type : G9T ／ PWM : S9T

### Air Flow-Static Pressure Characteristics



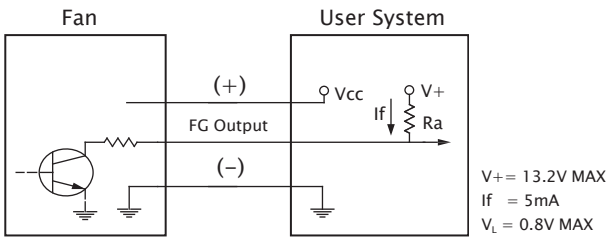

### External Dimensions(mm)



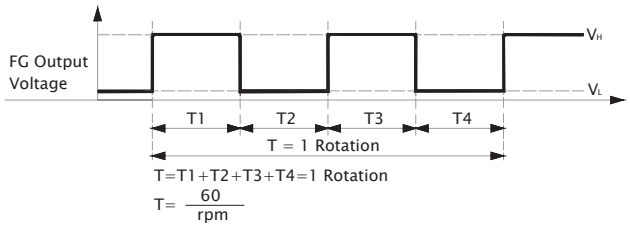

※ All model could be customized. Please contact with Sunon Sales.

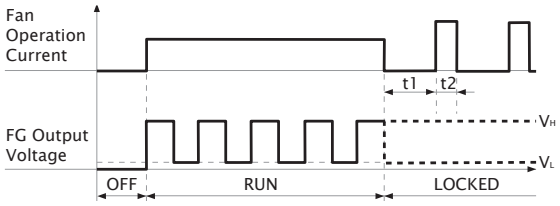
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

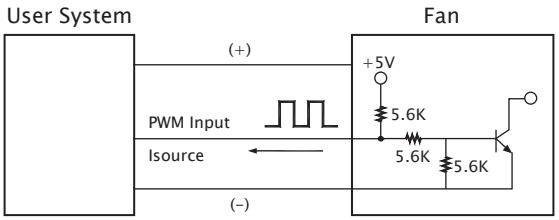



**[ FG Signal ]**




## PWM Input Signal

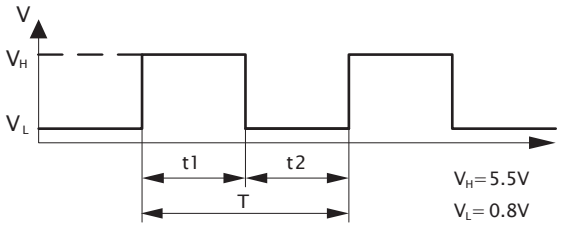



PWM FREQUENCY: 25KHZ

Isource=1.0mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

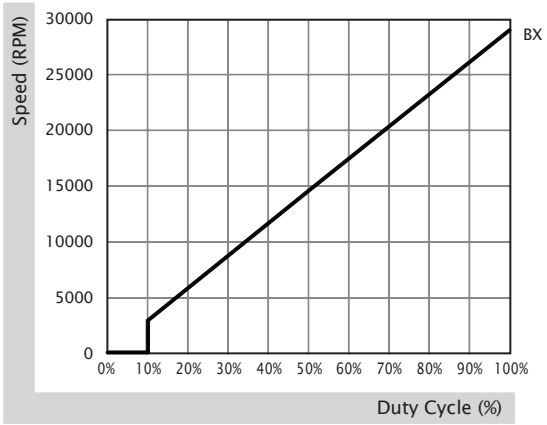
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x6 mm

## 5.5~6.3 CFM

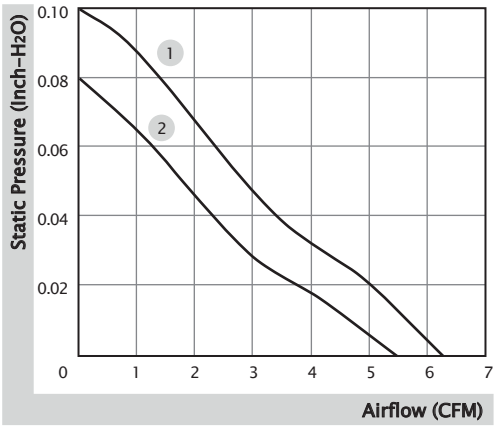
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF40060V1-1000U-A99 | ● | 5 | 87 | 0.44 | 7000 | 6.3 | 0.10 | 29.3 | 6.8 | 1 |
| MF40060V2-1000U-A99 | ● | 5 | 65 | 0.33 | 6000 | 5.5 | 0.08 | 25.3 | 6.8 | 2 |

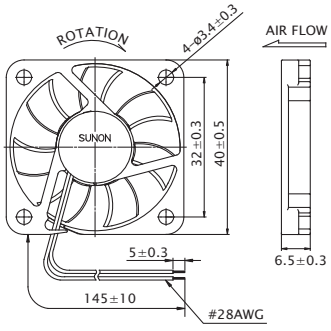
### Function

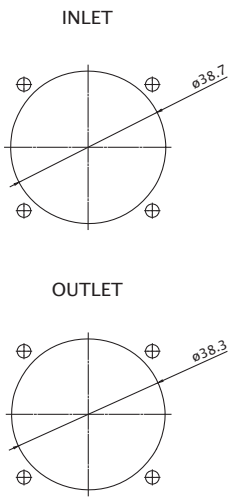
R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

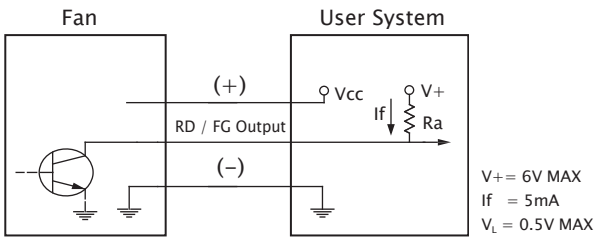


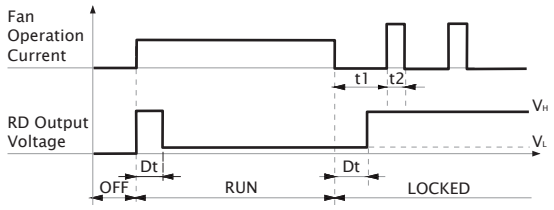

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

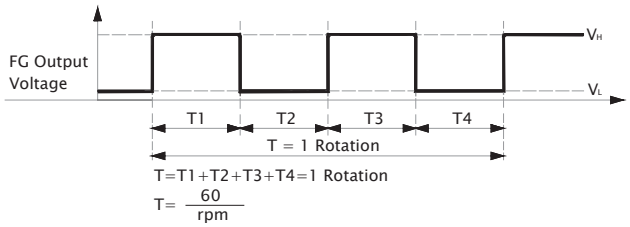
## RD / FG Output Signal

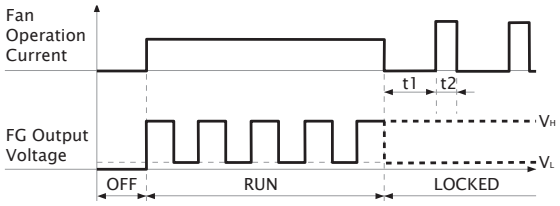



**[ RD Signal ]**

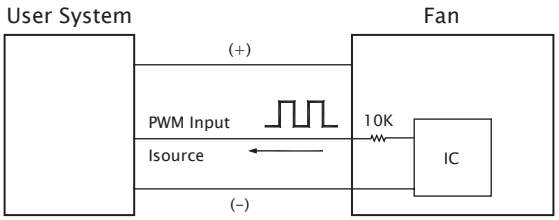



**[ FG Signal ]**




## PWM Input Signal

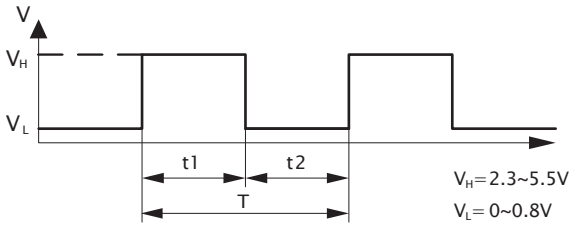



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

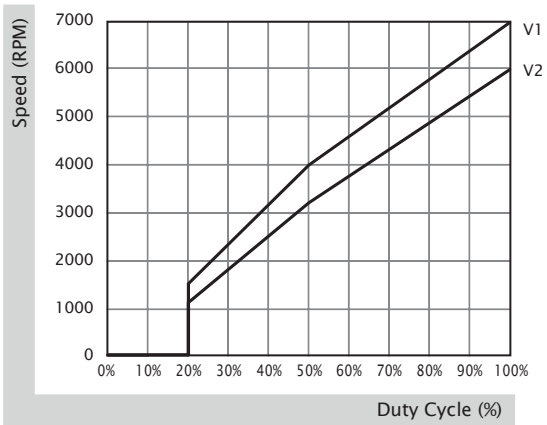
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x10 mm

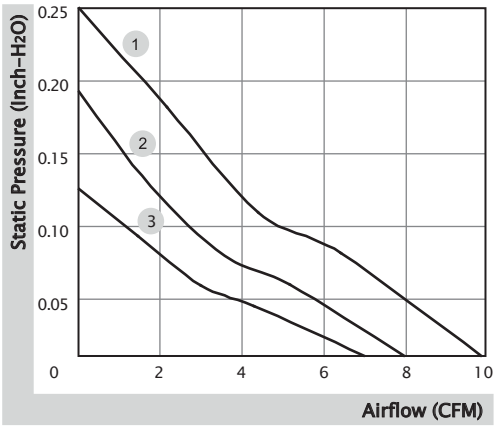
## 7.0~9.9 CFM

### Specification

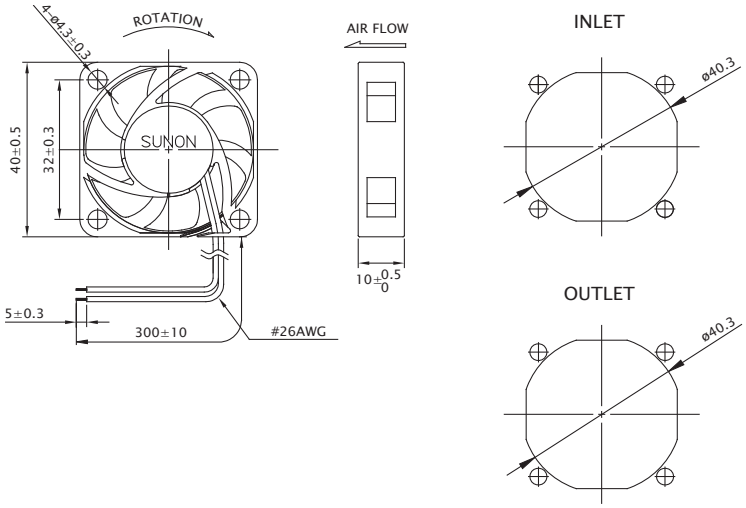
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF40100V1-1000U-A99 | ● | 5 | 136 | 0.68 | 7000 | 8.0 | 0.19 | 27.3 | 15.6 | 2 |
| MF40100V2-1000U-A99 | ● | 5 | 94 | 0.47 | 5800 | 7.0 | 0.12 | 20.6 | 15.6 | 3 |
| MF40101VX-1000U-A99 | ● | 12 | 87 | 1.05 | 8500 | 9.9 | 0.25 | 31.4 | 15.6 | 1 |
| MF40101V1-1000U-A99 | ● | 12 | 51 | 0.62 | 7000 | 8.0 | 0.19 | 27.3 | 15.6 | 2 |
| MF40101V2-1000U-A99 | ● | 12 | 40 | 0.48 | 5800 | 7.0 | 0.12 | 20.6 | 15.6 | 3 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



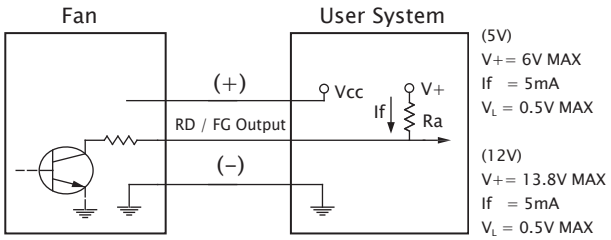

### External Dimensions(mm)



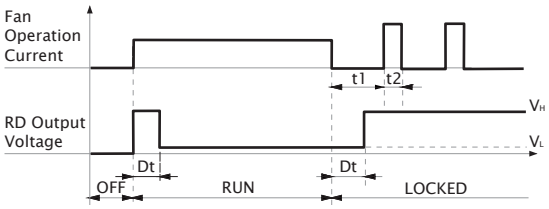

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

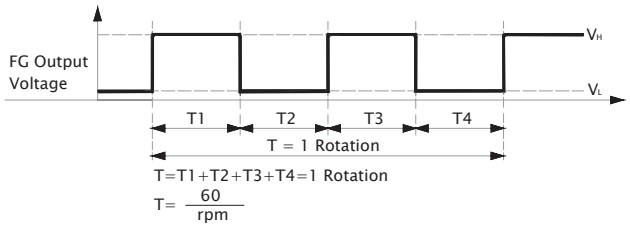
## RD / FG Output Signal

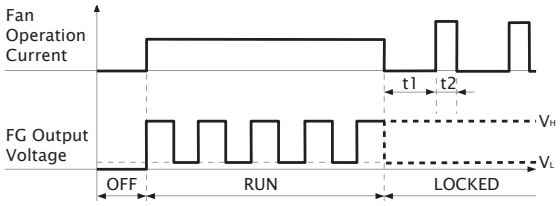



**[ RD Signal ]**




**[ FG Signal ]**



# 40x40x10 mm

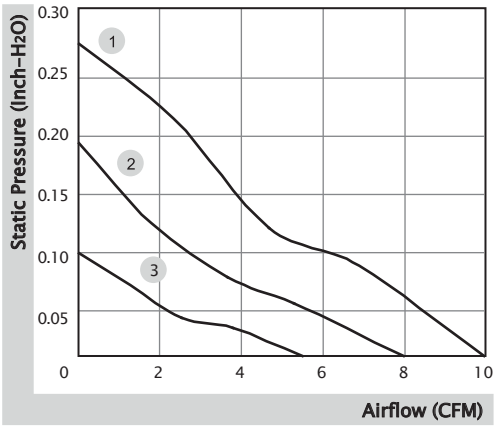
## 5.5~10.0 CFM

### Specification

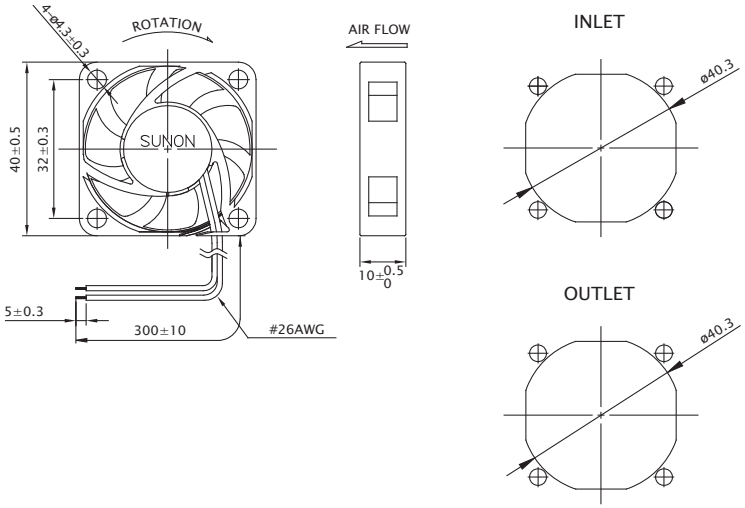
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF40101BX-1000U-A99 | ◉ | 12 | 122 | 1.47 | 9000 | 10.0 | 0.27 | 33.7 | 15.8 | 1 |
| EF40101B1-1000U-A99 | ◉ | 12 | 82 | 0.99 | 7000 | 8.0 | 0.19 | 27.3 | 15.8 | 2 |
| EF40101B2-1000U-A99 | ◉ | 12 | 37 | 0.45 | 5000 | 5.5 | 0.10 | 17.7 | 15.8 | 3 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



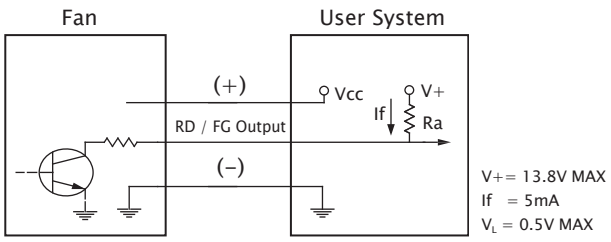

### External Dimensions(mm)



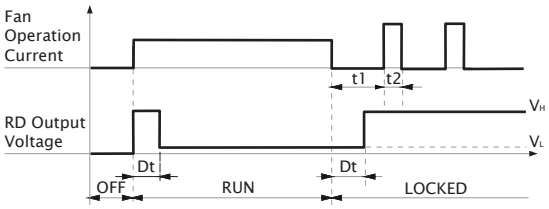

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

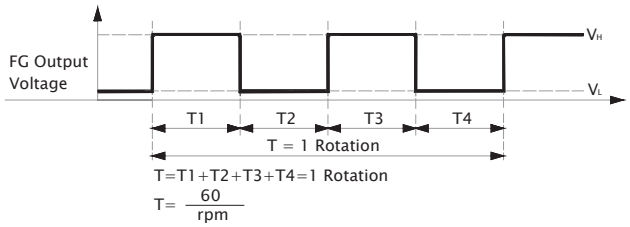
## RD / FG Output Signal

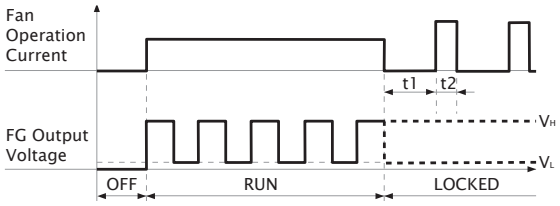



**[ RD Signal ]**




**[ FG Signal ]**



# 40x40x10 mm

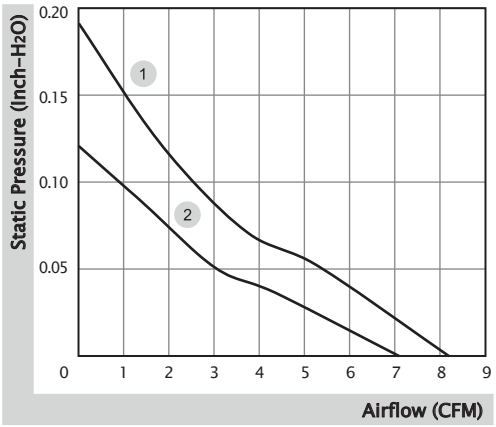
## 7.1~8.2 CFM

### Specification

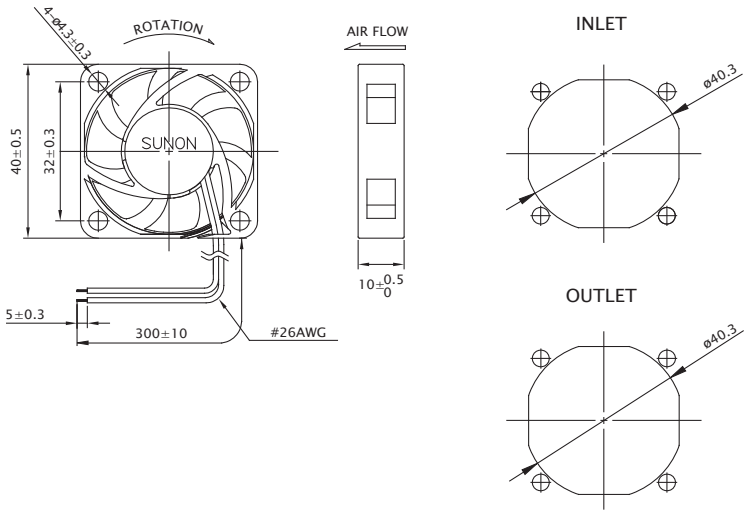
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◐ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE40100S1-1000U-999 | ○ | 5 | 172 | 0.86 | 7300 | 8.2 | 0.19 | 28.2 | 15.6 | 1 |
| EE40100S2-1000U-999 | ○ | 5 | 120 | 0.60 | 6100 | 7.1 | 0.12 | 23.0 | 15.6 | 2 |
| EE40101S1-1000U-999 | ○ | 12 | 82 | 0.99 | 7300 | 8.2 | 0.19 | 28.2 | 15.6 | 1 |
| EE40101S2-1000U-999 | ○ | 12 | 68 | 0.82 | 6100 | 7.1 | 0.12 | 23.0 | 15.6 | 2 |

### Function F Type : C99

### Air Flow-Static Pressure Characteristics



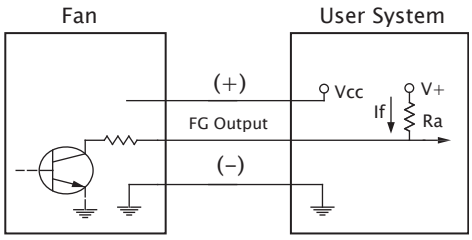

### External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

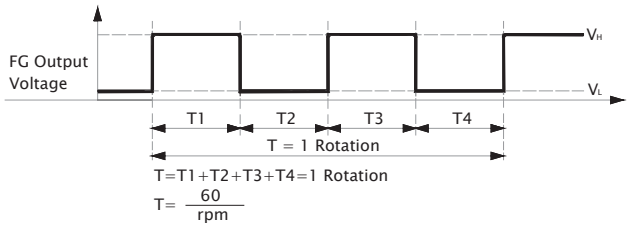
## FG Output Signal




(5V)
V+= 6V MAX
If = 5mA
$V_L$ = 0.5V MAX

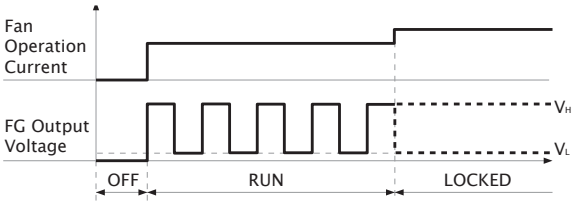
(12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 40x40x10 mm

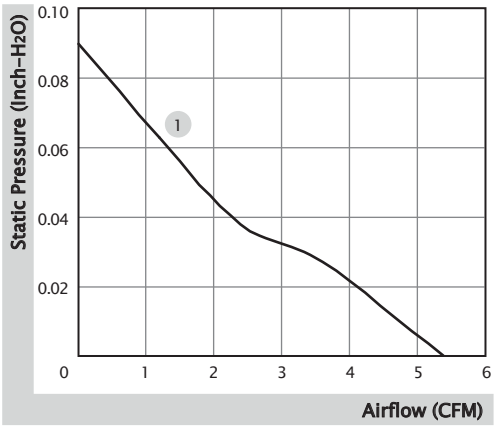
## 5.4 CFM

### Specification

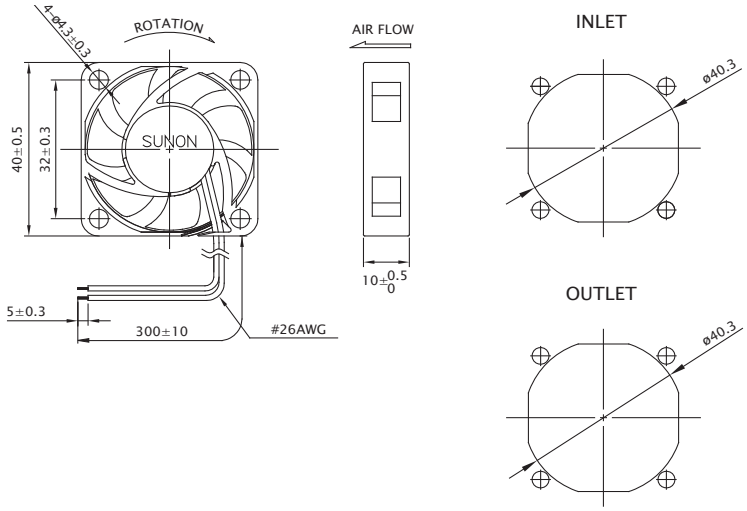
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA40101V4-1000U-A99 | ● | 12 | 31 | 0.38 | 5000 | 5.4 | 0.09 | 15.7 | 15.4 | 1 |

### Function F Type : G99

### Air Flow-Static Pressure Characteristics



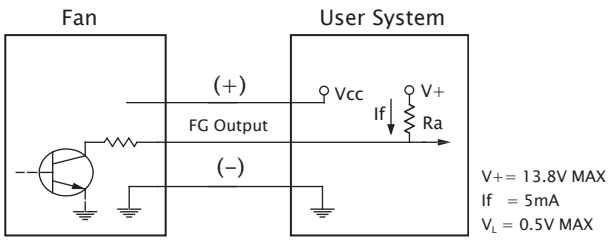

### External Dimensions(mm)



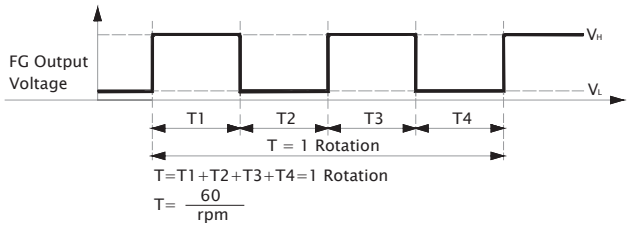

※ All model could be customized. Please contact with Sunon Sales.

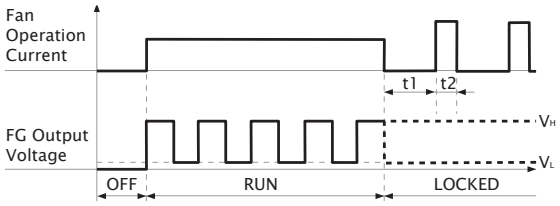
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 40x40x20 mm

## for Automative Application

Meets AEC-Q100
EMC CISPR 25 Class 2 Protection

## 11.0 CFM

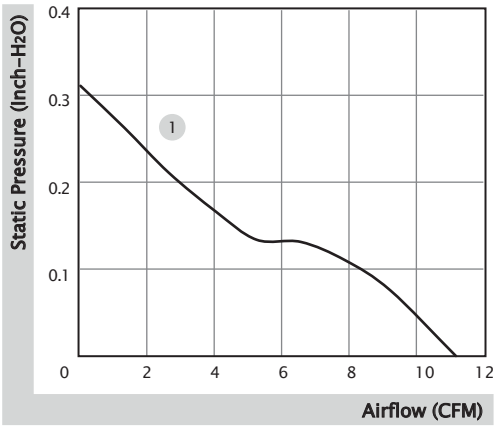
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| AF40200VX-1000U-A99 | ● | 5 | 180 | 0.90 | 8600 | 11.0 | 0.31 | 30.5 | 27.0 | 1 |
| AF40201VX-1000U-A99 | ● | 12 | 76 | 0.92 | 8600 | 11.0 | 0.31 | 30.5 | 27.0 | 1 |

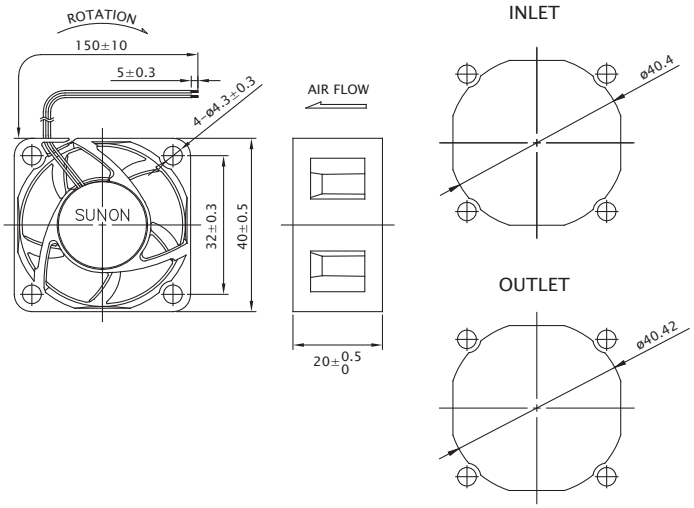
### Function

F Type : G99 ／ PWM : S99
IP52 : AL9, GL9, SL9

### Air Flow-Static Pressure Characteristics

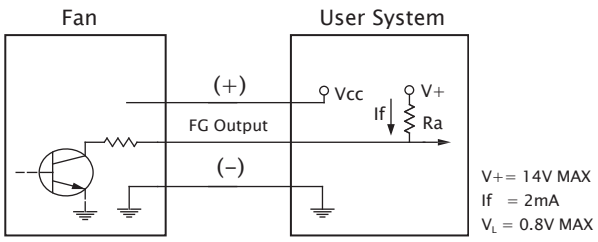



### External Dimensions(mm)

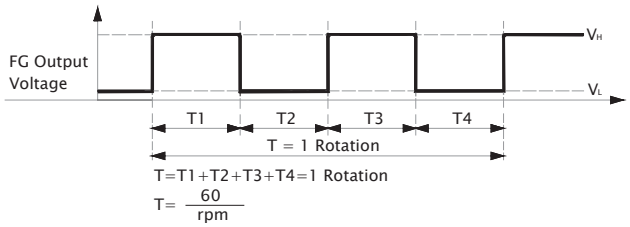


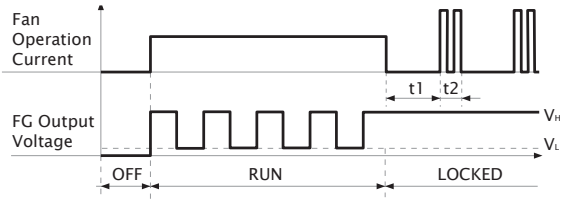

※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

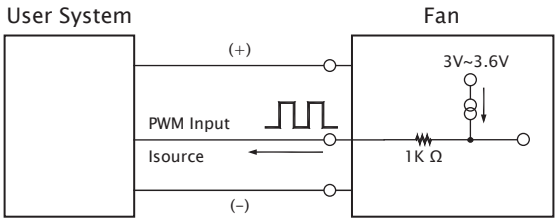



**[ FG Signal ]**




## PWM Input Signal

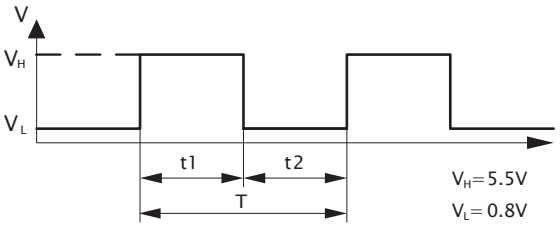



PWM FREQUENCY: 100HZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

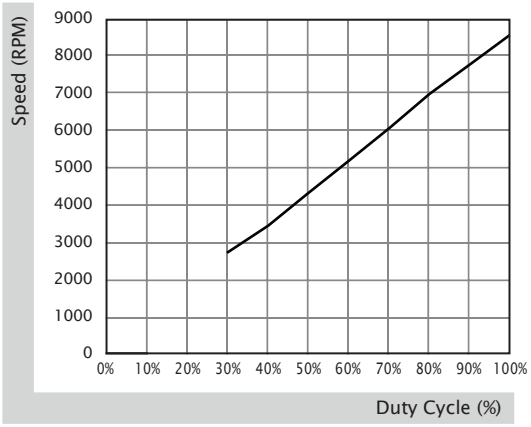
Min. start up duty cycle is 30%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x20 mm

## 6.3~10.8 CFM

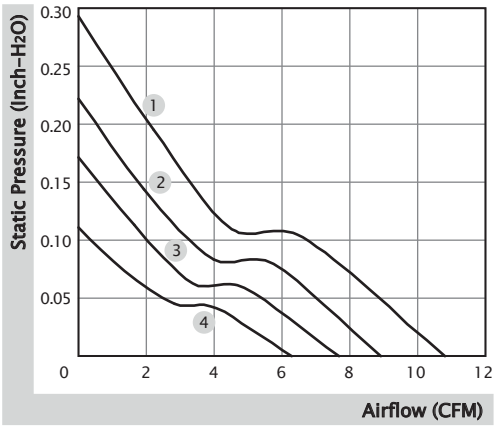
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF40200V1-1000U-A99 | ● | 5 | 150 | 0.75 | 7000 | 8.9 | 0.22 | 25.5 | 29.0 | 2 |
| MF40200V2-1000U-A99 | ● | 5 | 107 | 0.54 | 6000 | 7.7 | 0.17 | 21.0 | 29.0 | 3 |
| MF40200V3-1000U-A99 | ● | 5 | 75 | 0.38 | 5000 | 6.3 | 0.11 | 16.5 | 29.0 | 4 |
| MF40201VX-1000U-A99 | ● | 12 | 80 | 0.96 | 8000 | 10.8 | 0.29 | 27.5 | 29.0 | 1 |
| MF40201V1-1000U-A99 | ● | 12 | 58 | 0.70 | 7000 | 8.9 | 0.22 | 25.5 | 29.0 | 2 |
| MF40201V2-1000U-A99 | ● | 12 | 45 | 0.54 | 6000 | 7.7 | 0.17 | 21.0 | 29.0 | 3 |
| MF40201V3-1000U-A99 | ● | 12 | 38 | 0.46 | 5000 | 6.3 | 0.11 | 16.5 | 29.0 | 4 |
| MF40202VX-1000U-A99 | ● | 24 | 39 | 0.94 | 8000 | 10.8 | 0.29 | 27.5 | 29.0 | 1 |
| MF40202V1-1000U-A99 | ● | 24 | 32 | 0.77 | 7000 | 8.9 | 0.22 | 25.5 | 29.0 | 2 |
| MF40202V2-1000U-A99 | ● | 24 | 25 | 0.60 | 6000 | 7.7 | 0.17 | 21.0 | 29.0 | 3 |
| Model | ◒ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE40201SX-1000U-999 | ○ | 12 | 105 | 1.26 | 8000 | 10.8 | 0.29 | 27.5 | 29.0 | 1 |
| EE40201S1-1000U-999 | ○ | 12 | 80 | 0.96 | 7000 | 8.9 | 0.22 | 25.5 | 29.0 | 2 |
| EE40201S2-1000U-999 | ○ | 12 | 63 | 0.76 | 6000 | 7.7 | 0.17 | 21.0 | 29.0 | 3 |
| EE40201S3-1000U-999 | ○ | 12 | 52 | 0.63 | 5000 | 6.3 | 0.11 | 16.5 | 29.0 | 4 |

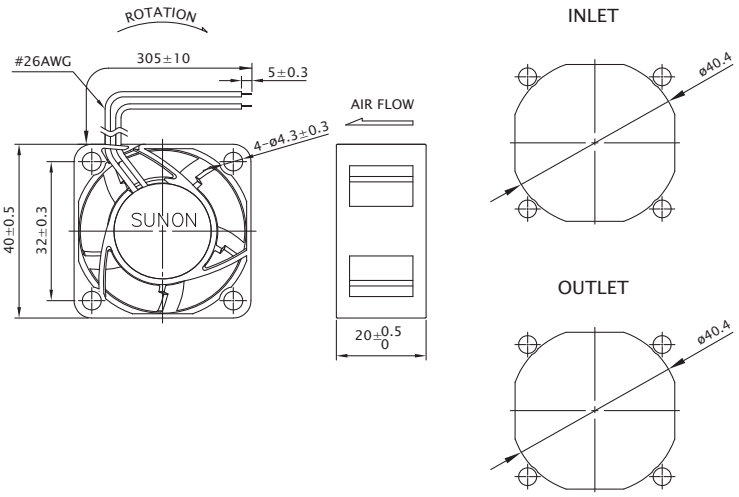
### Function

( MF Series ) R Type : F99 ／ F Type : G99
( EE Series ) F Type : C99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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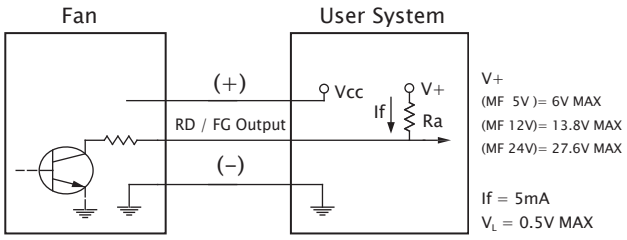
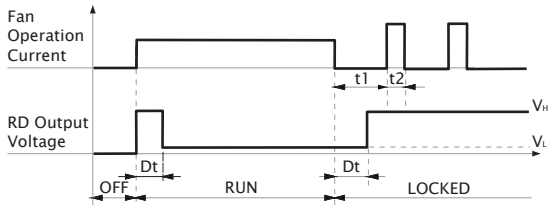
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

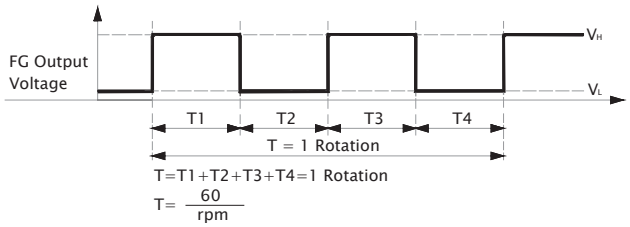
## RD / FG Output Signal

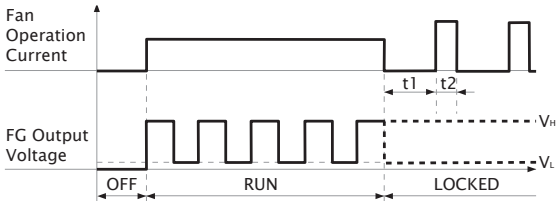



**[ RD Signal ]**

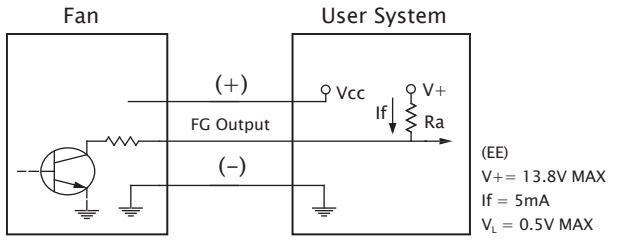


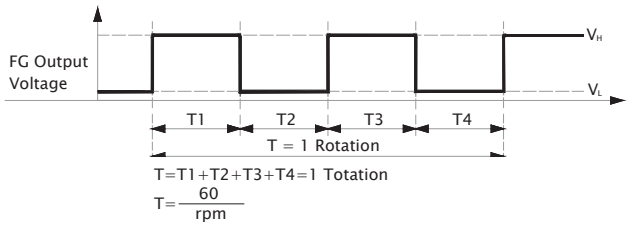

**[ FG Signal ]**

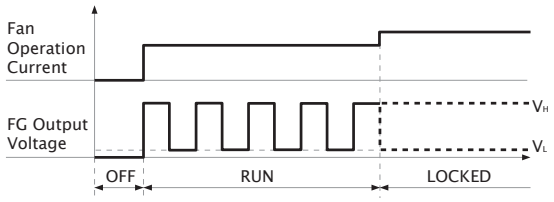



## Non-Auto Restart (C99) FG Output Signal

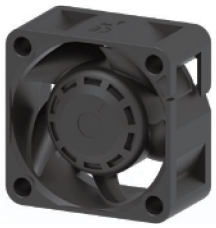


# 40x40x20 mm

## 6.3~10.8 CFM



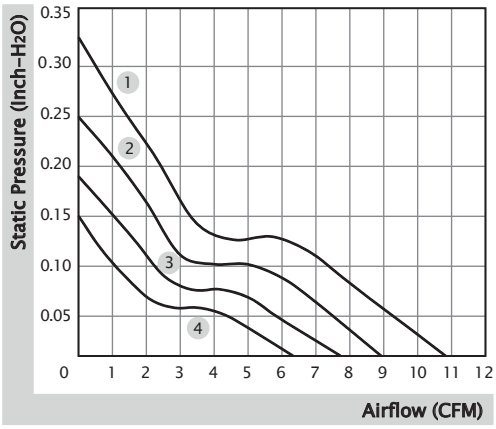
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF40201BX-1000U-A99 | ● | 12 | 65 | 0.78 | 8200 | 10.8 | 0.32 | 28.5 | 32.5 | 1 |
| EF40201B1-1000U-A99 | ● | 12 | 55 | 0.66 | 7200 | 8.9 | 0.24 | 24.5 | 32.5 | 2 |
| EF40201B2-1000U-A99 | ● | 12 | 40 | 0.48 | 6200 | 7.7 | 0.18 | 21.3 | 32.5 | 3 |
| EF40201B3-1000U-A99 | ● | 12 | 35 | 0.42 | 5200 | 6.3 | 0.14 | 16.2 | 32.5 | 4 |

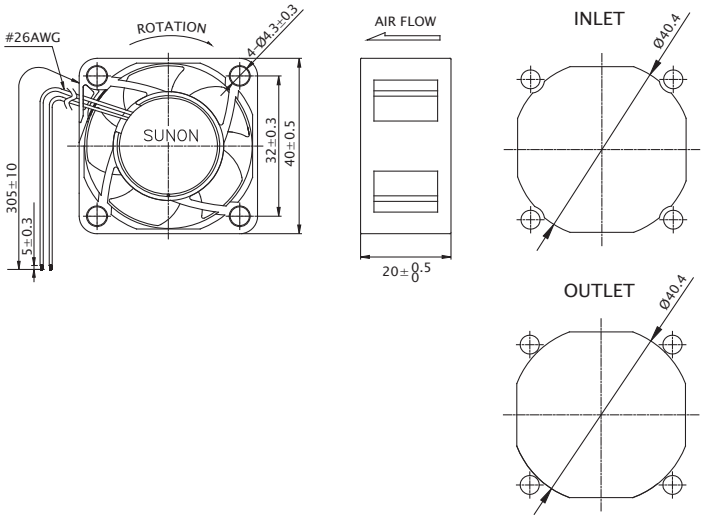
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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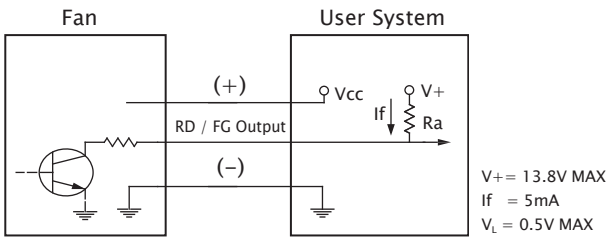
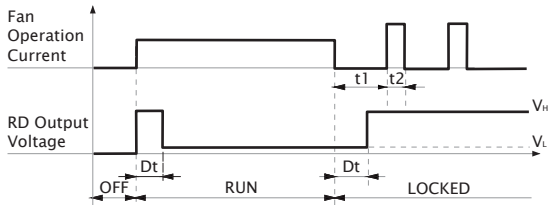
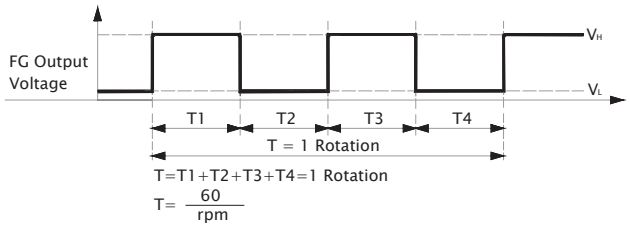
## RD / FG Output Signal

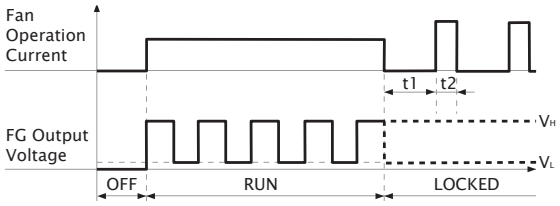



**[ RD Signal ]**

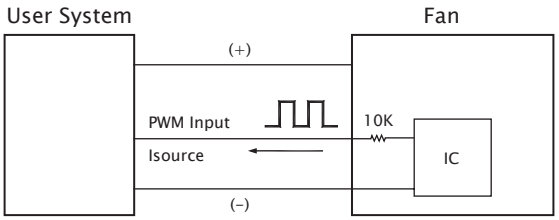



**[ FG Signal ]**




## PWM Input Signal

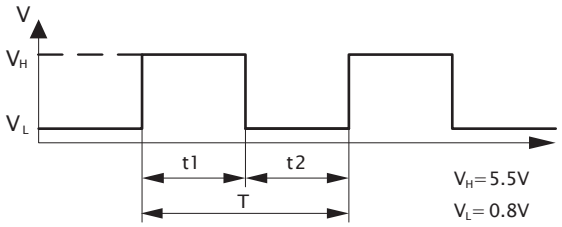



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The Speed is default to be maximum if PWM input pin is unconnected.

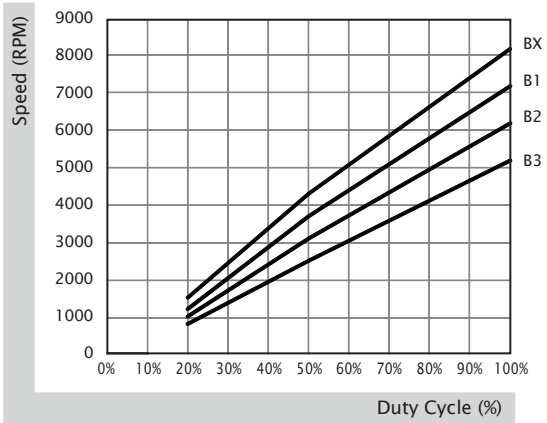
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x20 mm

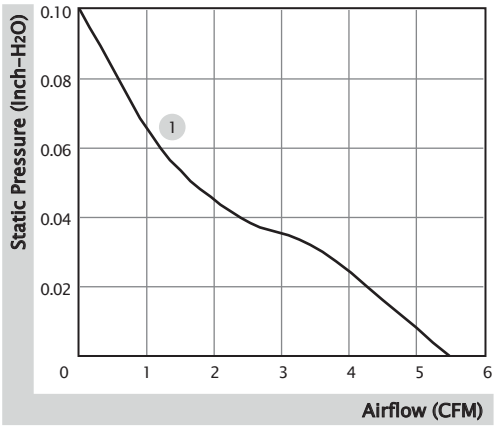
## 5.5 CFM

### Specification

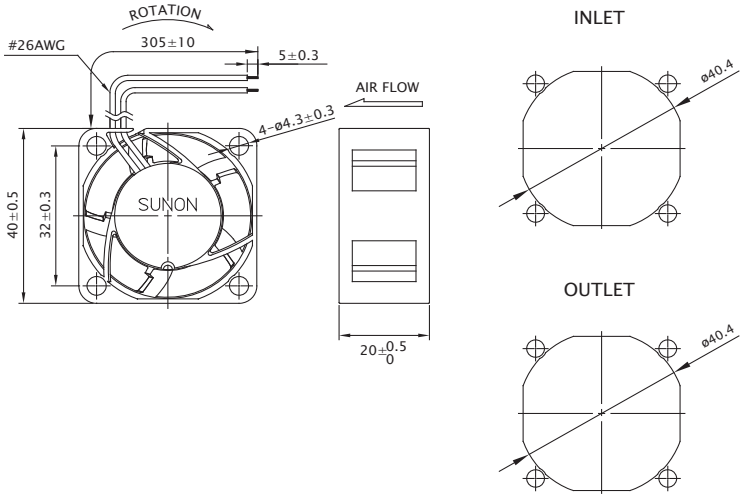
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA40201V4-1000U-A99 | ● | 12 | 31 | 0.38 | 4500 | 5.5 | 0.10 | 12.3 | 30.6 | 1 |

### Function F Type : G99

### Air Flow-Static Pressure Characteristics



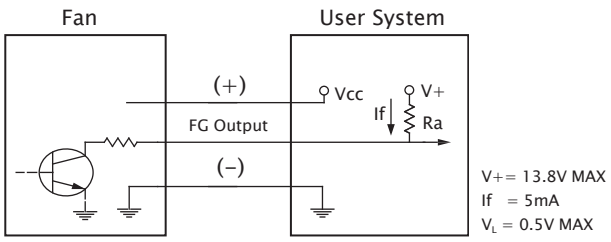

### External Dimensions(mm)



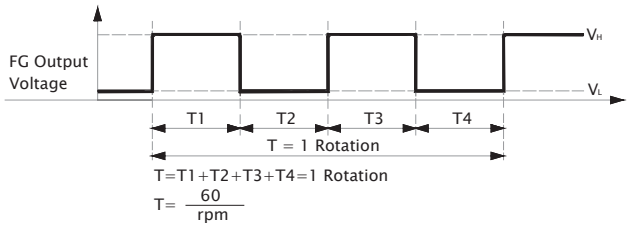

※ All model could be customized. Please contact with Sunon Sales.

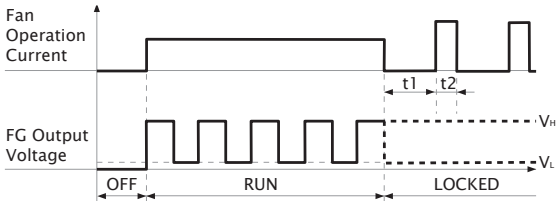
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 40x40x28 mm

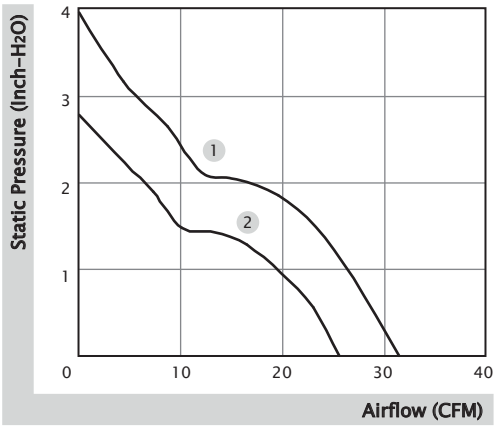
## 25.6~31.5 CFM

## Specification

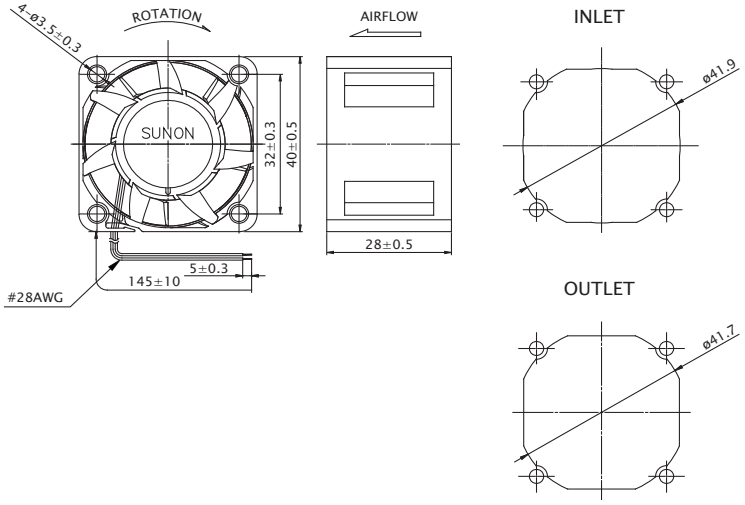
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| VF40281BX-000U-A9H | ● | 12 | 1140 | 13.68 | 27000 | 31.5 | 3.95 | 63.7 | 46.0 | 1 |
| VF40281B1-000U-A9H | ● | 12 | 630 | 7.56 | 21600 | 25.6 | 2.77 | 58.6 | 46.0 | 2 |

## Function F Type : G9H ／ PWM : S9H

## Air Flow-Static Pressure Characteristics



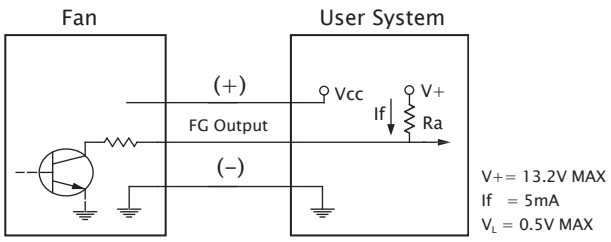

## External Dimensions(mm)



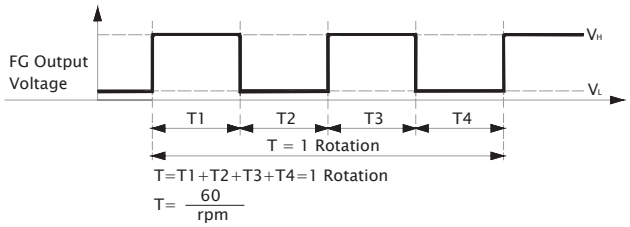

※ All model could be customized. Please contact with Sunon Sales.

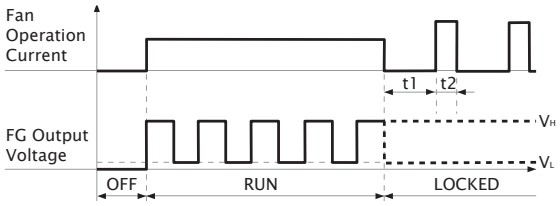
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

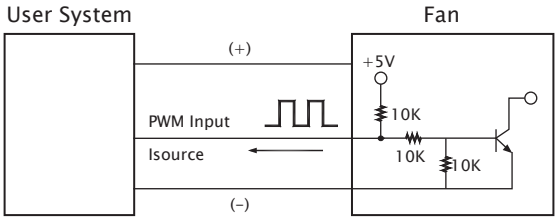



**[ FG Signal ]**




## PWM Input Signal

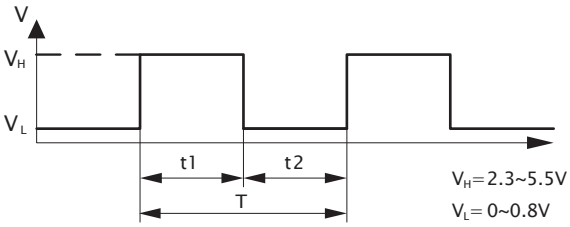



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

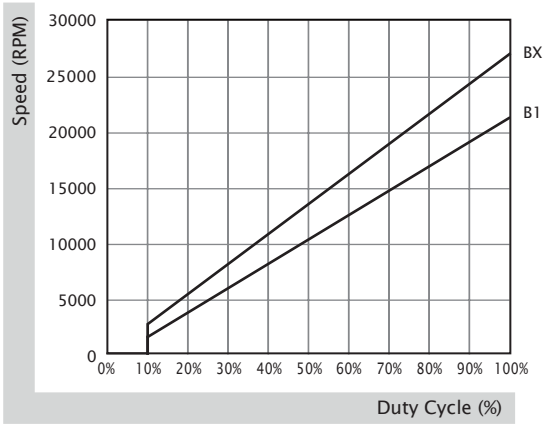
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x28 mm

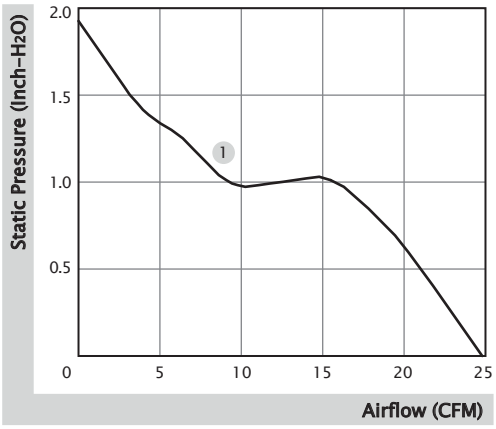
## 24.9 CFM

### Specification

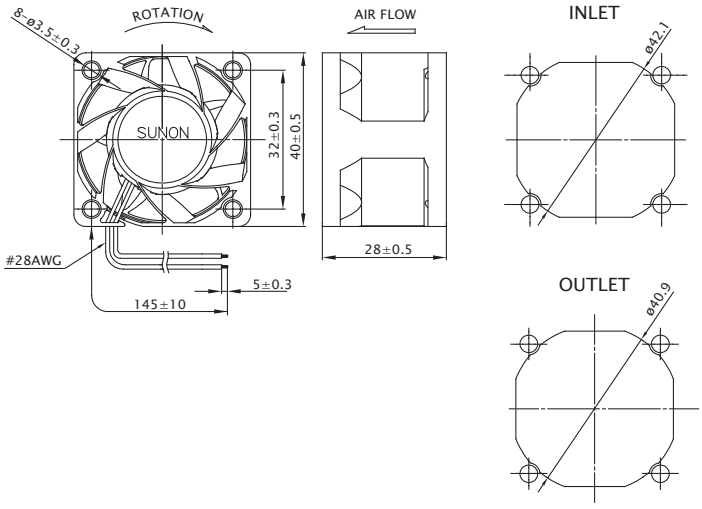
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF40281V1-000U-A99 | ● | 12 | 740 | 8.88 | 17600 | 24.9 | 1.95 | 56.0 | 45.0 | 1 |

### Function F Type : G99 ／ PWM : S99

### Air Flow-Static Pressure Characteristics



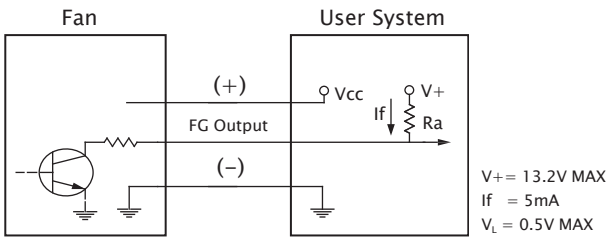

### External Dimensions(mm)



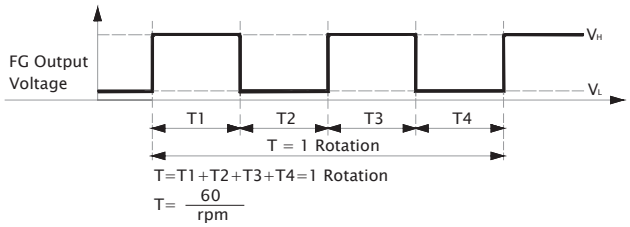

※ All model could be customized. Please contact with Sunon Sales.

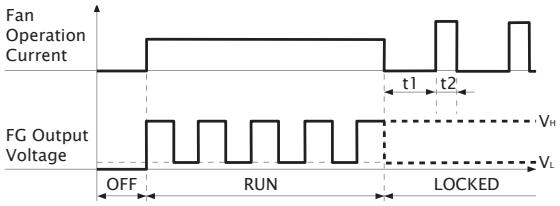
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

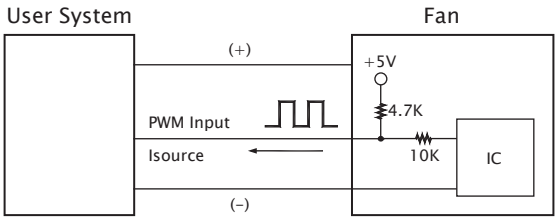



**[ FG Signal ]**




## PWM Input Signal

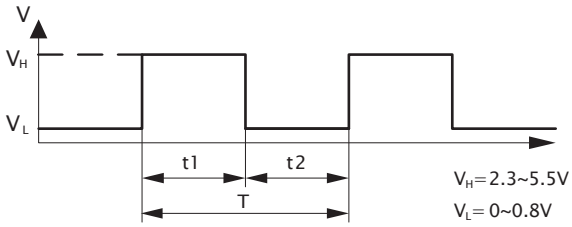



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

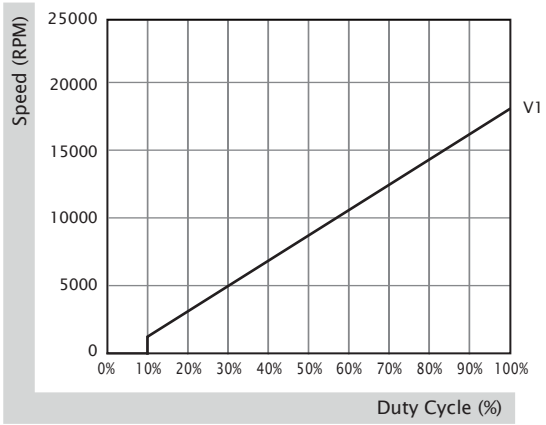
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x28 mm

## 12.8~31.3 CFM

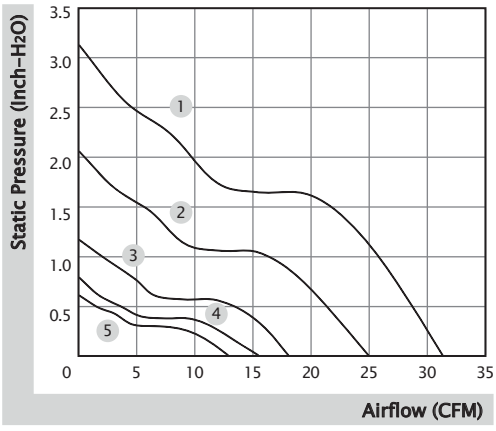
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF40281BX-1000U-A9H | ◓ | 12 | 950 | 11.4 | 22000 | 31.3 | 3.12 | 62.0 | 42.0 | 1 |
| PF40281B1-1000U-A9H | ◓ | 12 | 510 | 6.12 | 17600 | 24.9 | 2.05 | 56.0 | 42.0 | 2 |
| PF40281B2-1000U-A9H | ◓ | 12 | 220 | 2.64 | 13000 | 18.0 | 1.16 | 48.7 | 42.0 | 3 |
| PF40281B3-1000U-A9H | ◓ | 12 | 145 | 1.74 | 11000 | 15.4 | 0.78 | 43.9 | 42.0 | 4 |
| PF40281B4-1000U-A9H | ◓ | 12 | 96 | 1.16 | 9200 | 12.8 | 0.60 | 39.9 | 42.0 | 5 |

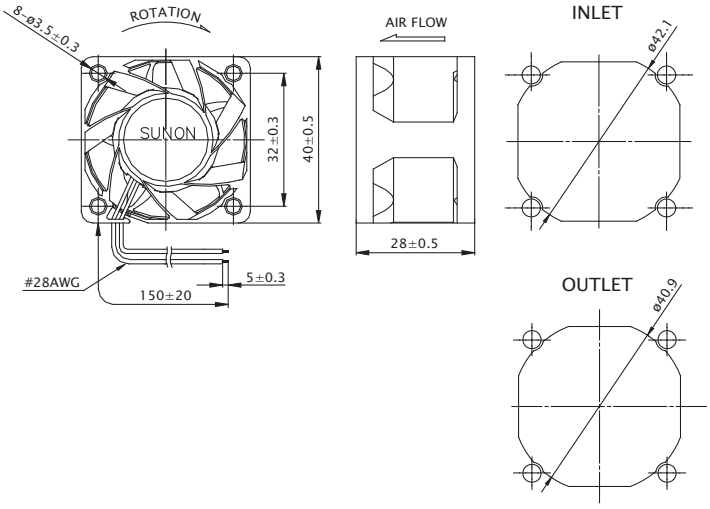
### Function

R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H

### Air Flow-Static Pressure Characteristics



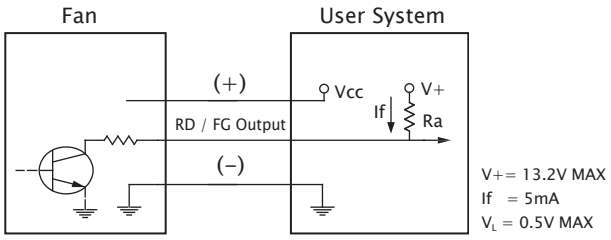

### External Dimensions(mm)



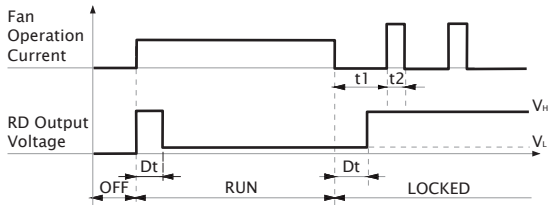

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

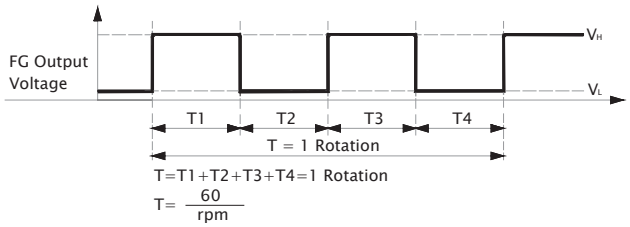
## RD / FG Output Signal

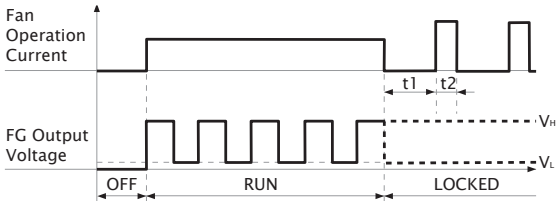



**[ RD Signal ]**

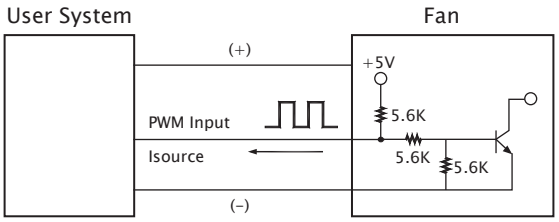



**[ FG Signal ]**




## PWM Input Signal

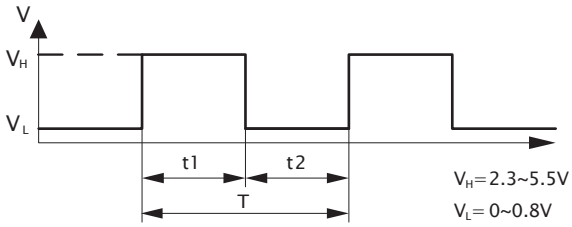



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

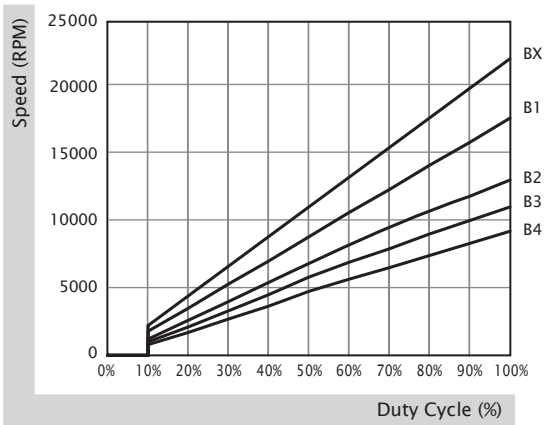
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x28 mm (IP68 / GR487)

## 14.1~23.9 CFM

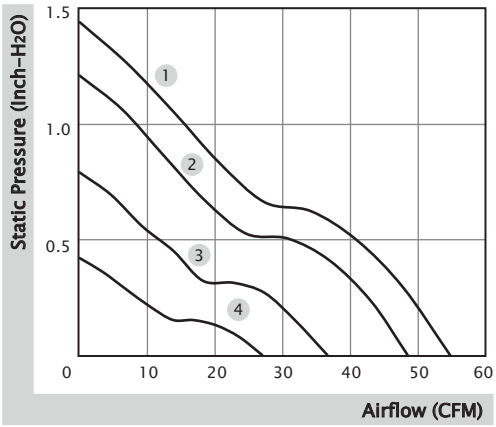
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF40282BX-1000U-AEP | ◉ | 12 | 400 | 9.60 | 17600 | 23.9 | 2.01 | 58.5 | 46.0 | 1 |
| GF40282B1-1000U-AEP | ◉ | 12 | 230 | 5.52 | 14600 | 19.6 | 1.38 | 52.8 | 46.0 | 2 |
| GF40282B2-1000U-AEP | ◉ | 12 | 180 | 4.32 | 13100 | 17.7 | 1.11 | 50.0 | 46.0 | 3 |
| GF40282B3-1000U-AEP | ◉ | 12 | 117 | 2.81 | 10500 | 14.1 | 0.71 | 45.0 | 46.0 | 4 |
| GF40282BX-1000U-ADP | ◉ | 12 | 400 | 9.60 | 17600 | 23.9 | 2.01 | 58.5 | 46.0 | 1 |
| GF40282B1-1000U-ADP | ◉ | 12 | 230 | 5.52 | 14600 | 19.6 | 1.38 | 52.8 | 46.0 | 2 |
| GF40282B2-1000U-ADP | ◉ | 12 | 180 | 4.32 | 13100 | 17.7 | 1.11 | 50.0 | 46.0 | 3 |
| GF40282B3-1000U-ADP | ◉ | 12 | 117 | 2.81 | 10500 | 14.1 | 0.71 | 45.0 | 46.0 | 4 |

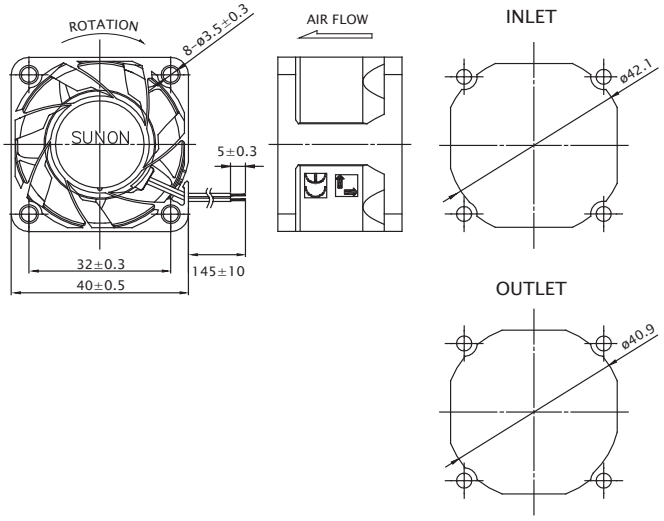
### Function

(IP68) R Type : FEP ／ F Type : GEP ／ PWM : HEP, QEP, SEP
(GR487) R Type : FDP ／ F Type : GDP ／ PWM : HDP, QDP, SDP

### Air Flow-Static Pressure Characteristics

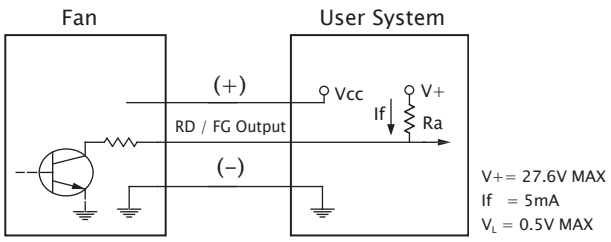



### External Dimensions(mm)

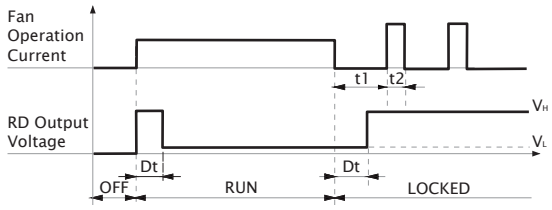



※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

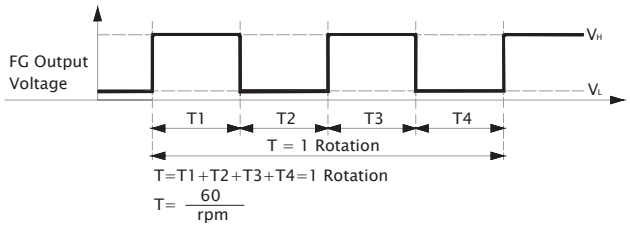
## RD / FG Output Signal

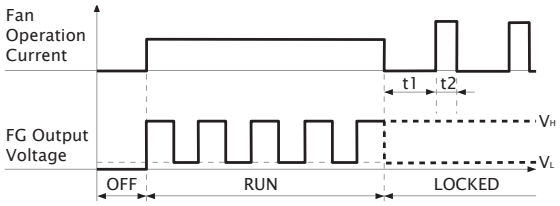



**[ RD Signal ]**

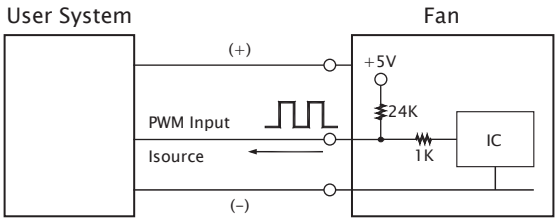



**[ FG Signal ]**




## PWM Input Signal

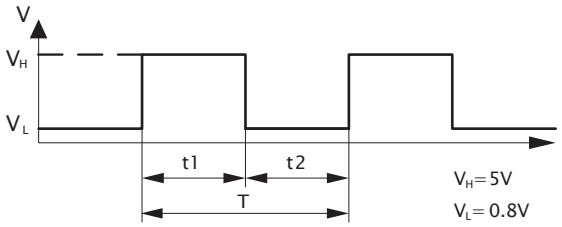



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

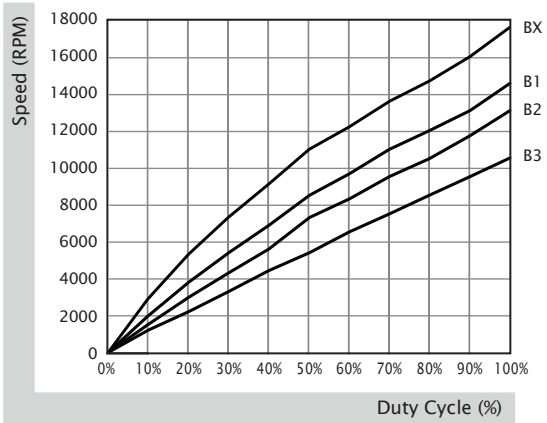
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x56 mm

## 26.9~31.7 CFM

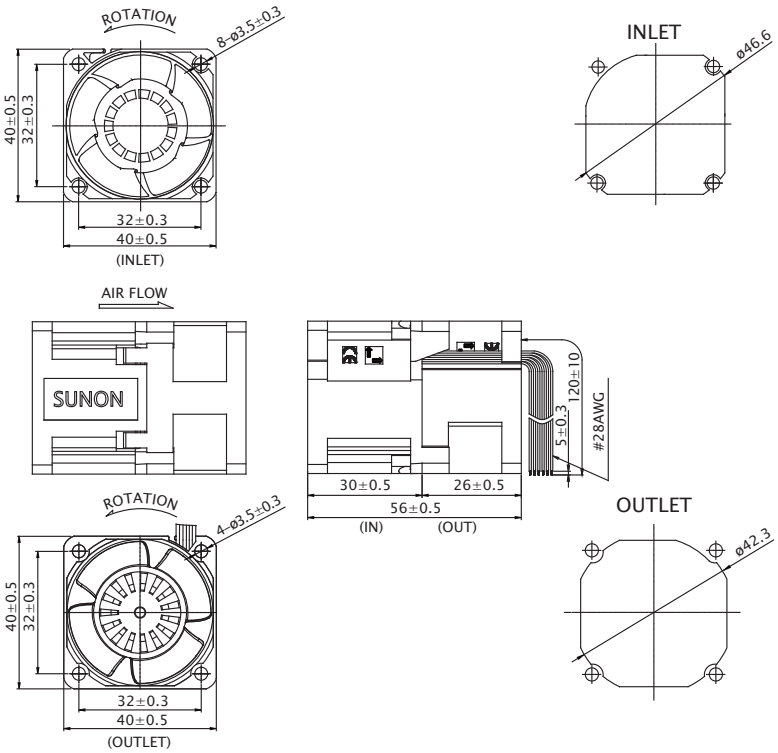
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF40561BX-1000U-A9H | ◉ | 12 | 1390 | 16.68 | 21500/18000 | 31.7 | 3.76 | 65.9 | 87.0 | 1 |
| PF40561B1-1000U-A9H | ◉ | 12 | 890 | 10.68 | 18000/15000 | 26.9 | 2.64 | 62.3 | 87.0 | 2 |

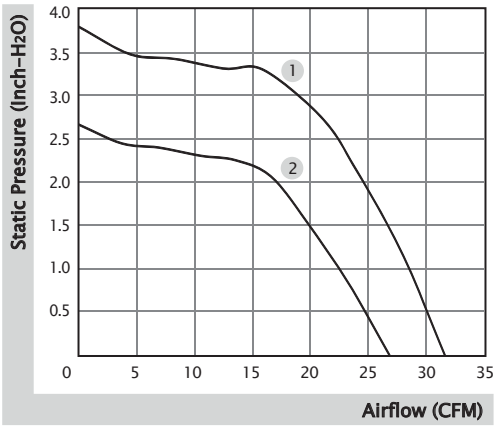
## Function

R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H

## External dimensions(mm)



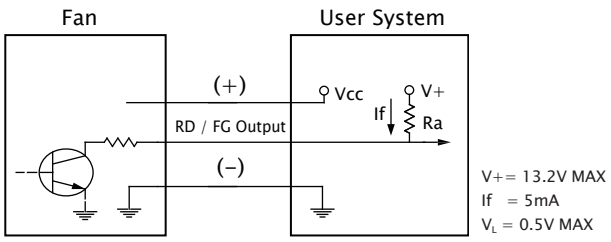

## Air Flow-Static Pressure Characteristics



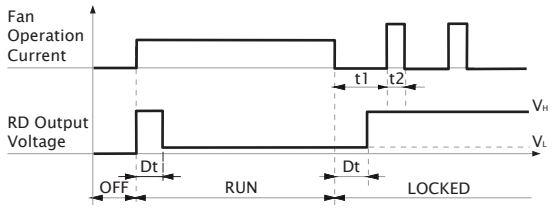

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

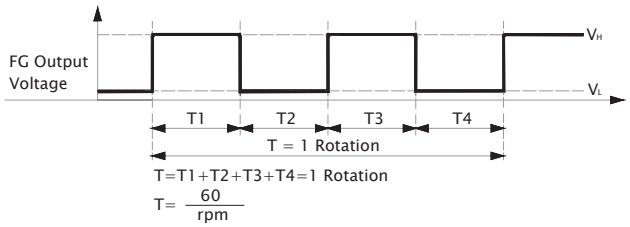
## RD / FG Output Signal

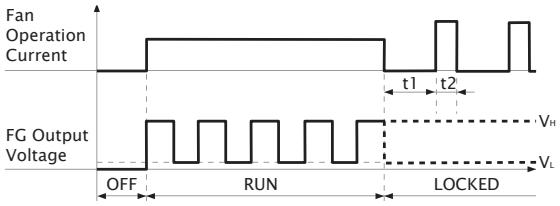



**[ RD Signal ]**

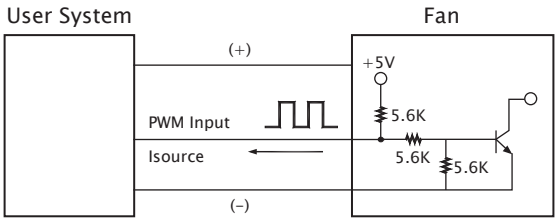



**[ FG Signal ]**




## PWM Input Signal

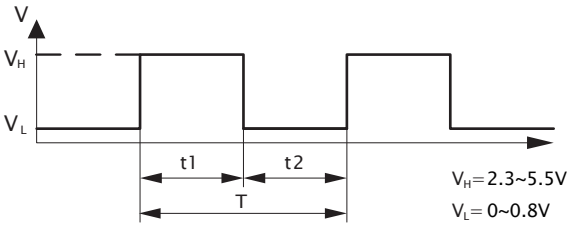



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

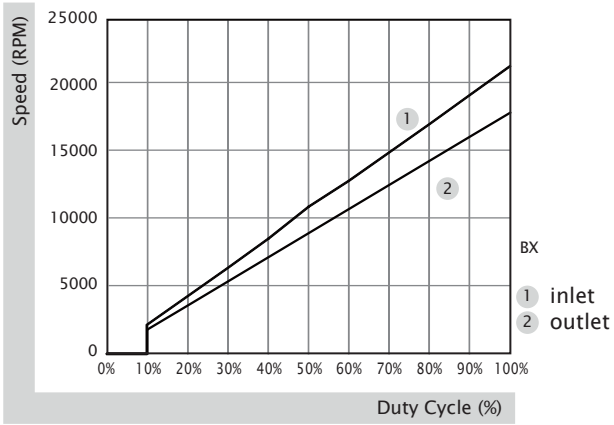
Min. start up duty cycle is 10%.

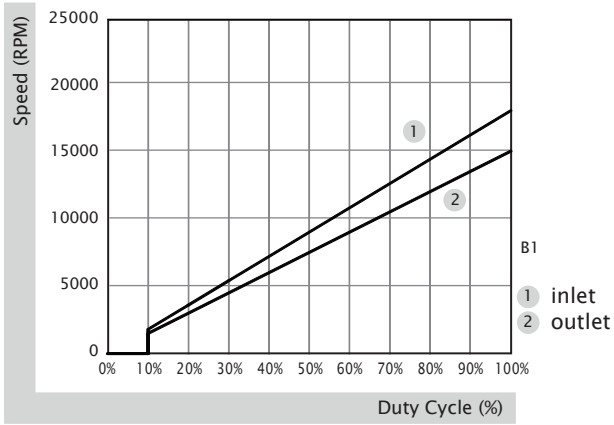



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 40x40x56 mm

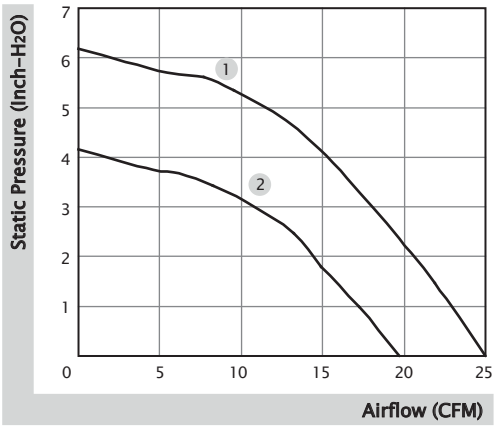
## 19.7~25.0 CFM

## Specification

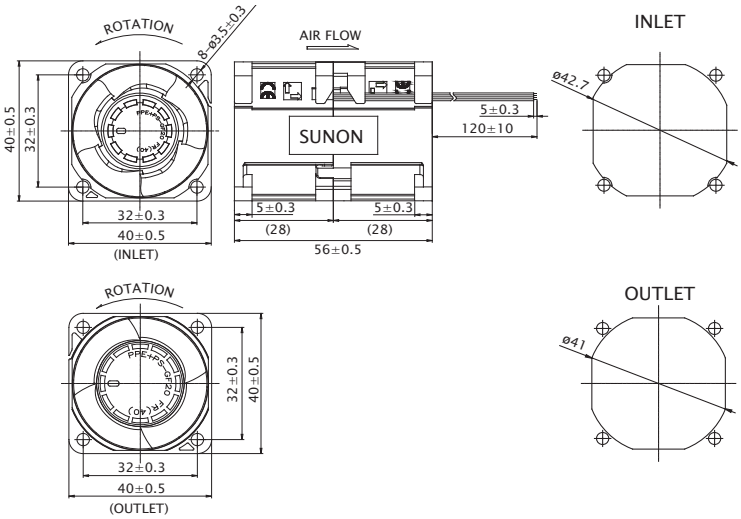
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| VG40561BX-000U-A9H | ● | 12 | 1400 | 16.80 | 25500/22300 | 25.0 | 6.19 | 65.0 | 87.0 | 1 |
| VG40561B1-000U-A9H | ● | 12 | 750 | 9.00 | 20400/17800 | 19.7 | 4.16 | 62.5 | 87.0 | 2 |

## Function F Type : G9H ／ PWM : S9H

## Air Flow-Static Pressure Characteristics



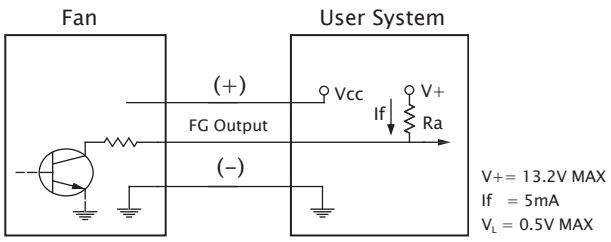

## External Dimensions(mm)



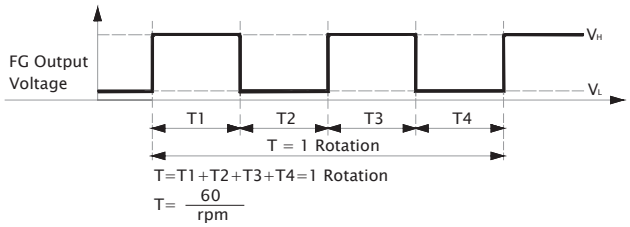

※ All model could be customized. Please contact with Sunon Sales.

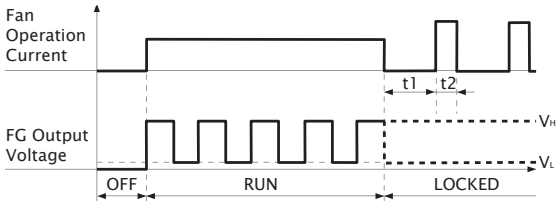
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

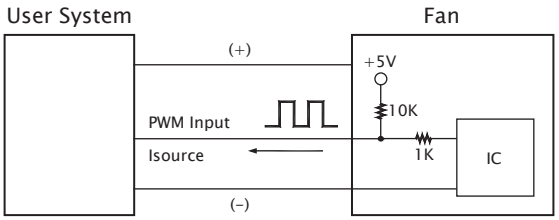



**[ FG Signal ]**




## PWM Input Signal

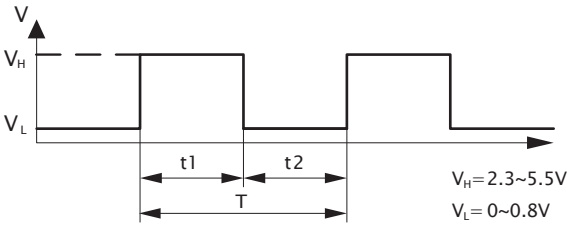



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

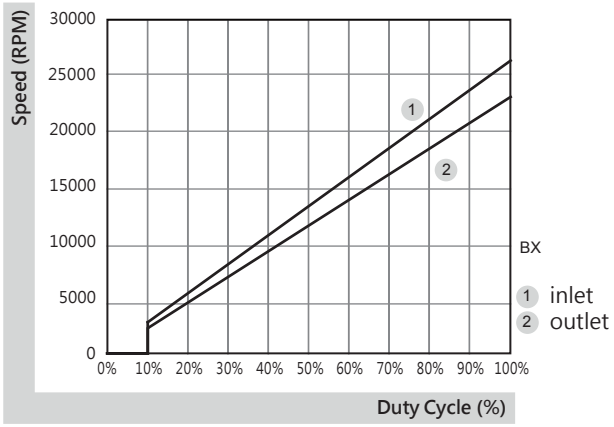
Min. start up duty cycle is 10%.

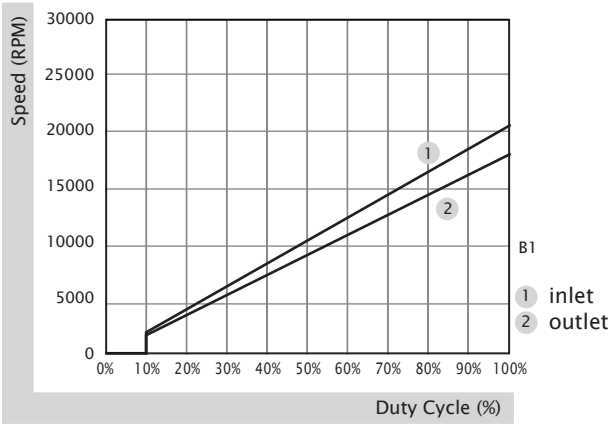



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 45x45x10 mm

## 9.4~12.4 CFM

## Specification

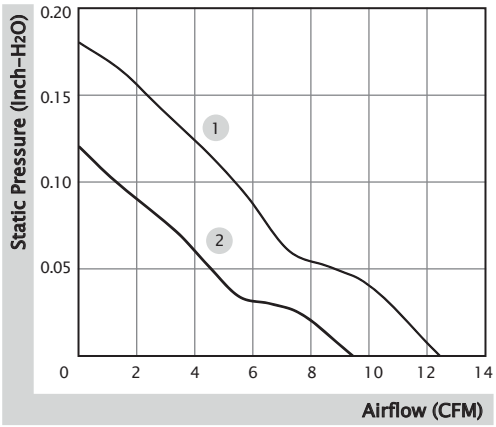
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF45100V1-1000U-A99 | ● | 5 | 205 | 1.03 | 6500 | 12.4 | 0.18 | 32.5 | 16.0 | 1 |
| MF45100V2-1000U-A99 | ● | 5 | 102 | 0.51 | 5000 | 9.4 | 0.12 | 26.1 | 16.0 | 2 |
| MF45101V1-1000U-A99 | ● | 12 | 100 | 1.20 | 6500 | 12.4 | 0.18 | 32.5 | 16.0 | 1 |
| *MF45101V2-1000U-A99 | ● | 12 | 47 | 0.57 | 5000 | 9.4 | 0.12 | 26.1 | 16.0 | 2 |

## Function

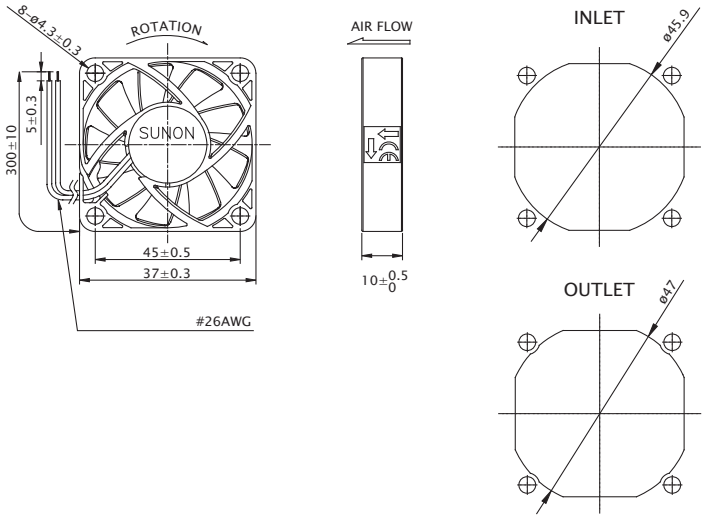
R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

*MF45101V2-1000U-A99 only available : R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics



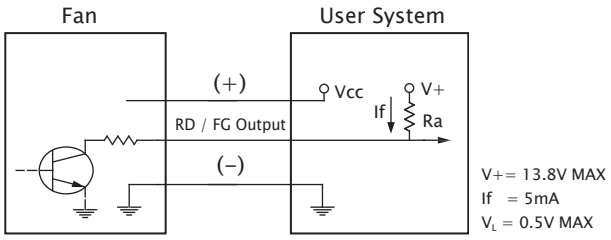

## External Dimensions(mm)



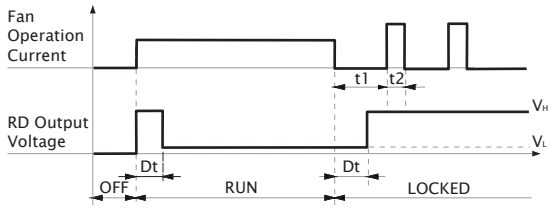

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

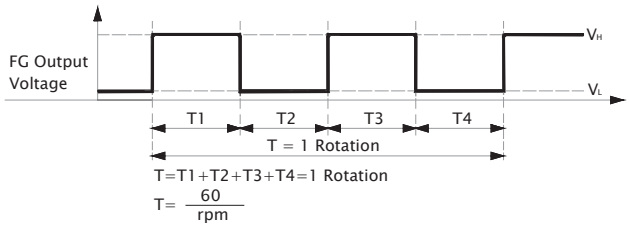
## RD / FG Output Signal

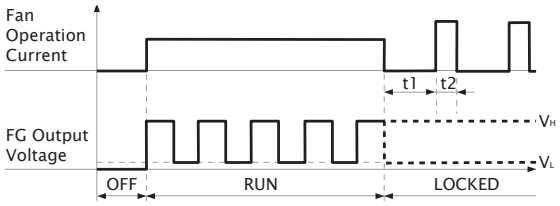



**[ RD Signal ]**

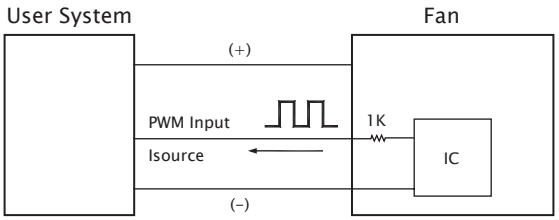



**[ FG Signal ]**




## PWM Input Signal

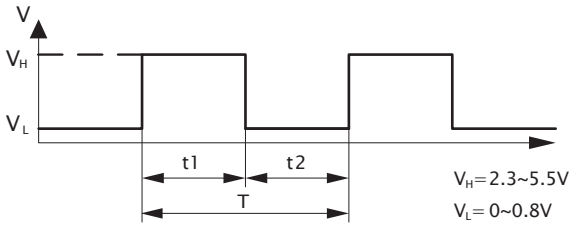



PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

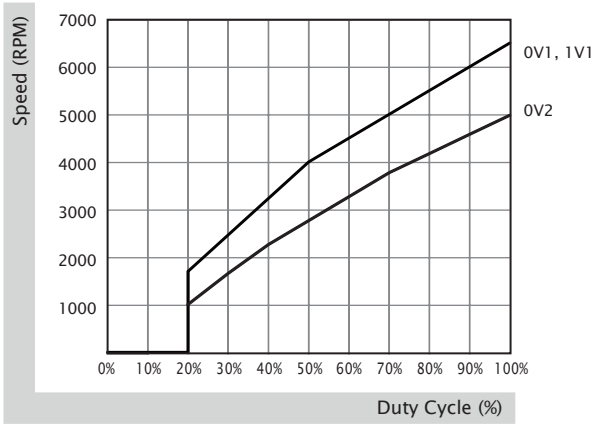
Min. start up duty cycle is 20%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 45x45x10 mm

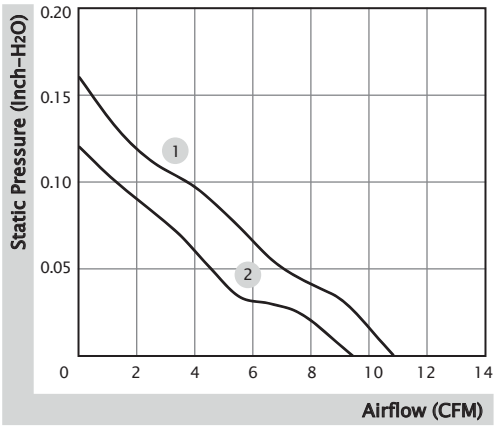
## 9.4~10.8 CFM

### Specification

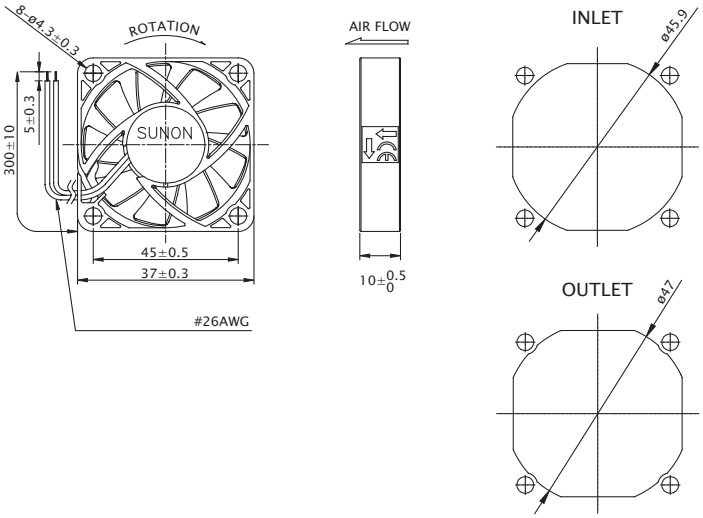
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◐ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF45101S1-1000U-999 | ○ | 12 | 85 | 1.02 | 5700 | 10.8 | 0.16 | 29.8 | 16.0 | 1 |
| EF45101S2-1000U-999 | ○ | 12 | 60 | 0.72 | 5000 | 9.4 | 0.12 | 26.1 | 16.0 | 2 |

### Function F Type : C99

### Air Flow-Static Pressure Characteristics



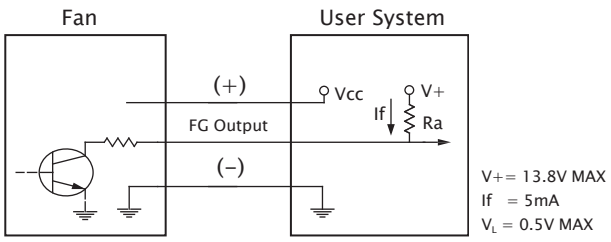

### External Dimensions(mm)



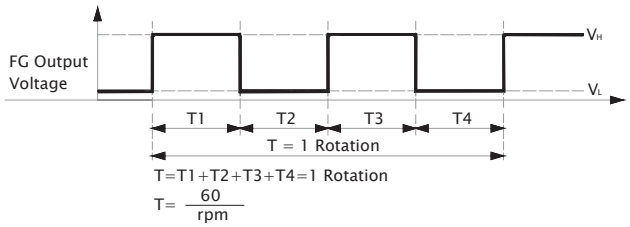

※ All model could be customized. Please contact with Sunon Sales.

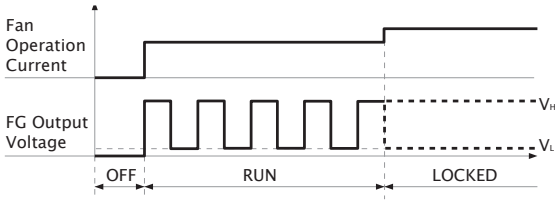
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 50x50x10 mm

## 8.4~13.8 CFM

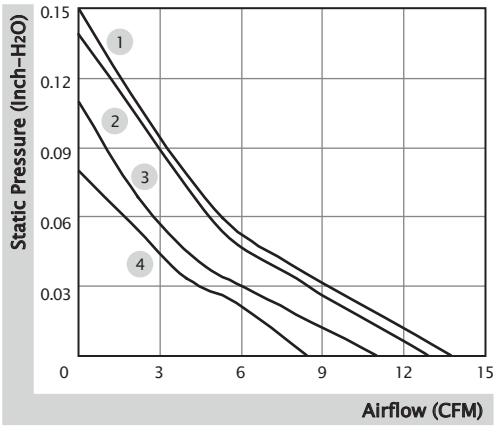
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF50100V1-1000U-A99 | ● | 5 | 155 | 0.78 | 5800 | 13.8 | 0.15 | 30.7 | 19.5 | 1 |
| MF50100V2-1000U-A99 | ● | 5 | 85 | 0.43 | 4800 | 11.0 | 0.11 | 25.6 | 19.5 | 3 |
| MF50100V3-1000U-A99 | ● | 5 | 75 | 0.38 | 4300 | 8.4 | 0.08 | 22.4 | 19.5 | 4 |
| MF50101V1-1000U-A99 | ● | 12 | 70 | 0.84 | 5800 | 13.8 | 0.15 | 30.7 | 19.5 | 1 |
| MF50101V2-1000U-A99 | ● | 12 | 50 | 0.60 | 4800 | 11.0 | 0.11 | 25.6 | 19.5 | 3 |
| MF50101V3-1000U-A99 | ● | 12 | 37 | 0.45 | 4300 | 8.4 | 0.08 | 22.4 | 19.5 | 4 |
| Model | ◇ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE50101S1-1000U-999 | ○ | 12 | 90 | 1.08 | 5700 | 13.0 | 0.14 | 30.7 | 19.5 | 2 |
| EE50101S2-1000U-999 | ○ | 12 | 75 | 0.90 | 4700 | 11.0 | 0.11 | 25.6 | 19.5 | 3 |

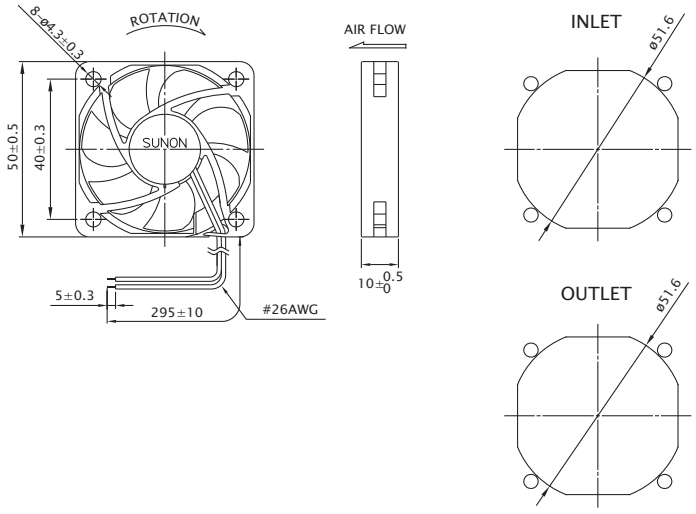
### Function

( MF Series ) R Type : F99 ／ F Type : G99
( EE, EB Series ) F Type : C99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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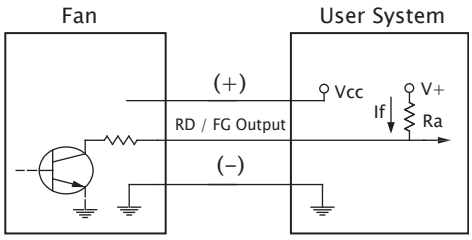
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

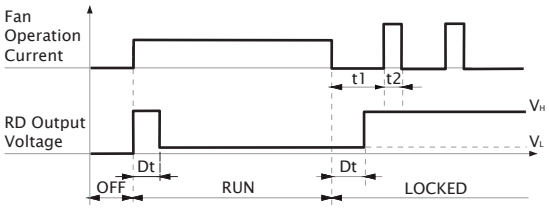
## RD / FG Output Signal



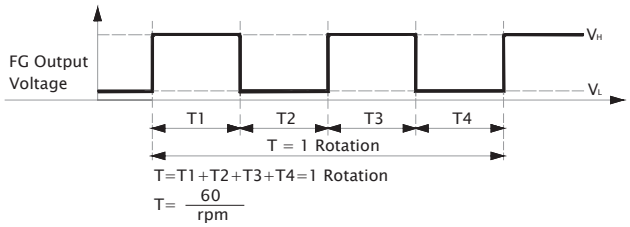

(MF 5V)
V+= 6V MAX
If = 5mA
$V_L$ = 0.5V MAX

(MF 12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ RD Signal ]**

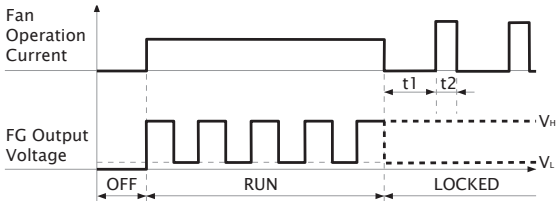



**[ FG Signal ]**

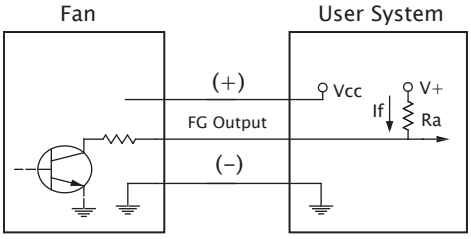



T=T1+T2+T3+T4=1 Rotation

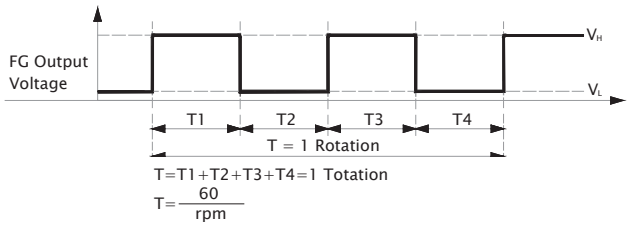
$T = \frac{60}{rpm}$




## Non-Auto Restart (C99) FG Output Signal

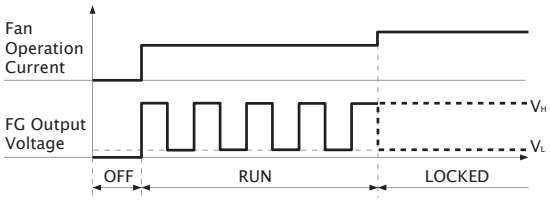



(EE)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX




T=T1+T2+T3+T4=1 Totation

$T = \frac{60}{rpm}$



# 50x50x15 mm

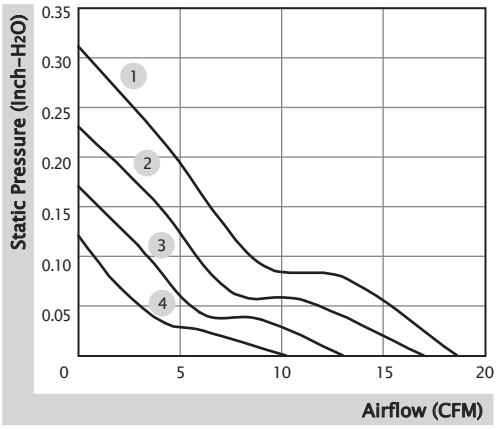
## 10.2~18.6 CFM

## Specification

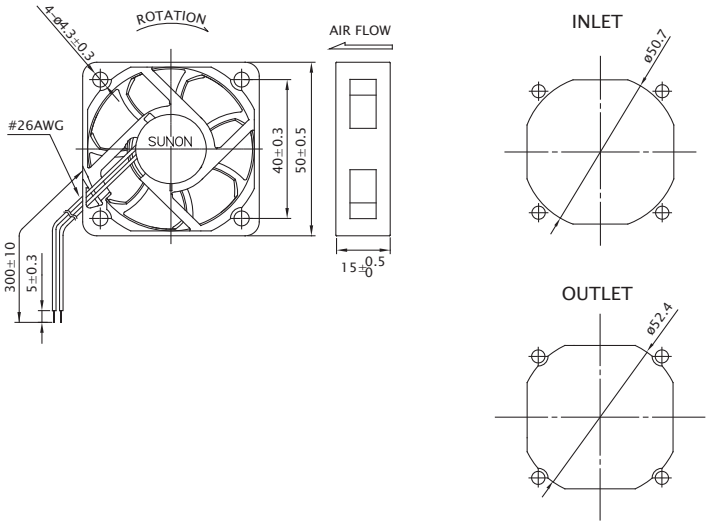
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF50151VX-1000U-A99 | ● | 12 | 100 | 1.20 | 7200 | 18.6 | 0.31 | 38.1 | 33.0 | 1 |
| MF50151V1-1000U-A99 | ● | 12 | 66 | 0.80 | 6100 | 17.0 | 0.23 | 33.0 | 33.0 | 2 |
| MF50151V2-1000U-A99 | ● | 12 | 42 | 0.51 | 5000 | 13.0 | 0.17 | 29.0 | 33.0 | 3 |
| MF50151V3-1000U-A99 | ● | 12 | 28 | 0.34 | 3800 | 10.2 | 0.12 | 20.1 | 33.0 | 4 |
| MF50152VX-1000U-A99 | ● | 24 | 55 | 1.32 | 7200 | 18.6 | 0.31 | 38.1 | 33.0 | 1 |
| MF50152V1-1000U-A99 | ● | 24 | 42 | 1.01 | 6100 | 17.0 | 0.23 | 33.0 | 33.0 | 2 |
| MF50152V2-1000U-A99 | ● | 24 | 27 | 0.65 | 5000 | 13.0 | 0.17 | 29.0 | 33.0 | 3 |

## Function R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics



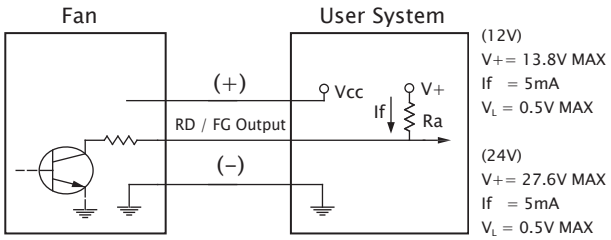

## External Dimensions(mm)



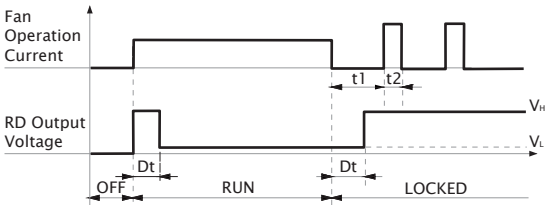

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

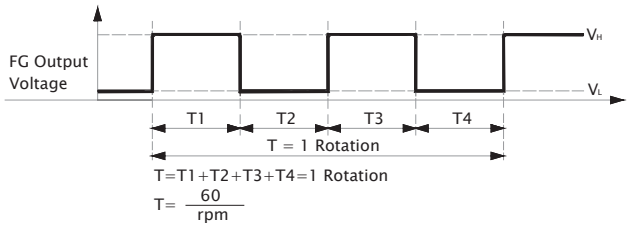
## RD / FG Output Signal

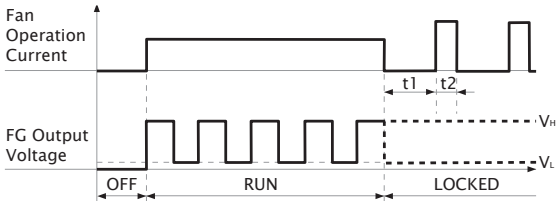



**[ RD Signal ]**




**[ FG Signal ]**



# 50x50x15 mm

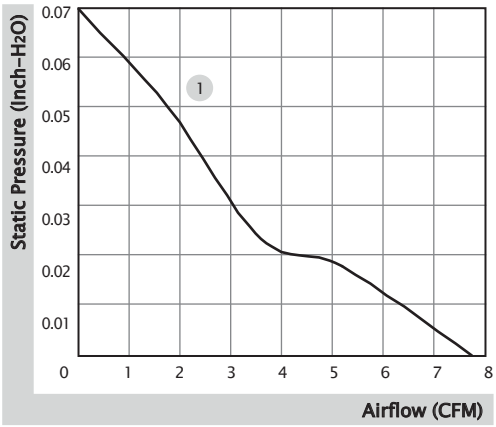
## 7.7 CFM

### Specification

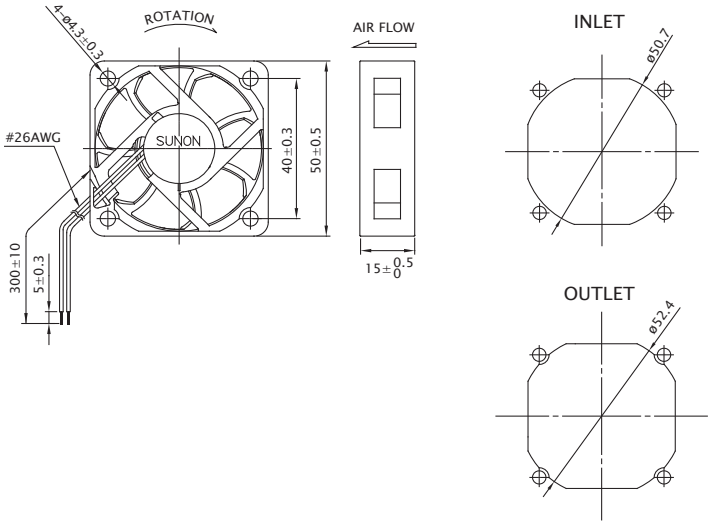
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA50151V4-1000U-A99 | ● | 12 | 25 | 0.30 | 3200 | 7.7 | 0.07 | 15.4 | 33.0 | 1 |

### Function F Type : G99

### Air Flow-Static Pressure Characteristics



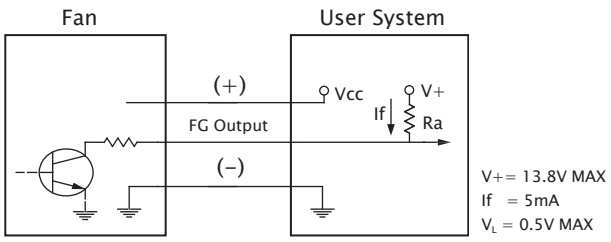

### External Dimensions(mm)



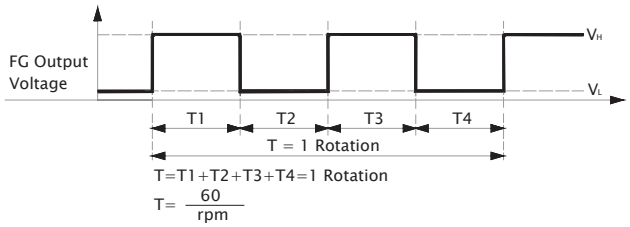

※ All model could be customized. Please contact with Sunon Sales.

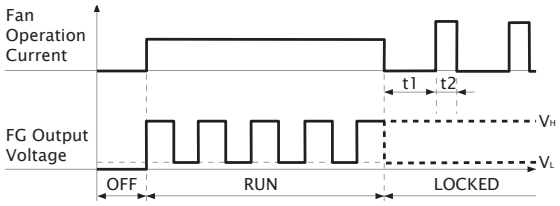
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 60x60x10 mm

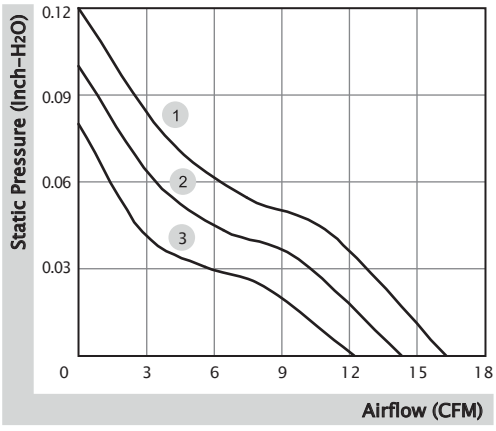
## 12.2~16.3 CFM

### Specification

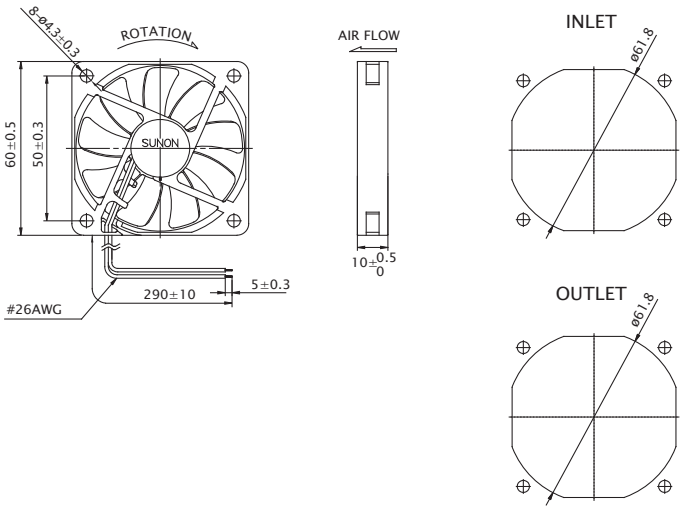
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF60101V1-1000U-A99 | ● | 12 | 108 | 1.30 | 4000 | 16.3 | 0.12 | 28.5 | 23.0 | 1 |
| MF60101V2-1000U-A99 | ● | 12 | 75 | 0.90 | 3500 | 14.3 | 0.10 | 25.0 | 23.0 | 2 |
| MF60101V3-1000U-A99 | ● | 12 | 46 | 0.56 | 3000 | 12.2 | 0.08 | 20.5 | 23.0 | 3 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



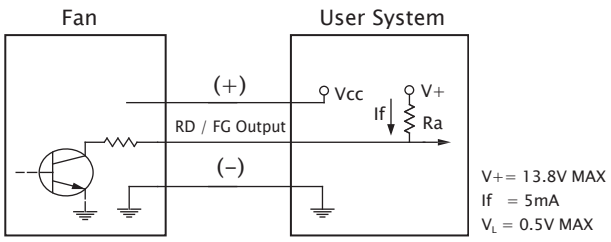

### External Dimensions(mm)



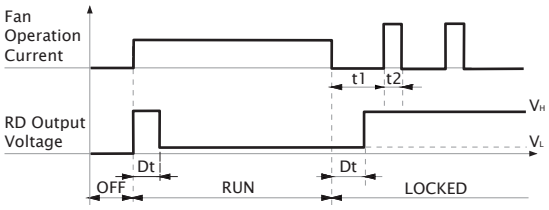

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

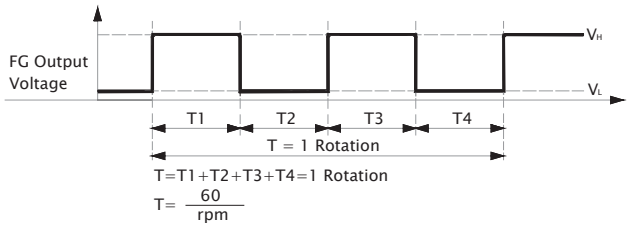
## RD / FG Output Signal

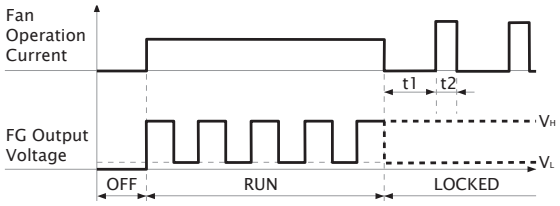



**[ RD Signal ]**




**[ FG Signal ]**



# 60x60x15 mm

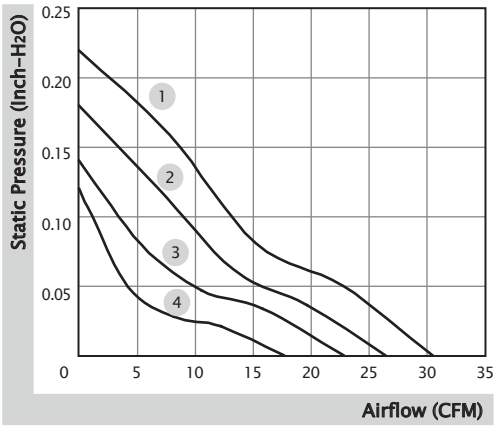
## 17.6~30.4 CFM

### Specification

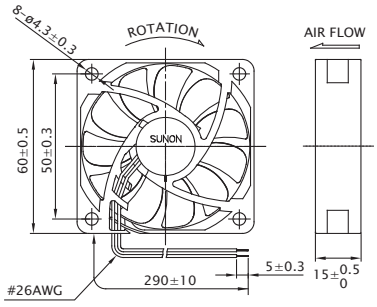
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF60151VX-1000U-A99 | ● | 12 | 185 | 2.22 | 5400 | 30.4 | 0.22 | 36.2 | 35.5 | 1 |
| MF60151V1-1000U-A99 | ● | 12 | 127 | 1.53 | 4700 | 26.4 | 0.18 | 34.2 | 35.5 | 2 |
| MF60151V2-1000U-A99 | ● | 12 | 68 | 0.82 | 3900 | 22.8 | 0.14 | 29.2 | 35.5 | 3 |
| MF60151V3-1000U-A99 | ● | 12 | 48 | 0.58 | 3000 | 17.6 | 0.12 | 21.3 | 35.5 | 4 |
| MF60152VX-1000U-A99 | ● | 24 | 85 | 2.04 | 5400 | 30.4 | 0.22 | 36.2 | 35.5 | 1 |
| MF60152V1-1000U-A99 | ● | 24 | 75 | 1.80 | 4700 | 26.4 | 0.18 | 34.2 | 35.5 | 2 |
| MF60152V2-1000U-A99 | ● | 24 | 40 | 0.96 | 3900 | 22.8 | 0.14 | 29.2 | 35.5 | 3 |

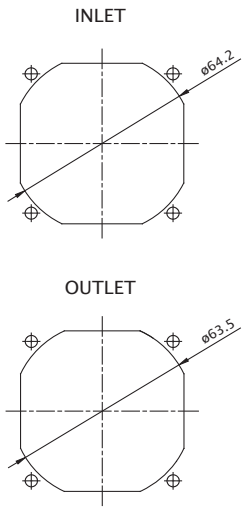
### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

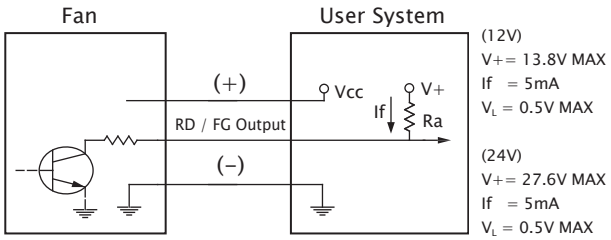


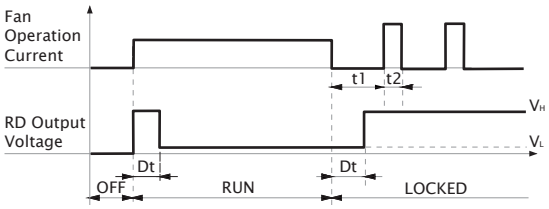

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

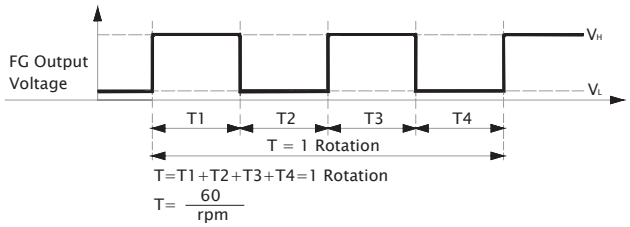
## RD / FG Output Signal

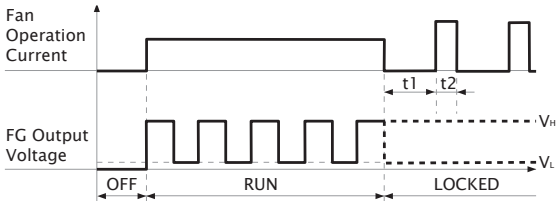



**[ RD Signal ]**




**[ FG Signal ]**



# 60x60x15 mm

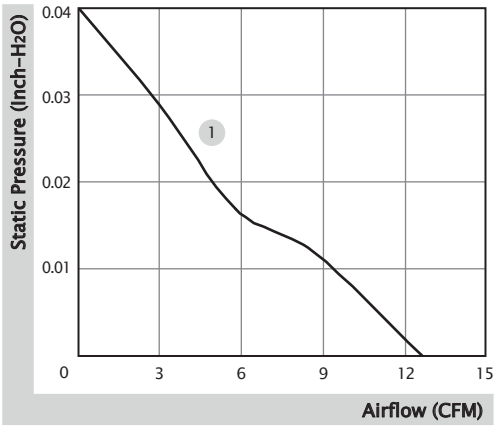
## 12.7 CFM

### Specification

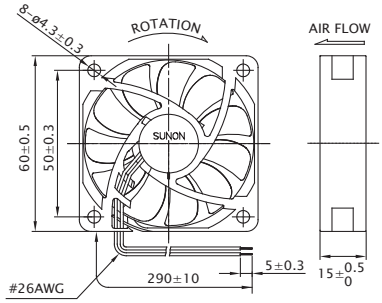
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA60151V4-1000U-A99 | ● | 12 | 22 | 0.27 | 2200 | 12.7 | 0.04 | 14.5 | 35.0 | 1 |

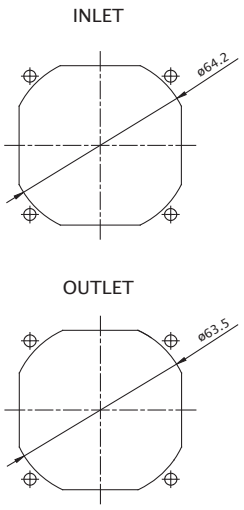
### Function F Type : G99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

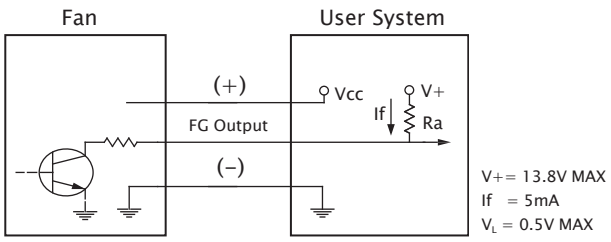


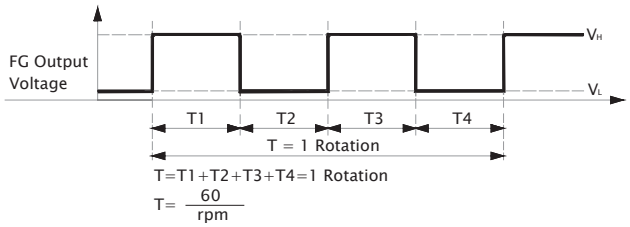

※ All model could be customized. Please contact with Sunon Sales.

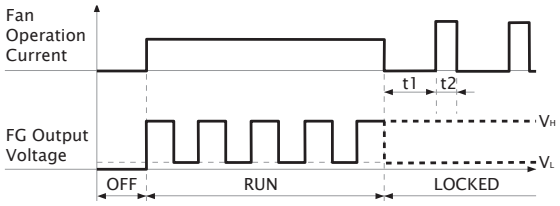
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 60x60x15 mm (IP56/IP68)

## 10.6~21.3 CFM

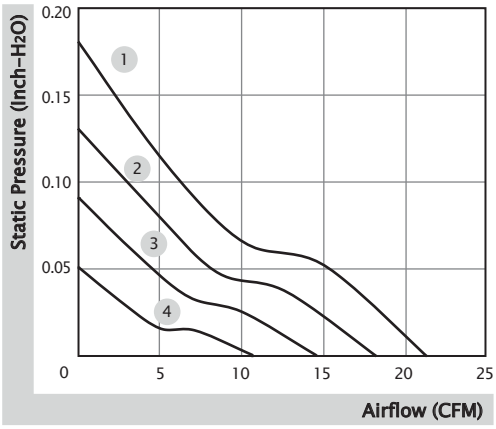
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF60151B6-1E00U-AC9 | ◉ | 12 | 125 | 1.50 | 4500 | 21.3 | 0.18 | 34.5 | 47.0 | 1 |
| GF60151B7-1E00U-AC9 | ◉ | 12 | 80 | 0.96 | 3900 | 18.2 | 0.13 | 29.8 | 47.0 | 2 |
| GF60151B8-1E00U-AC9 | ◉ | 12 | 70 | 0.84 | 3200 | 14.5 | 0.09 | 24.9 | 47.0 | 3 |
| GF60151B9-1E00U-AC9 | ◉ | 12 | 32 | 0.39 | 2300 | 10.6 | 0.05 | 17.1 | 47.0 | 4 |
| GF60151B6-1E00U-AE9 | ◉ | 12 | 125 | 1.50 | 4500 | 21.3 | 0.18 | 34.5 | 47.0 | 1 |
| GF60151B7-1E00U-AE9 | ◉ | 12 | 80 | 0.96 | 3900 | 18.2 | 0.13 | 29.8 | 47.0 | 2 |
| GF60151B8-1E00U-AE9 | ◉ | 12 | 70 | 0.84 | 3200 | 14.5 | 0.09 | 24.9 | 47.0 | 3 |
| GF60151B9-1E00U-AE9 | ◉ | 12 | 32 | 0.39 | 2300 | 10.6 | 0.05 | 17.1 | 47.0 | 4 |

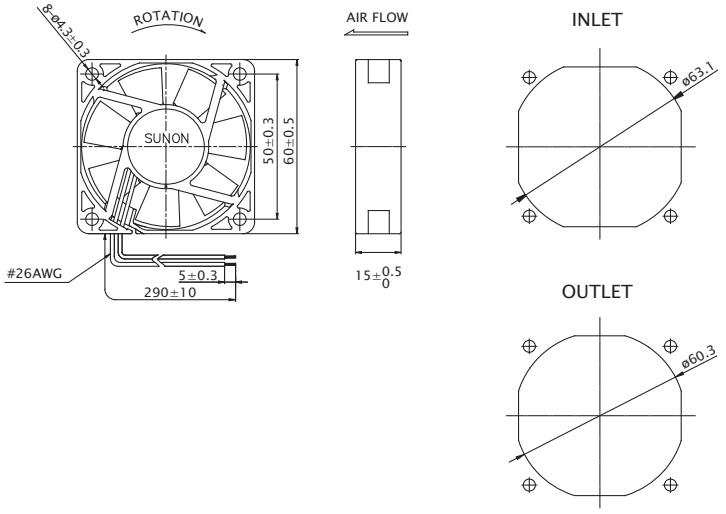
### Function

(IP56) R Type : FC9 ／ F Type : GC9
(IP68) R Type : FE9 ／ F Type : GE9

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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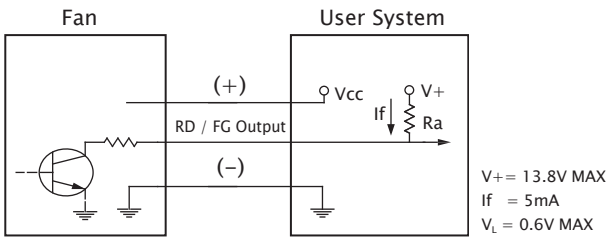
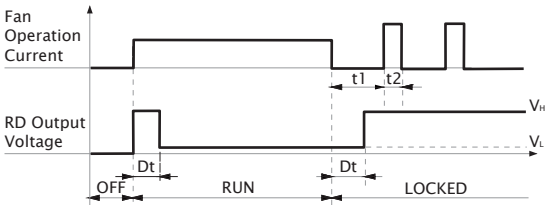
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

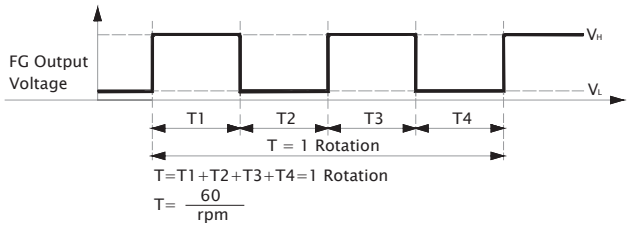
## RD / FG Output Signal

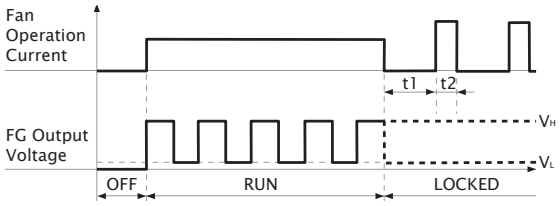



**[ RD Signal ]**




**[ FG Signal ]**



# 60x60x20 mm

## 16.0~30.5 CFM

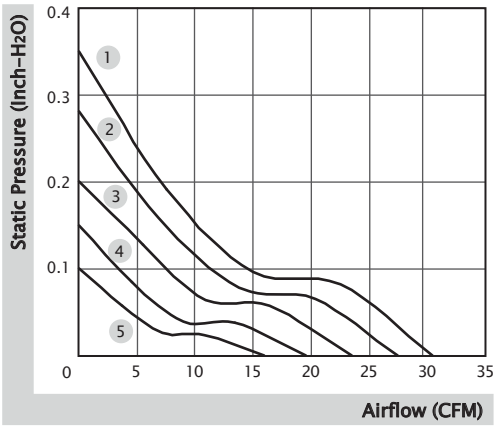
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PE60201BX-000U-A99 | ● | 12 | 230 | 2.76 | 5500 | 30.5 | 0.35 | 41.0 | 52.0 | 1 |
| PE60201B1-000U-A99 | ● | 12 | 192 | 2.30 | 5000 | 27.5 | 0.28 | 39.0 | 52.0 | 2 |
| PE60201B2-000U-A99 | ● | 12 | 148 | 1.78 | 4400 | 23.5 | 0.20 | 35.0 | 52.0 | 3 |
| PE60201B3-000U-A99 | ● | 12 | 103 | 1.24 | 3600 | 19.5 | 0.15 | 30.0 | 52.0 | 4 |
| PE60201B4-000U-A99 | ● | 12 | 81 | 0.97 | 3000 | 16.0 | 0.10 | 24.0 | 52.0 | 5 |

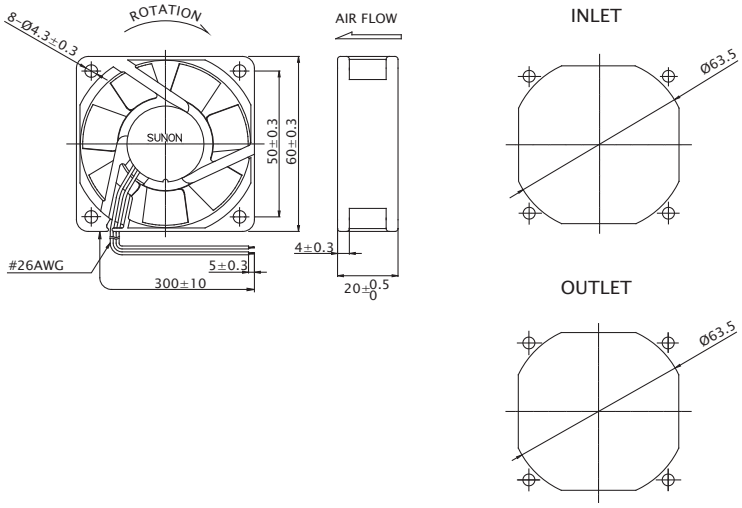
## Function

R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics



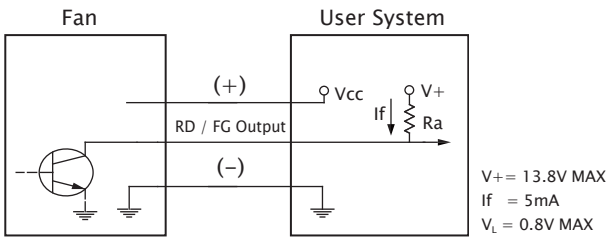

## External Dimensions(mm)



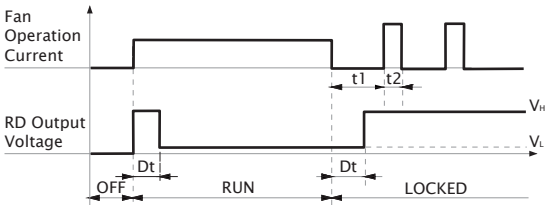

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

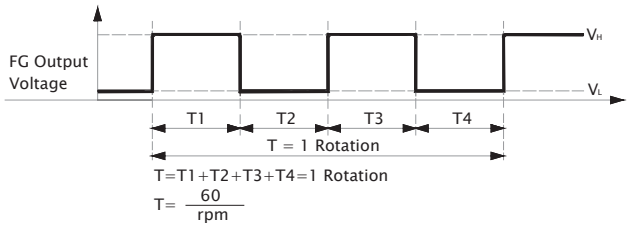
## RD / FG Output Signal




**[ RD Signal ]**

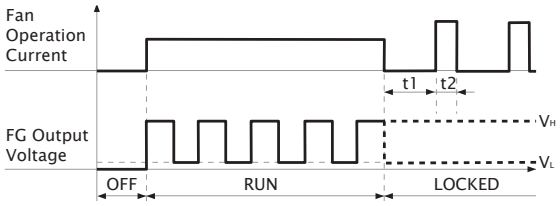



**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 60x60x20 mm

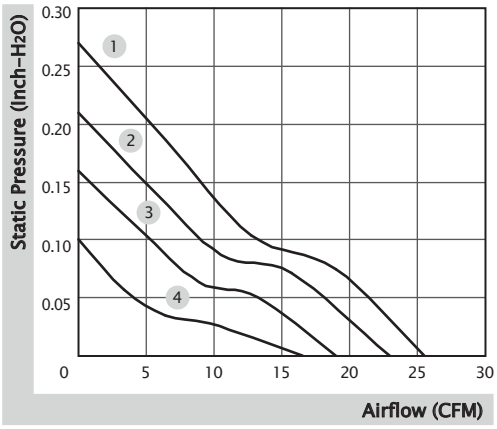
## 16.5~25.5 CFM

## Specification

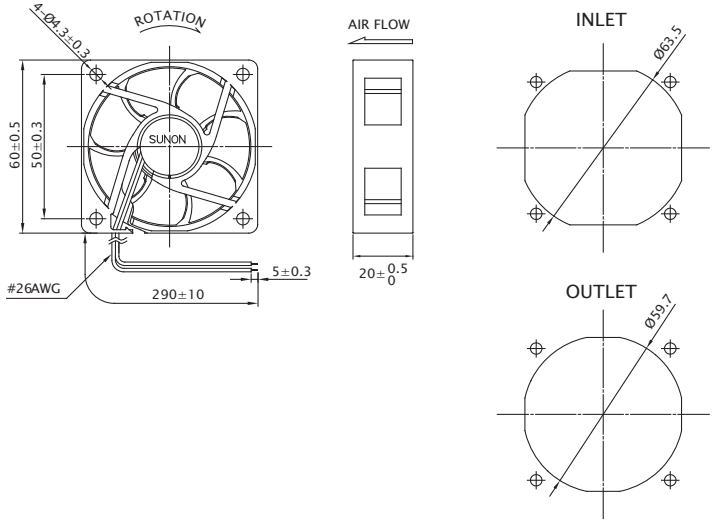
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF60201VX-1000U-A99 | ● | 12 | 142 | 1.71 | 5700 | 25.5 | 0.27 | 39.0 | 50.0 | 1 |
| MF60201V1-1000U-A99 | ● | 12 | 100 | 1.20 | 5000 | 23.0 | 0.21 | 33.5 | 50.0 | 2 |
| MF60201V2-1000U-A99 | ● | 12 | 65 | 0.78 | 4200 | 19.0 | 0.16 | 28.0 | 50.0 | 3 |
| MF60201V3-1000U-A99 | ● | 12 | 40 | 0.48 | 3100 | 16.5 | 0.10 | 21.0 | 50.0 | 4 |
| MF60202VX-1000U-A99 | ● | 24 | 75 | 1.80 | 5700 | 25.5 | 0.27 | 39.0 | 50.0 | 1 |
| MF60202V1-1000U-A99 | ● | 24 | 55 | 1.32 | 5000 | 23.0 | 0.21 | 33.5 | 50.0 | 2 |
| MF60202V2-1000U-A99 | ● | 24 | 35 | 0.84 | 4200 | 19.0 | 0.16 | 28.0 | 50.0 | 3 |
| MF60202V3-1000U-A99 | ● | 24 | 22 | 0.53 | 3100 | 16.5 | 0.10 | 21.0 | 50.0 | 4 |

## Function R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics



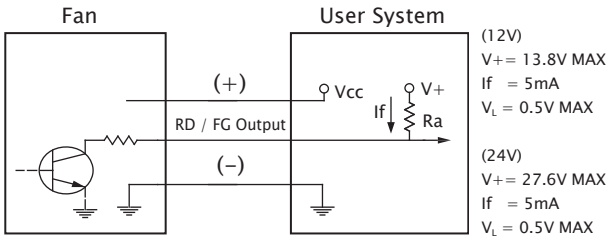

## External Dimensions(mm)



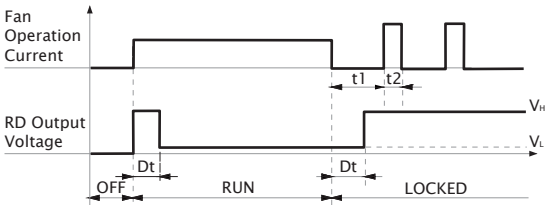

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

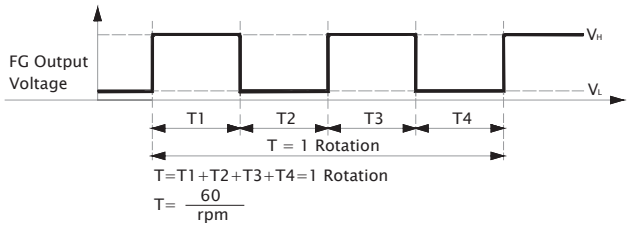
## RD / FG Output Signal

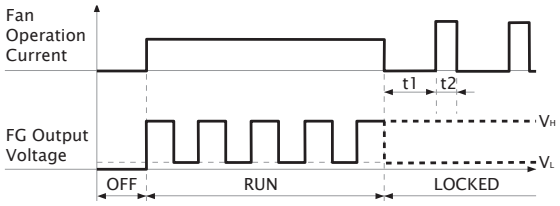



**[ RD Signal ]**




**[ FG Signal ]**



# 60x60x20 mm

## 14.1~23.0 CFM

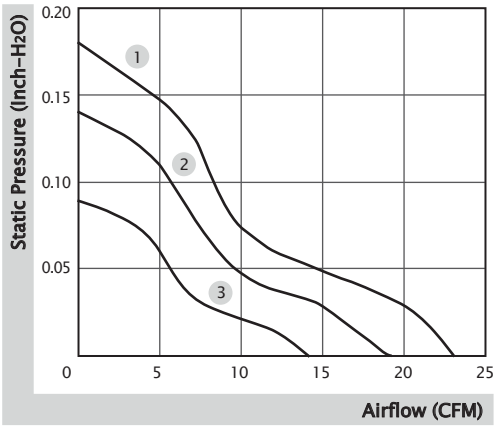
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE60201B1-000U-999 | ● | 12 | 135 | 1.62 | 4500 | 23.0 | 0.18 | 34.5 | 52.0 | 1 |
| EE60201B2-000U-999 | ● | 12 | 95 | 1.14 | 3700 | 19.0 | 0.14 | 29.0 | 52.0 | 2 |
| EE60201B3-000U-999 | ● | 12 | 70 | 0.84 | 3000 | 14.1 | 0.09 | 24.5 | 52.0 | 3 |
| EF60202B1-000U-A99 | ● | 24 | 60 | 1.44 | 4500 | 23.0 | 0.18 | 34.5 | 52.0 | 1 |
| EF60202B2-000U-A99 | ● | 24 | 38 | 0.92 | 3700 | 19.0 | 0.14 | 29.0 | 52.0 | 2 |
| EF60202B3-000U-A99 | ● | 24 | 23 | 0.56 | 3000 | 14.1 | 0.09 | 24.5 | 52.0 | 3 |

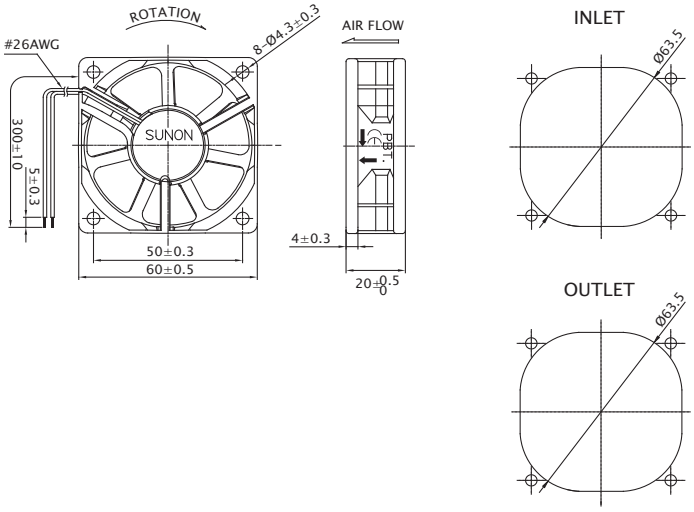
## Function

(12V) Auto Restart : A99 ／ F Type : C99, G99
(24V) R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics

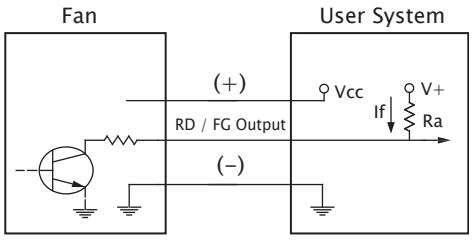



## External Dimensions(mm)



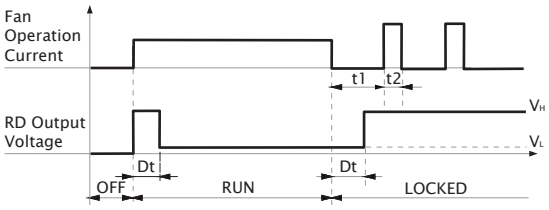

※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## RD / FG Output Signal

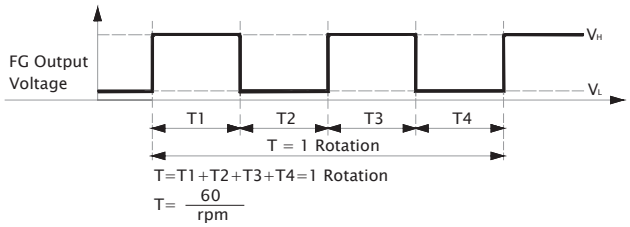



(EF)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ RD Signal ]**

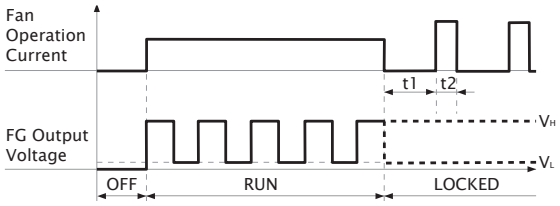



**[ FG Signal ]**

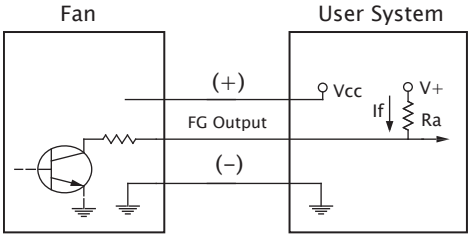



T=T1+T2+T3+T4=1 Rotation

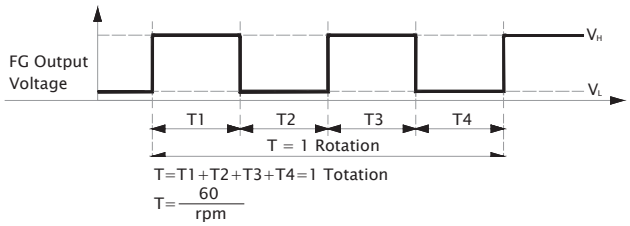
$T = \frac{60}{rpm}$




## Non-Auto Restart (C99) FG Output Signal

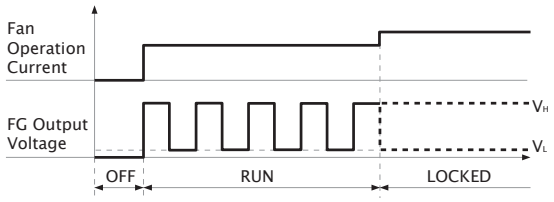



(EE)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.8V MAX




T=T1+T2+T3+T4=1 Totation

$T = \frac{60}{rpm}$



# 60x60x20 mm

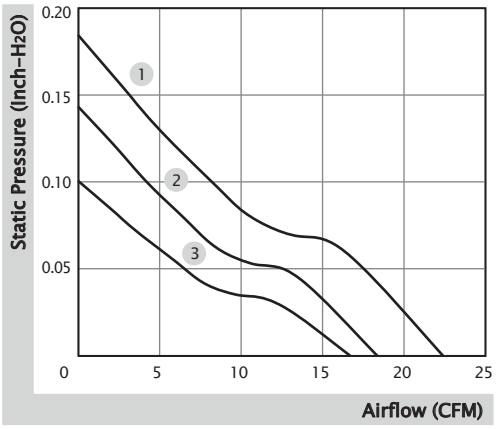
## 16.8~22.6 CFM

### Specification

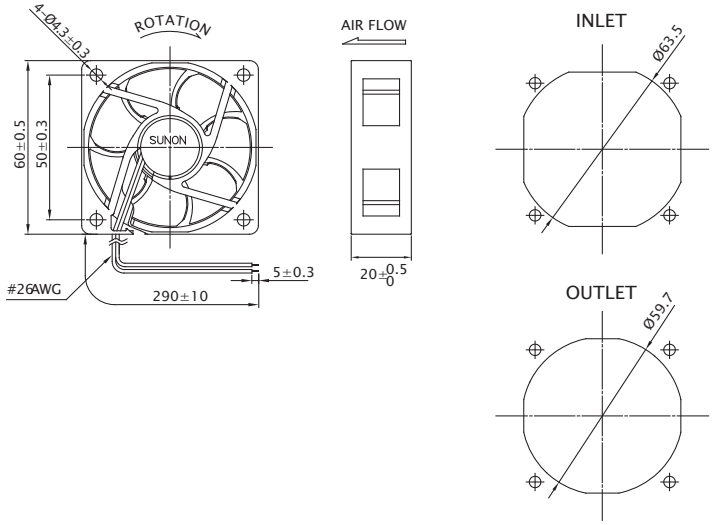
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◐ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE60201S1-1000U-999 | ○ | 12 | 115 | 1.38 | 4700 | 22.6 | 0.18 | 32.5 | 50.0 | 1 |
| EE60201S2-1000U-999 | ○ | 12 | 82 | 0.99 | 3900 | 18.5 | 0.14 | 26.3 | 50.0 | 2 |
| EE60201S3-1000U-999 | ○ | 12 | 58 | 0.70 | 3200 | 16.8 | 0.10 | 22.0 | 50.0 | 3 |

### Function F Type : C99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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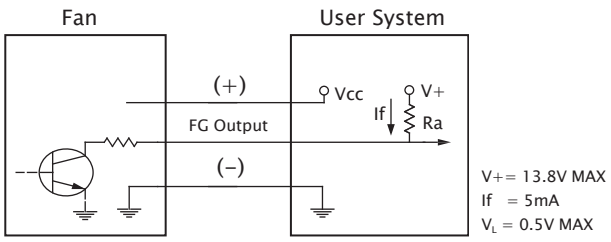
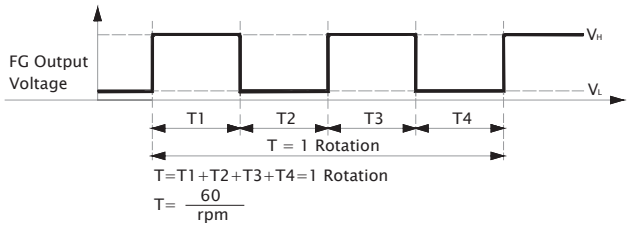
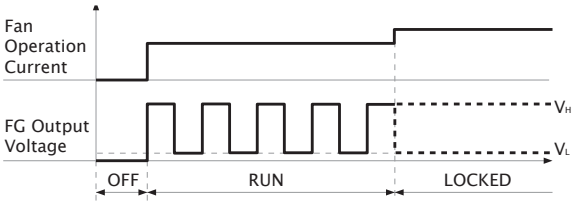
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 60x60x25 mm (GR487/IP68)

## 26.9~54.8 CFM

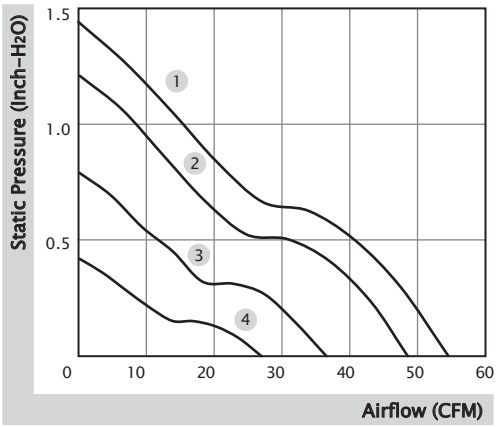
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF60252BX-1000U-ADP | ● | 24 | 545 | 13.08 | 12900 | 54.8 | 1.44 | 55.4 | 84.0 | 1 |
| GF60252B1-1000U-ADP | ● | 24 | 405 | 9.72 | 11500 | 48.4 | 1.21 | 53.2 | 84.0 | 2 |
| GF60252B2-1000U-ADP | ● | 24 | 208 | 5.00 | 9000 | 36.5 | 0.79 | 47.2 | 84.0 | 3 |
| GF60252B3-1000U-ADP | ● | 24 | 115 | 2.76 | 6450 | 26.9 | 0.42 | 38.0 | 84.0 | 4 |
| GF60252BX-1000U-AEP | ● | 24 | 545 | 13.08 | 12900 | 54.8 | 1.44 | 55.4 | 84.0 | 1 |
| GF60252B1-1000U-AEP | ● | 24 | 405 | 9.72 | 11500 | 48.4 | 1.21 | 53.2 | 84.0 | 2 |
| GF60252B2-1000U-AEP | ● | 24 | 208 | 5.00 | 9000 | 36.5 | 0.79 | 47.2 | 84.0 | 3 |
| GF60252B3-1000U-AEP | ● | 24 | 115 | 2.76 | 6450 | 26.9 | 0.42 | 38.0 | 84.0 | 4 |

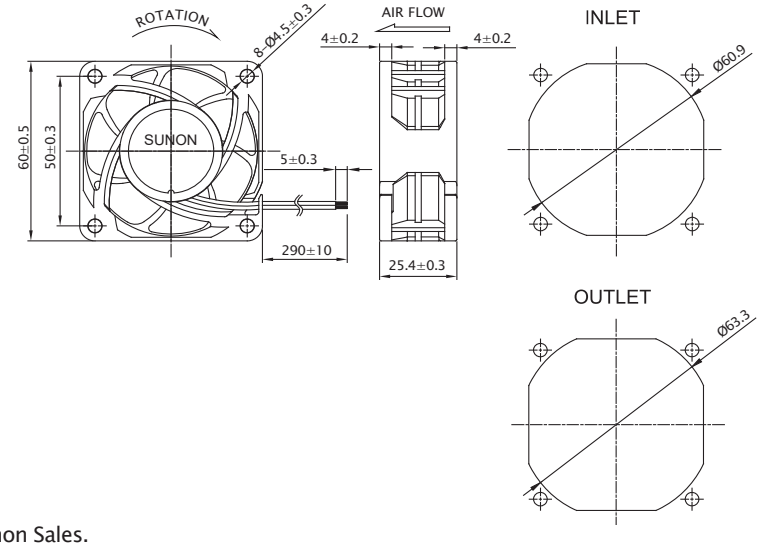
### Function

(GR487) R Type : FDP ／ F Type : GDP ／ PWM : HDP, QDP, SDP
(IP68) R Type : FEP ／ F Type : GEP ／ PWM : HEP, QEP, SEP

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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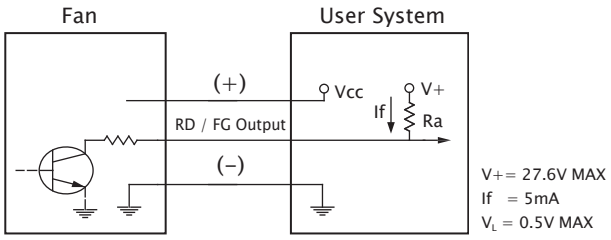
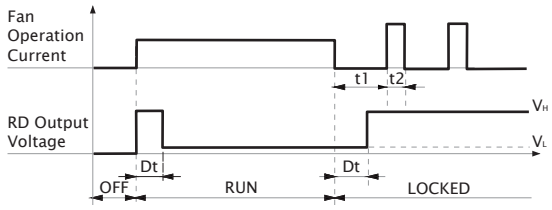
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

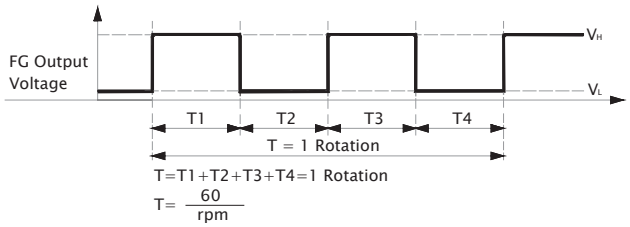
## RD / FG Output Signal

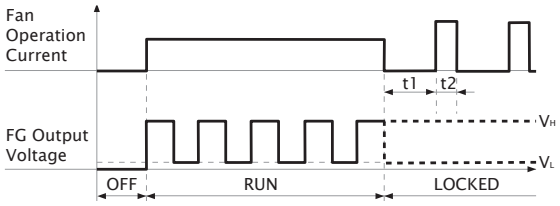



**[ RD Signal ]**

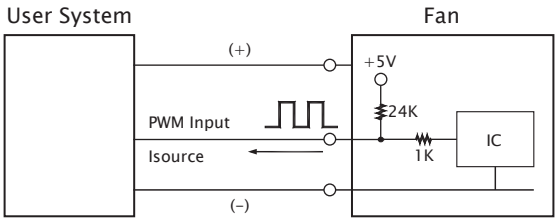



**[ FG Signal ]**




## PWM Input Signal

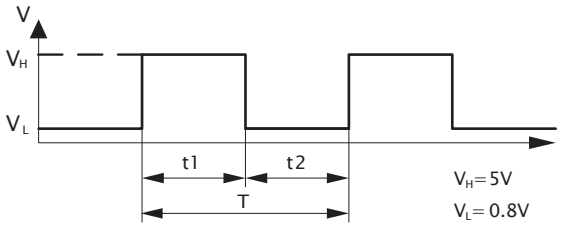



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

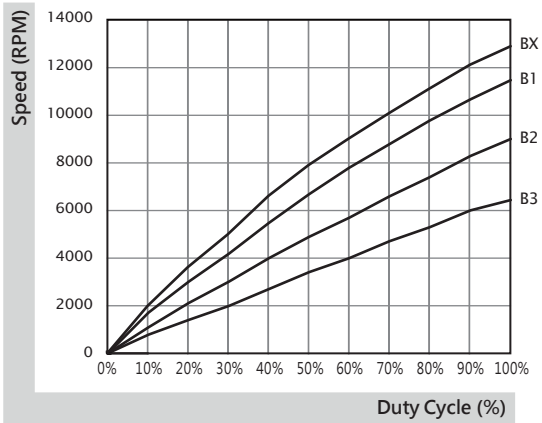
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 60x60x25 mm

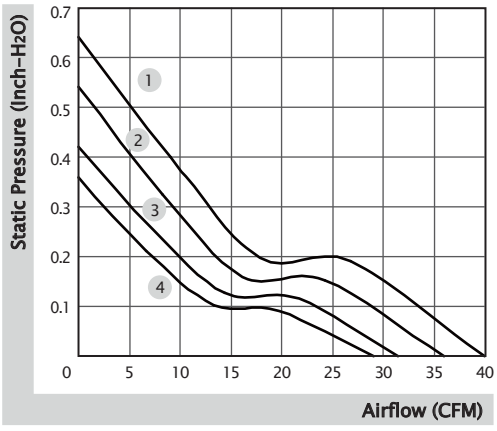
## 29.0~40.0 CFM

### Specification

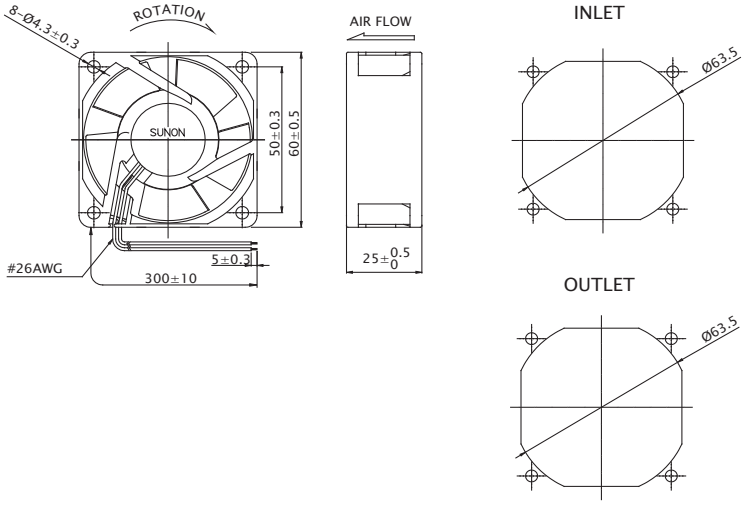
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PE60251BX-000U-A99 | ◉ | 12 | 370 | 4.44 | 7600 | 40.0 | 0.64 | 46.0 | 71.0 | 1 |
| PE60251B1-000U-A99 | ◉ | 12 | 297 | 3.57 | 6900 | 36.0 | 0.54 | 44.0 | 71.0 | 2 |
| PE60251B2-000U-A99 | ◉ | 12 | 232 | 2.79 | 6100 | 31.5 | 0.42 | 42.0 | 71.0 | 3 |
| PE60251B3-000U-A99 | ◉ | 12 | 197 | 2.37 | 5600 | 29.0 | 0.36 | 38.0 | 71.0 | 4 |
| PE60252BX-000U-A99 | ◉ | 24 | 190 | 4.56 | 7600 | 40.0 | 0.64 | 46.0 | 75.0 | 1 |
| PE60252B1-000U-A99 | ◉ | 24 | 155 | 3.72 | 6900 | 36.0 | 0.54 | 44.0 | 75.0 | 2 |
| PE60252B2-000U-A99 | ◉ | 24 | 121 | 2.91 | 6100 | 31.5 | 0.42 | 42.0 | 75.0 | 3 |
| PE60252B3-000U-A99 | ◉ | 24 | 104 | 2.50 | 5600 | 29.0 | 0.36 | 38.0 | 75.0 | 4 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



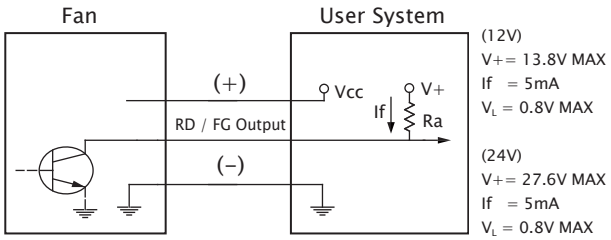

### External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

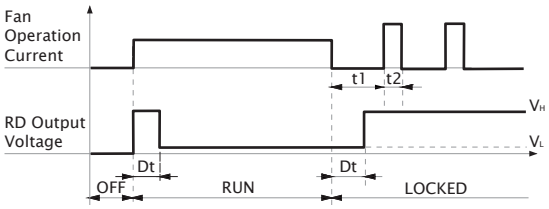
## RD / FG Output Signal



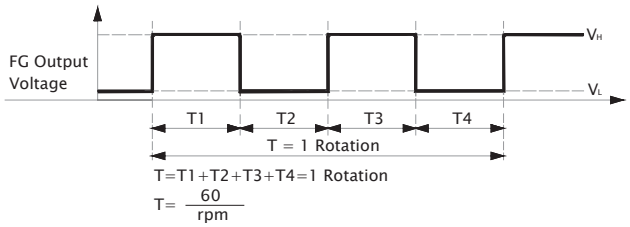

(12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.8V MAX

(24V)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.8V MAX

**[ RD Signal ]**

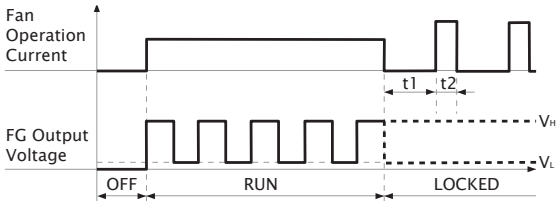



**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 60x60x25 mm

## 16.0~27.0 CFM

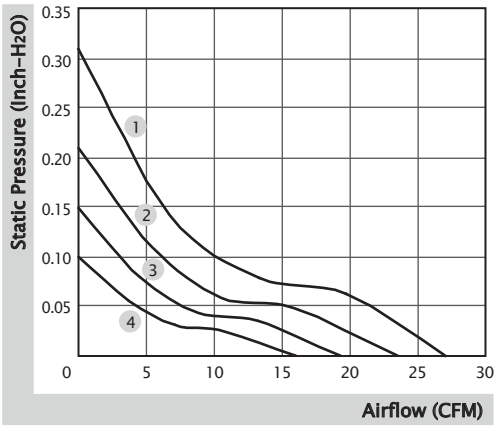
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF60251VX-1000U-A99 | ● | 12 | 130 | 1.56 | 5200 | 27.0 | 0.31 | 31.2 | 45.0 | 1 |
| MF60251V1-1000U-A99 | ● | 12 | 75 | 0.90 | 4500 | 23.5 | 0.21 | 27.0 | 45.0 | 2 |
| MF60251V2-1000U-A99 | ● | 12 | 72 | 0.87 | 3800 | 19.3 | 0.15 | 22.0 | 45.0 | 3 |
| MF60251V3-1000U-A99 | ● | 12 | 44 | 0.53 | 3100 | 16.0 | 0.10 | 16.7 | 45.0 | 4 |
| MF60252VX-1000U-A99 | ● | 24 | 80 | 1.92 | 5200 | 27.0 | 0.31 | 31.2 | 45.0 | 1 |
| MF60252V1-1000U-A99 | ● | 24 | 50 | 1.20 | 4500 | 23.5 | 0.21 | 27.0 | 45.0 | 2 |
| MF60252V2-1000U-A99 | ● | 24 | 30 | 0.72 | 3800 | 19.3 | 0.15 | 22.0 | 45.0 | 3 |
| MF60252V3-1000U-A99 | ● | 24 | 22 | 0.53 | 3100 | 16.0 | 0.10 | 16.7 | 45.0 | 4 |
| Model | ◔ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE60251S1-1000U-999 | ○ | 12 | 122 | 1.47 | 4500 | 23.5 | 0.21 | 27.0 | 45.0 | 2 |
| EE60251S2-1000U-999 | ○ | 12 | 85 | 1.02 | 3800 | 19.3 | 0.15 | 22.0 | 45.0 | 3 |
| EE60251S3-1000U-999 | ○ | 12 | 60 | 0.72 | 3100 | 16.0 | 0.10 | 16.7 | 45.0 | 4 |
| EF60252S1-1000U-A99 | ○ | 24 | 50 | 1.20 | 4500 | 23.5 | 0.21 | 27.0 | 45.0 | 2 |

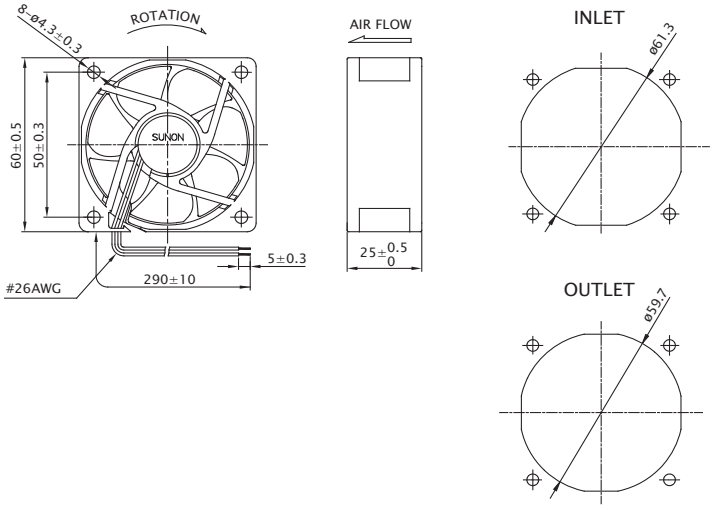
### Function

( MF Series ) R Type : F99 ／ F Type : G99
( EE Series ) F Type : C99
( EF Series ) F Type : G99

### Air Flow-Static Pressure Characteristics

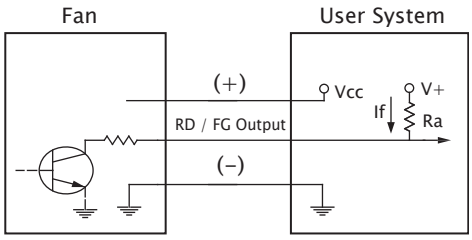



### External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

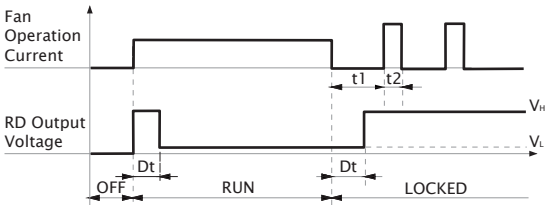
## RD / FG Output Signal



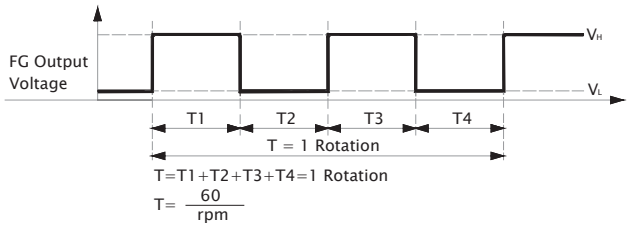

(MF 12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

(MF 24V)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ RD Signal ]**

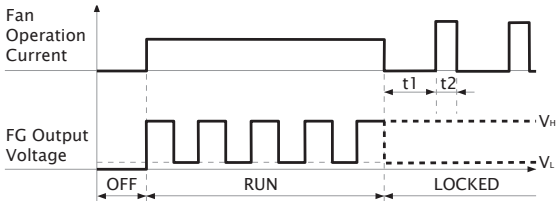



**[ FG Signal ]**

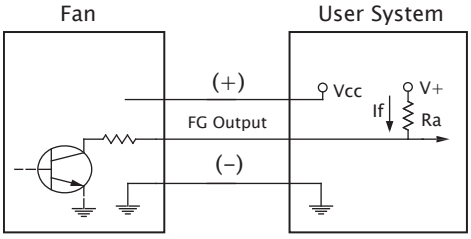



T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$

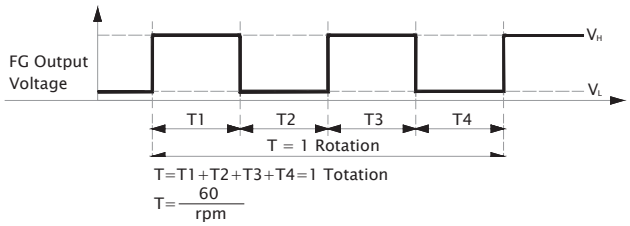



## Non-Auto Restart (C99) FG Output Signal



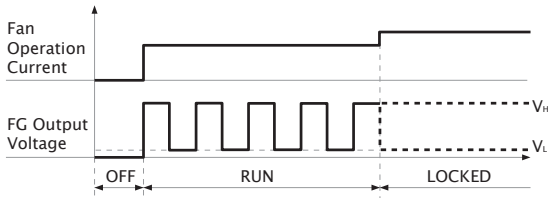

(EE 12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

(EE 24V)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.5V MAX




T=T1+T2+T3+T4=1 Totation

$T = \frac{60}{rpm}$



# 60x60x25 mm

## 13.9~23.5 CFM

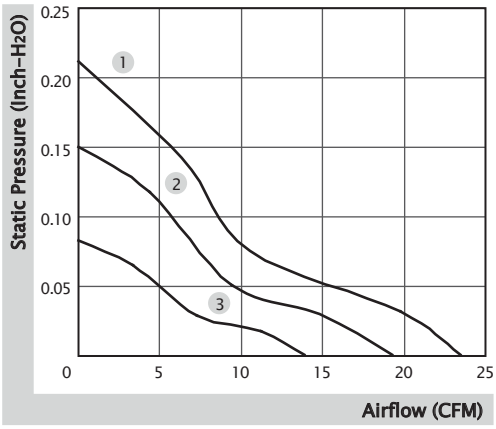
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE60251B1-000U-999 | ● | 12 | 120 | 1.44 | 4500 | 23.5 | 0.21 | 34.5 | 50.0 | 1 |
| EE60251B2-000U-999 | ● | 12 | 78 | 0.94 | 3800 | 19.3 | 0.15 | 30.0 | 50.0 | 2 |
| EE60251B3-000U-999 | ● | 12 | 58 | 0.70 | 3000 | 13.9 | 0.08 | 20.0 | 50.0 | 3 |

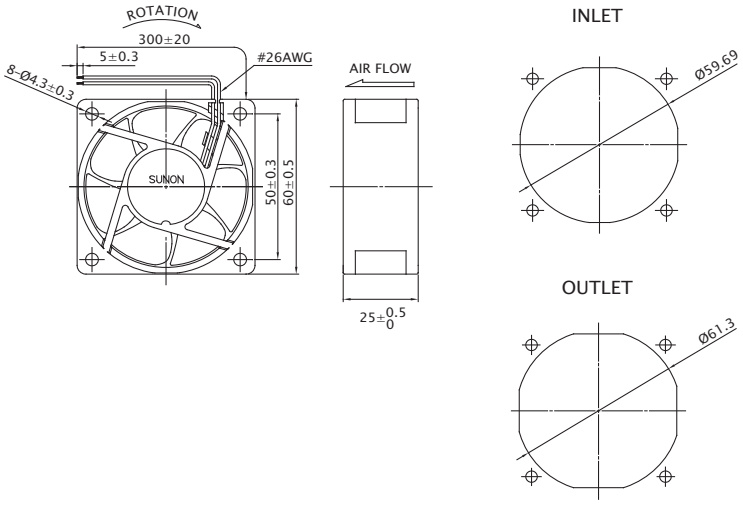
### Function

Auto Restart : A99 ／ F Type : C99, G99

### Air Flow-Static Pressure Characteristics



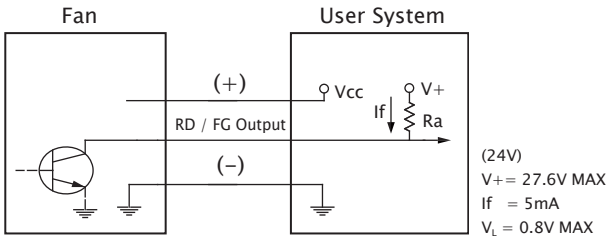

### External Dimensions(mm)



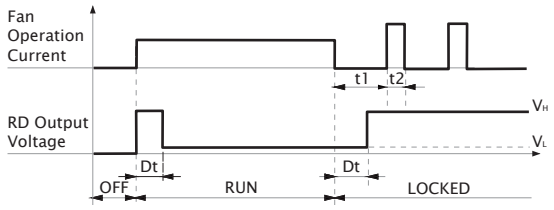

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

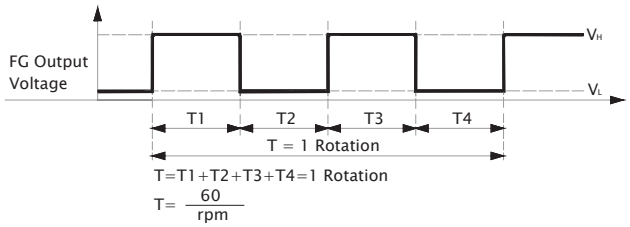
## RD / FG Output Signal

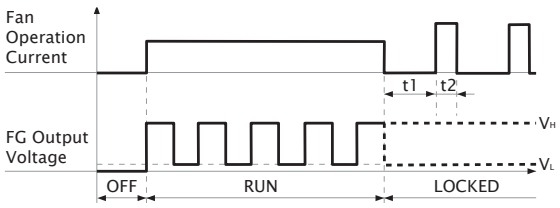



**[ RD Signal ]**

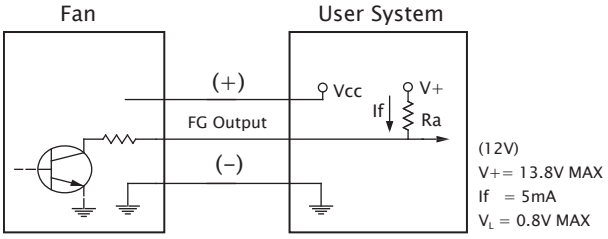


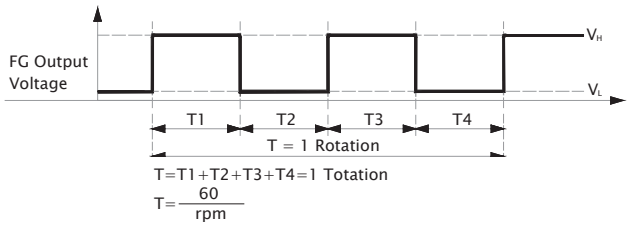

**[ FG Signal ]**

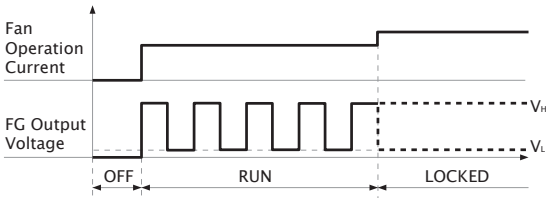



## Non-Auto Restart (C99) FG Output Signal



# 60x60x25 mm

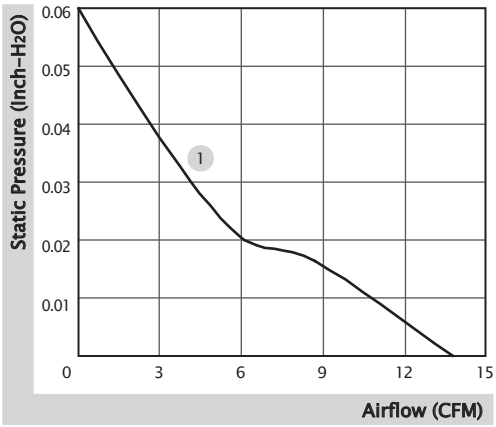
## 13.8 CFM

### Specification

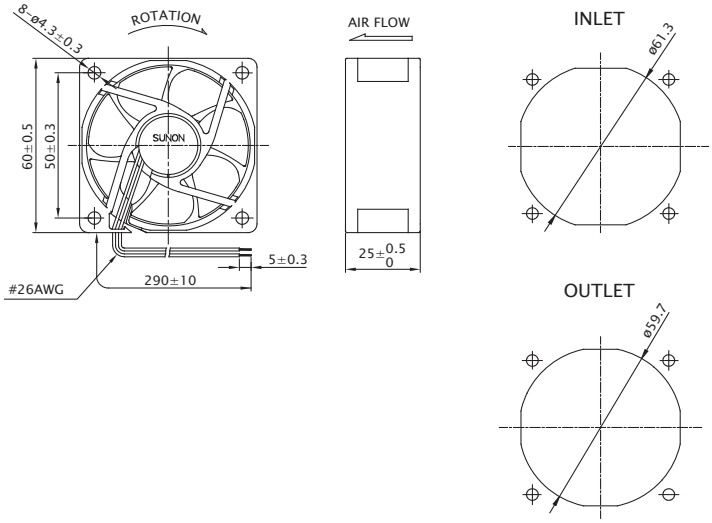
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA60251V4-1000U-A99 | ● | 12 | 20 | 0.24 | 2500 | 13.8 | 0.06 | 10.7 | 45.0 | 1 |

### Function F Type : G99

### Air Flow-Static Pressure Characteristics



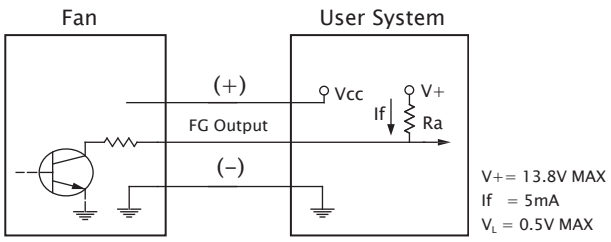

### External Dimensions(mm)



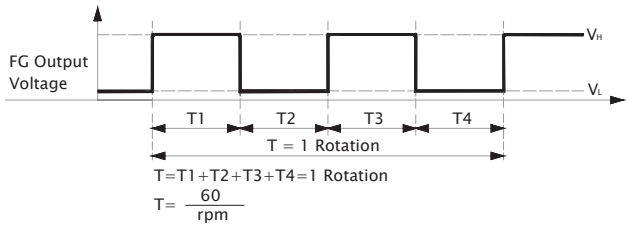

※ All model could be customized. Please contact with Sunon Sales.

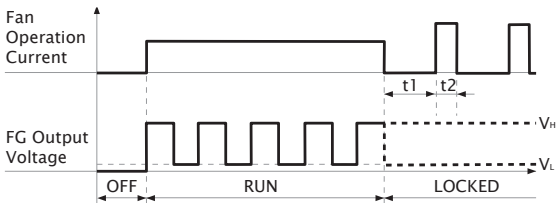
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 60x60x38 mm

## 60.6~75.2 CFM

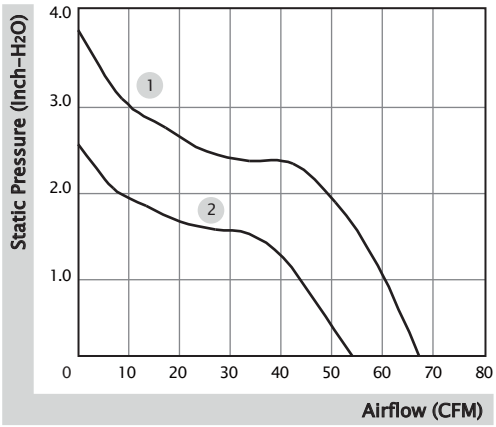
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF60381BX-1000U-A99 | ● | 12 | 2500 | 30.00 | 16500 | 75.2 | 3.57 | 67.0 | 127.0 | 1 |
| PF60381B1-1000U-A99 | ● | 12 | 1200 | 14.40 | 13200 | 60.6 | 2.30 | 61.2 | 127.0 | 2 |

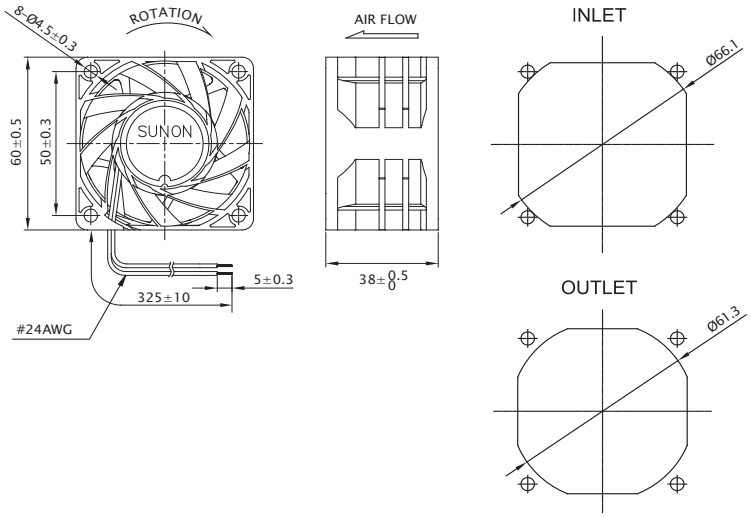
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics




## External Dimensions(mm)

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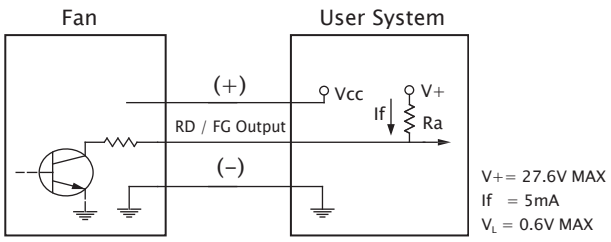
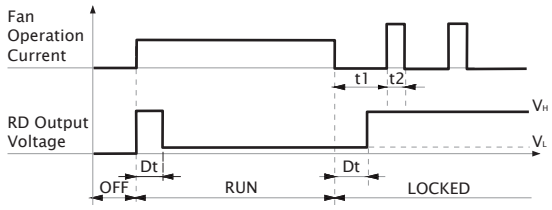
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

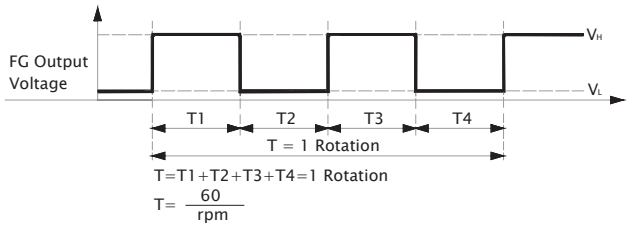
## RD / FG Output Signal

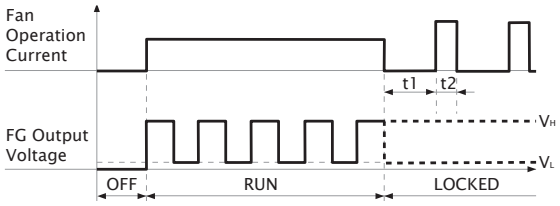



**[ RD Signal ]**

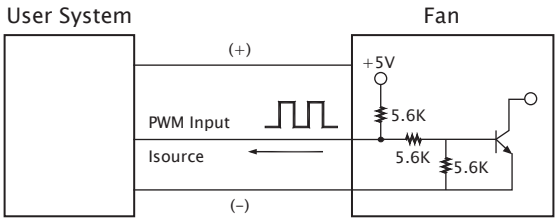



**[ FG Signal ]**




## PWM Input Signal

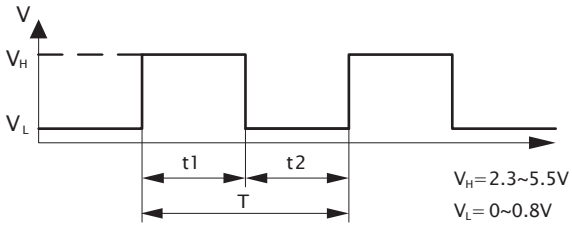



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

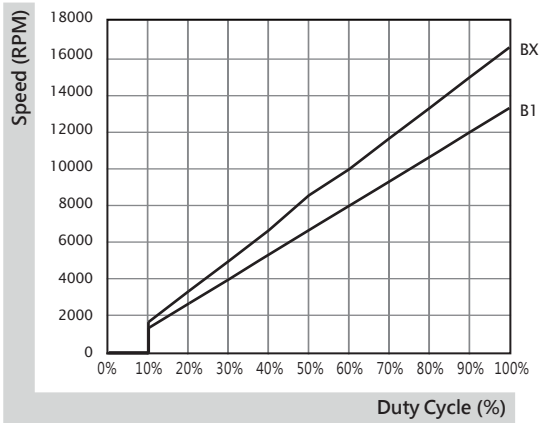
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 60x60x38 mm

## 54.1~67.8 CFM

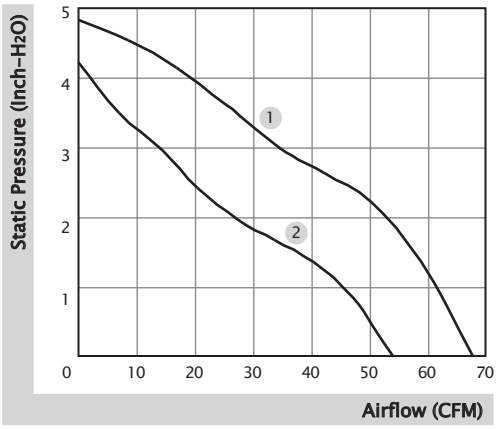
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| VF60381BX-000U-A9H | ● | 12 | 1900 | 22.80 | 22800 | 67.8 | 4.84 | 64.1 | 120.0 | 1 |
| VF60381B1-000U-A9H | ● | 12 | 1000 | 12.00 | 18300 | 54.1 | 4.23 | 60.9 | 120.0 | 2 |
| VF60384BX-1000U-A9H | ● | 48 | 460 | 22.08 | 22800 | 67.8 | 4.84 | 64.1 | 120.0 | 1 |
| VF60384B1-1000U-A9H | ● | 48 | 265 | 12.72 | 18300 | 54.1 | 4.23 | 60.9 | 120.0 | 2 |

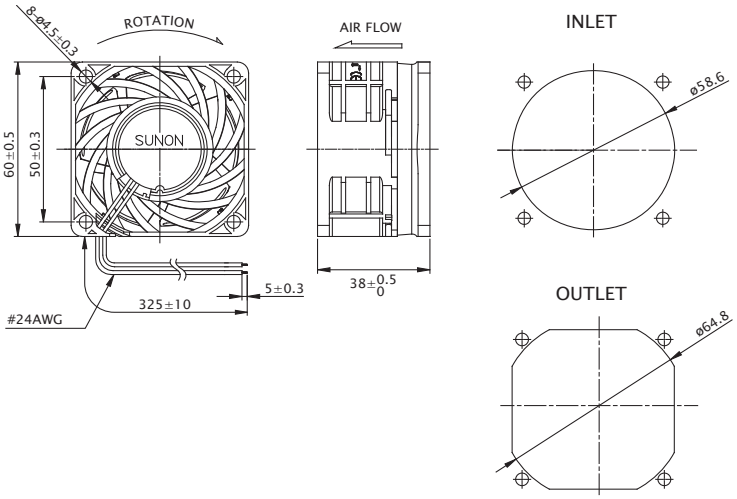
### Function

(12V) R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H
(48V) R Type : F9H ／ F Type : G9H ／ PWM : Q9H, S9H

### Air Flow-Static Pressure Characteristics

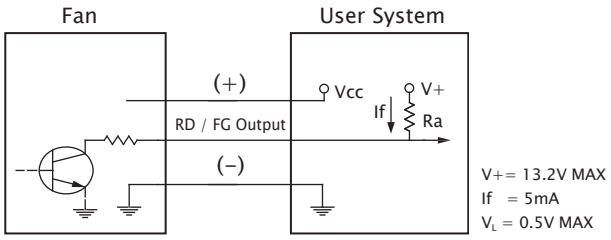



### External Dimensions(mm)

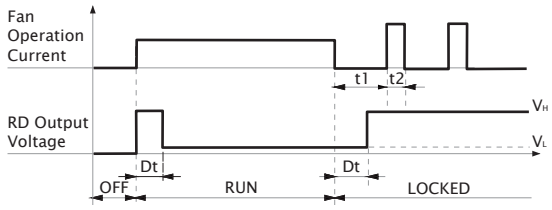



※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

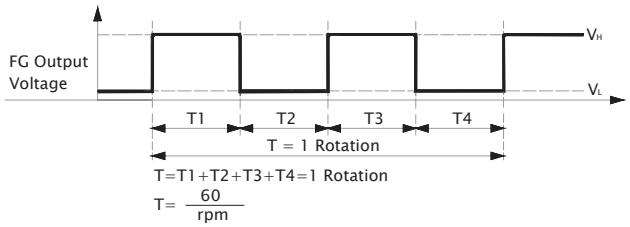
## RD / FG Output Signal

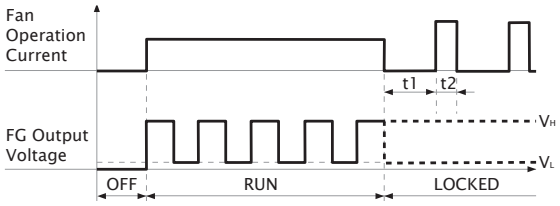



**[ RD Signal ]**

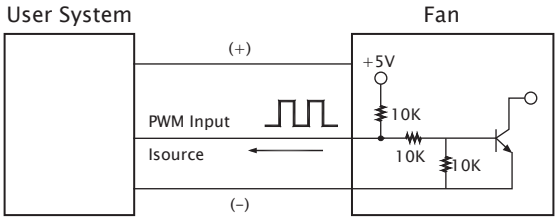



**[ FG Signal ]**




## PWM Input Signal

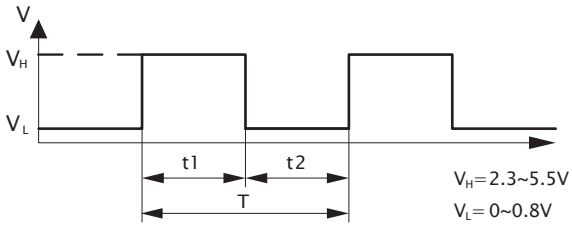



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

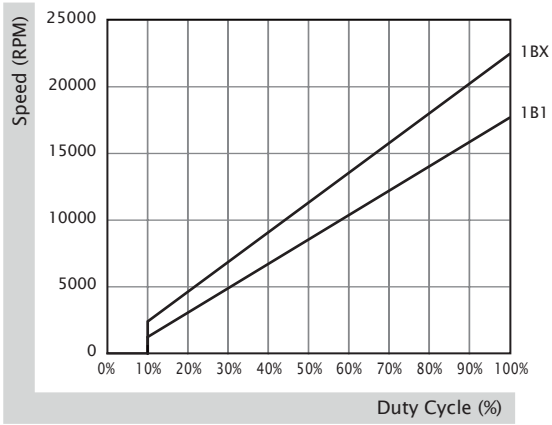
Min. start up duty cycle is 10%.

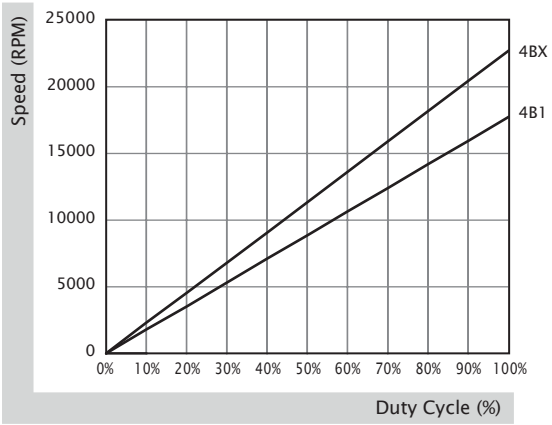



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 60x60x38 mm

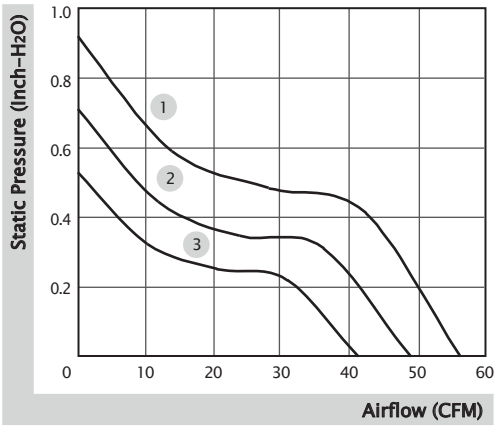
## 41.5~56.5 CFM

## Specification

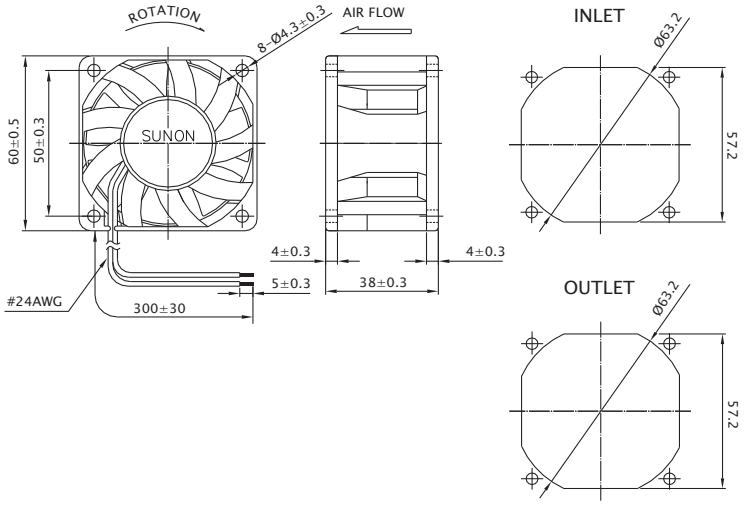
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMD2406PMB1-A (2).GN | ● | 24 | 430 | 10.3 | 8000 | 56.5 | 0.92 | 56.0 | 90.0 | 1 |
| PMD2406PMB2-A (2).GN | ● | 24 | 310 | 7.4 | 7000 | 49.2 | 0.71 | 52.0 | 90.0 | 2 |
| PMD2406PMB3-A (2).GN | ● | 24 | 220 | 5.3 | 6000 | 41.5 | 0.53 | 47.0 | 90.0 | 3 |

## Function R Type : (2).R.GN ／ F Type : (2).F.GN

## Air Flow-Static Pressure Characteristics



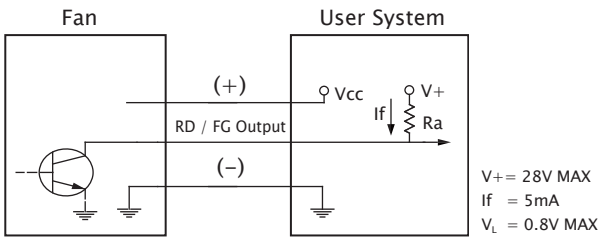

## External Dimensions(mm)



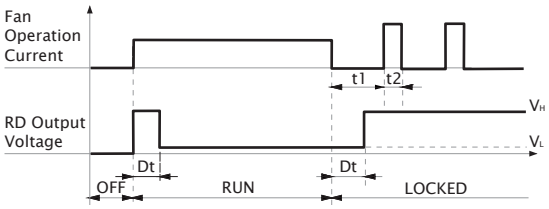

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

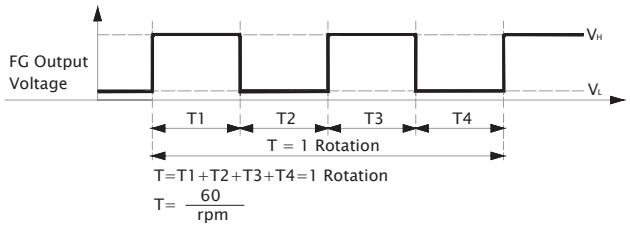
## RD / FG Output Signal

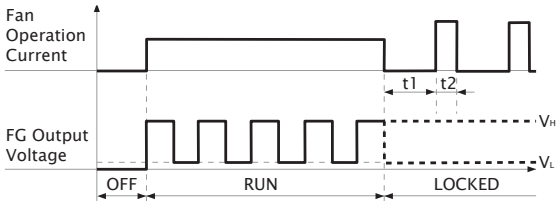



**[ RD Signal ]**




**[ FG Signal ]**



# 60x60x56 mm

## 58.5~72.9 CFM

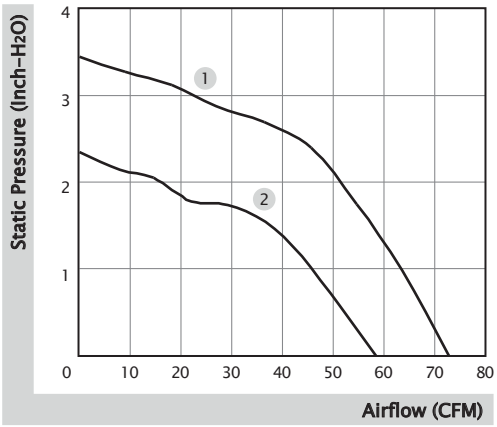
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF60561BX-000U-A9H | ◓ | 12 | 2500 | 30.0 | 15300/14300 | 72.9 | 3.44 | 71.7 | 172.0 | 1 |
| PF60561B1-000U-A9H | ◓ | 12 | 1400 | 16.8 | 12300/11500 | 58.5 | 2.35 | 67.0 | 172.0 | 2 |

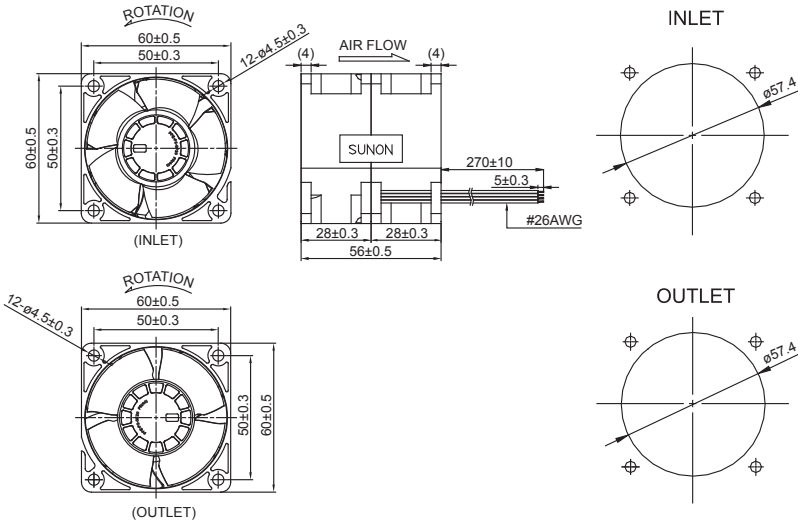
## Function

R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H

## Air Flow-Static Pressure Characteristics



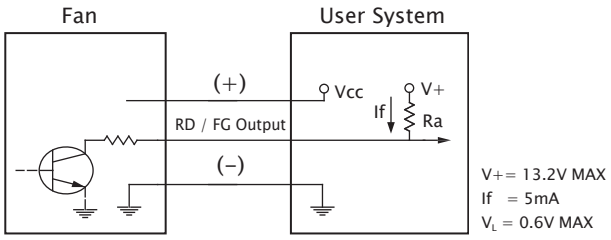

## External Dimensions(mm)



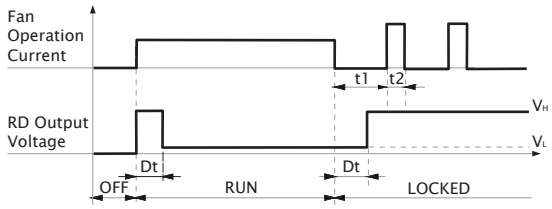

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

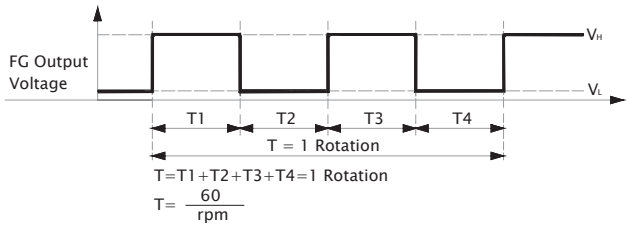
## RD / FG Output Signal

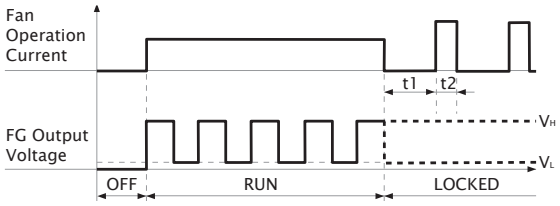



**[ RD Signal ]**

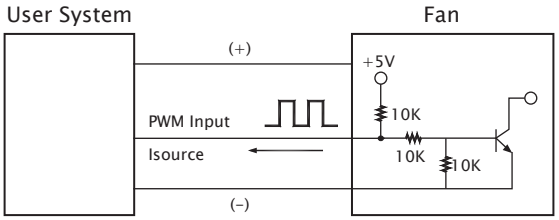



**[ FG Signal ]**




## PWM Input Signal

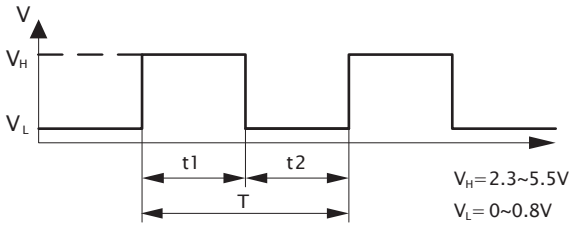



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

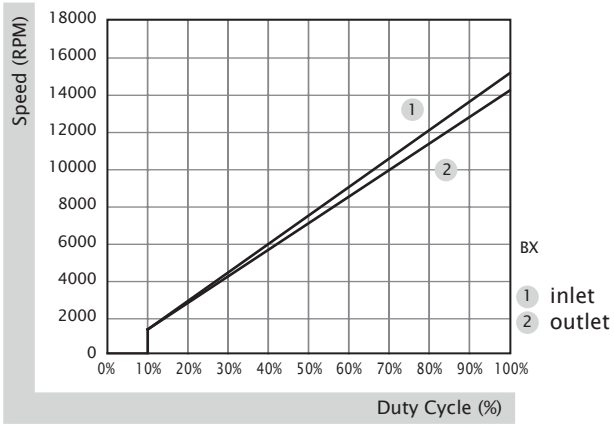
Min. start up duty cycle is 10%.

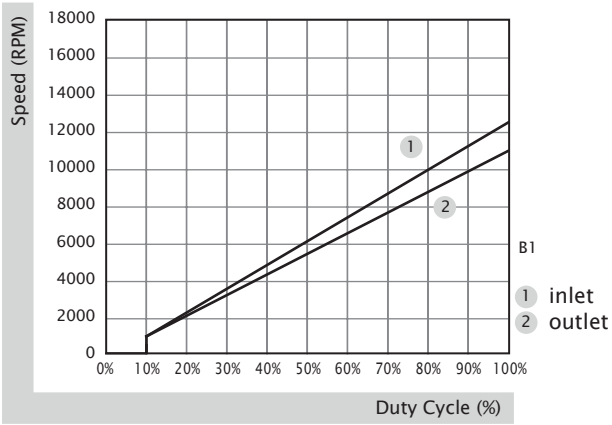



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 60x60x76 mm

## 58.7~73.2 CFM

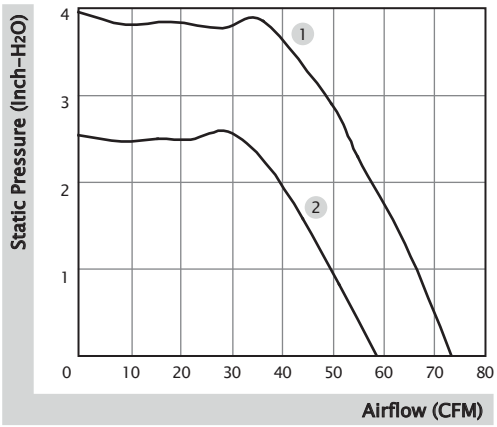
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF60761BX-000U-A99 | ● | 12 | 2800 | 33.60 | 18200/14700 | 73.2 | 3.96 | 68.6 | 270.0 | 1 |
| PF60761B1-000U-A99 | ● | 12 | 1600 | 19.20 | 14600/11700 | 58.7 | 2.54 | 62.8 | 270.0 | 2 |

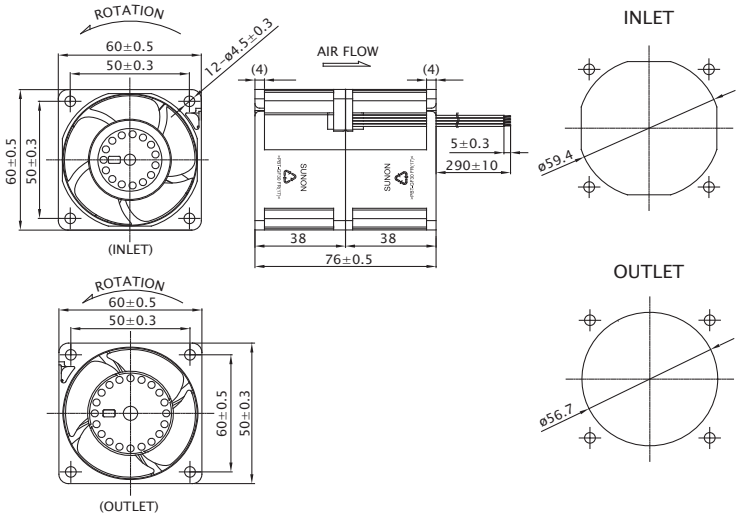
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics



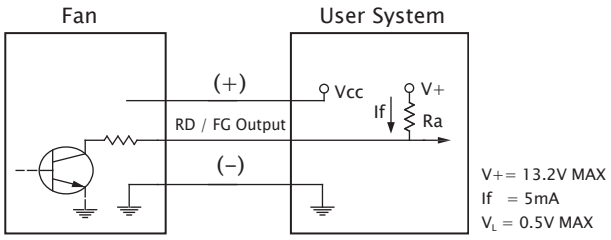

## External Dimensions(mm)



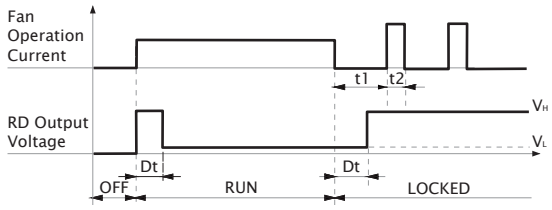

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

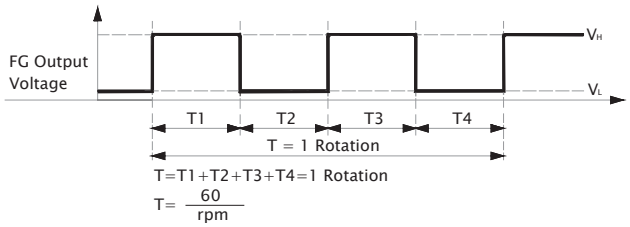
## RD / FG Output Signal

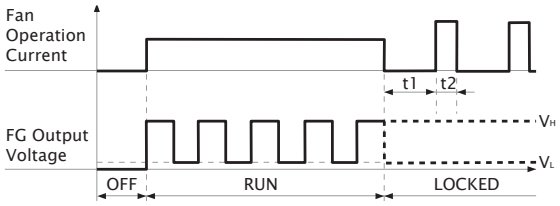



**[ RD Signal ]**

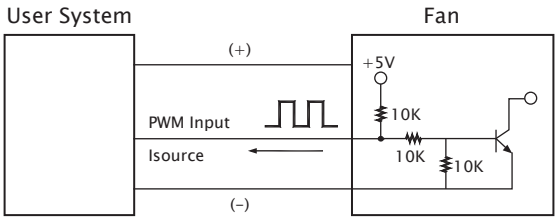



**[ FG Signal ]**




## PWM Input Signal

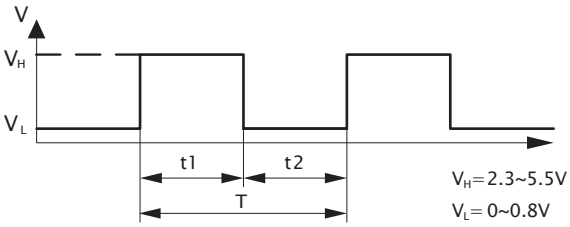



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

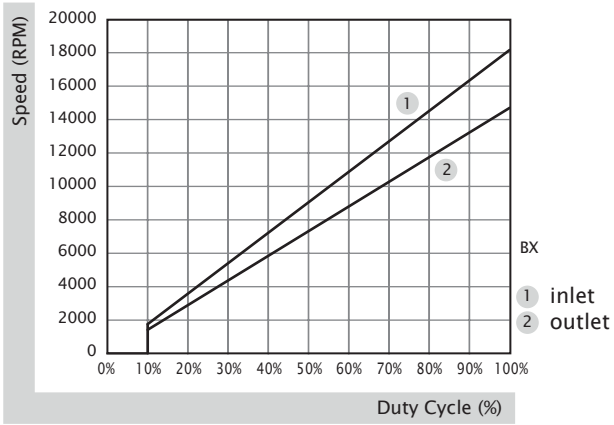
Min. start up duty cycle is 10%.

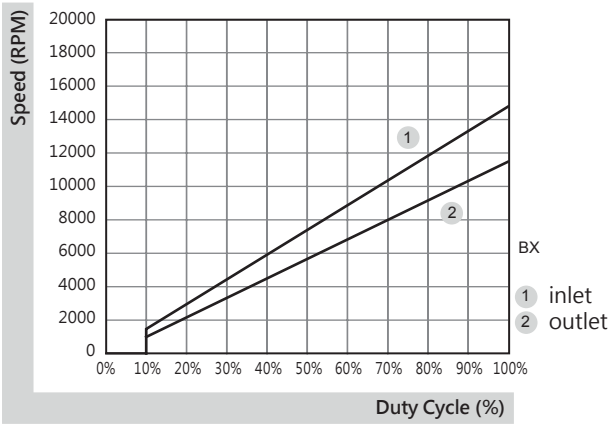



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 70x70x15 mm

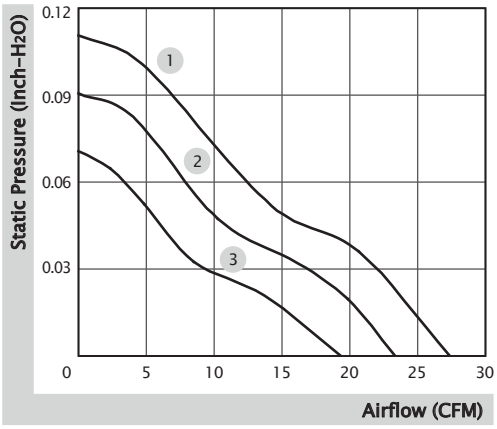
## 19.0~27.0 CFM

### Specification

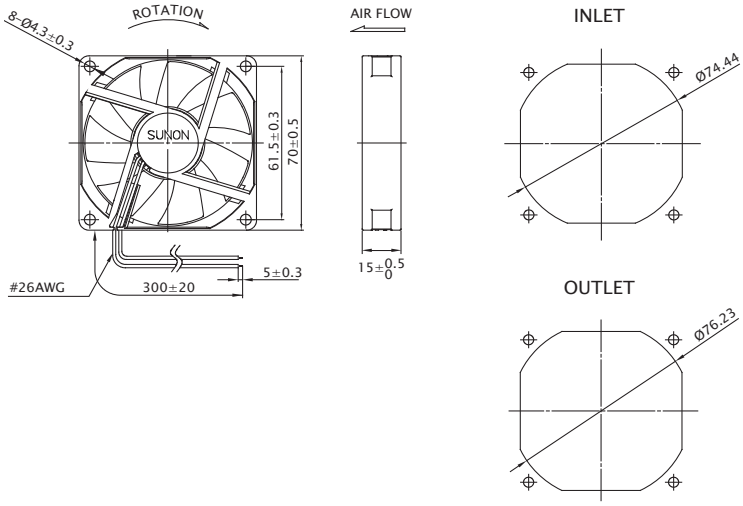
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| ME70151V1-000U-A99 | ● | 12 | 113 | 1.36 | 3300 | 27.0 | 0.11 | 31.5 | 41.0 | 1 |
| ME70151V2-000U-A99 | ● | 12 | 74 | 0.89 | 2800 | 23.0 | 0.09 | 26.5 | 41.0 | 2 |
| ME70151V3-000U-A99 | ● | 12 | 47 | 0.57 | 2300 | 19.0 | 0.07 | 21.5 | 41.0 | 3 |

### Function F Type : G99

### Air Flow-Static Pressure Characteristics



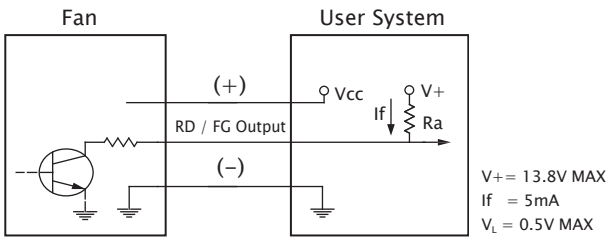

### External Dimensions(mm)



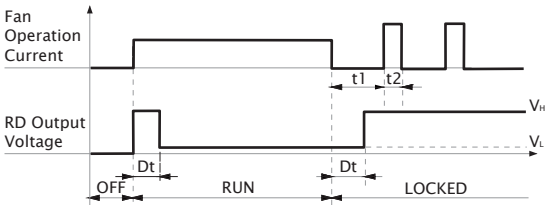

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

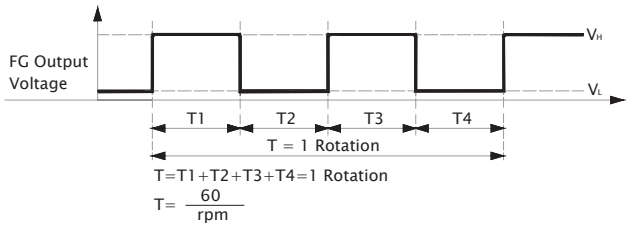
## RD / FG Output Signal

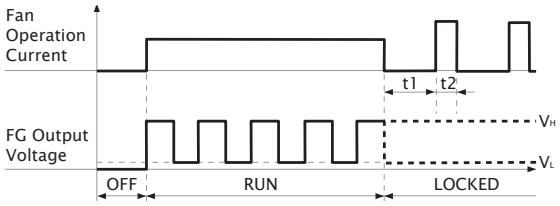



**[ RD Signal ]**




**[ FG Signal ]**



# 70x70x25 mm

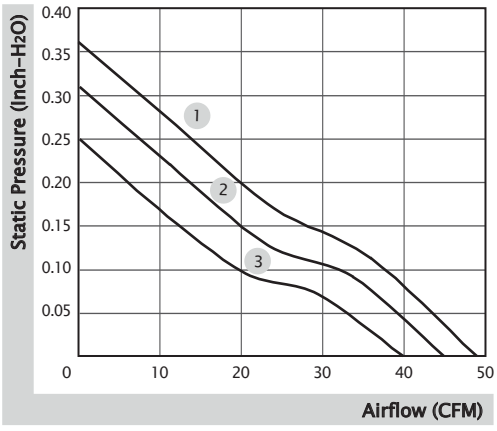
## 40.0~49.0 CFM

### Specification

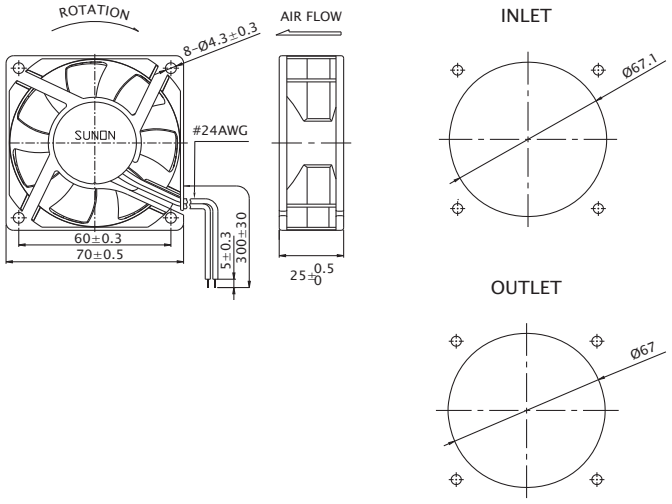
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMD2407PTV1-A GN | ● | 24 | 200 | 4.8 | 5100 | 49.0 | 0.36 | 44.0 | 90.0 | 1 |
| PMD2407PTV2-A GN | ● | 24 | 160 | 3.8 | 4700 | 45.0 | 0.31 | 42.0 | 90.0 | 2 |
| PMD2407PTV3-A GN | ● | 24 | 130 | 3.1 | 4200 | 40.0 | 0.25 | 38.0 | 90.0 | 3 |

### Function R Type : (2).R.GN ／ F Type : (2).F.GN

### Air Flow-Static Pressure Characteristics



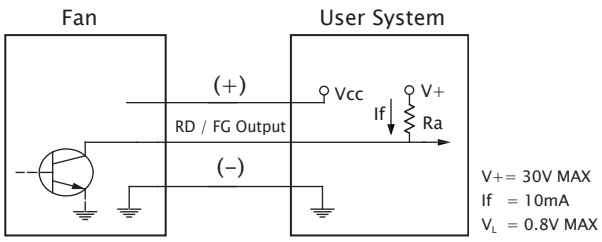

### External Dimensions(mm)



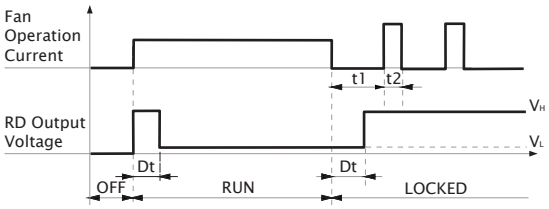

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

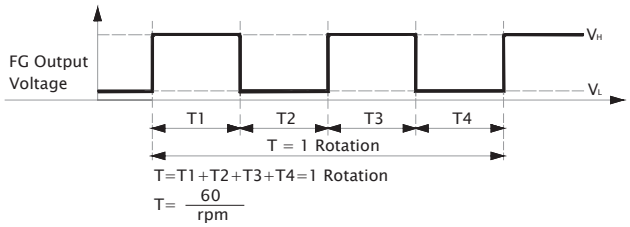
## RD / FG Output Signal

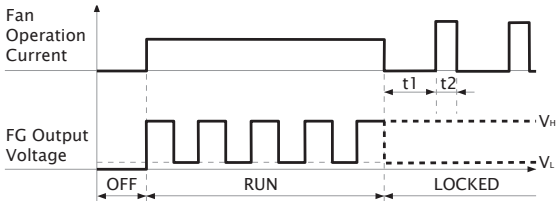



**[ RD Signal ]**




**[ FG Signal ]**



# 80x80x15 mm

## 30.0~37.0 CFM

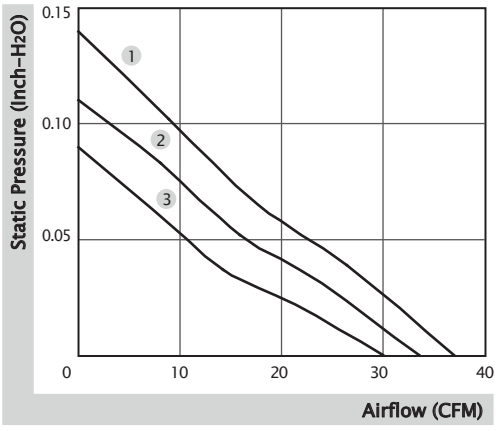
## Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EE80151S1-000U-A99 | ○ | 12 | 163 | 1.96 | 3000 | 37.0 | 0.14 | 34.7 | 68.0 | 1 |
| EE80151S2-000U-999 | ○ | 12 | 134 | 1.61 | 2700 | 33.6 | 0.11 | 32.0 | 68.0 | 2 |
| EE80151S3-000U-999 | ○ | 12 | 100 | 1.20 | 2400 | 30.0 | 0.09 | 30.8 | 68.0 | 3 |

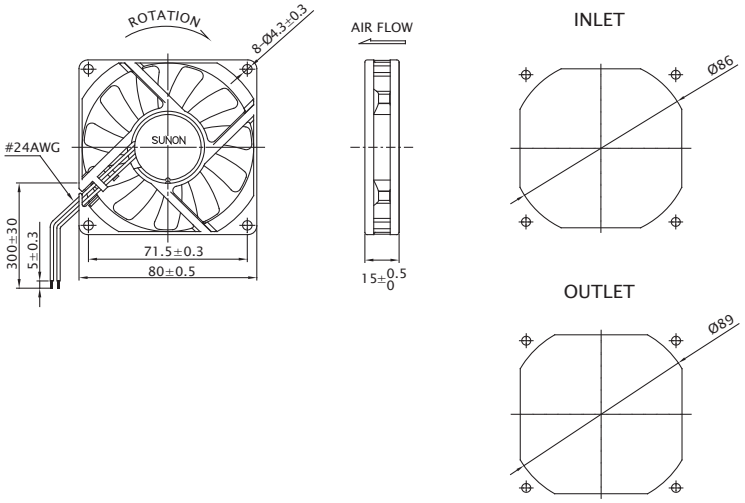
## Function

( Speed 1) R Type : F99 ／ F Type : G99
( Speed 2,3 ) F Type : C99

## Air Flow-Static Pressure Characteristics

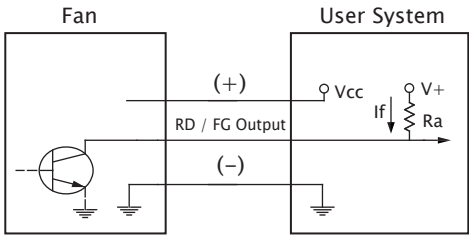



## External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

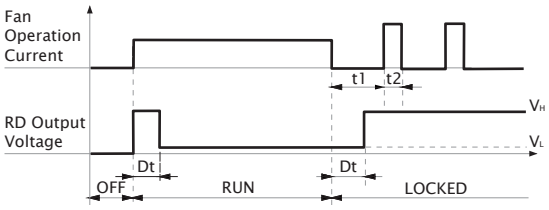
## RD / FG Output Signal



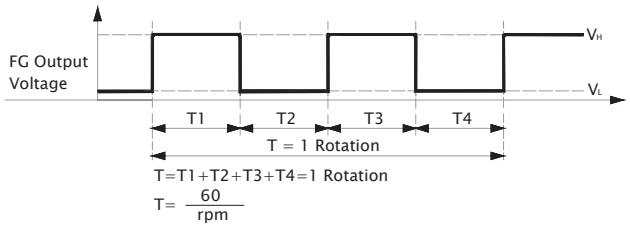

(ME 12V)
V+= 13.8V MAX
If = 4mA
$V_L$ = 0.8V MAX

(ME 24V)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.8V MAX

**[ RD Signal ]**

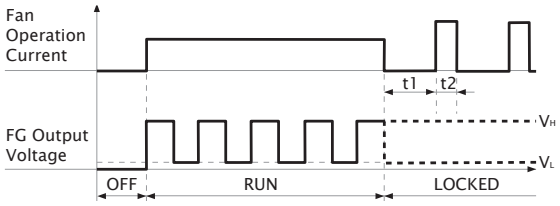



**[ FG Signal ]**

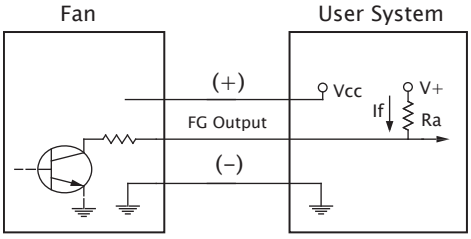



T=T1+T2+T3+T4=1 Rotation

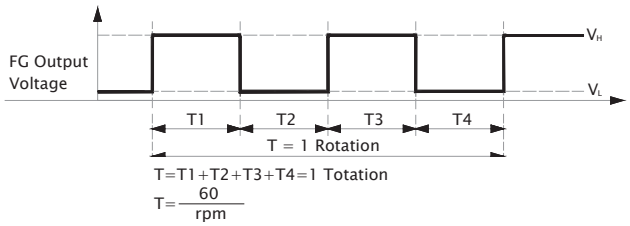
$T = \frac{60}{rpm}$




## Non-Auto Restart (C99) FG Output Signal

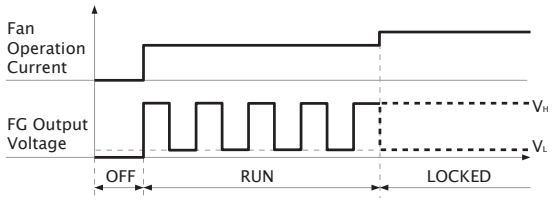



(EE)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.8V MAX




T=T1+T2+T3+T4=1 Totation

$T = \frac{60}{rpm}$



# 80x80x25 mm

## 53.0~60.0 CFM

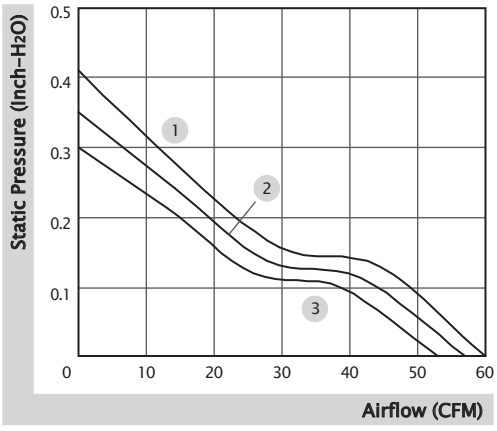
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF80251V1-1000U-A99 | ● | 12 | 310 | 3.72 | 4800 | 60.0 | 0.41 | 44.7 | 91.0 | 1 |
| PF80251V2-1000U-A99 | ● | 12 | 240 | 2.88 | 4500 | 57.0 | 0.35 | 43.1 | 91.0 | 2 |
| PF80251V3-1000U-A99 | ● | 12 | 200 | 2.40 | 4200 | 53.0 | 0.30 | 41.5 | 91.0 | 3 |
| PF80252V1-1000U-A99 | ● | 24 | 180 | 4.32 | 4800 | 60.0 | 0.41 | 44.7 | 91.0 | 1 |
| PF80252V2-1000U-A99 | ● | 24 | 126 | 3.03 | 4500 | 57.0 | 0.35 | 43.1 | 91.0 | 2 |
| PF80252V3-1000U-A99 | ● | 24 | 110 | 2.64 | 4200 | 53.0 | 0.30 | 41.5 | 91.0 | 3 |

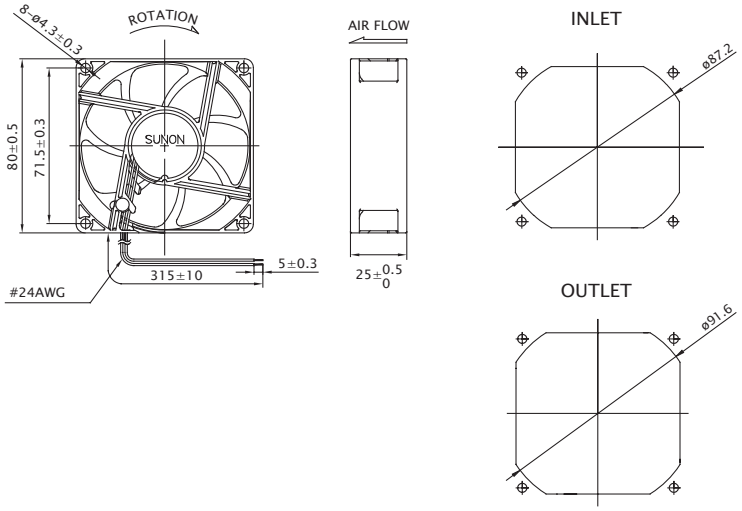
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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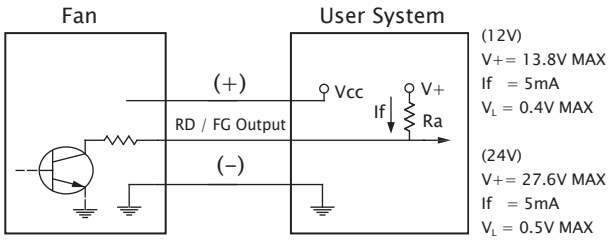
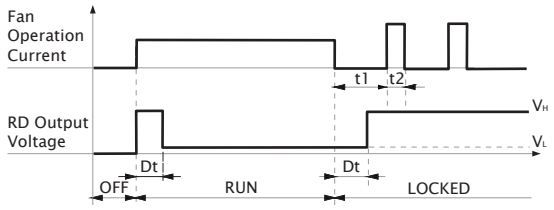
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

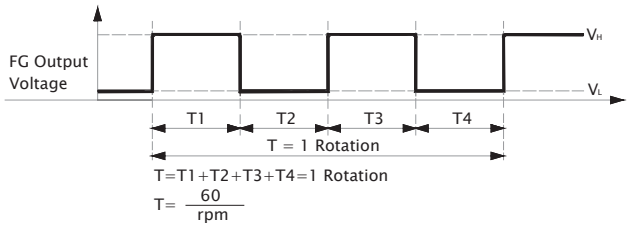
## RD / FG Output Signal

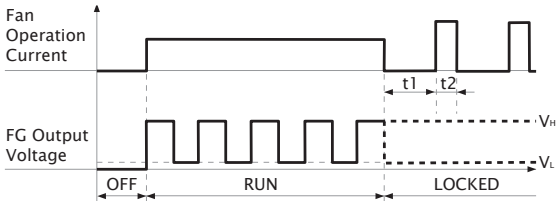



**[ RD Signal ]**

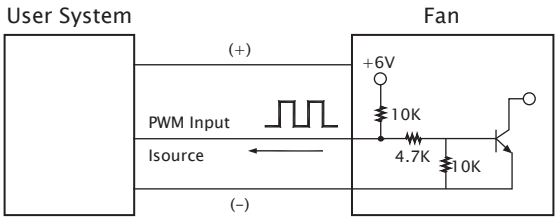



**[ FG Signal ]**



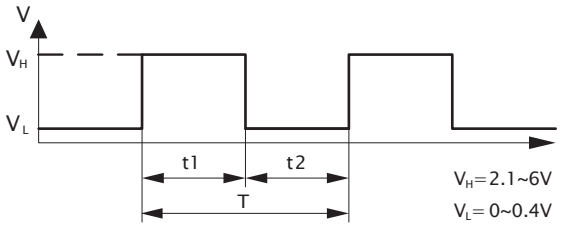

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

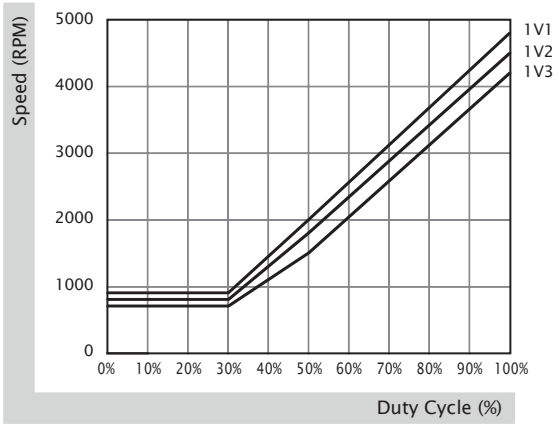
The speed is default to be maximum if PWM input pin is unconnected.

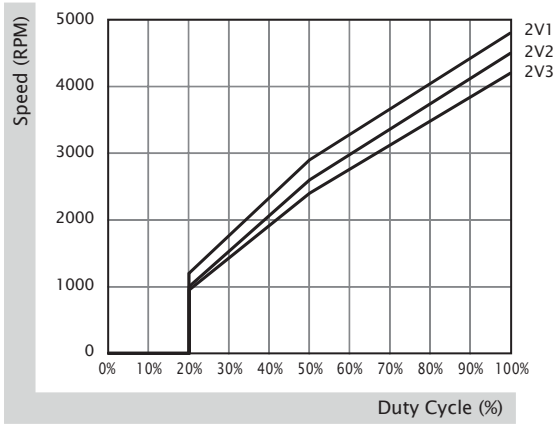



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x25 mm

## 53.0~60.0 CFM

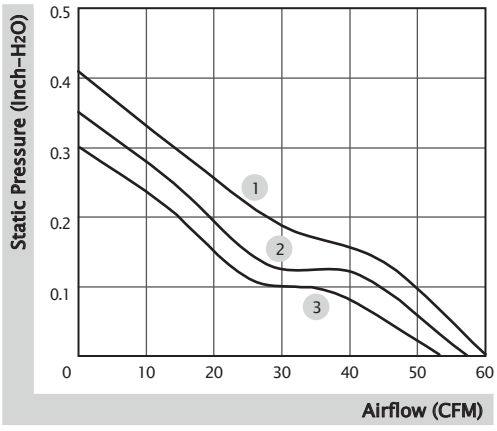
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF80251B1-1000U-A99 | ◉ | 12 | 295 | 3.54 | 4800 | 60.0 | 0.41 | 45.5 | 91.0 | 1 |
| PF80251B2-1000U-A99 | ◉ | 12 | 255 | 3.06 | 4500 | 57.0 | 0.35 | 44.0 | 91.0 | 2 |
| PF80251B3-1000U-A99 | ◉ | 12 | 195 | 2.34 | 4200 | 53.0 | 0.30 | 42.5 | 91.0 | 3 |
| PF80252B1-1000U-A99 | ◉ | 24 | 155 | 3.72 | 4800 | 60.0 | 0.41 | 45.5 | 91.0 | 1 |
| PF80252B2-1000U-A99 | ◉ | 24 | 135 | 3.24 | 4500 | 57.0 | 0.35 | 44.0 | 91.0 | 2 |
| PF80252B3-1000U-A99 | ◉ | 24 | 100 | 2.40 | 4200 | 53.0 | 0.30 | 42.5 | 91.0 | 3 |

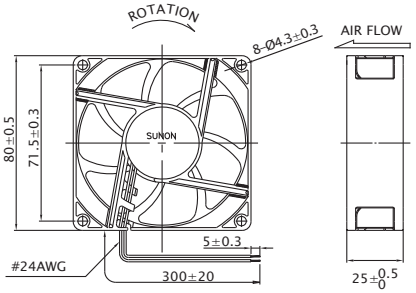
## Function

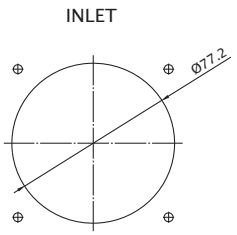
R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

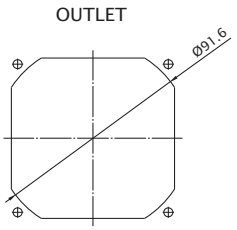
## Air Flow-Static Pressure Characteristics




## External Dimensions(mm)

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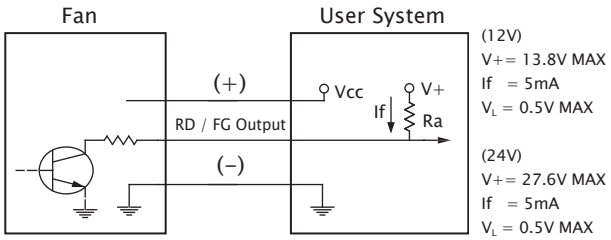
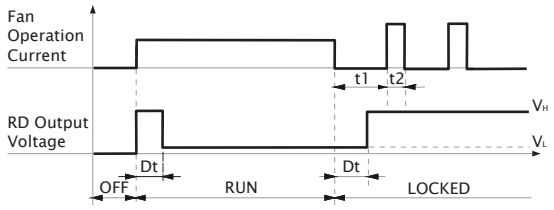
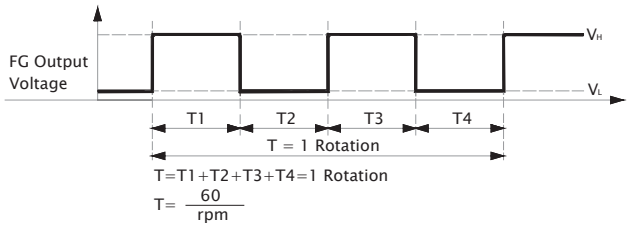
## RD / FG Output Signal

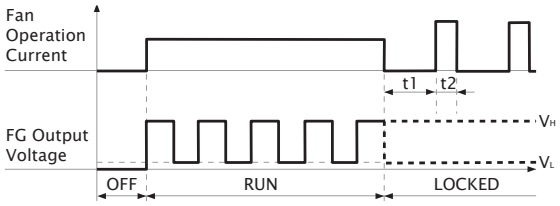



**[ RD Signal ]**

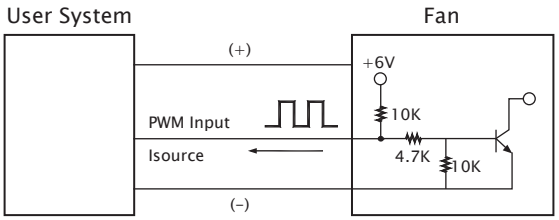



**[ FG Signal ]**



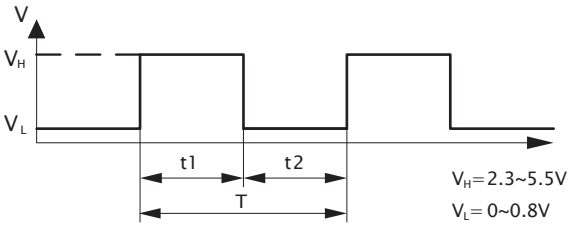

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

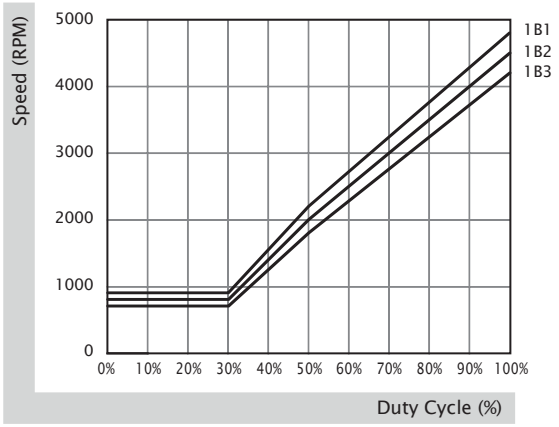
The speed is default to be maximum if PWM input pin is unconnected.

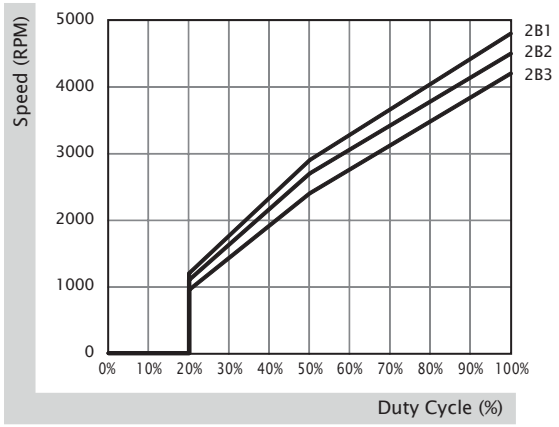



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x25 mm

## 33.0~41.0 CFM

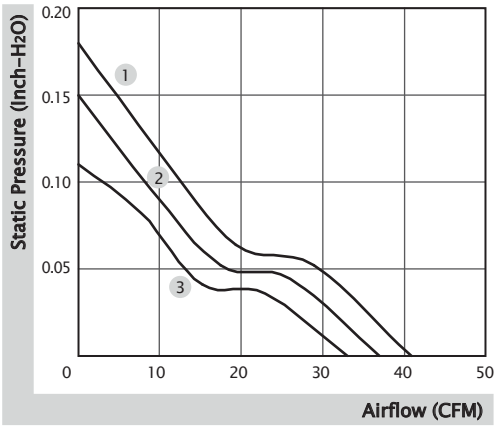
## Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF80251V1-1000U-A99 | ● | 12 | 120 | 1.44 | 3200 | 41.0 | 0.18 | 33.0 | 75.0 | 1 |
| MF80251V2-1000U-A99 | ● | 12 | 92 | 1.11 | 2900 | 37.0 | 0.15 | 30.0 | 75.0 | 2 |
| MF80251V3-1000U-A99 | ● | 12 | 65 | 0.78 | 2600 | 33.0 | 0.11 | 28.0 | 75.0 | 3 |
| MF80252V1-1000U-A99 | ● | 24 | 65 | 1.56 | 3200 | 41.0 | 0.18 | 33.0 | 75.0 | 1 |
| MF80252V2-1000U-A99 | ● | 24 | 50 | 1.20 | 2900 | 37.0 | 0.15 | 30.0 | 75.0 | 2 |
| MF80252V3-1000U-A99 | ● | 24 | 40 | 0.96 | 2600 | 33.0 | 0.11 | 28.0 | 75.0 | 3 |
| Model | ◇ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF80251S1-1000U-A99 | ○ | 12 | 120 | 1.44 | 3200 | 41.0 | 0.18 | 33.0 | 75.0 | 1 |
| EF80251S2-1000U-A99 | ○ | 12 | 95 | 1.14 | 2900 | 37.0 | 0.15 | 30.0 | 75.0 | 2 |
| EF80251S3-1000U-A99 | ○ | 12 | 70 | 0.84 | 2600 | 33.0 | 0.11 | 28.0 | 75.0 | 3 |
| EF80252S1-1000U-A99 | ○ | 24 | 55 | 1.32 | 3200 | 41.0 | 0.18 | 33.0 | 75.0 | 1 |
| EF80252S2-1000U-A99 | ○ | 24 | 42 | 1.01 | 2900 | 37.0 | 0.15 | 30.0 | 75.0 | 2 |

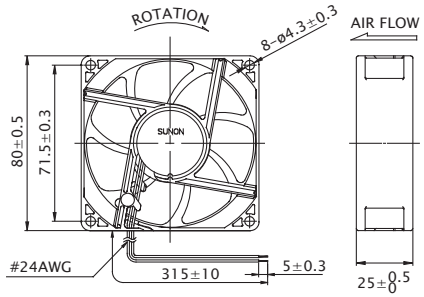
## Function

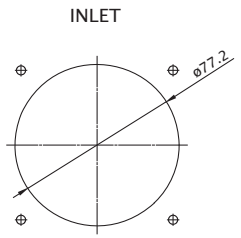
( MF Series ) R Type : F99 ／ F Type : G99
( EF Series, Speed 1) R Type : F99 ／ F Type : G99
( EF Series, Speed 2,3 ) F Type : G99

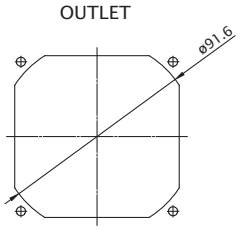
## Air Flow-Static Pressure Characteristics




## External Dimensions(mm)

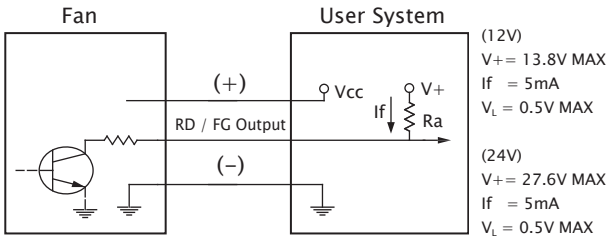


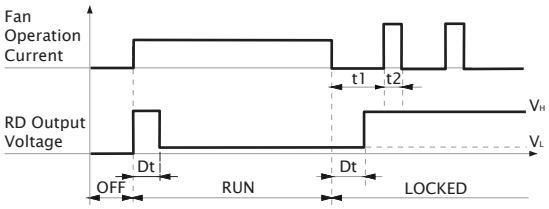




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

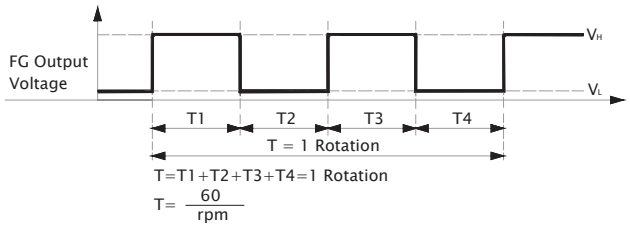
## RD / FG Output Signal

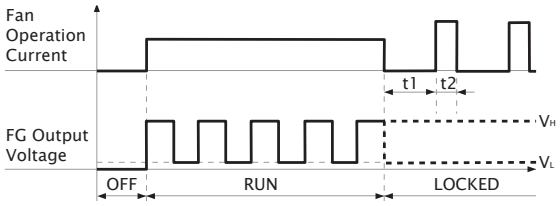



**[ RD Signal ]**




**[ FG Signal ]**



# 80x80x25 mm

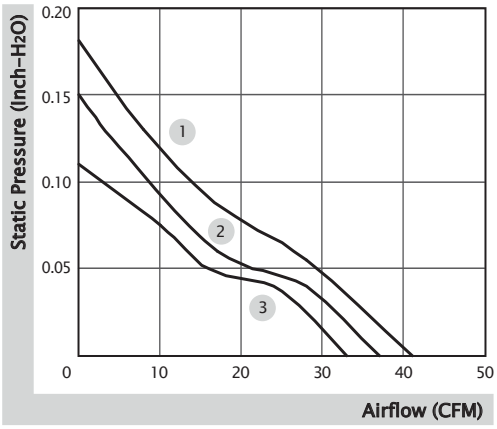
## 33.0~41.0 CFM

### Specification

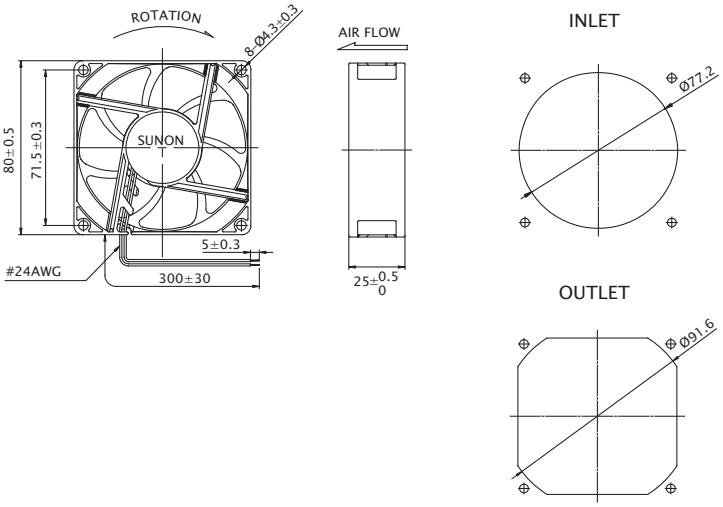
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF80251B1-1000U-A99 | ◉ | 12 | 125 | 1.50 | 3200 | 41.0 | 0.18 | 33.0 | 75.0 | 1 |
| EF80251B2-1000U-A99 | ◉ | 12 | 90 | 1.08 | 2900 | 37.0 | 0.15 | 30.0 | 75.0 | 2 |
| EF80251B3-1000U-A99 | ◉ | 12 | 65 | 0.78 | 2600 | 33.0 | 0.11 | 28.0 | 75.0 | 3 |
| EF80252B1-1000U-A99 | ◉ | 24 | 65 | 1.56 | 3200 | 41.0 | 0.18 | 33.0 | 75.0 | 1 |
| EF80252B2-1000U-A99 | ◉ | 24 | 48 | 1.16 | 2900 | 37.0 | 0.15 | 30.0 | 75.0 | 2 |
| EF80252B3-1000U-A99 | ◉ | 24 | 36 | 0.89 | 2600 | 33.0 | 0.11 | 28.0 | 75.0 | 3 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



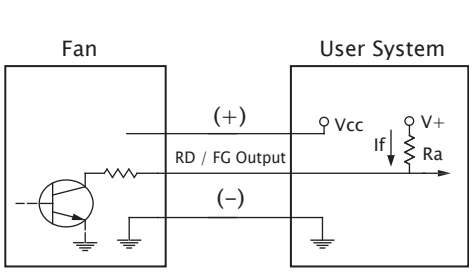

### External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## RD / FG Output Signal



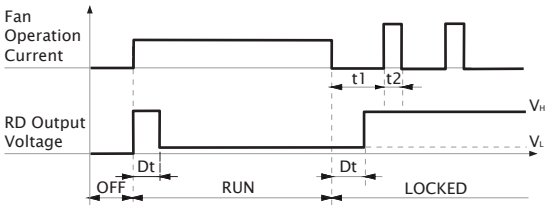

(EE Speed X)
V+= 13.8V MAX
If = 4mA
$V_L$ = 0.8V MAX

(EE Speed 1, 2,3)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

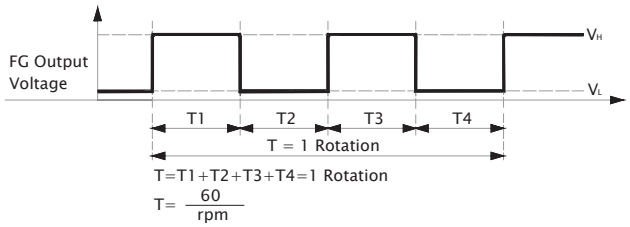
(EF Speed X)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.8V MAX

(EF Speed 1, 2, 3)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.5V MAX

### [ RD Signal ]

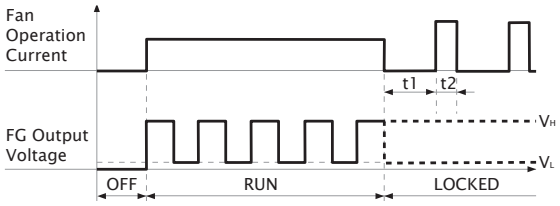



### [ FG Signal ]




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 80x80x25 mm

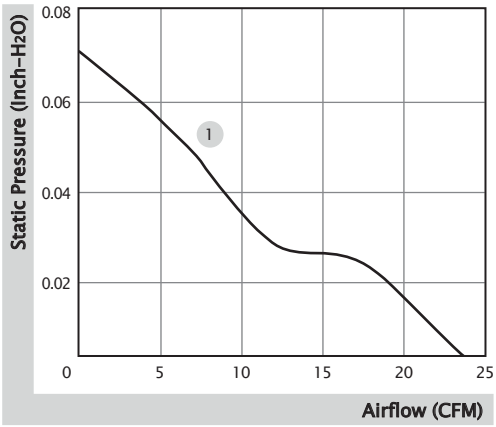
## 23.9 CFM

## Specification

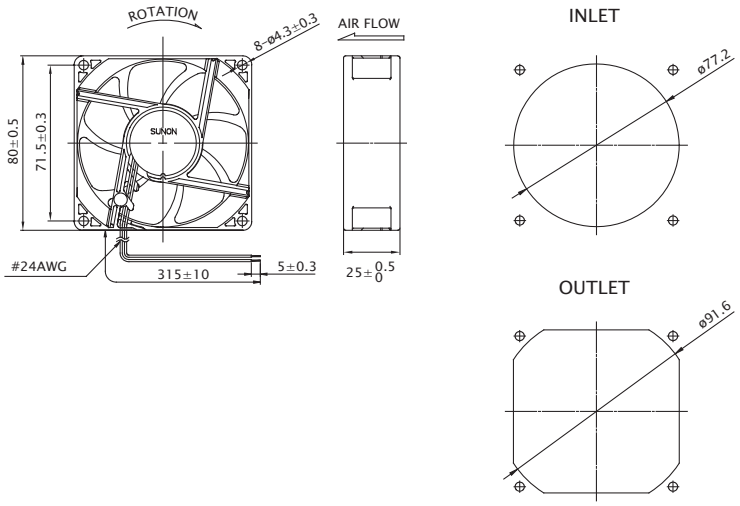
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA80251V4-1000U-A99 | ● | 12 | 40 | 0.48 | 2000 | 23.9 | 0.07 | 20.4 | 75.0 | 1 |

## Function F Type : G99

## Air Flow-Static Pressure Characteristics



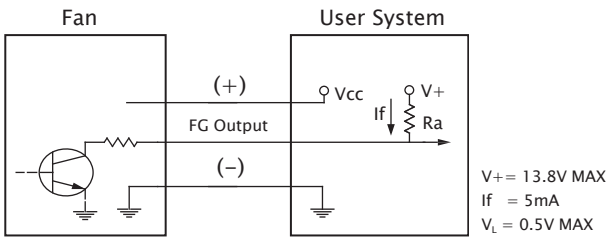

## External Dimensions(mm)



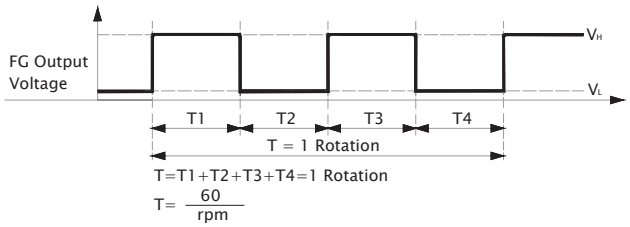

※ All model could be customized. Please contact with Sunon Sales.

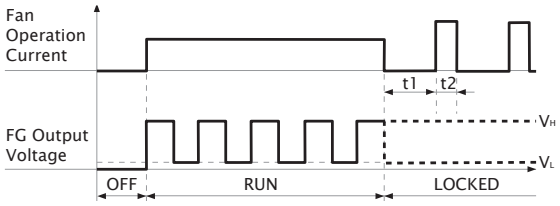
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 80x80x25 mm (IP56)

## 33.0~60.0 CFM

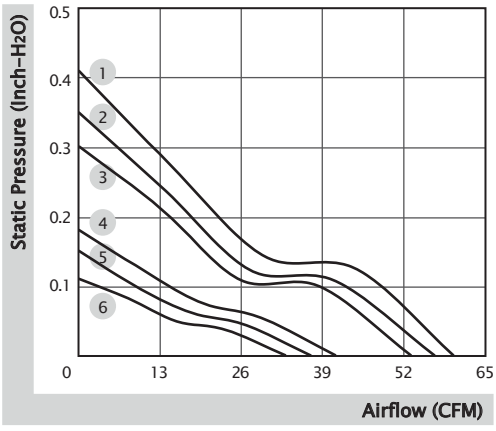
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF80251B1-000U-AC9 | ● | 12 | 330 | 3.96 | 4800 | 60.0 | 0.41 | 47.5 | 105.0 | 1 |
| GF80251B2-000U-AC9 | ● | 12 | 255 | 3.06 | 4500 | 57.0 | 0.35 | 46.0 | 105.0 | 2 |
| GF80251B3-000U-AC9 | ● | 12 | 200 | 2.40 | 4200 | 53.0 | 0.30 | 44.5 | 105.0 | 3 |
| GF80251B5-000U-AC9 | ● | 12 | 145 | 1.74 | 3200 | 41.0 | 0.18 | 33.0 | 87.0 | 4 |
| GF80251B6-000U-AC9 | ● | 12 | 120 | 1.44 | 2900 | 37.0 | 0.15 | 30.0 | 87.0 | 5 |
| GF80251B7-000U-AC9 | ● | 12 | 84 | 1.01 | 2600 | 33.0 | 0.11 | 28.0 | 87.0 | 6 |
| GE80252B1-000U-AC9 | ● | 24 | 200 | 4.80 | 4800 | 60.0 | 0.41 | 47.5 | 105.0 | 1 |
| GE80252B2-000U-AC9 | ● | 24 | 166 | 3.99 | 4500 | 57.0 | 0.35 | 46.0 | 105.0 | 2 |
| GE80252B3-000U-AC9 | ● | 24 | 137 | 3.29 | 4200 | 53.0 | 0.30 | 44.5 | 105.0 | 3 |
| GF80252B5-000U-AC9 | ● | 24 | 73 | 1.76 | 3200 | 41.0 | 0.18 | 33.0 | 87.0 | 4 |
| GF80252B6-000U-AC9 | ● | 24 | 59 | 1.42 | 2900 | 37.0 | 0.15 | 30.0 | 87.0 | 5 |
| GF80252B7-000U-AC9 | ● | 24 | 45 | 1.08 | 2600 | 33.0 | 0.11 | 28.0 | 87.0 | 6 |

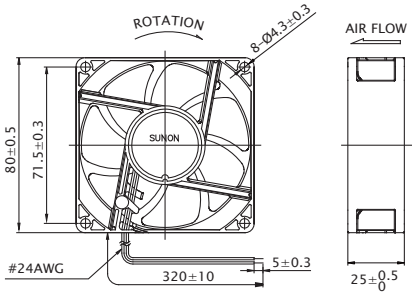
## Function

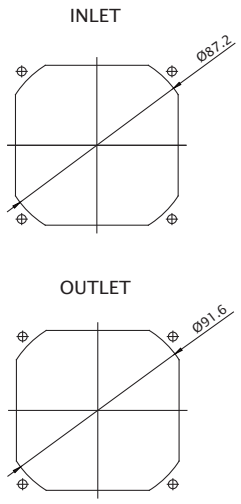
(Speed 1, 2, 3) R Type : FC9 ／ F Type : GC9 ／ PWM : HC9, QC9, SC9
(Speed 5, 6, 7) R Type : FC9 ／ F Type : GC9

## Air Flow-Static Pressure Characteristics



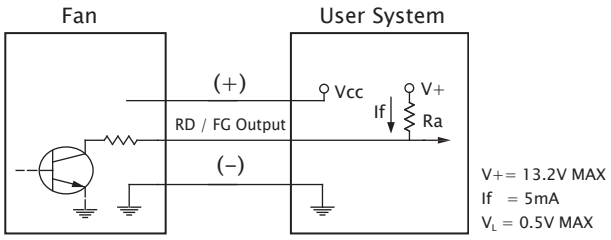

## External Dimensions(mm)



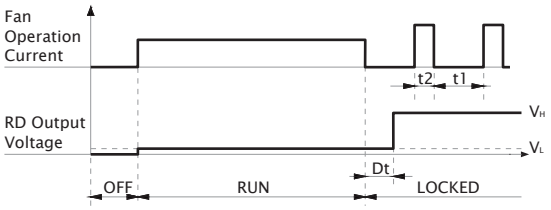

※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## RD / FG Output Signal

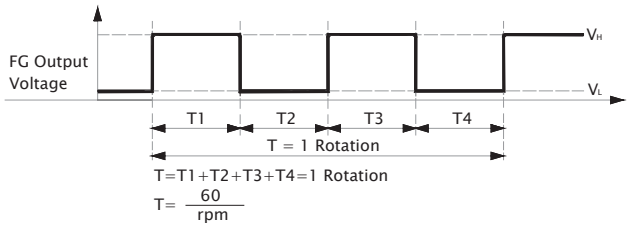



V+= 13.2V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ RD Signal ]**

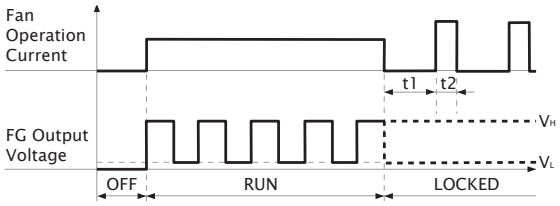



**[ FG Signal ]**

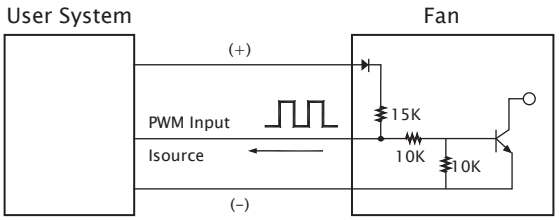



T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



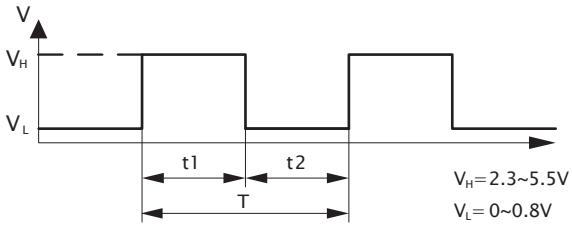

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0..8mA at PWM Input Voltage 0V

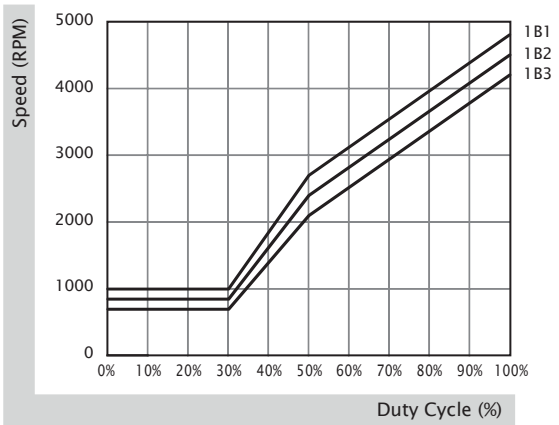
The speed is default to be maximum if PWM input pin is unconnected.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x25 mm (IP68)

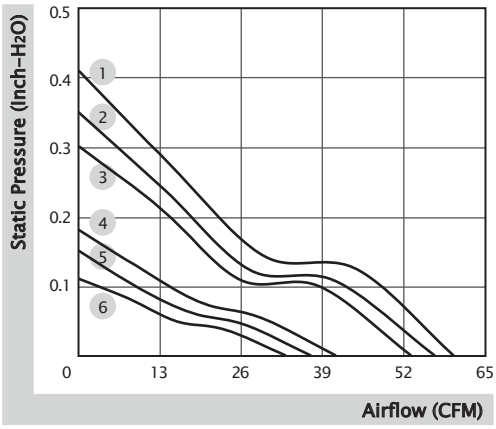
## 33.0~60.0 CFM

## Specification

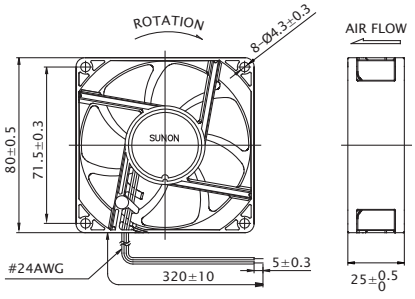
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF80251B1-000U-AE9 | ◉ | 12 | 330 | 3.96 | 4800 | 60.0 | 0.41 | 47.5 | 105.0 | 1 |
| GF80251B2-000U-AE9 | ◉ | 12 | 255 | 3.06 | 4500 | 57.0 | 0.35 | 46.0 | 105.0 | 2 |
| GF80251B3-000U-AE9 | ◉ | 12 | 200 | 2.40 | 4200 | 53.0 | 0.30 | 44.5 | 105.0 | 3 |
| GF80251B5-000U-AE9 | ◉ | 12 | 145 | 1.74 | 3200 | 41.0 | 0.18 | 33.0 | 87.0 | 4 |
| GF80251B6-000U-AE9 | ◉ | 12 | 120 | 1.44 | 2900 | 37.0 | 0.15 | 30.0 | 87.0 | 5 |
| GF80251B7-000U-AE9 | ◉ | 12 | 84 | 1.01 | 2600 | 33.0 | 0.11 | 28.0 | 87.0 | 6 |
| GE80252B1-000U-AE9 | ◉ | 24 | 200 | 4.80 | 4800 | 60.0 | 0.41 | 47.5 | 105.0 | 1 |
| GE80252B2-000U-AE9 | ◉ | 24 | 166 | 3.99 | 4500 | 57.0 | 0.35 | 46.0 | 105.0 | 2 |
| GE80252B3-000U-AE9 | ◉ | 24 | 137 | 3.29 | 4200 | 53.0 | 0.30 | 44.5 | 105.0 | 3 |
| GF80252B5-000U-AE9 | ◉ | 24 | 73 | 1.76 | 3200 | 41.0 | 0.18 | 33.0 | 87.0 | 4 |
| GF80252B6-000U-AE9 | ◉ | 24 | 59 | 1.42 | 2900 | 37.0 | 0.15 | 30.0 | 87.0 | 5 |
| GF80252B7-000U-AE9 | ◉ | 24 | 45 | 1.08 | 2600 | 33.0 | 0.11 | 28.0 | 87.0 | 6 |

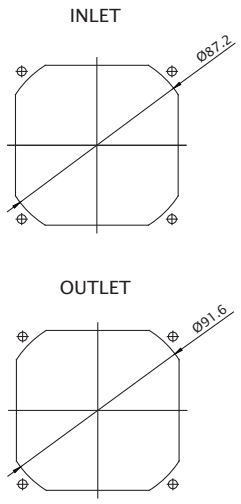
**Function** (Speed 1, 2, 3) R Type : FE9 ／ F Type : GE9 ／ PWM : HE9, QE9, SE9
(Speed 5, 6, 7) R Type : FE9 ／ F Type : GE9

## Air Flow-Static Pressure Characteristics



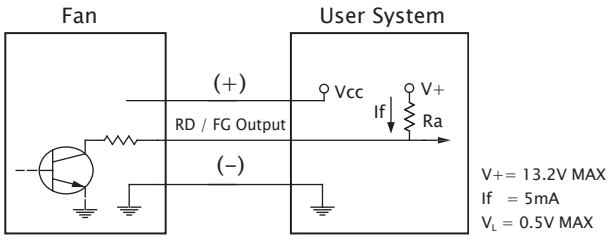

## External Dimensions(mm)



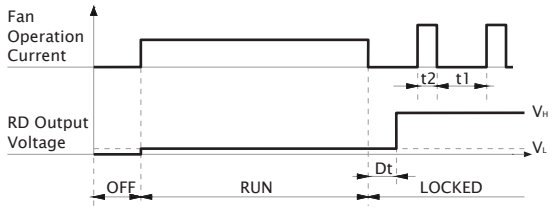




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

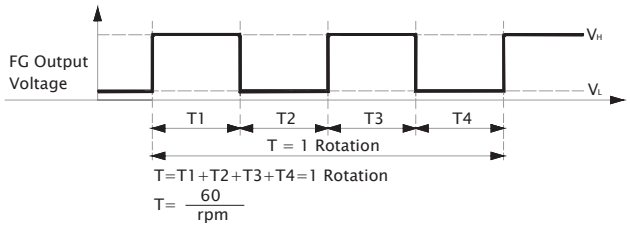
## RD / FG Output Signal

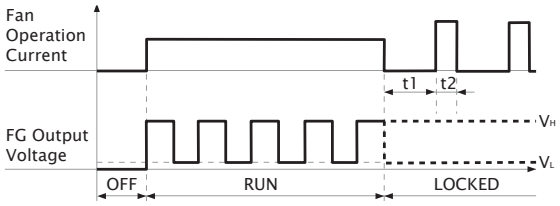



**[ RD Signal ]**

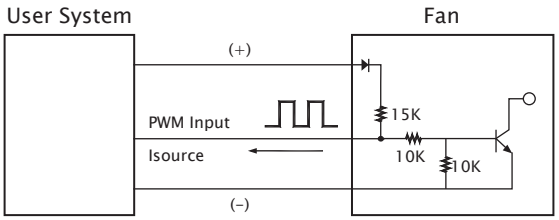



**[ FG Signal ]**



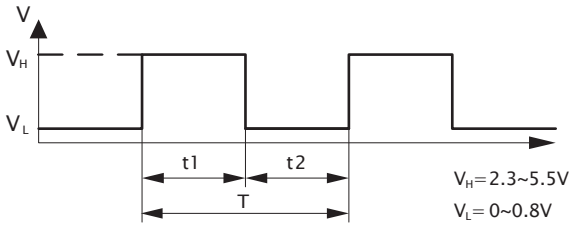

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0..8mA at PWM Input Voltage 0V

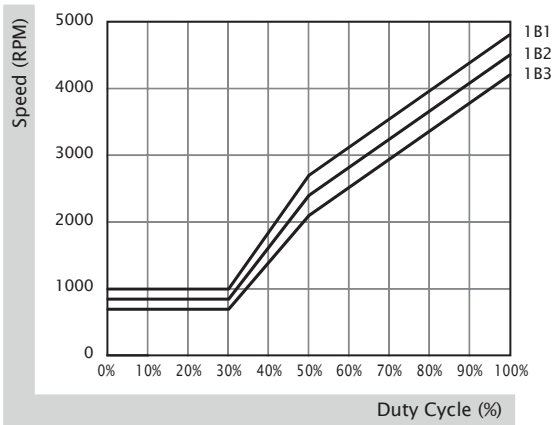
The speed is default to be maximum if PWM input pin is unconnected.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x25 mm (GR487)

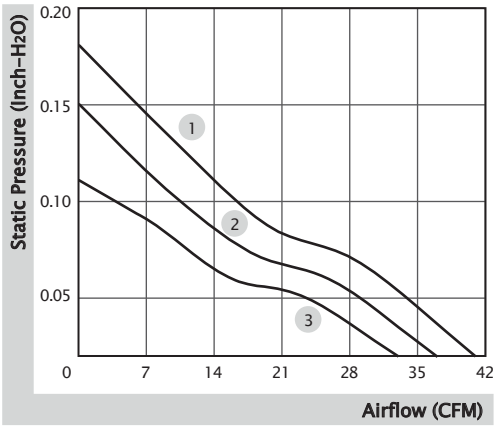
## 33.0~41.0 CFM

## Specification

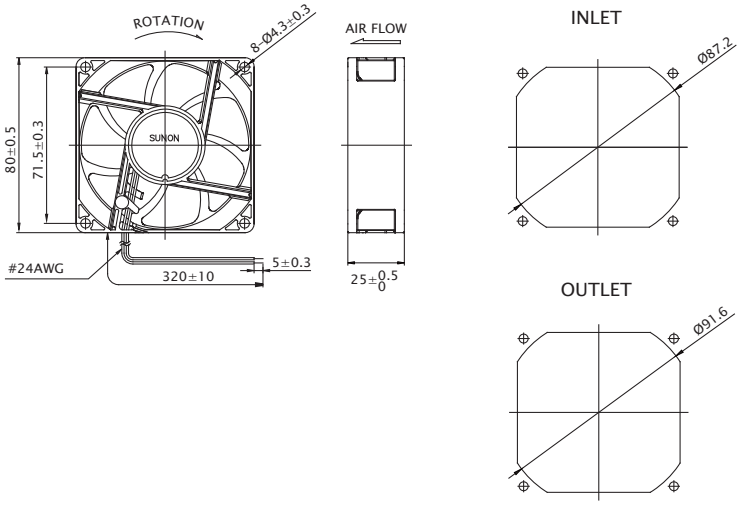
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF80251B5-000U-AD9 | ● | 12 | 145 | 1.74 | 3200 | 41.0 | 0.18 | 33.0 | 87.0 | 1 |
| GF80251B6-000U-AD9 | ● | 12 | 120 | 1.44 | 2900 | 37.0 | 0.15 | 30.0 | 87.0 | 2 |
| GF80251B7-000U-AD9 | ● | 12 | 84 | 1.01 | 2600 | 33.0 | 0.11 | 28.0 | 87.0 | 3 |
| GF80252B5-000U-AD9 | ● | 24 | 73 | 1.76 | 3200 | 41.0 | 0.18 | 33.0 | 87.0 | 1 |
| GF80252B6-000U-AD9 | ● | 24 | 59 | 1.42 | 2900 | 37.0 | 0.15 | 30.0 | 87.0 | 2 |
| GF80252B7-000U-AD9 | ● | 24 | 45 | 1.08 | 2600 | 33.0 | 0.11 | 28.0 | 87.0 | 3 |

## Function R Type : FD9 ／ F Type : GD9

## Air Flow-Static Pressure Characteristics



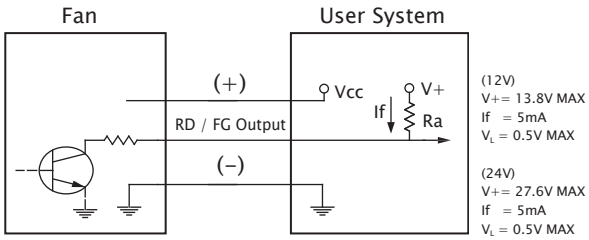

## External Dimensions(mm)



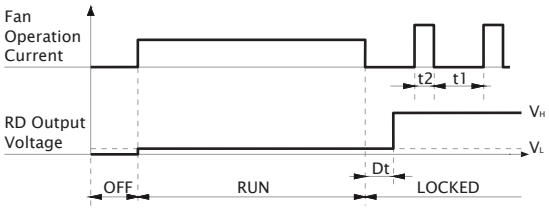

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

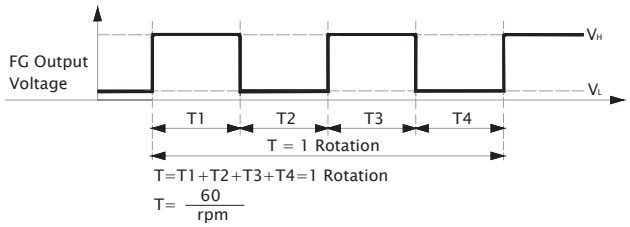
## RD / FG Output Signal

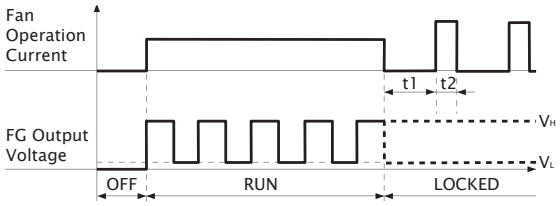



**[ RD Signal ]**




**[ FG Signal ]**



# 80x80x32 mm (IP56/IP68)

## 50.3~59.4 CFM

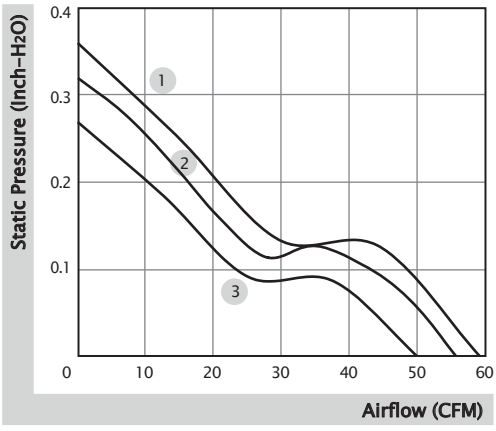
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF80321B1-000U-AC9 | ◓ | 12 | 310 | 3.72 | 4800 | 59.4 | 0.36 | 45.2 | 109.0 | 1 |
| GF80321B2-000U-AC9 | ◓ | 12 | 230 | 2.76 | 4500 | 55.9 | 0.32 | 43.1 | 109.0 | 2 |
| GF80321B3-000U-AC9 | ◓ | 12 | 190 | 2.28 | 4100 | 50.3 | 0.27 | 41.1 | 109.0 | 3 |
| GF80321B1-000U-AE9 | ◓ | 12 | 310 | 3.72 | 4800 | 59.4 | 0.36 | 45.2 | 109.0 | 1 |
| GF80321B2-000U-AE9 | ◓ | 12 | 230 | 2.76 | 4500 | 55.9 | 0.32 | 43.1 | 109.0 | 2 |
| GF80321B3-000U-AE9 | ◓ | 12 | 190 | 2.28 | 4100 | 50.3 | 0.27 | 41.1 | 109.0 | 3 |

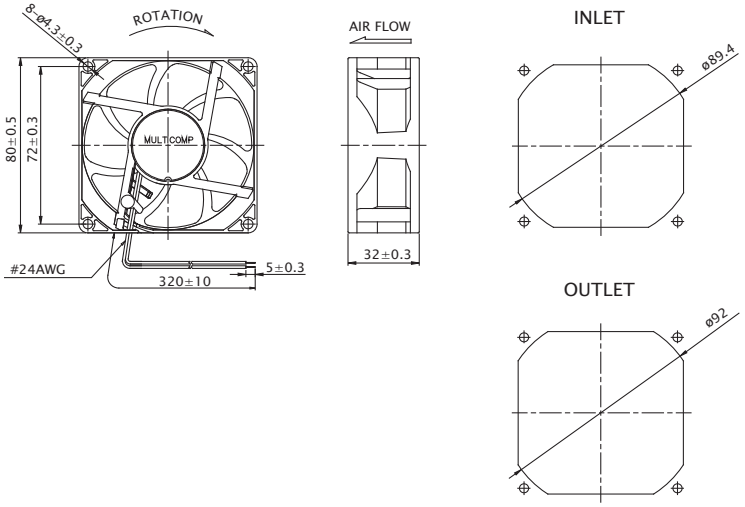
### Function

(IP56) R Type : FC9 ／ F Type : GC9 ／ PWM : HC9, QC9, SC9
(IP68) R Type : FE9 ／ F Type : GE9 ／ PWM : HE9, QE9, SE9

### Air Flow-Static Pressure Characteristics

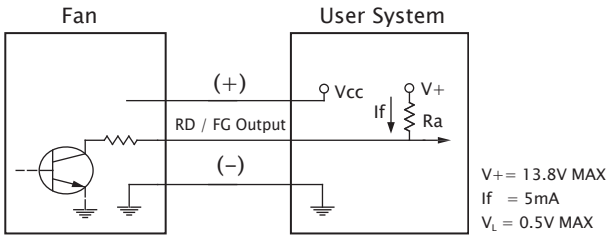



### External Dimensions(mm)

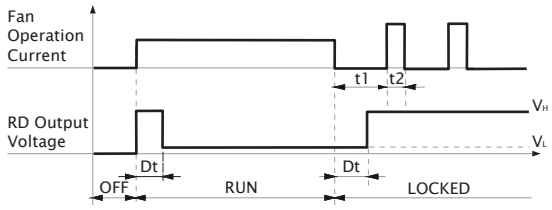



※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

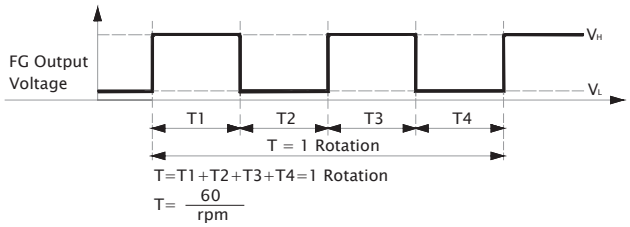
## RD / FG Output Signal

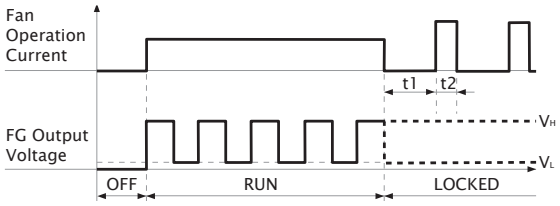



**[ RD Signal ]**

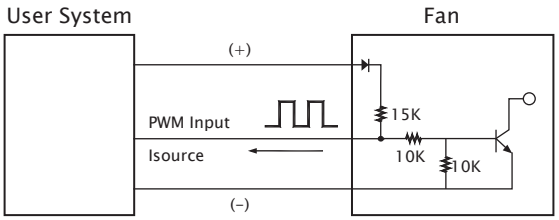



**[ FG Signal ]**



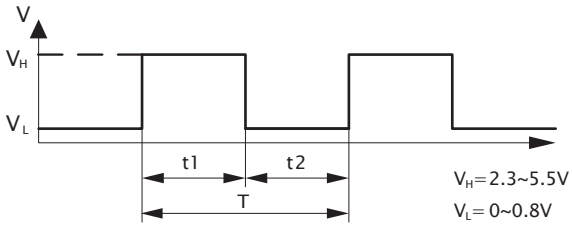

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0..8mA at PWM Input Voltage 0V

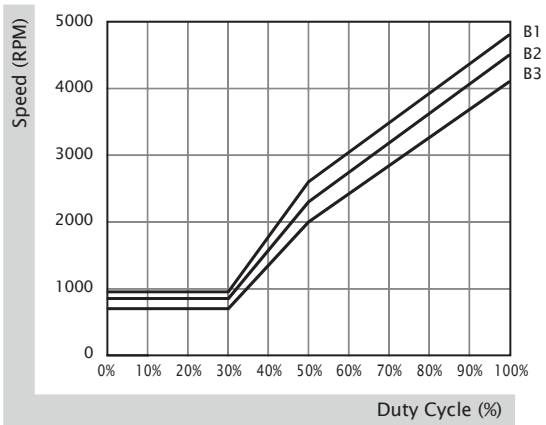
The speed is default to be maximum if PWM input pin is unconnected.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x38 mm

## 113.9~141.9 CFM

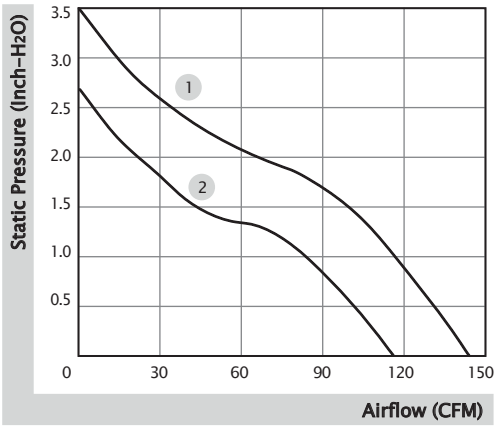
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF80381BX-1000U-A9H | ◉ | 12 | 4000 | 48.00 | 14000 | 141.9 | 3.50 | 69.1 | 195.0 | 1 |
| PF80381B1-1000U-A9H | ◉ | 12 | 1800 | 21.60 | 11200 | 113.9 | 2.68 | 63.4 | 195.0 | 2 |

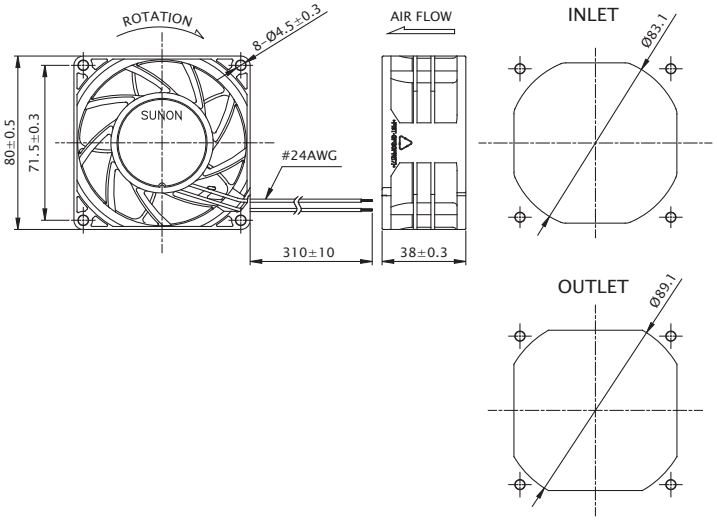
## Function

R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H

## Air Flow-Static Pressure Characteristics



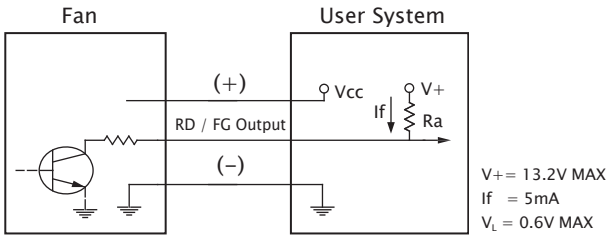

## External Dimensions(mm)



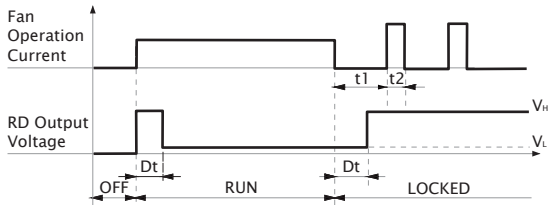

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

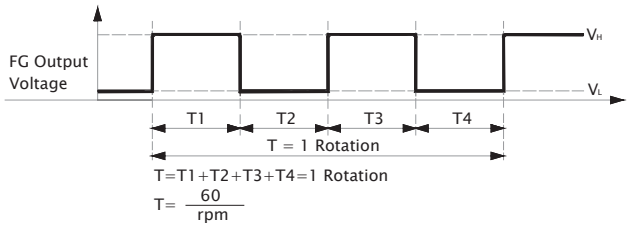
## RD / FG Output Signal

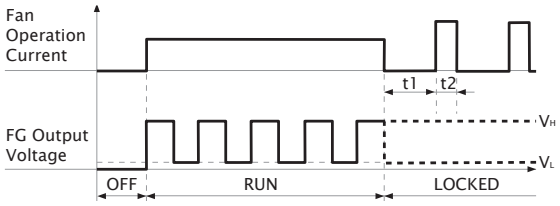



**[ RD Signal ]**

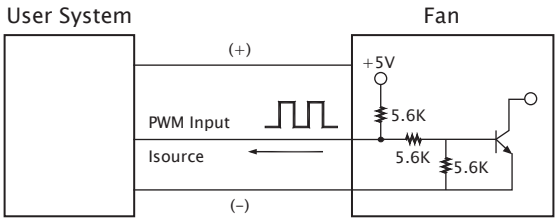



**[ FG Signal ]**




## PWM Input Signal

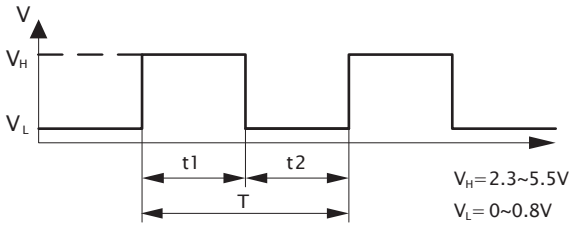



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

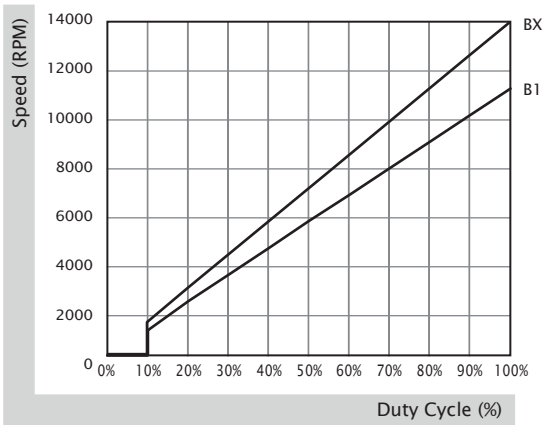
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x38 mm

## 105.8~134.3 CFM

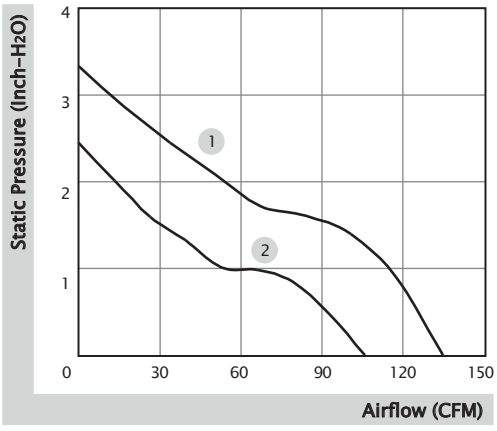
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF80384BX-000U-A99 | ◓ | 48 | 700 | 33.60 | 12900 | 134.3 | 3.35 | 67.5 | 204.0 | 1 |
| PF80384B1-000U-A99 | ◓ | 48 | 380 | 18.24 | 10500 | 105.8 | 2.46 | 62.6 | 204.0 | 2 |

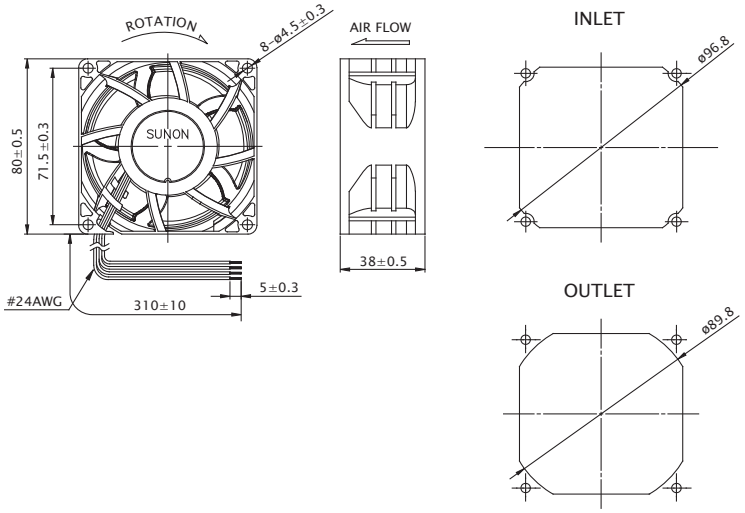
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics



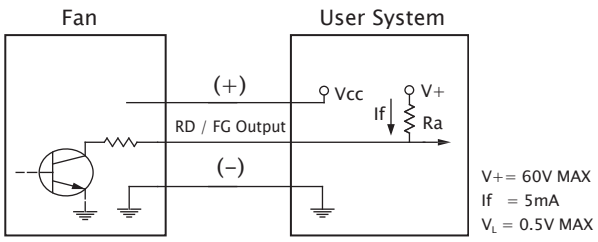

## External Dimensions(mm)



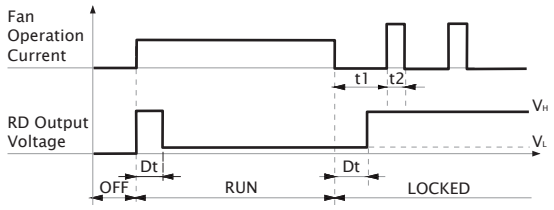

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

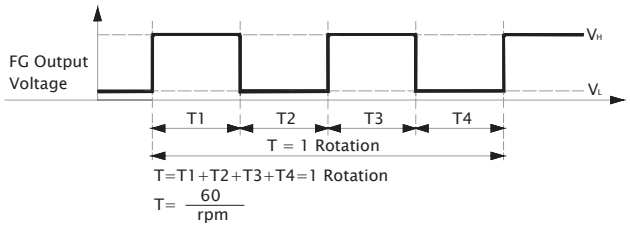
## RD / FG Output Signal

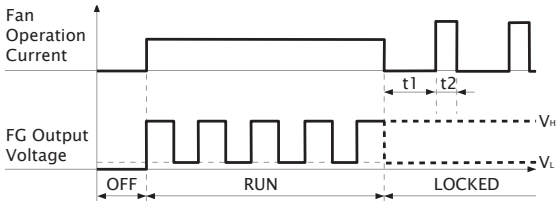



**[ RD Signal ]**

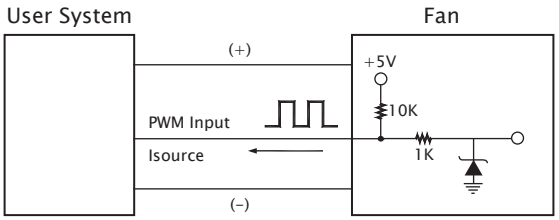



**[ FG Signal ]**




## PWM Input Signal

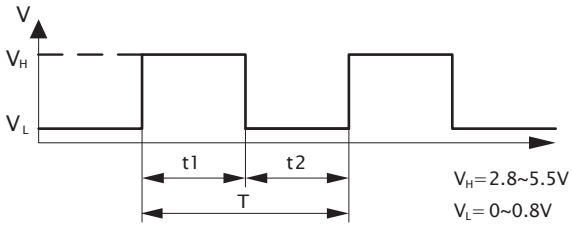



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

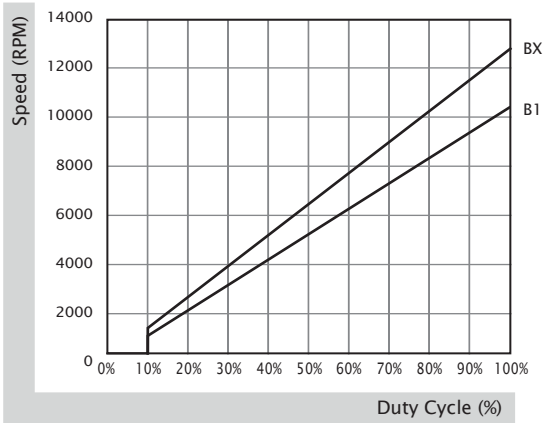
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 80x80x38 mm

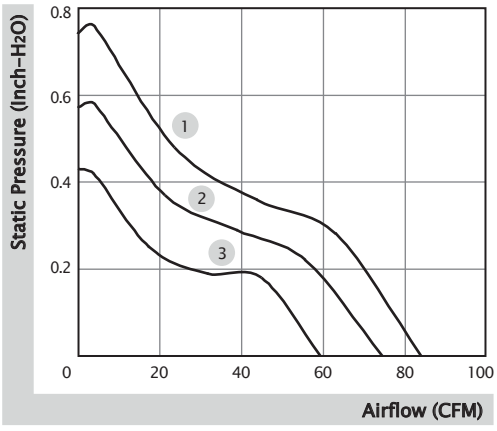
## 59.5~84.1 CFM

## Specification

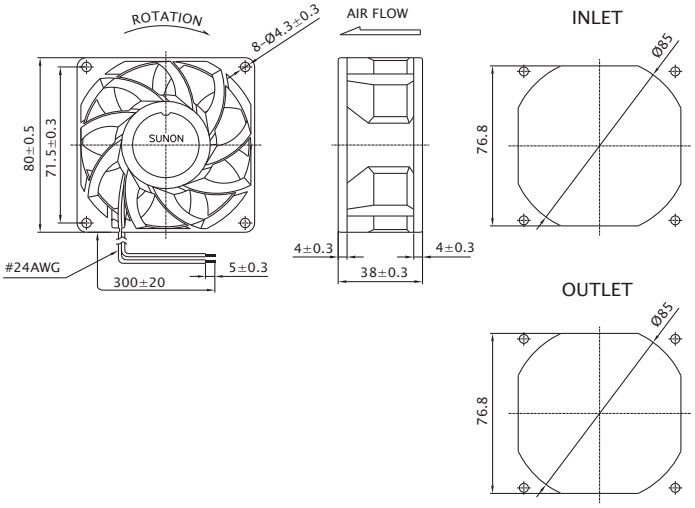
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMD1208PMB1-A (2).GN | ◉ | 12 | 760 | 9.1 | 5700 | 84.1 | 0.74 | 55.2 | 175.0 | 1 |
| PMD1208PMB2-A (2).GN | ◉ | 12 | 530 | 6.4 | 4900 | 74.5 | 0.57 | 51.6 | 175.0 | 2 |
| PMD1208PMB3-A (2).GN | ◉ | 12 | 370 | 4.4 | 4200 | 59.5 | 0.43 | 47.3 | 175.0 | 3 |
| PMD2408PMB1-A (2).GN | ◉ | 24 | 400 | 9.6 | 5700 | 84.1 | 0.74 | 55.2 | 175.0 | 1 |
| PMD2408PMB2-A (2).GN | ◉ | 24 | 300 | 7.2 | 4900 | 74.5 | 0.57 | 51.6 | 175.0 | 2 |
| PMD2408PMB3-A (2).GN | ◉ | 24 | 200 | 4.8 | 4200 | 59.5 | 0.43 | 47.3 | 175.0 | 3 |

## Function R Type : (2).R.GN ／ F Type : (2).F.GN

## Air Flow-Static Pressure Characteristics



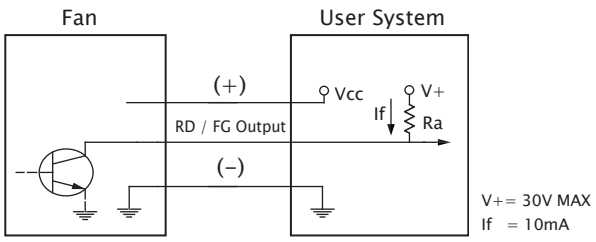

## External Dimensions(mm)



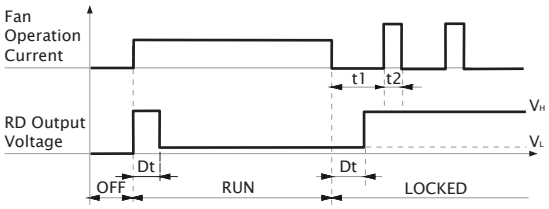

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

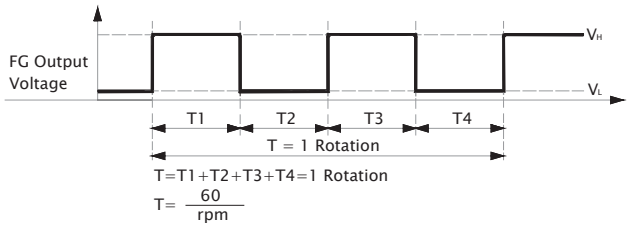
## RD / FG Output Signal

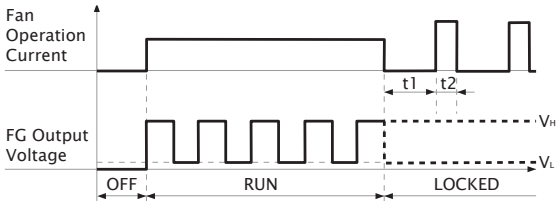



**[ RD Signal ]**




**[ FG Signal ]**



# 80x80x80 mm

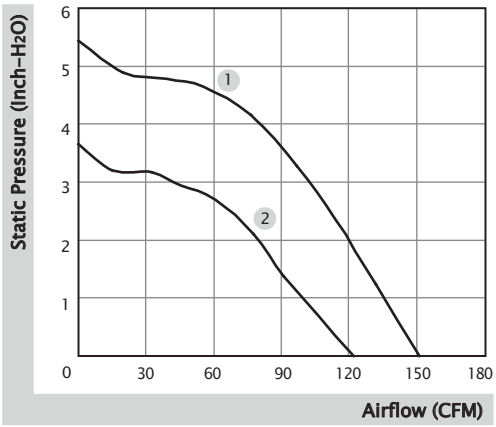
## 122.0~151.5 CFM

## Specification

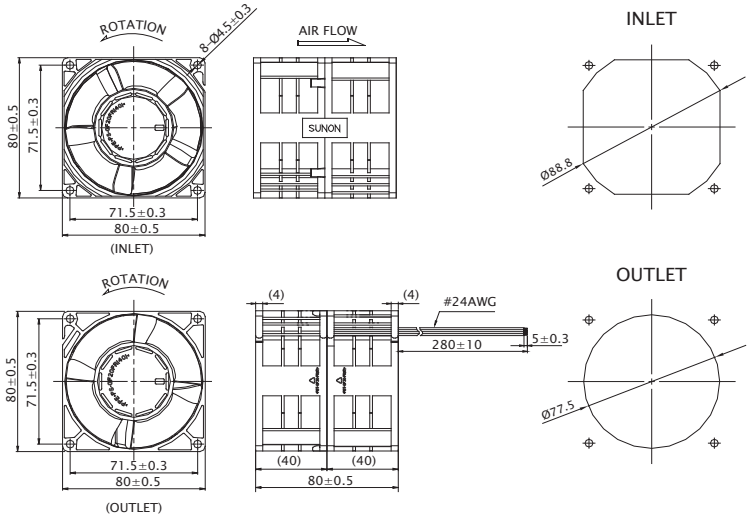
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF80801BX-000U-A9H | ◓ | 12 | 6800 | 81.60 | 15600/14100 | 151.5 | 5.44 | 80.4 | 464.0 | 1 |
| PF80801B1-000U-A9H | ◓ | 12 | 3500 | 42.00 | 12600/11300 | 122.0 | 3.66 | 75.1 | 464.0 | 2 |

## Function F Type : G9H ／ PWM : S9H

## Air Flow-Static Pressure Characteristics



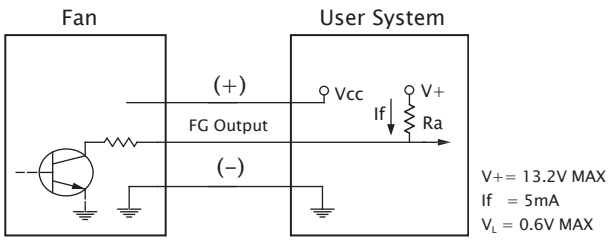

## External Dimensions(mm)



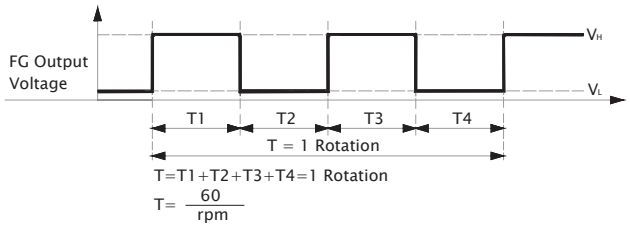

※ All model could be customized. Please contact with Sunon Sales.

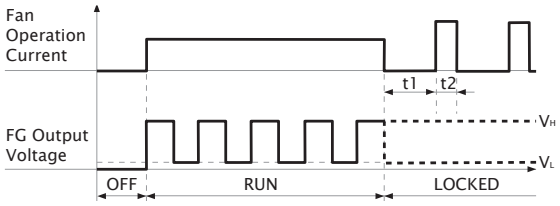
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

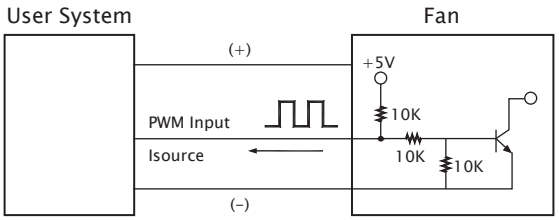



**[ FG Signal ]**




## PWM Input Signal

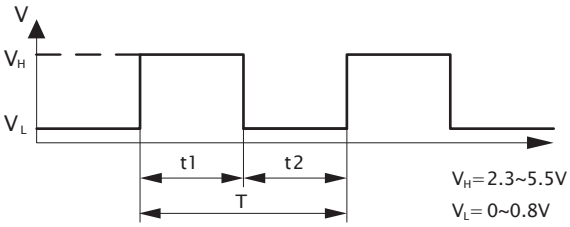



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

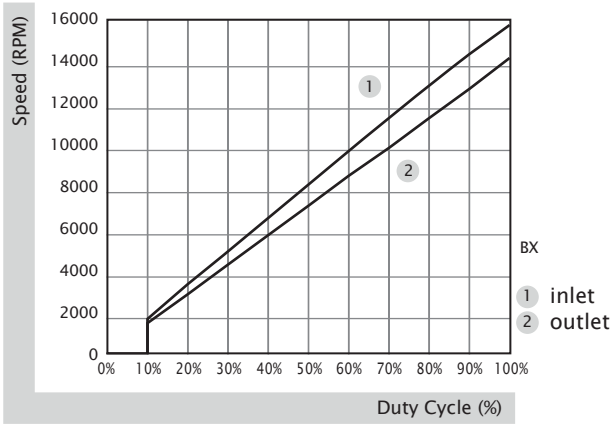
Min. start up duty cycle is 10%.

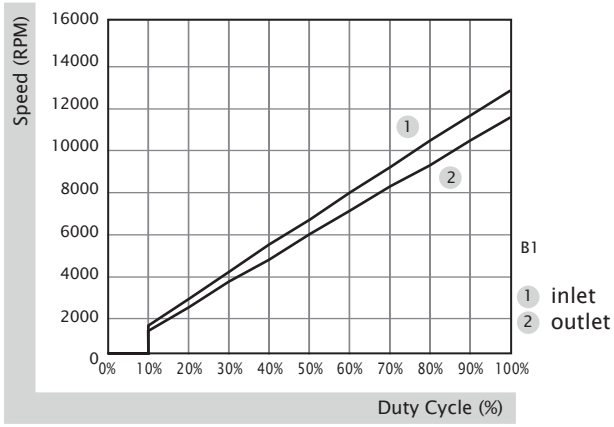



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 92x92x25 mm

## 65.0~75.0 CFM

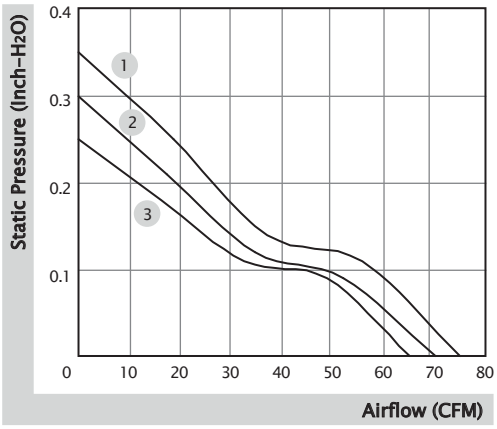
### Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF92251V1-1000U-A99 | ● | 12 | 370 | 4.44 | 4500 | 75.0 | 0.35 | 45.5 | 106.0 | 1 |
| PF92251V2-1000U-A99 | ● | 12 | 280 | 3.36 | 4200 | 70.0 | 0.30 | 43.7 | 106.0 | 2 |
| PF92251V3-1000U-A99 | ● | 12 | 230 | 2.76 | 3900 | 65.0 | 0.25 | 41.6 | 106.0 | 3 |
| PF92252V1-1000U-A99 | ● | 24 | 210 | 5.04 | 4500 | 75.0 | 0.35 | 45.5 | 106.0 | 1 |
| PF92252V2-1000U-A99 | ● | 24 | 145 | 3.48 | 4200 | 70.0 | 0.30 | 43.7 | 106.0 | 2 |
| PF92252V3-1000U-A99 | ● | 24 | 126 | 3.03 | 3900 | 65.0 | 0.25 | 41.6 | 106.0 | 3 |

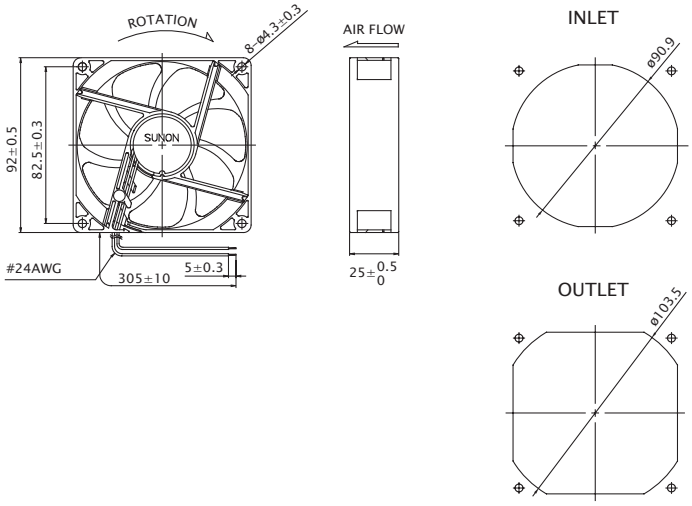
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



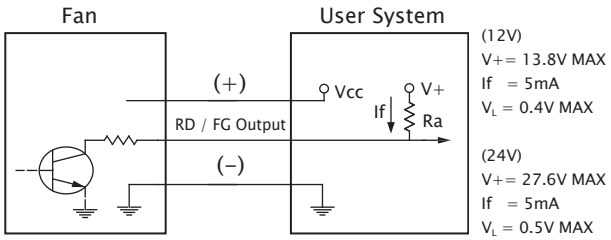

### External Dimensions(mm)



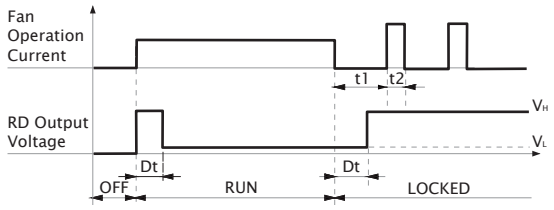

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

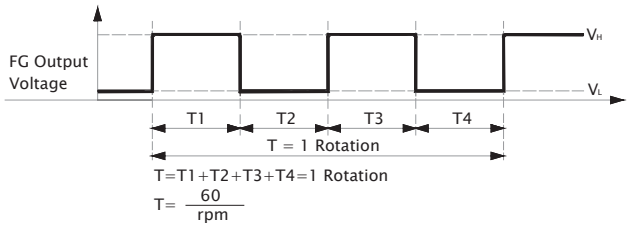
## RD / FG Output Signal

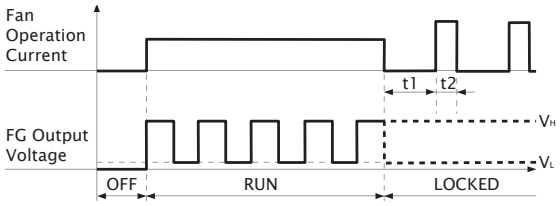



**[ RD Signal ]**

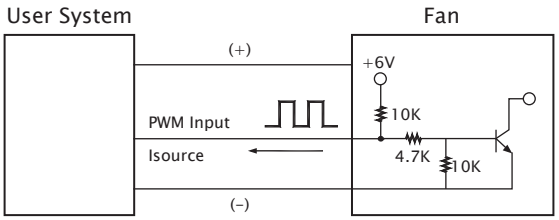



**[ FG Signal ]**



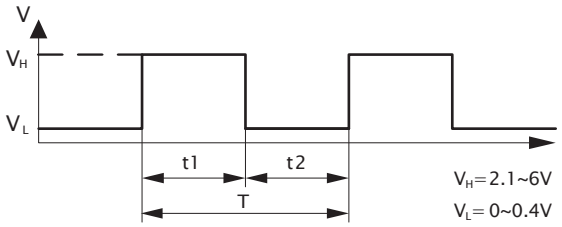

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

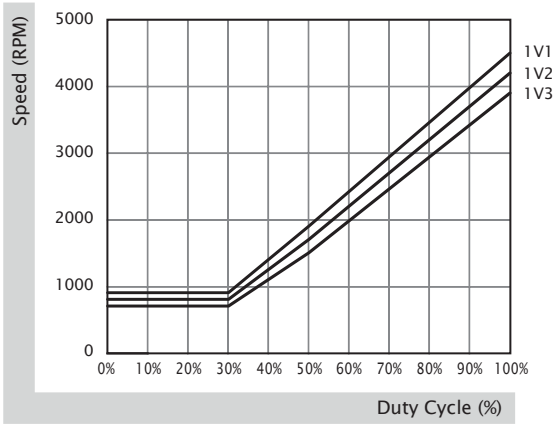
The speed is default to be maximum if PWM input pin is unconnected.

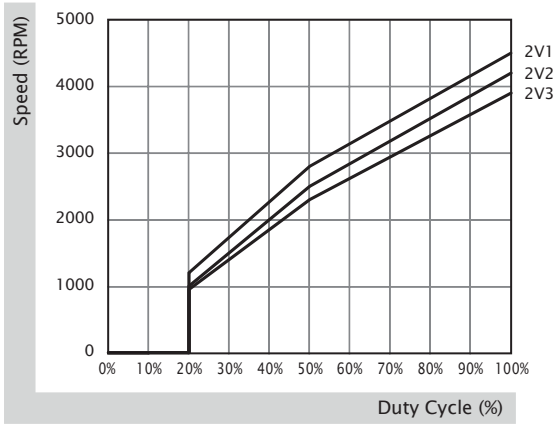



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 92x92x25 mm

## 65.0~75.0 CFM

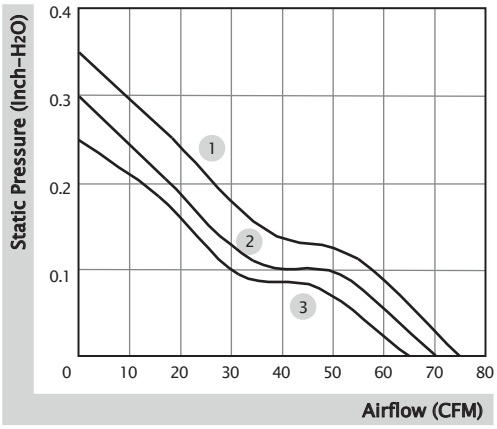
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF92251B1-1000U-A99 | ◓ | 12 | 360 | 4.32 | 4500 | 75.0 | 0.35 | 46.1 | 103.0 | 1 |
| PF92251B2-1000U-A99 | ◓ | 12 | 275 | 3.30 | 4200 | 70.0 | 0.30 | 44.0 | 103.0 | 2 |
| PF92251B3-1000U-A99 | ◓ | 12 | 225 | 2.70 | 3900 | 65.0 | 0.25 | 41.8 | 103.0 | 3 |
| PF92252B1-1000U-A99 | ◓ | 24 | 205 | 4.92 | 4500 | 75.0 | 0.35 | 46.1 | 103.0 | 1 |

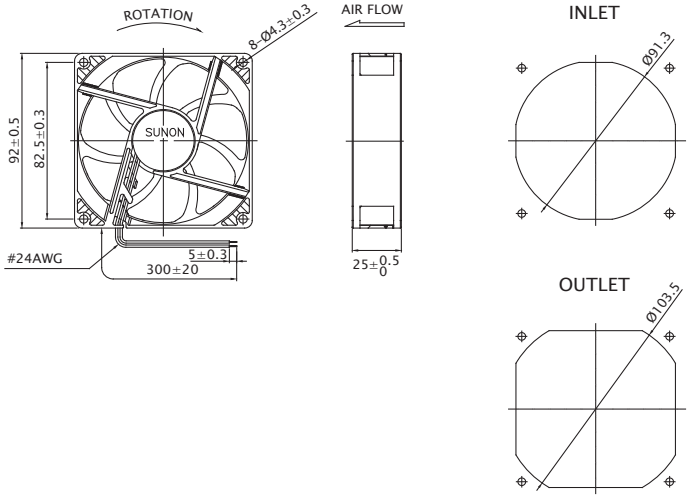
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



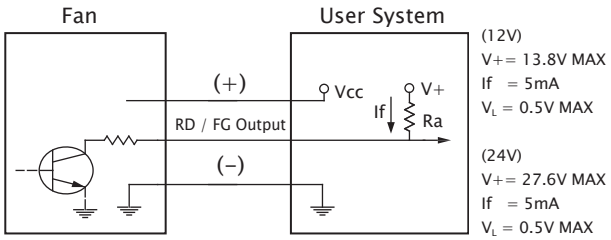

### External Dimensions(mm)



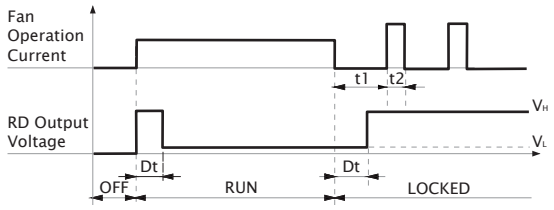

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

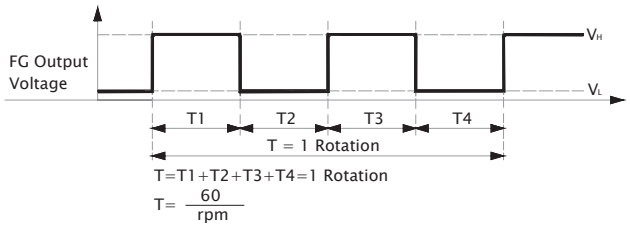
## RD / FG Output Signal

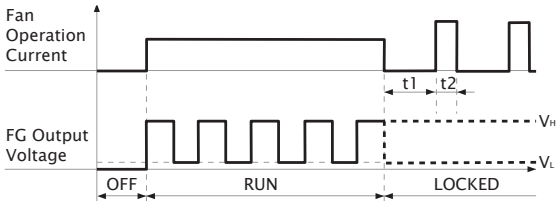



**[ RD Signal ]**

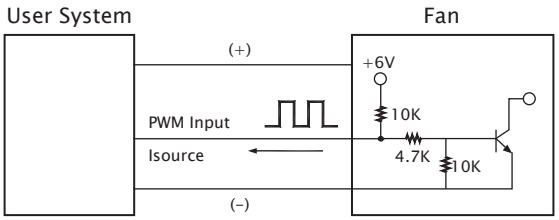



**[ FG Signal ]**



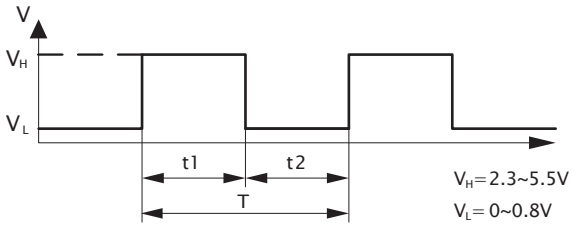

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0.6mA at PWM Input Voltage 0V

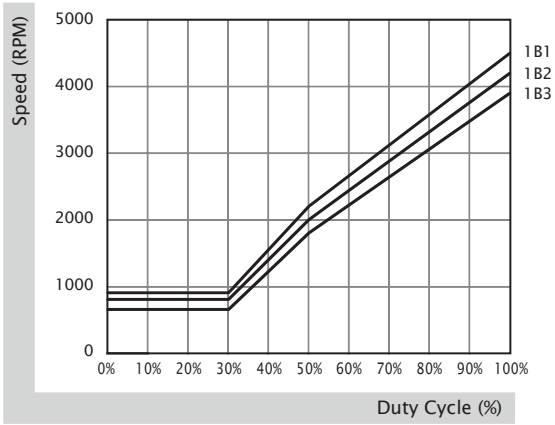
The speed is default to be maximum if PWM input pin is unconnected.

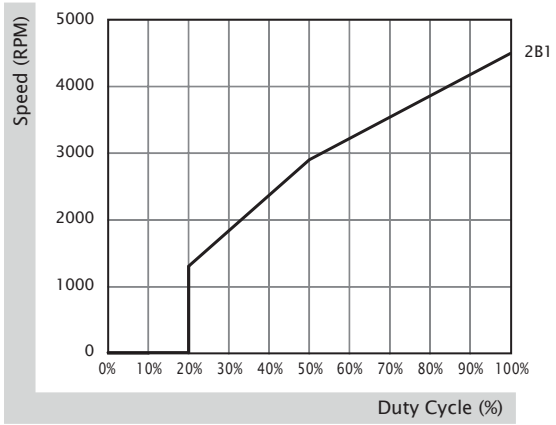



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 92x92x25 mm

## 39.5~51.5 CFM

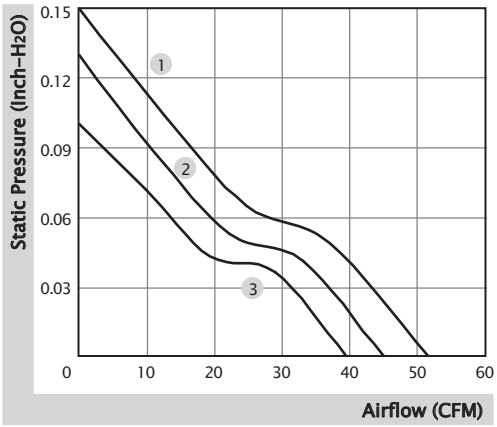
## Specification

| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF92251V1-1000U-A99 | ● | 12 | 140 | 1.68 | 3000 | 51.5 | 0.15 | 34.0 | 92.0 | 1 |
| MF92251V2-1000U-A99 | ● | 12 | 105 | 1.26 | 2700 | 45.0 | 0.13 | 32.0 | 92.0 | 2 |
| MF92251V3-1000U-A99 | ● | 12 | 75 | 0.90 | 2400 | 39.5 | 0.10 | 28.0 | 92.0 | 3 |
| MF92252V1-1000U-A99 | ● | 24 | 75 | 1.80 | 3000 | 51.5 | 0.15 | 34.0 | 92.0 | 1 |
| MF92252V2-1000U-A99 | ● | 24 | 55 | 1.32 | 2700 | 45.0 | 0.13 | 32.0 | 92.0 | 2 |
| MF92252V3-1000U-A99 | ● | 24 | 42 | 1.01 | 2400 | 39.5 | 0.10 | 28.0 | 92.0 | 3 |
| Model | ◇ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF92251S1-1000U-A99 | ○ | 12 | 140 | 1.68 | 3000 | 51.5 | 0.15 | 34.0 | 92.0 | 1 |
| EF92251S2-1000U-A99 | ○ | 12 | 110 | 1.32 | 2700 | 45.0 | 0.13 | 32.0 | 92.0 | 2 |
| EF92251S3-1000U-A99 | ○ | 12 | 80 | 0.96 | 2400 | 39.5 | 0.10 | 28.0 | 92.0 | 3 |
| EF92252S1-1000U-A99 | ○ | 24 | 60 | 1.44 | 3000 | 51.5 | 0.15 | 34.0 | 92.0 | 1 |

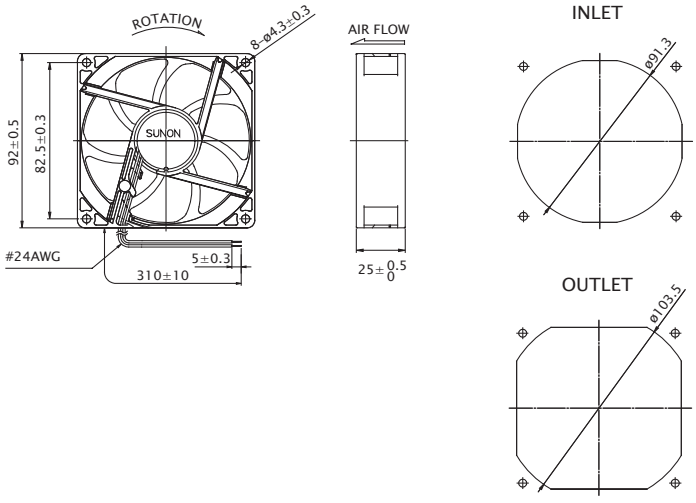
## Function

( MF Series ) R Type : F99 ／ F Type : G99
( EF Series, Speed 1) R Type : F99 ／ F Type : G99
( EF Series, Speed 2,3 ) F Type : G99

## Air Flow-Static Pressure Characteristics

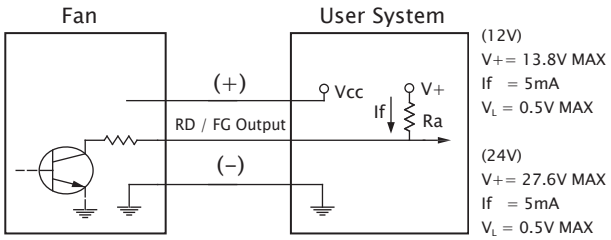



## External Dimensions(mm)

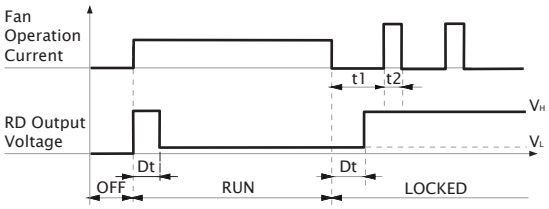



※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

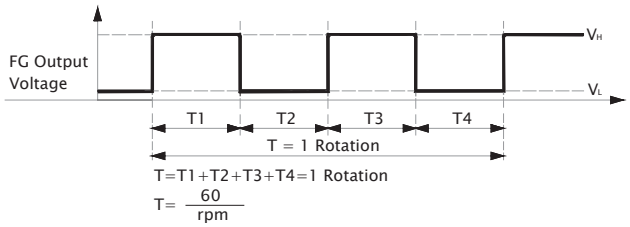
## RD / FG Output Signal

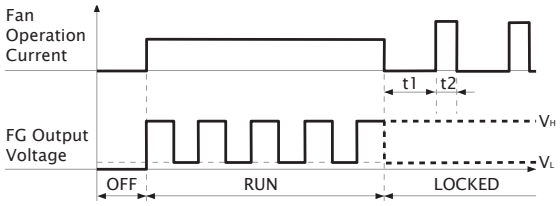



**[ RD Signal ]**




**[ FG Signal ]**



# 92x92x25 mm

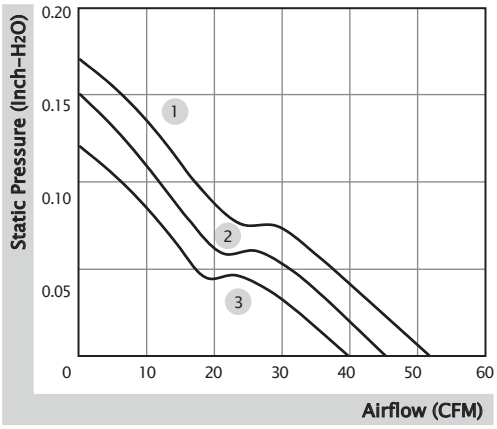
## 39.5~51.5 CFM

## Specification

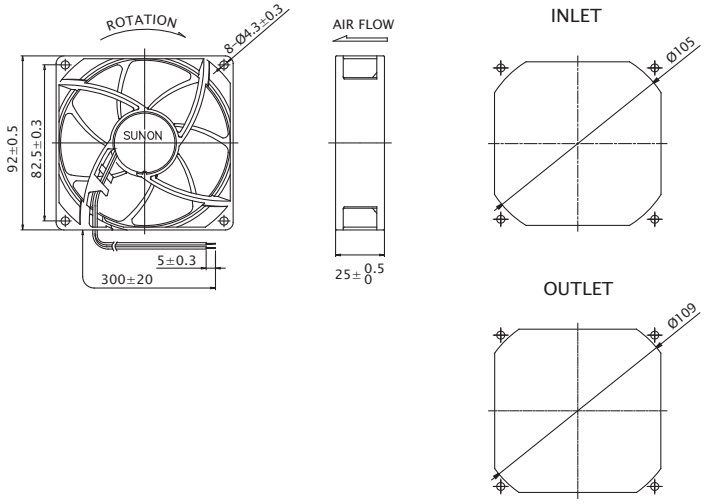
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF92251B1-1000U-A99 | ● | 12 | 125 | 1.50 | 3000 | 51.5 | 0.17 | 34.0 | 92.0 | 1 |
| EF92251B2-1000U-A99 | ● | 12 | 90 | 1.08 | 2700 | 45.0 | 0.15 | 32.0 | 92.0 | 2 |
| EF92251B3-1000U-A99 | ● | 12 | 62 | 0.75 | 2400 | 39.5 | 0.12 | 28.0 | 92.0 | 3 |
| EF92252B1-1000U-A99 | ● | 24 | 63 | 1.52 | 3000 | 51.5 | 0.17 | 34.0 | 92.0 | 1 |
| EF92252B2-1000U-A99 | ● | 24 | 45 | 1.08 | 2700 | 45.0 | 0.15 | 32.0 | 92.0 | 2 |

## Function R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics



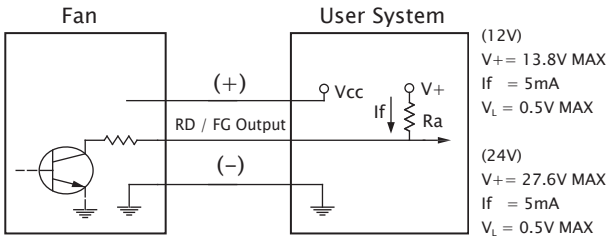

## External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

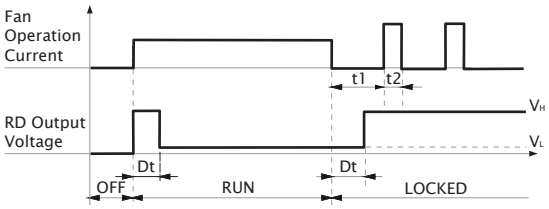
## RD / FG Output Signal



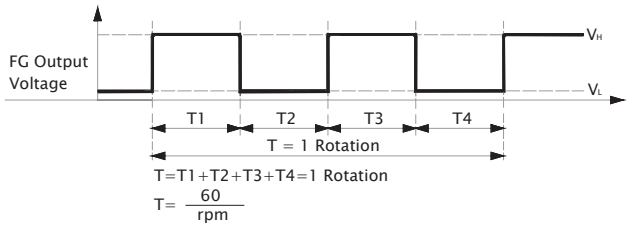

(12V)
V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

(24V)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ RD Signal ]**

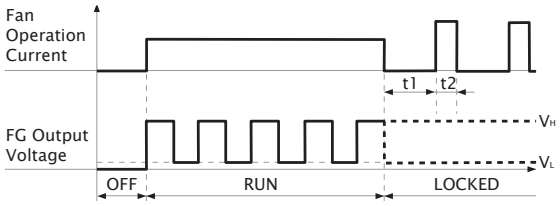



**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 92x92x25 mm

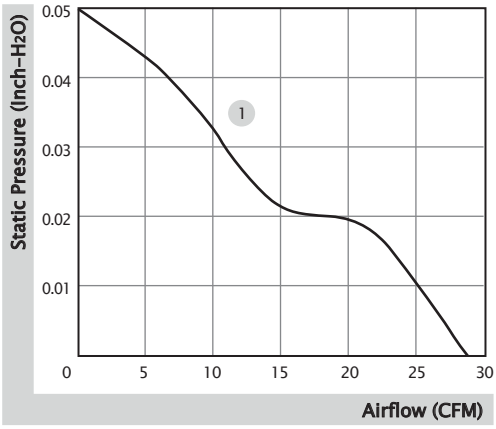
## 28.4 CFM

### Specification

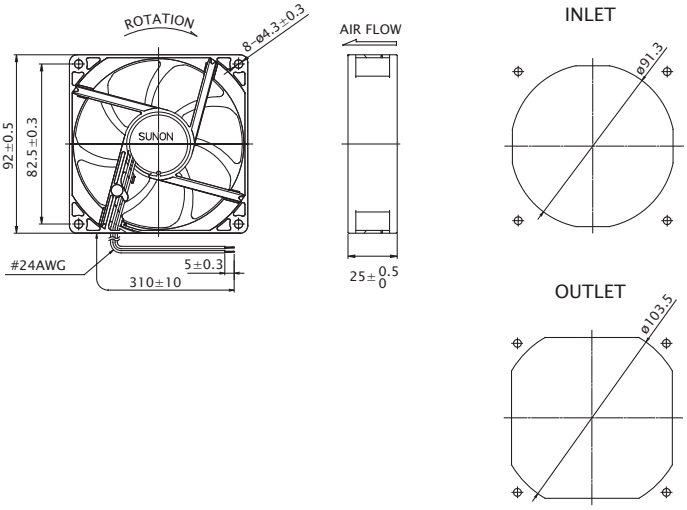
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HA92251V4-1000U-A99 | ● | 12 | 45 | 0.54 | 1700 | 28.4 | 0.05 | 17.7 | 92.0 | 1 |

### Function F Type : G99

### Air Flow-Static Pressure Characteristics



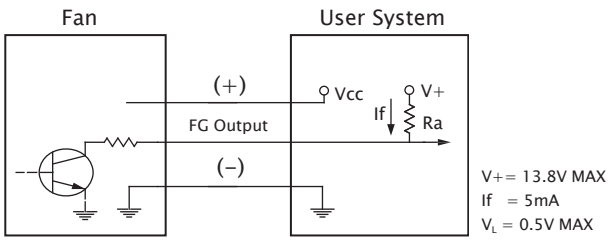

### External Dimensions(mm)



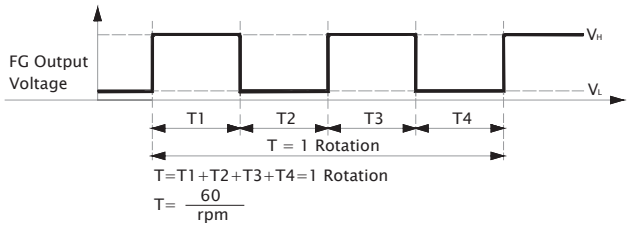

※ All model could be customized. Please contact with Sunon Sales.

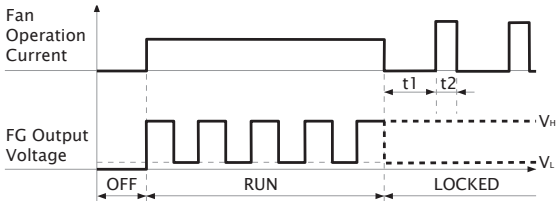
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 92x92x25 mm (IP56)

## 39.5~75.0 CFM

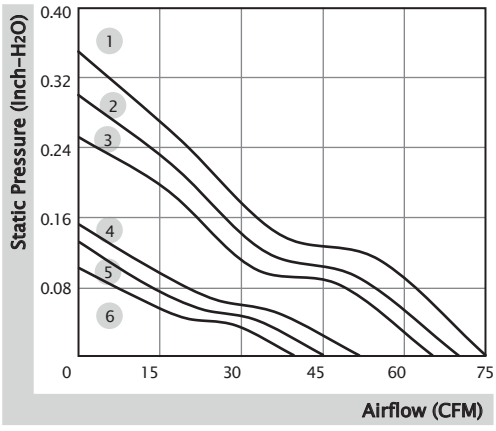
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF92251B1-000U-AC9 | ● | 12 | 393 | 4.72 | 4500 | 75.0 | 0.35 | 47.0 | 113.0 | 1 |
| GF92251B2-000U-AC9 | ● | 12 | 300 | 3.60 | 4200 | 70.0 | 0.30 | 45.0 | 113.0 | 2 |
| GF92251B3-000U-AC9 | ● | 12 | 230 | 2.76 | 3900 | 65.0 | 0.25 | 43.0 | 113.0 | 3 |
| GF92251B5-000U-AC9 | ● | 12 | 165 | 1.98 | 3000 | 51.5 | 0.15 | 34.0 | 99.0 | 4 |
| GF92251B6-000U-AC9 | ● | 12 | 135 | 1.62 | 2700 | 45.0 | 0.13 | 32.0 | 99.0 | 5 |
| GF92251B7-000U-AC9 | ● | 12 | 91 | 1.10 | 2400 | 39.5 | 0.10 | 28.0 | 99.0 | 6 |
| GE92252B1-000U-AC9 | ● | 24 | 220 | 5.28 | 4500 | 75.0 | 0.35 | 47.0 | 113.0 | 1 |
| GE92252B2-000U-AC9 | ● | 24 | 180 | 4.32 | 4200 | 70.0 | 0.30 | 45.0 | 113.0 | 2 |
| GE92252B3-000U-AC9 | ● | 24 | 155 | 3.72 | 3900 | 65.0 | 0.25 | 43.0 | 113.0 | 3 |
| GF92252B5-000U-AC9 | ● | 24 | 87 | 2.09 | 3000 | 51.5 | 0.15 | 34.0 | 99.0 | 4 |
| GF92252B6-000U-AC9 | ● | 24 | 65 | 1.56 | 2700 | 45.0 | 0.13 | 32.0 | 99.0 | 5 |
| GF92252B7-000U-AC9 | ● | 24 | 47 | 1.13 | 2400 | 39.5 | 0.10 | 28.0 | 99.0 | 6 |

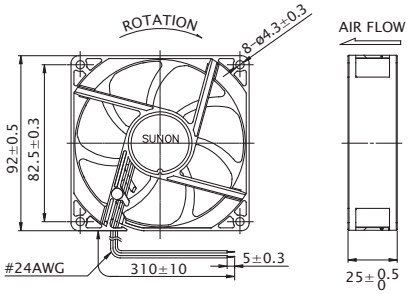
### Function

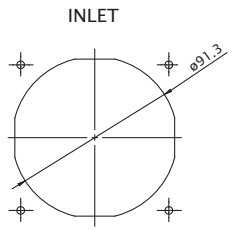
( Speed 1, 2, 3 ) R Type : FC9 ／ F Type : GC9 ／ PWM : HC9, QC9, SC9
( Speed 4, 5, 6 ) R Type : FC9 ／ F Type : GC9

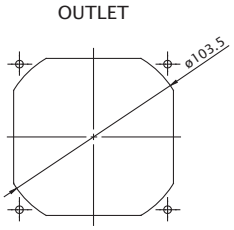
### Air Flow-Static Pressure Characteristics




### External Dimensions(mm)

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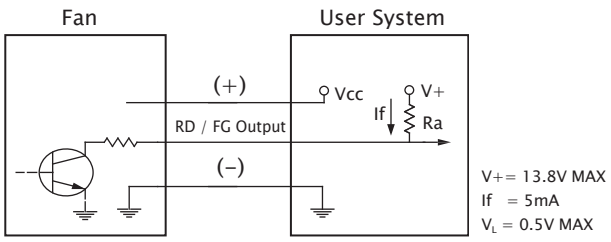
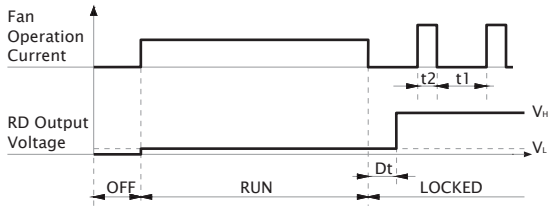
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## RD / FG Output Signal

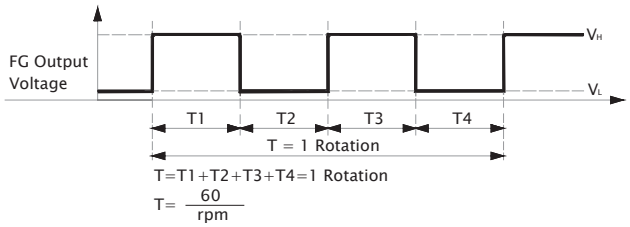



V+= 13.8V MAX
If = 5mA
$V_L$ = 0.5V MAX

**[ RD Signal ]**

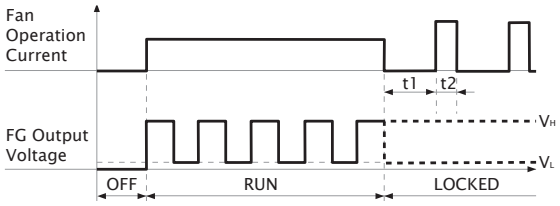



**[ FG Signal ]**

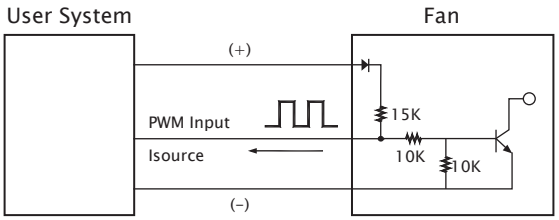



T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



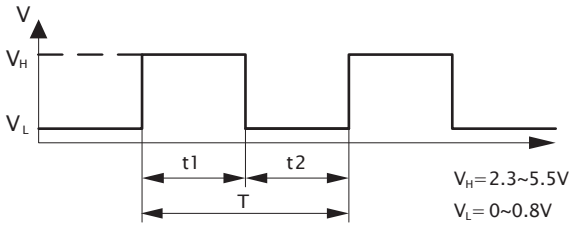

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0.8mA at PWM Input Voltage 0V

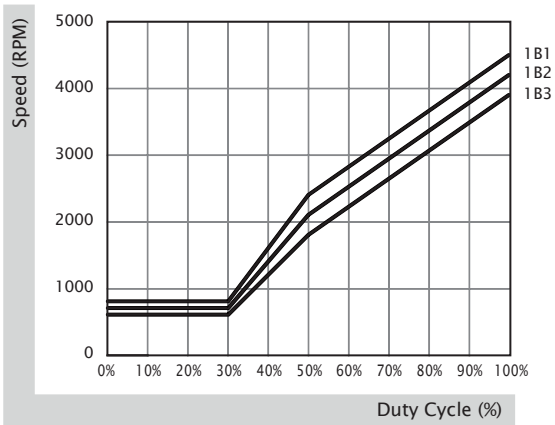
The speed is default to be maximum if PWM input pin is unconnected.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 92x92x25 mm (IP68)

## 39.5~75.0 CFM

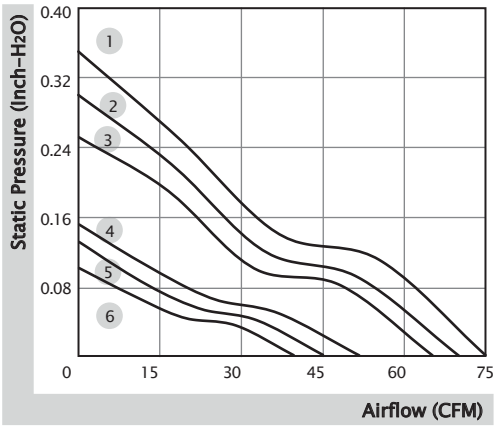
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF92251B1-000U-AE9 | ● | 12 | 393 | 4.72 | 4500 | 75.0 | 0.35 | 47.0 | 113.0 | 1 |
| GF92251B2-000U-AE9 | ● | 12 | 300 | 3.60 | 4200 | 70.0 | 0.30 | 45.0 | 113.0 | 2 |
| GF92251B3-000U-AE9 | ● | 12 | 230 | 2.76 | 3900 | 65.0 | 0.25 | 43.0 | 113.0 | 3 |
| GF92251B5-000U-AE9 | ● | 12 | 165 | 1.98 | 3000 | 51.5 | 0.15 | 34.0 | 99.0 | 4 |
| GF92251B6-000U-AE9 | ● | 12 | 135 | 1.62 | 2700 | 45.0 | 0.13 | 32.0 | 99.0 | 5 |
| GF92251B7-000U-AE9 | ● | 12 | 91 | 1.10 | 2400 | 39.5 | 0.10 | 28.0 | 99.0 | 6 |
| GE92252B1-000U-AE9 | ● | 24 | 220 | 5.28 | 4500 | 75.0 | 0.35 | 47.0 | 113.0 | 1 |
| GE92252B2-000U-AE9 | ● | 24 | 180 | 4.32 | 4200 | 70.0 | 0.30 | 45.0 | 113.0 | 2 |
| GE92252B3-000U-AE9 | ● | 24 | 155 | 3.72 | 3900 | 65.0 | 0.25 | 43.0 | 113.0 | 3 |
| GF92252B5-000U-AE9 | ● | 24 | 87 | 2.09 | 3000 | 51.5 | 0.15 | 34.0 | 99.0 | 4 |
| GF92252B6-000U-AE9 | ● | 24 | 65 | 1.56 | 2700 | 45.0 | 0.13 | 32.0 | 99.0 | 5 |
| GF92252B7-000U-AE9 | ● | 24 | 47 | 1.13 | 2400 | 39.5 | 0.10 | 28.0 | 99.0 | 6 |

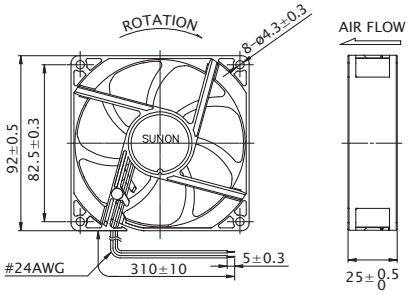
### Function

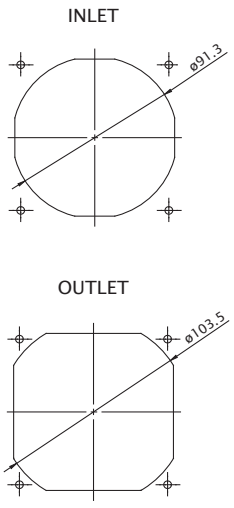
( Speed 1, 2, 3 ) R Type : FE9 ／ F Type : GE9 ／ PWM : HE9, QE9, SE9
( Speed 4, 5, 6 ) R Type : FE9 ／ F Type : GE9

### Air Flow-Static Pressure Characteristics



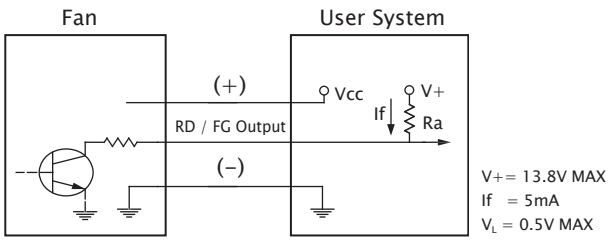

### External Dimensions(mm)



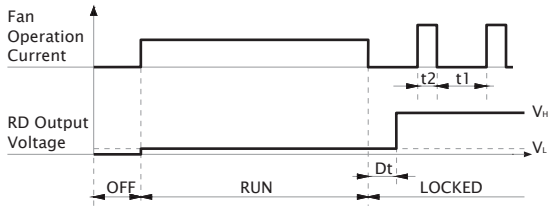




※ All model could be customized. Please contact with Sunon Sales.
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

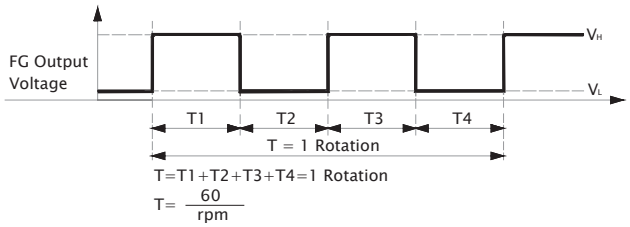
## RD / FG Output Signal

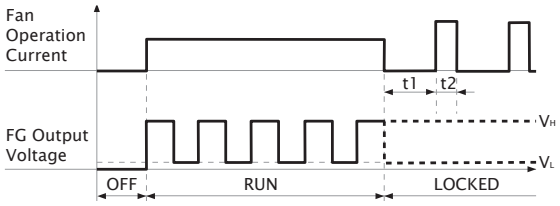



**[ RD Signal ]**

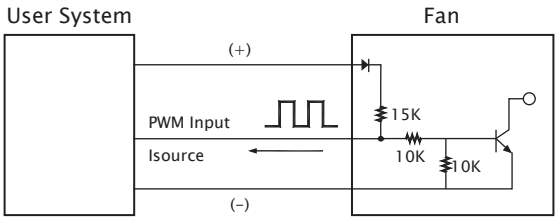



**[ FG Signal ]**



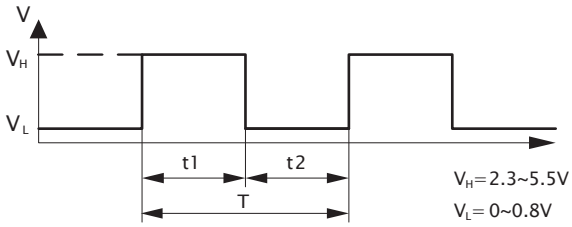

## PWM Input Signal




PWM FREQUENCY: 25KHZ

Isource=0.8mA at PWM Input Voltage 0V

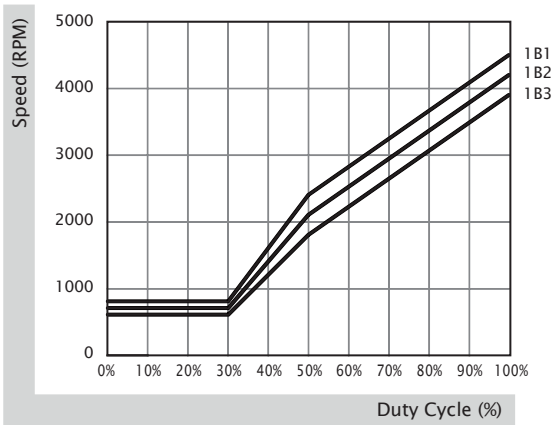
The speed is default to be maximum if PWM input pin is unconnected.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 92x92x25 mm (GR487)

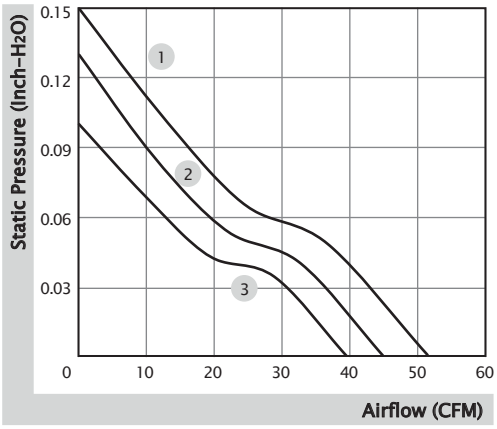
## 39.5~51.5 CFM

### Specification

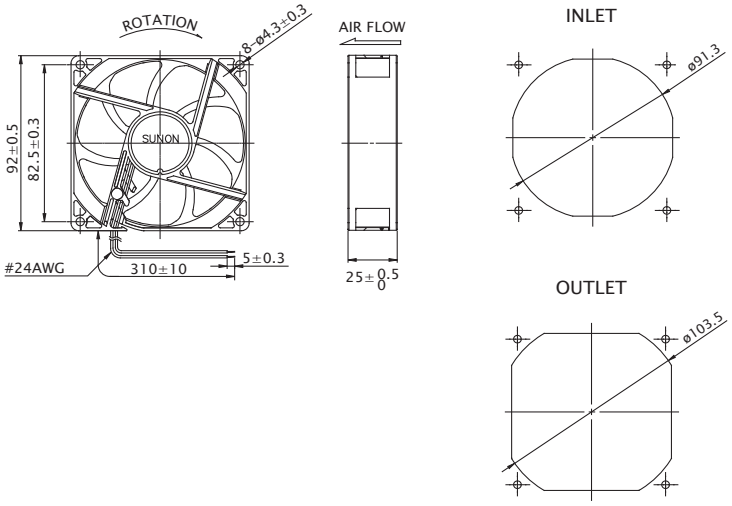
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| GF92251B5-000U-AD9 | ● | 12 | 165 | 1.98 | 3000 | 51.5 | 0.15 | 34.0 | 99.0 | 1 |
| GF92251B6-000U-AD9 | ● | 12 | 135 | 1.62 | 2700 | 45.0 | 0.13 | 32.0 | 99.0 | 2 |
| GF92251B7-000U-AD9 | ● | 12 | 91 | 1.10 | 2400 | 39.5 | 0.10 | 28.0 | 99.0 | 3 |
| GF92252B5-000U-AD9 | ● | 24 | 87 | 2.09 | 3000 | 51.5 | 0.15 | 34.0 | 99.0 | 1 |
| GF92252B6-000U-AD9 | ● | 24 | 65 | 1.56 | 2700 | 45.0 | 0.13 | 32.0 | 99.0 | 2 |
| GF92252B7-000U-AD9 | ● | 24 | 47 | 1.13 | 2400 | 39.5 | 0.10 | 28.0 | 99.0 | 3 |

### Function R Type : FD9 ／ F Type : GD9

### Air Flow-Static Pressure Characteristics



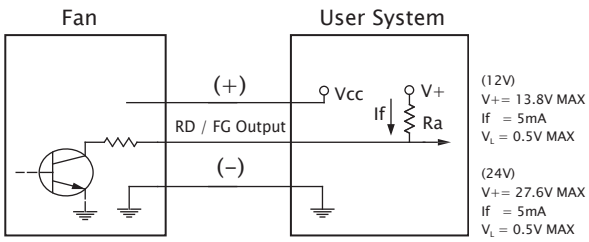

### External Dimensions(mm)



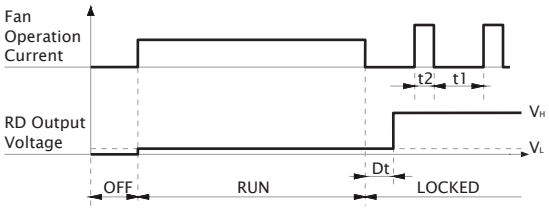

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

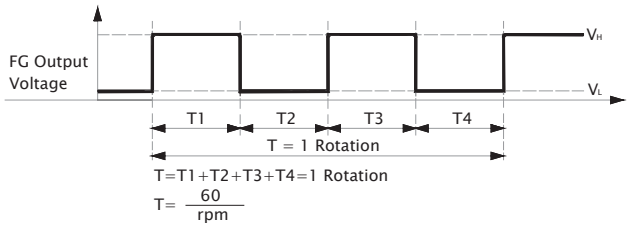
## RD / FG Output Signal

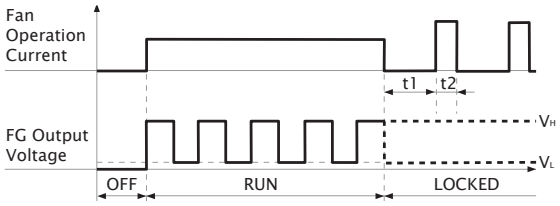



**[ RD Signal ]**




**[ FG Signal ]**



# 92x92x38 mm

## 138.1~182.4 CFM

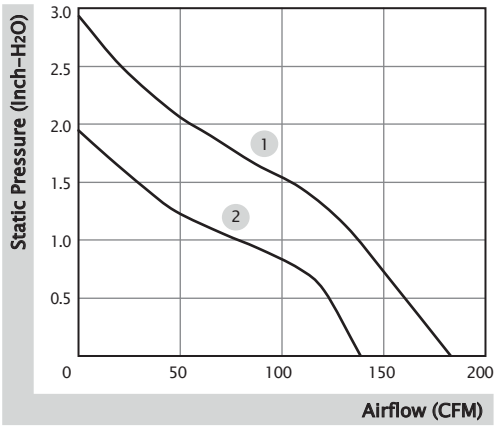
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF92381BX-1000U-A9H | ● | 12 | 4200 | 50.40 | 12000 | 182.4 | 2.94 | 70.2 | 227.0 | 1 |
| PF92381B1-1000U-A9H | ● | 12 | 1850 | 22.20 | 9300 | 138.1 | 1.95 | 62.9 | 227.0 | 2 |

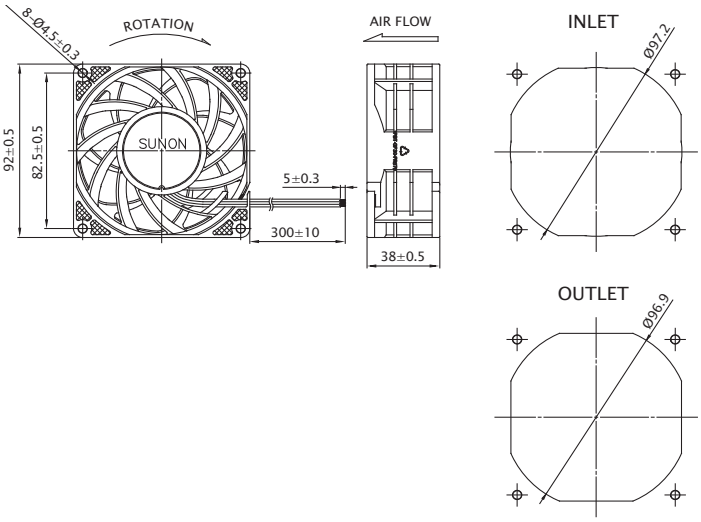
## Function

R Type : F9H ／ F Type : G9H ／ PWM : H9H, Q9H, S9H

## Air Flow-Static Pressure Characteristics



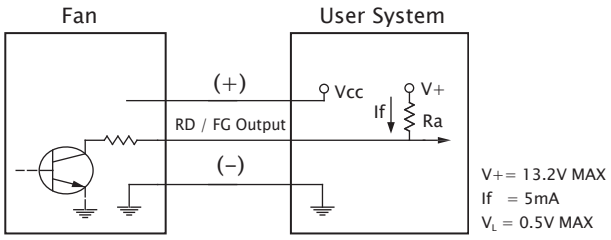

## External Dimensions(mm)



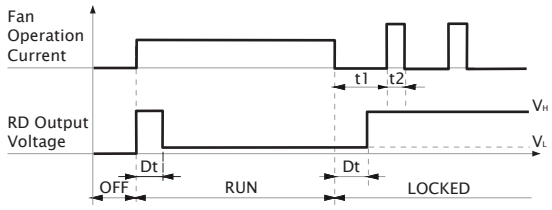

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

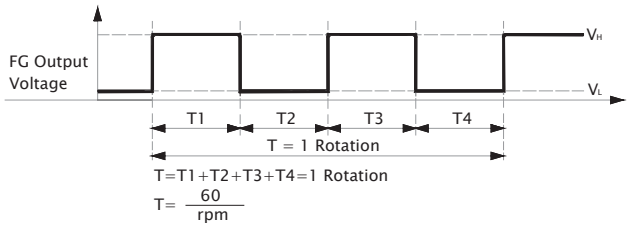
## RD / FG Output Signal

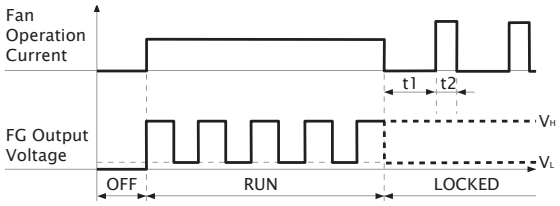



**[ RD Signal ]**

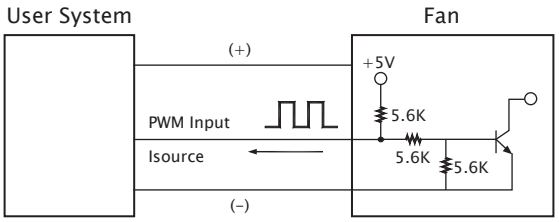



**[ FG Signal ]**




## PWM Input Signal

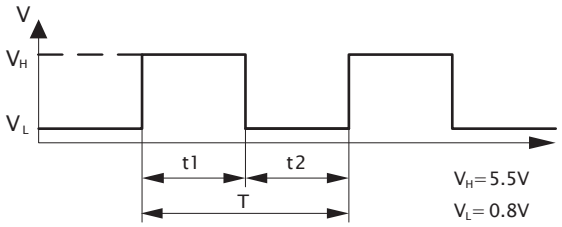



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

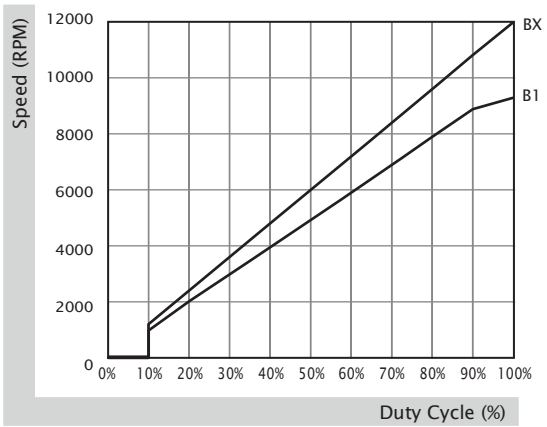
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 92x92x38 mm

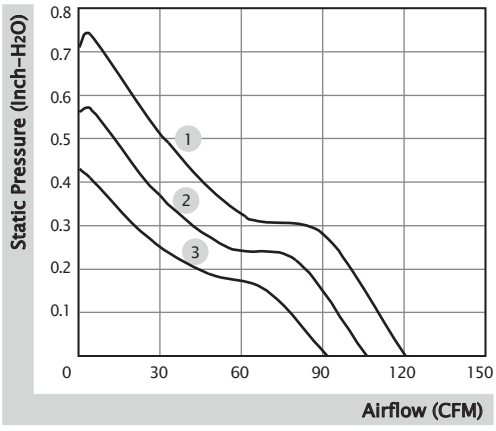
## 91.7~120.2 CFM

## Specification

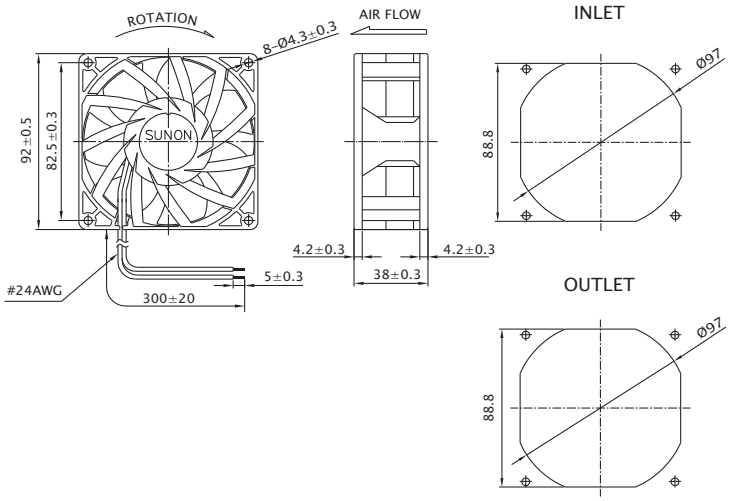
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◓ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMD1209PMB1-A (2).GN | ◓ | 12 | 1040 | 12.5 | 4900 | 120.2 | 0.71 | 57.6 | 190.0 | 1 |
| PMD1209PMB2-A (2).GN | ◓ | 12 | 710 | 8.5 | 4400 | 106.3 | 0.56 | 53.8 | 190.0 | 2 |
| PMD1209PMB3-A (2).GN | ◓ | 12 | 470 | 5.6 | 3800 | 91.7 | 0.43 | 50.3 | 190.0 | 3 |
| PMD2409PMB1-A (2).GN | ◓ | 24 | 510 | 12.2 | 4900 | 120.2 | 0.71 | 57.6 | 190.0 | 1 |
| PMD2409PMB2-A (2).GN | ◓ | 24 | 400 | 9.6 | 4400 | 106.3 | 0.56 | 53.8 | 190.0 | 2 |
| PMD2409PMB3-A (2).GN | ◓ | 24 | 250 | 6.0 | 3800 | 91.7 | 0.43 | 50.3 | 190.0 | 3 |

## Function R Type : (2).R.GN ／ F Type : (2).F.GN

## Air Flow-Static Pressure Characteristics



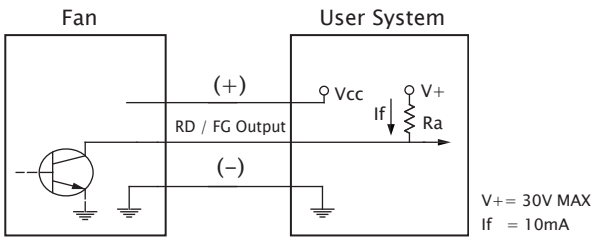

## External Dimensions(mm)



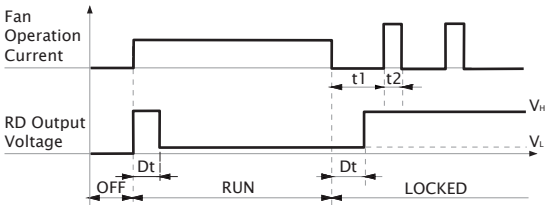

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

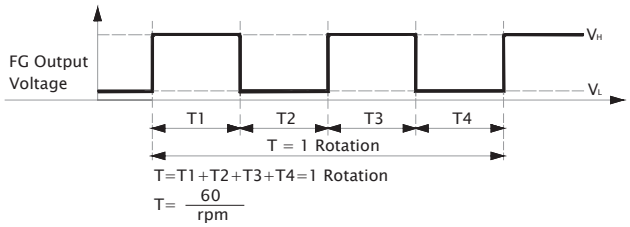
## RD / FG Output Signal




**[ RD Signal ]**

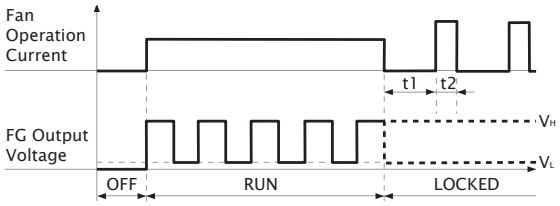



**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 120x120x25 mm

## 120.0~150.0 CFM

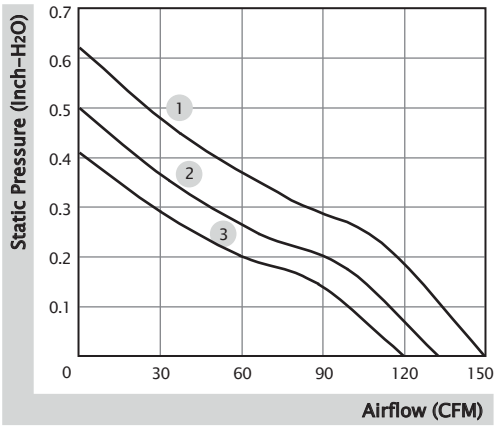
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMD1212PTB1-A (2).GN | ● | 12 | 1000 | 12.0 | 4500 | 150.0 | 0.62 | 54.0 | 220.0 | 1 |
| PMD1212PTB2-A (2).GN | ● | 12 | 720 | 8.6 | 4000 | 133.0 | 0.50 | 51.0 | 220.0 | 2 |
| PMD1212PTB3-A (2).GN | ● | 12 | 540 | 6.5 | 3600 | 120.0 | 0.41 | 48.0 | 220.0 | 3 |
| PMD2412PTB1-A (2).GN | ● | 24 | 490 | 11.8 | 4500 | 150.0 | 0.62 | 54.0 | 220.0 | 1 |
| PMD2412PTB3-A (2).GN | ● | 24 | 280 | 6.7 | 3600 | 120.0 | 0.41 | 48.0 | 220.0 | 3 |

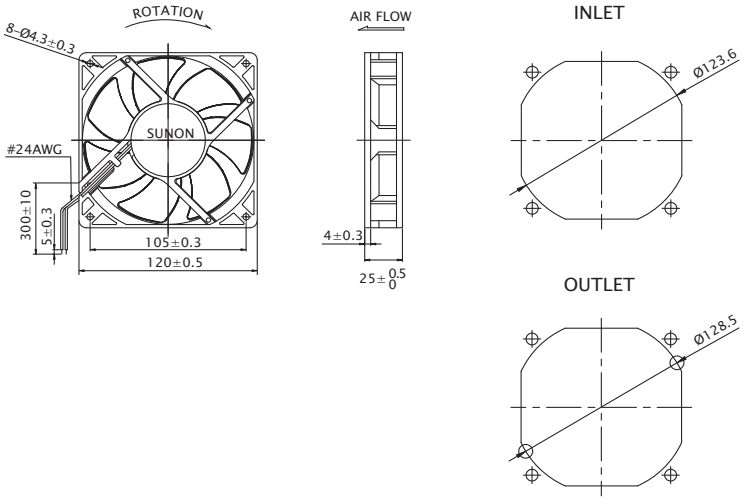
### Function

R Type : (2).R.GN ／ F Type : (2).F.GN

### Air Flow-Static Pressure Characteristics



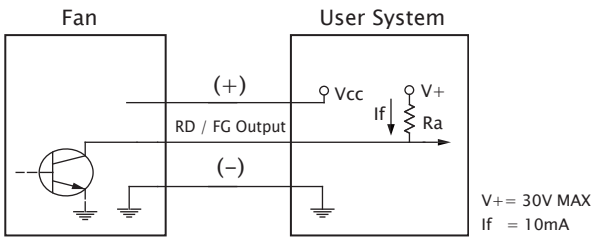

### External Dimensions(mm)



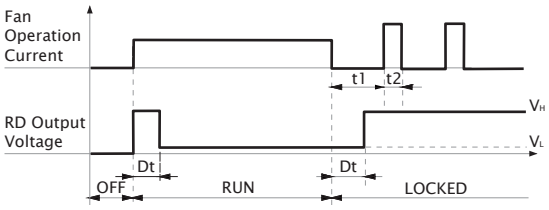

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

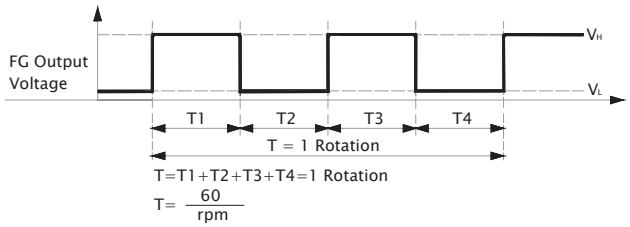
## RD / FG Output Signal

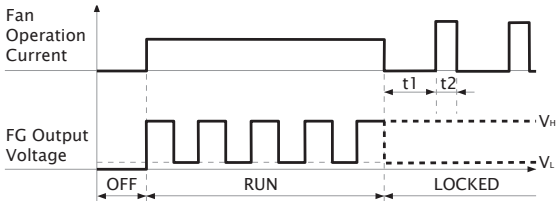



**[ RD Signal ]**




**[ FG Signal ]**



# 120x120x25 mm

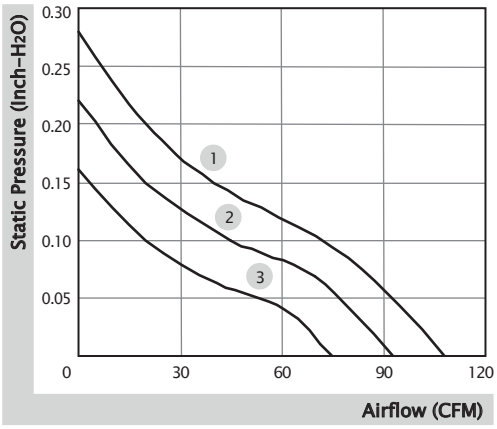
## 75.0~108.2 CFM

## Specification

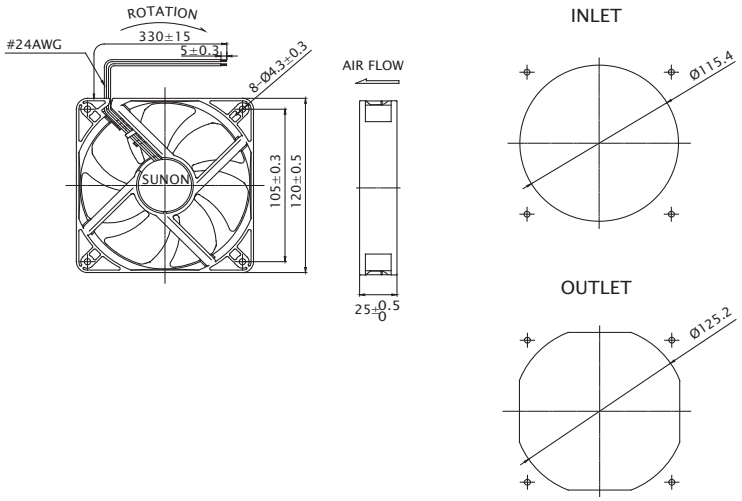
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MFC0251V1-000U-A99 | ● | 12 | 350 | 4.20 | 3100 | 108.2 | 0.28 | 44.5 | 162.0 | 1 |
| MFC0251V2-000U-A99 | ● | 12 | 250 | 3.00 | 2700 | 93.0 | 0.22 | 40.5 | 162.0 | 2 |
| MFC0251V3-000U-A99 | ● | 12 | 140 | 1.68 | 2200 | 75.0 | 0.16 | 34.0 | 162.0 | 3 |
| MEC0252V1-000U-A99 | ● | 24 | 207 | 5.00 | 3100 | 108.2 | 0.28 | 44.5 | 162.0 | 1 |
| MEC0252V2-000U-A99 | ● | 24 | 146 | 3.50 | 2700 | 93.0 | 0.22 | 40.5 | 162.0 | 2 |
| MEC0252V3-000U-A99 | ● | 24 | 84 | 2.00 | 2200 | 75.0 | 0.16 | 34.0 | 162.0 | 3 |
| Model | ◔ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EEC0251B1-000U-A99 | ◔ | 12 | 451 | 5.4 | 3100 | 108.2 | 0.28 | 44.5 | 157.0 | 1 |
| EEC0251B2-000U-A99 | ◔ | 12 | 279 | 3.4 | 2700 | 93.0 | 0.22 | 40.5 | 157.0 | 2 |
| EEC0251B3-000U-A99 | ◔ | 12 | 161 | 1.9 | 2200 | 75.0 | 0.16 | 34.0 | 157.0 | 3 |
| EEC0252B1-000U-A99 | ◔ | 24 | 207 | 5.0 | 3100 | 108.2 | 0.28 | 44.5 | 157.0 | 1 |
| EEC0252B2-000U-A99 | ◔ | 24 | 146 | 3.5 | 2700 | 93.0 | 0.22 | 40.5 | 157.0 | 2 |
| EEC0252B3-000U-A99 | ◔ | 24 | 84 | 2.0 | 2200 | 75.0 | 0.16 | 34.0 | 157.0 | 3 |
| EEC0254B1-000U-A99 | ◔ | 48 | 119 | 5.7 | 3100 | 108.2 | 0.28 | 44.5 | 157.0 | 1 |
| EEC0254B2-000U-A99 | ◔ | 48 | 79 | 3.8 | 2700 | 93.0 | 0.22 | 40.5 | 157.0 | 2 |
| EEC0254B3-000U-A99 | ◔ | 48 | 54 | 2.6 | 2200 | 75.0 | 0.16 | 34.0 | 157.0 | 3 |

## Function R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics



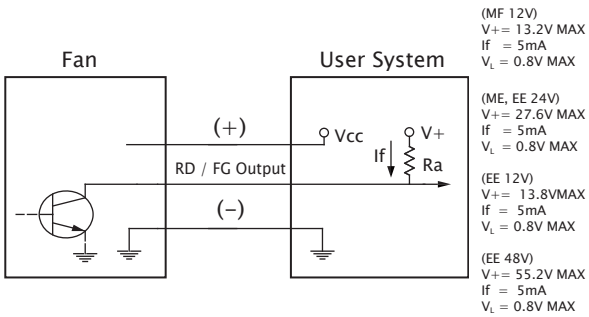

## External Dimensions(mm)




※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## RD / FG Output Signal



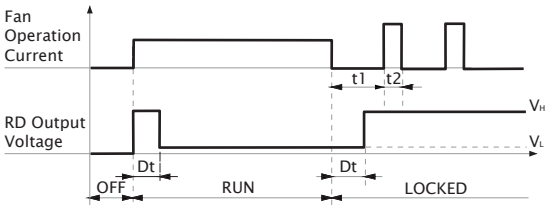

(MF 12V)
V+= 13.2V MAX
If = 5mA
$V_L$ = 0.8V MAX

(ME, EE 24V)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.8V MAX

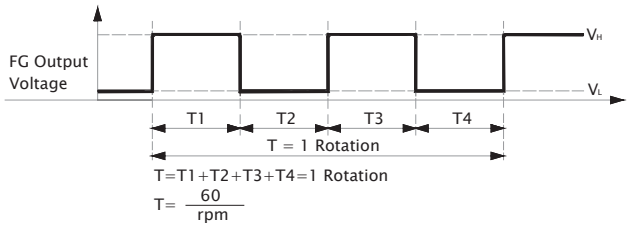
(EE 12V)
V+= 13.8VMAX
If = 5mA
$V_L$ = 0.8V MAX

(EE 48V)
V+= 55.2V MAX
If = 5mA
$V_L$ = 0.8V MAX

**[ RD Signal ]**

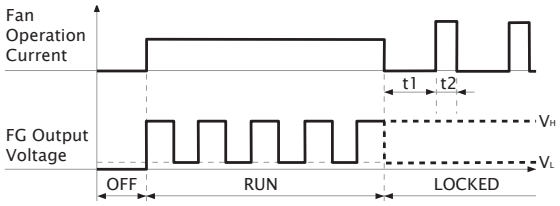



**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 120x120x25 mm

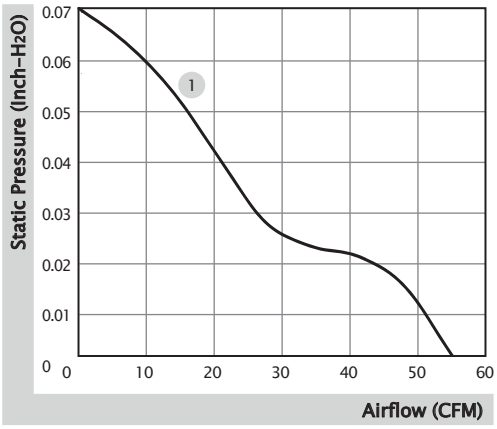
## 55.0 CFM

### Specification

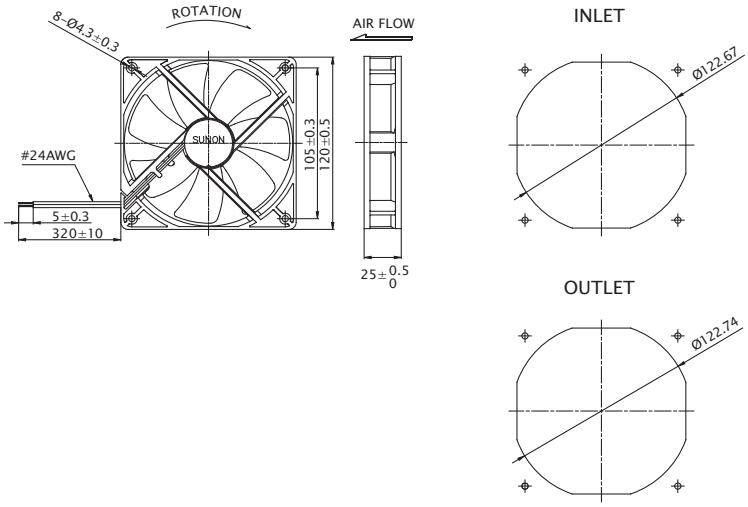
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◐ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| HAC0251S4-1000U-999 | ○ | 12 | 88 | 1.06 | 1600 | 55.1 | 0.07 | 28.8 | 106.0 | 1 |

### Function F Type : C99

### Air Flow-Static Pressure Characteristics



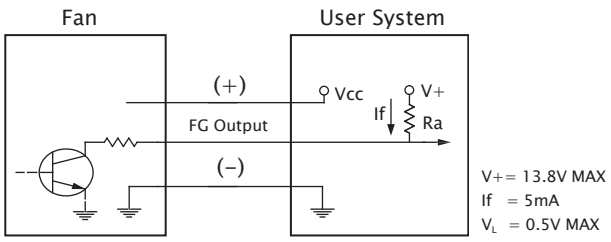

### External Dimensions(mm)



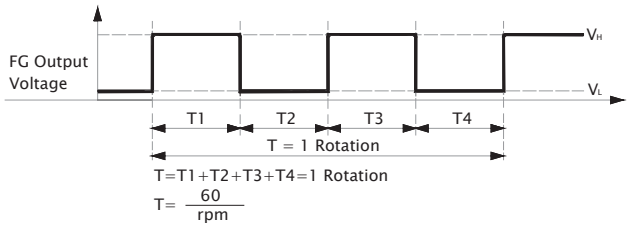

※ All model could be customized. Please contact with Sunon Sales.

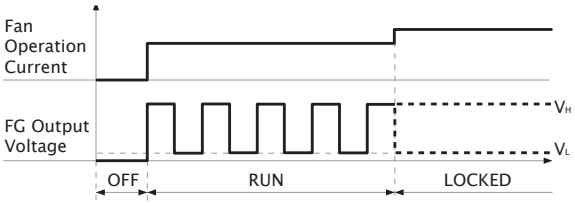
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal




**[ FG Signal ]**



# 120x120x38 mm

## 301.7 CFM

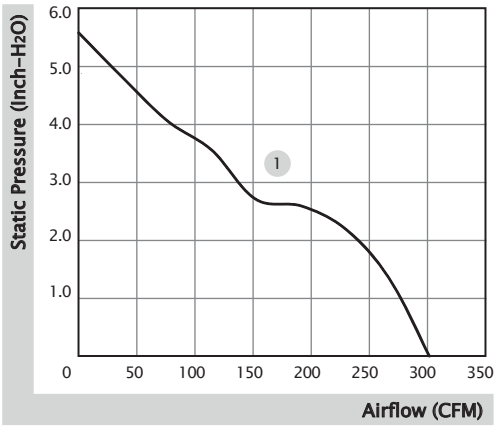
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| XGC0384BX-1000U-A9H | ◉ | 48 | 2100 | 100.8 | 11600 | 301.7 | 5.58 | 75.0 | 465.0 | 1 |

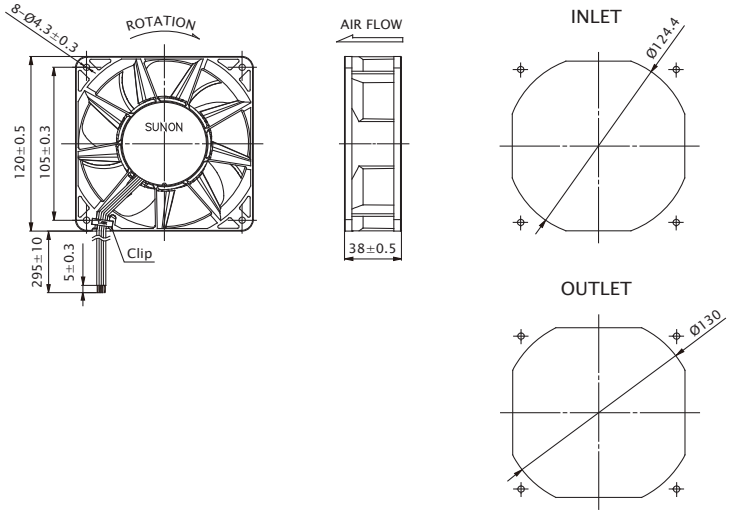
### Function

F Type : G9H ／ PWM : H9H, S9H

### Air Flow-Static Pressure Characteristics



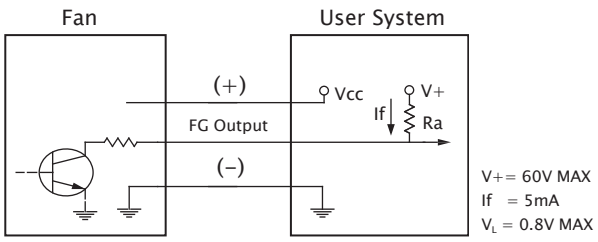

### External Dimensions(mm)



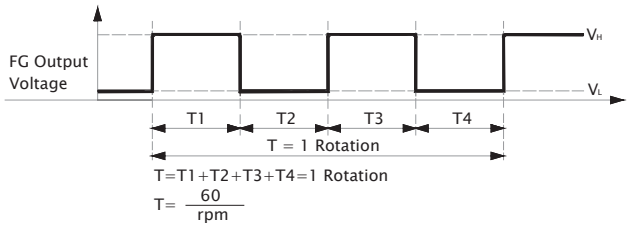

※ All model could be customized. Please contact with Sunon Sales.

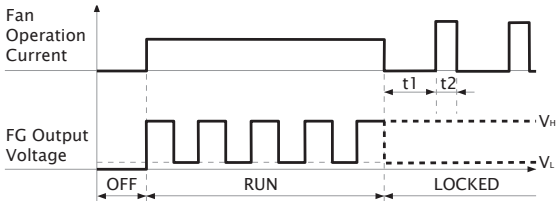
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

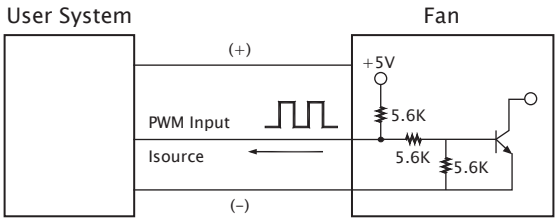



**[ FG Signal ]**




## PWM Input Signal

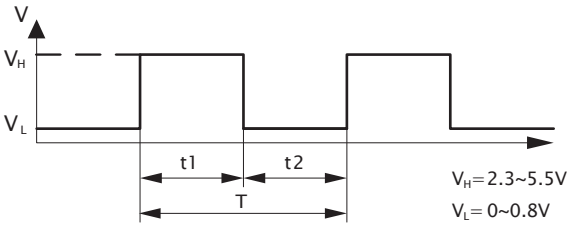



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

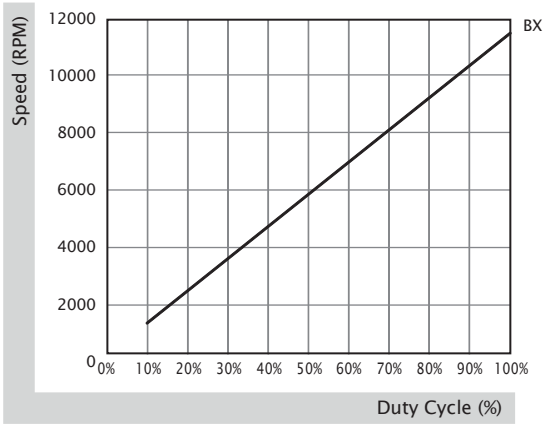
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 120x120x38 mm

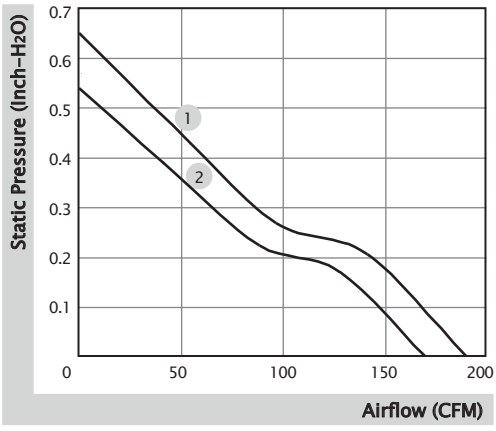
## 170.0~190.0 CFM

### Specification

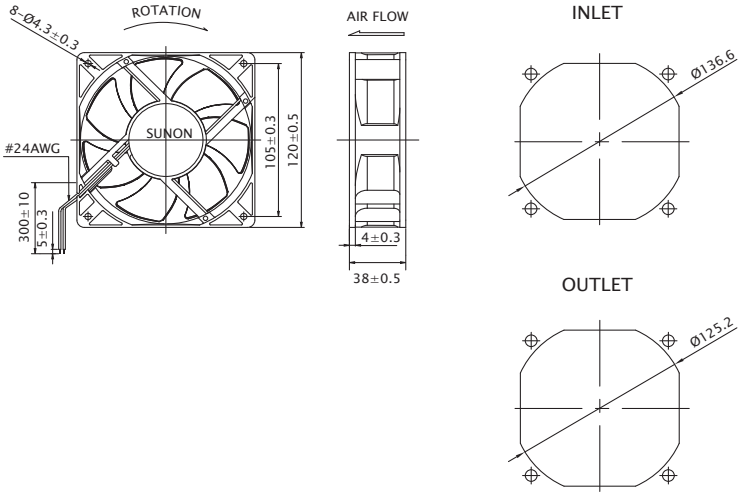
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMD1212PMB1-A (2).GN | ● | 12 | 1600 | 19.2 | 4200 | 190.0 | 0.65 | 54.0 | 330.0 | 1 |
| PMD1212PMB2-A (2).GN | ● | 12 | 1200 | 14.4 | 3800 | 170.0 | 0.54 | 51.0 | 330.0 | 2 |
| PMD2412PMB1-A (2).GN | ● | 24 | 760 | 18.2 | 4200 | 190.0 | 0.65 | 54.0 | 330.0 | 1 |
| PMD2412PMB2-A (2).GN | ● | 24 | 570 | 13.7 | 3800 | 170.0 | 0.54 | 51.0 | 330.0 | 2 |

### Function R Type : (2).R.GN ／ F Type : (2).F.GN

### Air Flow-Static Pressure Characteristics



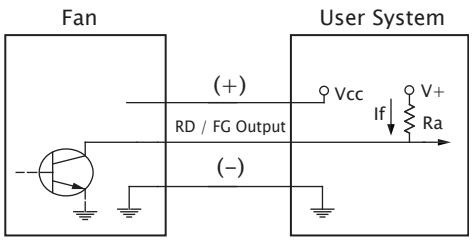

### External Dimensions(mm)



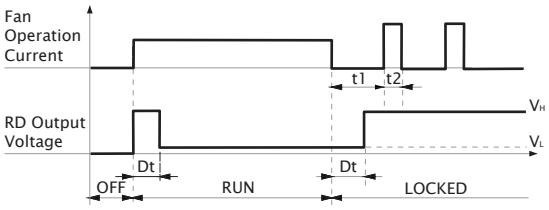

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

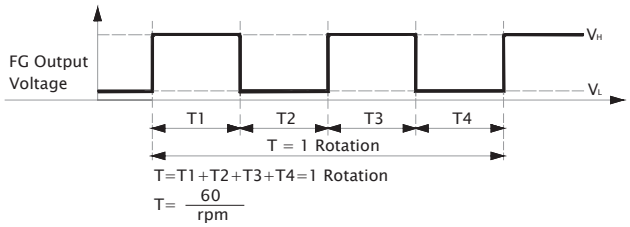
## RD / FG Output Signal




**[ RD Signal ]**

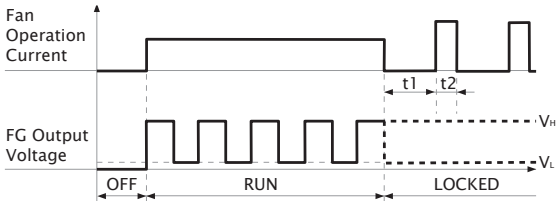



**[ FG Signal ]**




T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$



# 120x120x38 mm

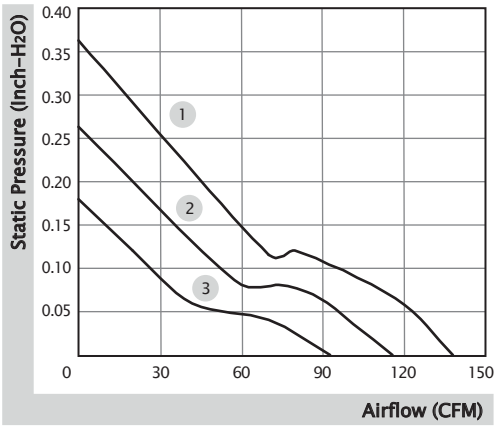
## 93.0~138.0 CFM

## Specification

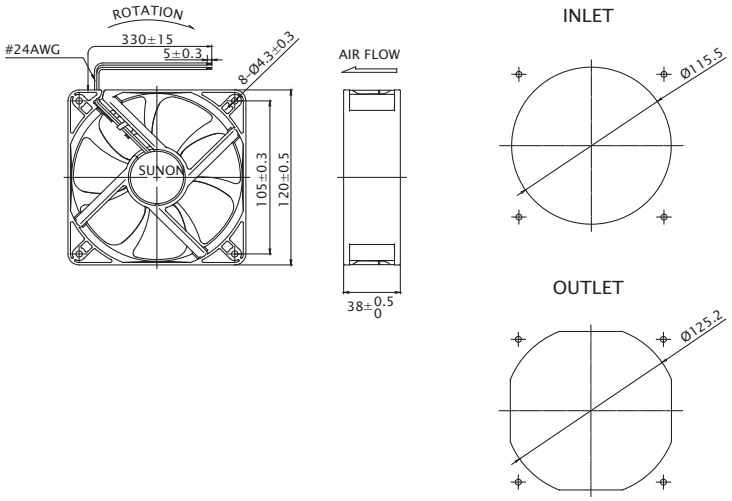
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MEC0381V1-000U-A99 | ● | 12 | 833 | 10.0 | 3100 | 138.0 | 0.36 | 48.0 | 218.0 | 1 |
| MEC0381V2-000U-A99 | ● | 12 | 421 | 5.1 | 2600 | 116.0 | 0.26 | 44.0 | 218.0 | 2 |
| MEC0381V3-000U-A99 | ● | 12 | 241 | 2.9 | 2100 | 93.0 | 0.18 | 37.0 | 218.0 | 3 |
| MEC0382V1-000U-A99 | ● | 24 | 383 | 9.2 | 3100 | 138.0 | 0.36 | 48.0 | 218.0 | 1 |
| MEC0382V2-000U-A99 | ● | 24 | 224 | 5.4 | 2600 | 116.0 | 0.26 | 44.0 | 218.0 | 2 |
| MEC0382V3-000U-A99 | ● | 24 | 130 | 3.1 | 2100 | 93.0 | 0.18 | 37.0 | 218.0 | 3 |
| Model | ◒ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EEC0381B1-000U-A99 | ◒ | 12 | 833 | 10.0 | 3100 | 138.0 | 0.36 | 48.0 | 214.0 | 1 |
| EEC0381B2-000U-A99 | ◒ | 12 | 421 | 5.1 | 2600 | 116.0 | 0.26 | 44.0 | 214.0 | 2 |
| EEC0381B3-000U-A99 | ◒ | 12 | 241 | 2.9 | 2100 | 93.0 | 0.18 | 37.0 | 214.0 | 3 |
| EEC0382B1-000U-A99 | ◒ | 24 | 383 | 9.2 | 3100 | 138.0 | 0.36 | 48.0 | 214.0 | 1 |
| EEC0382B2-000U-A99 | ◒ | 24 | 224 | 5.4 | 2600 | 116.0 | 0.26 | 44.0 | 214.0 | 2 |
| EEC0382B3-000U-A99 | ◒ | 24 | 130 | 3.1 | 2100 | 93.0 | 0.18 | 37.0 | 214.0 | 3 |
| EEC0384B1-000U-A99 | ◒ | 48 | 203 | 9.7 | 3100 | 138.0 | 0.36 | 48.0 | 214.0 | 1 |
| EEC0384B2-000U-A99 | ◒ | 48 | 120 | 5.8 | 2600 | 116.0 | 0.26 | 44.0 | 214.0 | 2 |
| EEC0384B3-000U-A99 | ◒ | 48 | 69 | 3.3 | 2100 | 93.0 | 0.18 | 37.0 | 214.0 | 3 |

## Function R Type : F99 ／ F Type : G99

## Air Flow-Static Pressure Characteristics




## External Dimensions(mm)

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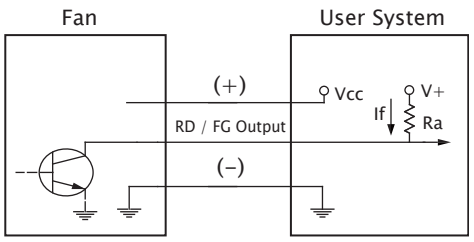
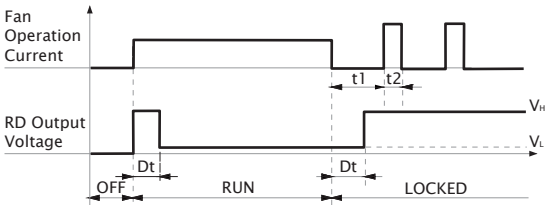
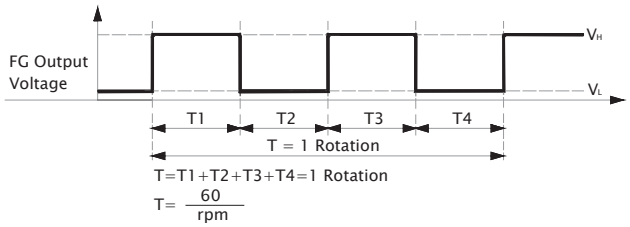
## RD / FG Output Signal

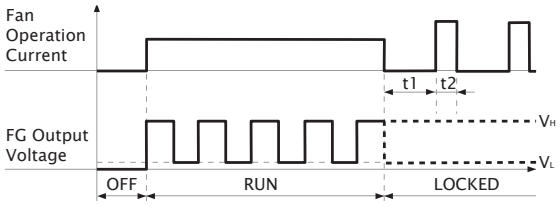



**[ RD Signal ]**




**[ FG Signal ]**



# 140x140x38 mm

## 238.5~297.9 CFM

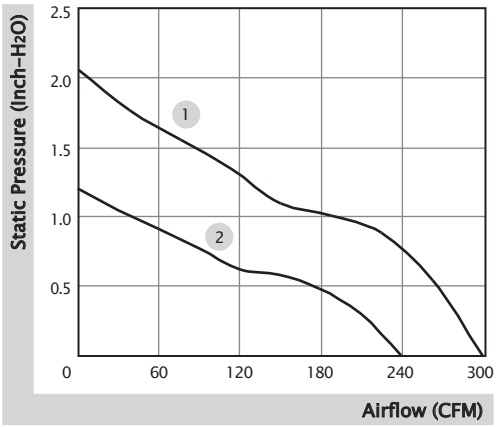
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PFE0381BX-000U-A99 | ◉ | 12 | 3300 | 39.60 | 6800 | 297.9 | 2.05 | 68.3 | 472.0 | 1 |
| PFE0381B1-000U-A99 | ◉ | 12 | 1720 | 20.64 | 5500 | 238.5 | 1.20 | 62.0 | 472.0 | 2 |

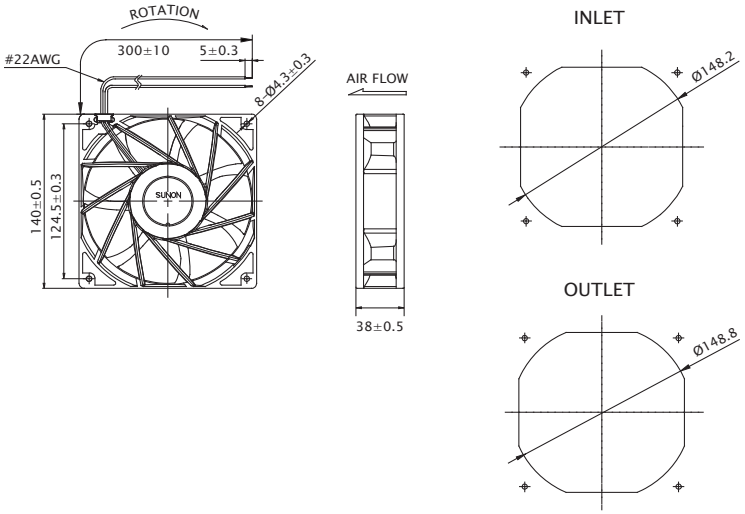
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics




## External Dimensions(mm)

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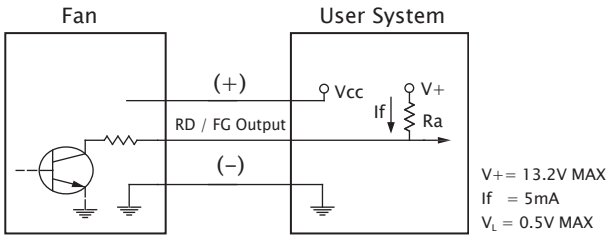
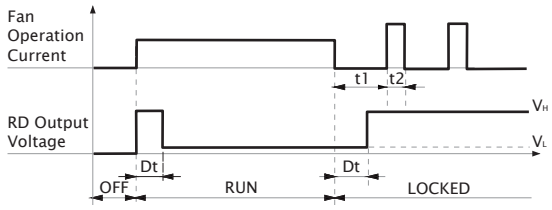
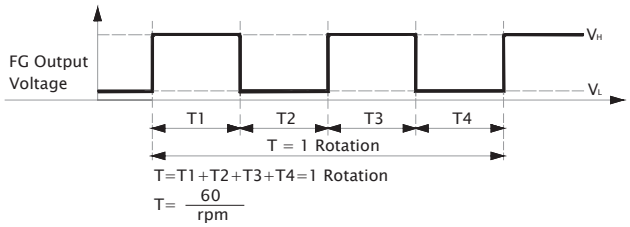
## RD / FG Output Signal

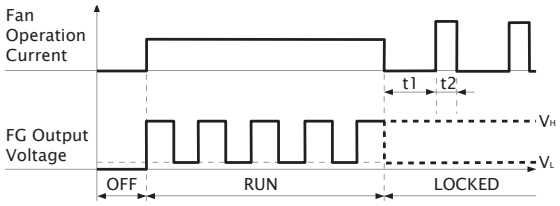



**[ RD Signal ]**

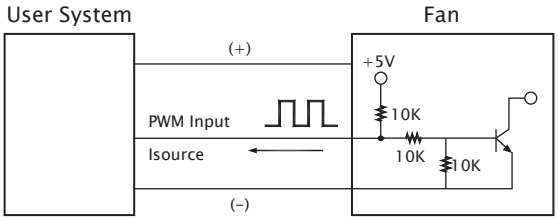



**[ FG Signal ]**




## PWM Input Signal

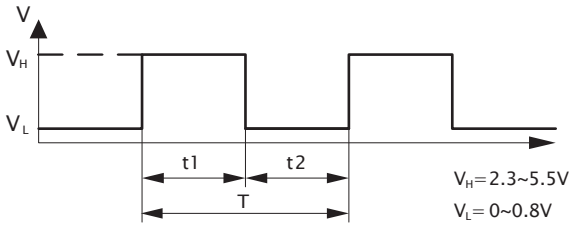



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

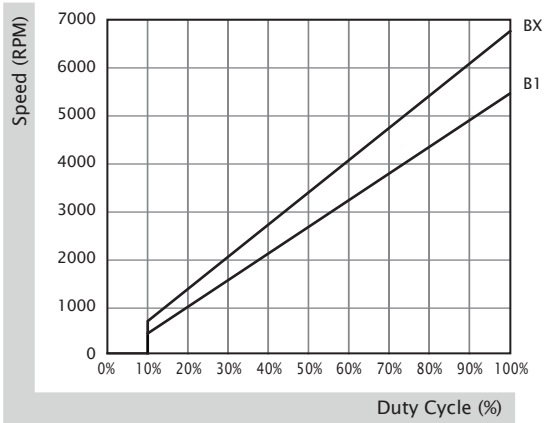
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 140x140x38 mm

## 282.6 CFM

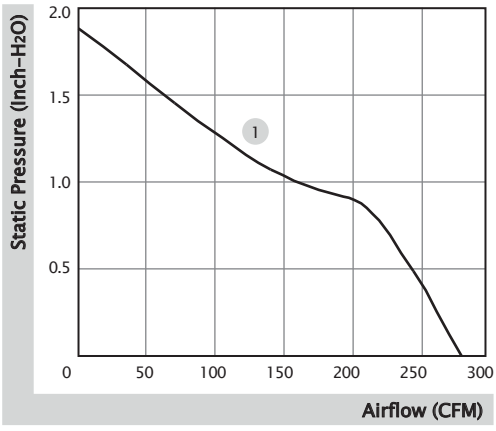
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PFE0384BX-000U-A99 | ● | 48 | 740 | 35.52 | 6600 | 282.6 | 1.88 | 65.9 | 560.0 | 1 |

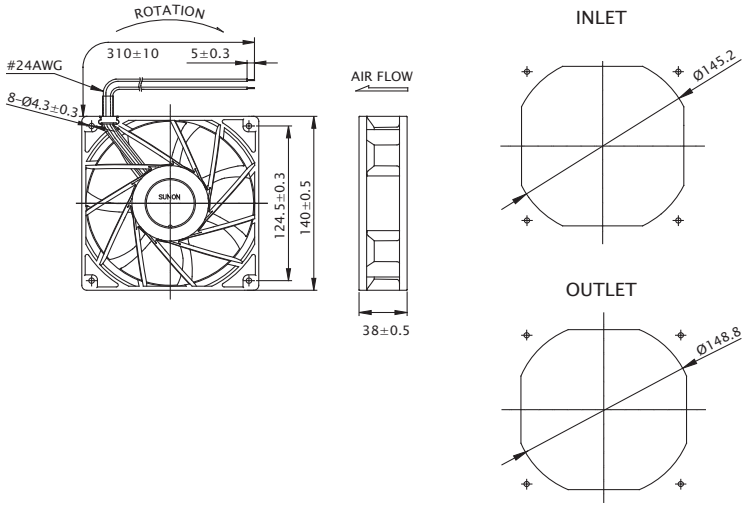
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics



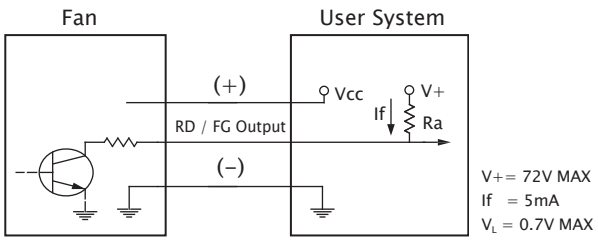

## External Dimensions(mm)



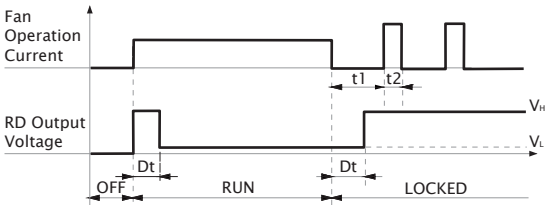

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

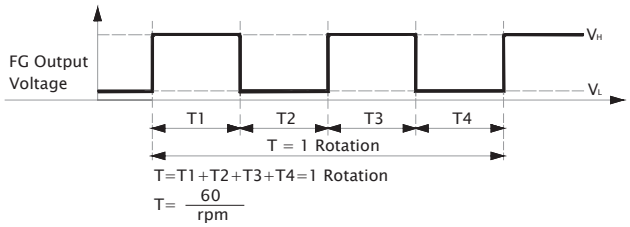
## RD / FG Output Signal

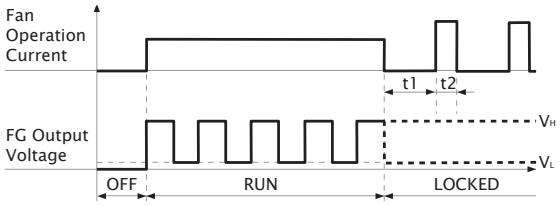



**[ RD Signal ]**

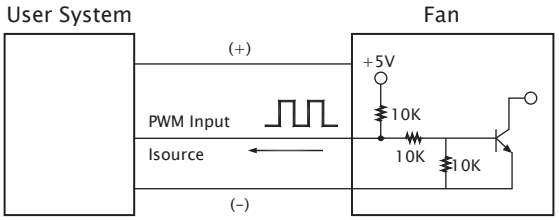



**[ FG Signal ]**




## PWM Input Signal

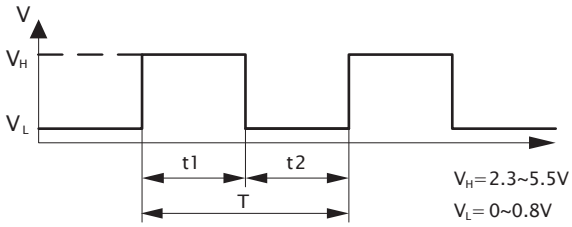



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

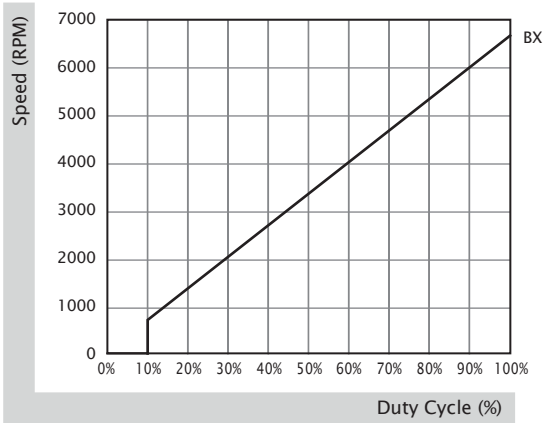
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 140x140x51 mm

## 250.3 CFM

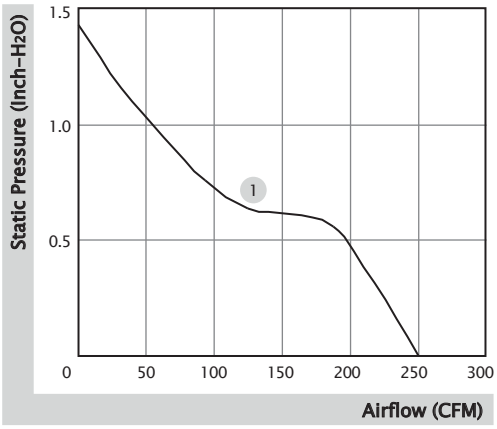
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PFE0514B1-000U-A99 | ◉ | 48 | 470 | 22.56 | 5000 | 250.3 | 1.43 | 61.4 | 635.0 | 1 |

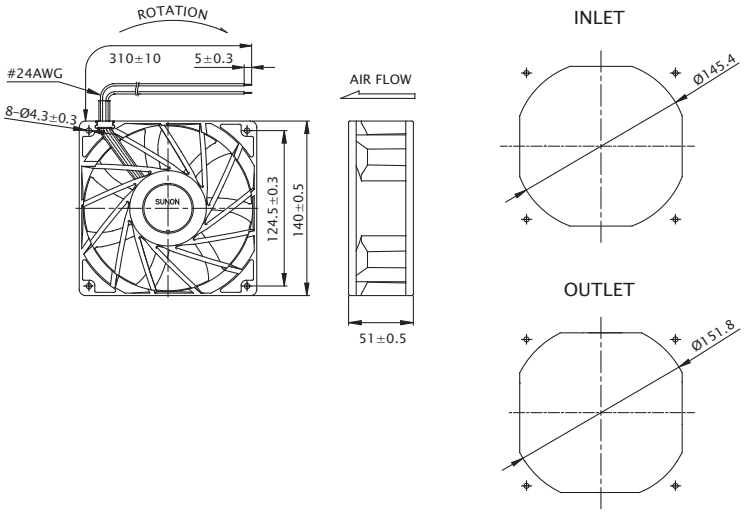
### Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

### Air Flow-Static Pressure Characteristics



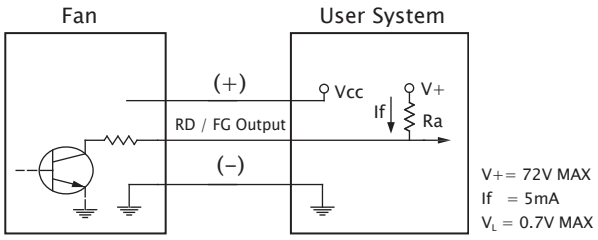

### External Dimensions(mm)



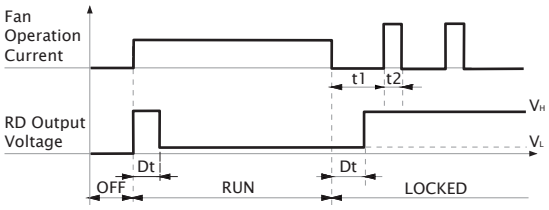

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

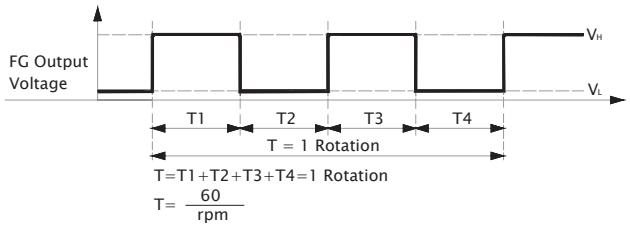
## RD / FG Output Signal

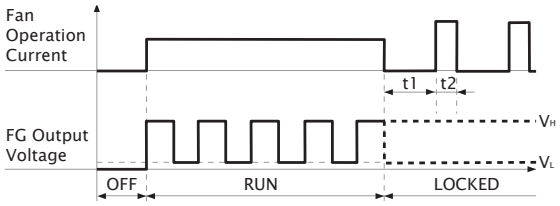



**[ RD Signal ]**

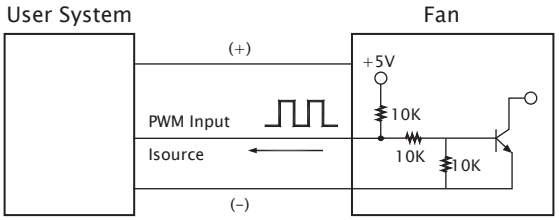



**[ FG Signal ]**




## PWM Input Signal

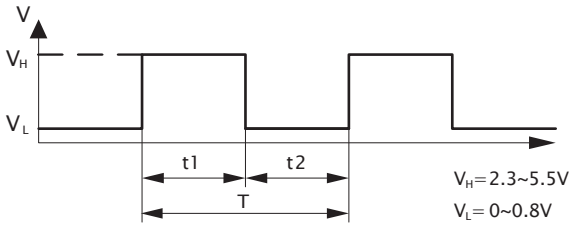



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

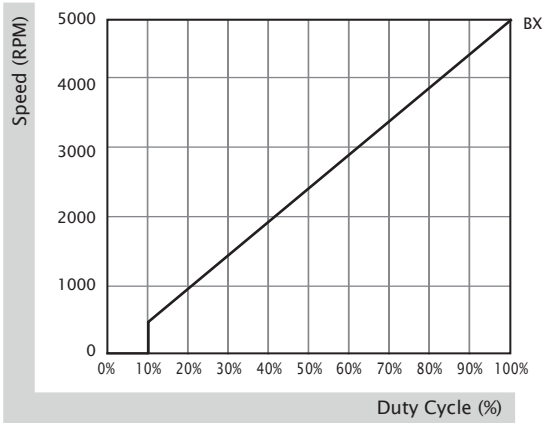
Min. start up duty cycle is 10%.



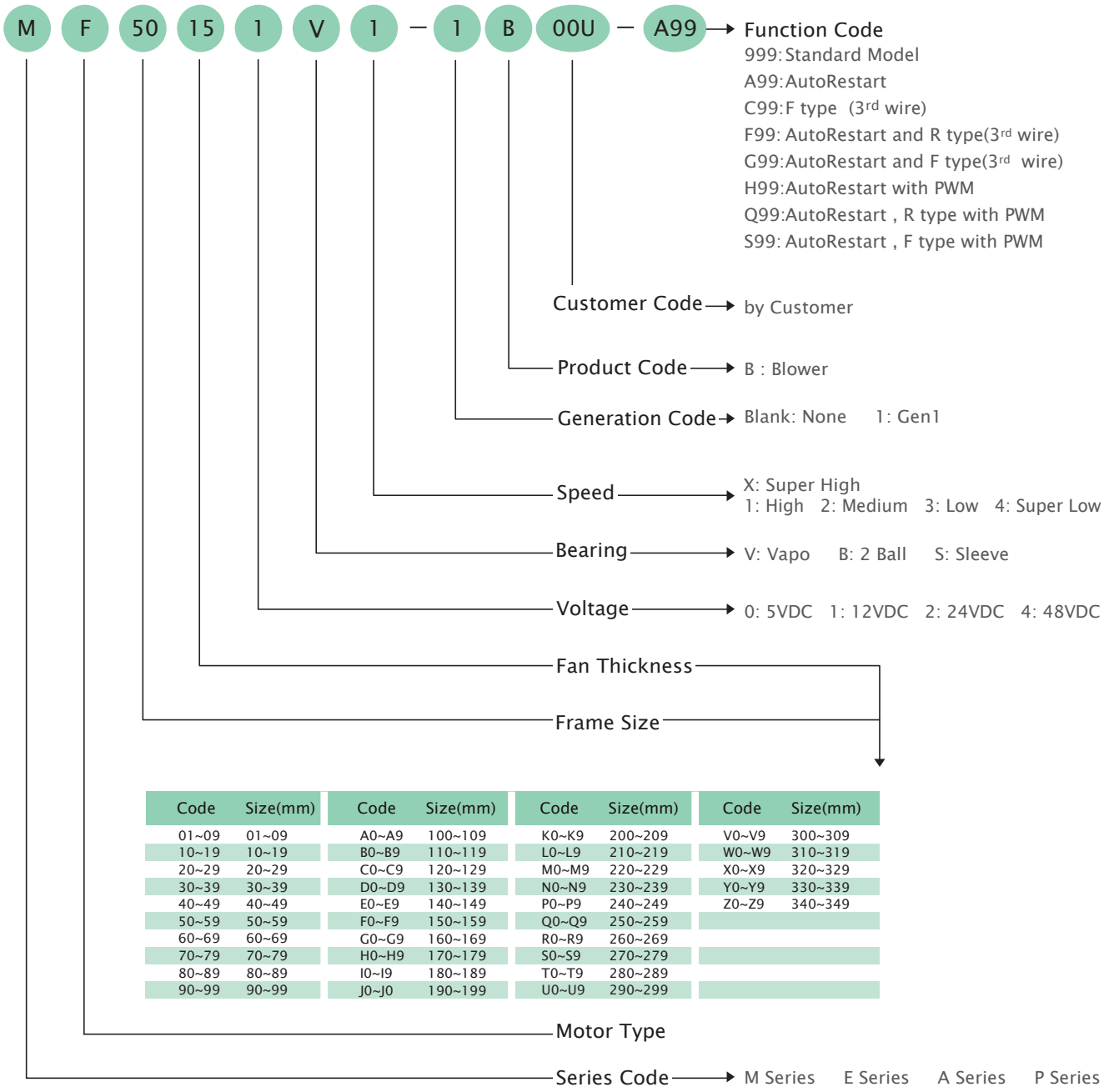

1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



## DC Blower New Model Numbering System




| Code | Size(mm) | Code | Size(mm) | Code | Size(mm) | Code | Size(mm) |
|---|---|---|---|---|---|---|---|
| 01~09 | 01~09 | A0~A9 | 100~109 | K0~K9 | 200~209 | V0~V9 | 300~309 |
| 10~19 | 10~19 | B0~B9 | 110~119 | L0~L9 | 210~219 | W0~W9 | 310~319 |
| 20~29 | 20~29 | C0~C9 | 120~129 | M0~M9 | 220~229 | X0~X9 | 320~329 |
| 30~39 | 30~39 | D0~D9 | 130~139 | N0~N9 | 230~239 | Y0~Y9 | 330~339 |
| 40~49 | 40~49 | E0~E9 | 140~149 | P0~P9 | 240~249 | Z0~Z9 | 340~349 |
| 50~59 | 50~59 | F0~F9 | 150~159 | Q0~Q9 | 250~259 | | |
| 60~69 | 60~69 | G0~G9 | 160~169 | R0~R9 | 260~269 | | |
| 70~79 | 70~79 | H0~H9 | 170~179 | S0~S9 | 270~279 | | |
| 80~89 | 80~89 | I0~I9 | 180~189 | T0~T9 | 280~289 | | |
| 90~99 | 90~99 | J0~J0 | 190~199 | U0~U9 | 290~299 | | |

## Certification

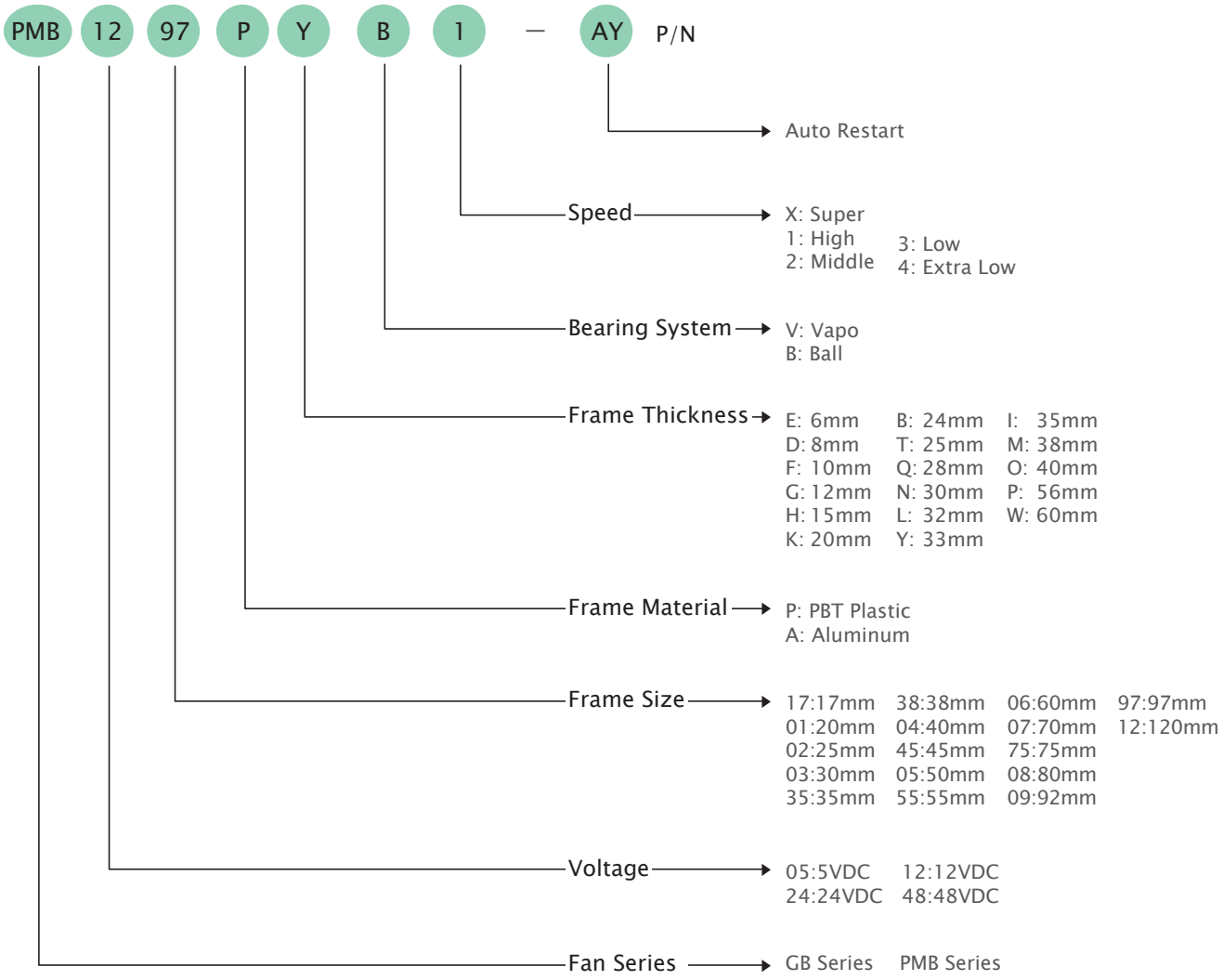
QC 080000 IECQ HSPM

## Safety

※ Note: For critical or extreme environments, including non stop operation, please contact SUNON and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.

※ Note: The “Life Expectancy” of the fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports(L10 and MTTF Report) that relate to the fan are only for reference.

## DC Blower Old Model Numbering System




### P/N

Example : PMB1297PYB1-AY P/N:(2).GN

- (2) Two ball bearing
- GN RoHS compliance

## Certification

QC 080000 IECQ HSPM

## Safety

※ Note: For critical or extreme environments, including non stop operation, please contact SUNON and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.

※ Note: The "Life Expectancy" of the fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports(L10 and MTTF Report) that relate to the fan are only for reference.

# 50x50x15 mm

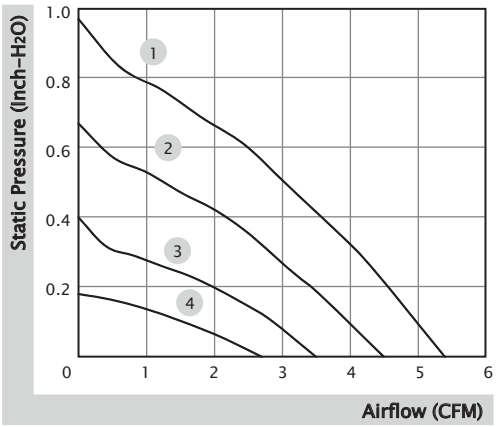
## 2.7~5.4 CFM

### Specification

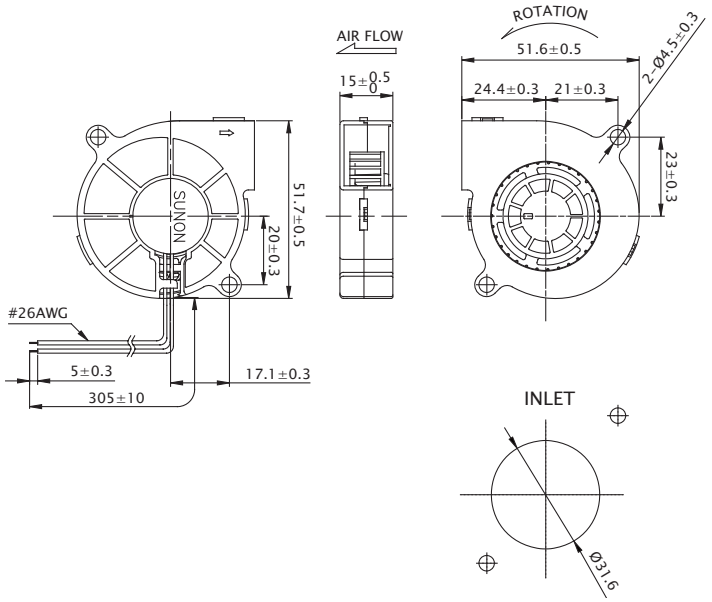
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF50151VX-1B00U-A99 | ● | 12 | 155 | 1.86 | 6200 | 5.4 | 0.97 | 42.2 | 30.0 | 1 |
| MF50151V1-1B00U-A99 | ● | 12 | 95 | 1.14 | 5200 | 4.5 | 0.67 | 39.6 | 30.0 | 2 |
| MF50151V2-1B00U-A99 | ● | 12 | 45 | 0.54 | 4200 | 3.5 | 0.40 | 32.6 | 30.0 | 3 |
| MF50151V3-1B00U-A99 | ● | 12 | 30 | 0.36 | 3200 | 2.7 | 0.18 | 23.2 | 30.0 | 4 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



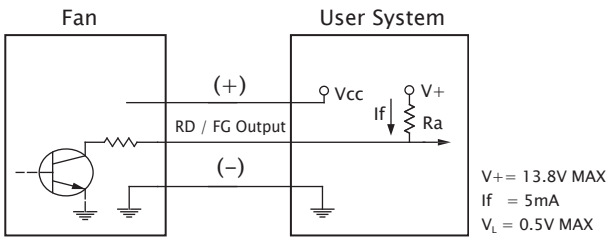

### External dimensions(mm)



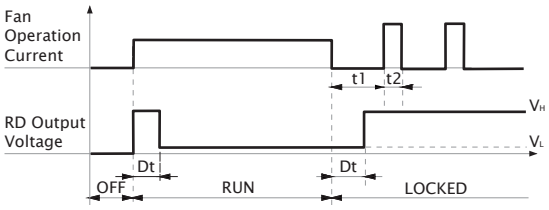

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

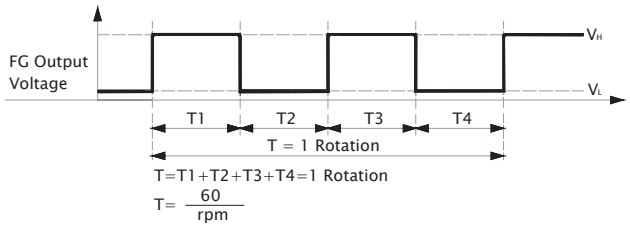
## RD / FG Output Signal

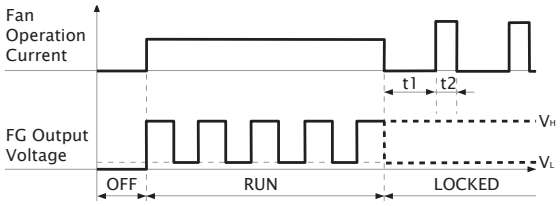



**[ RD Signal ]**




**[ FG Signal ]**



# 50x50x15 mm

## 2.6~5.4 CFM

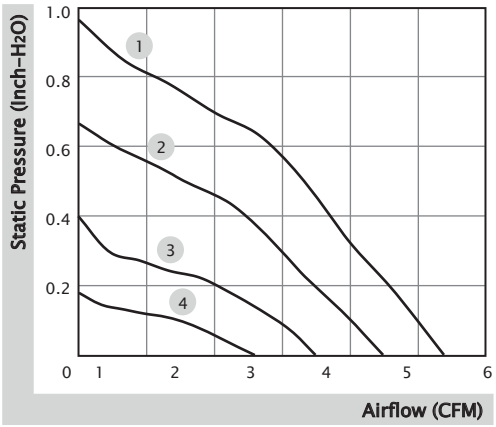
### Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| EF50151BX-1B00U-A99 | ● | 12 | 150 | 1.80 | 6200 | 5.4 | 0.97 | 45.8 | 31.0 | 1 |
| EF50151B1-1B00U-A99 | ● | 12 | 106 | 1.28 | 5200 | 4.5 | 0.67 | 41.0 | 31.0 | 2 |
| EF50151B2-1B00U-A99 | ● | 12 | 54 | 0.65 | 4200 | 3.5 | 0.40 | 34.0 | 31.0 | 3 |
| EF50151B3-1B00U-A99 | ● | 12 | 36 | 0.44 | 3200 | 2.6 | 0.18 | 26.0 | 31.0 | 4 |

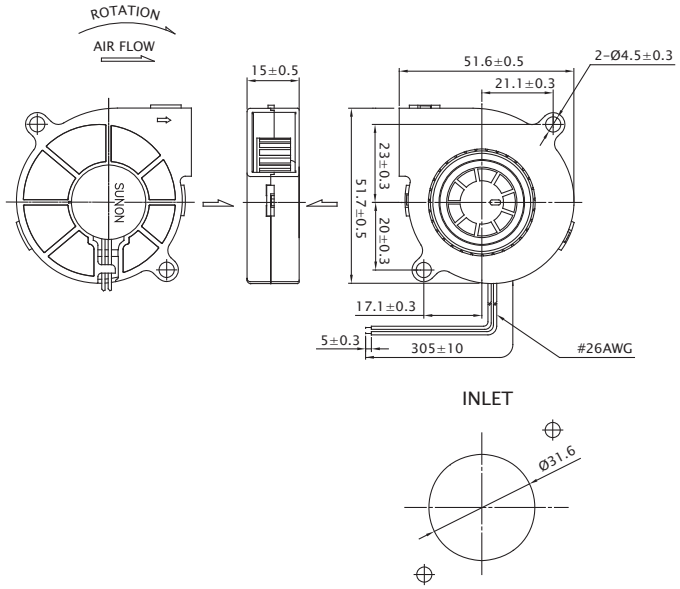
### Function

R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



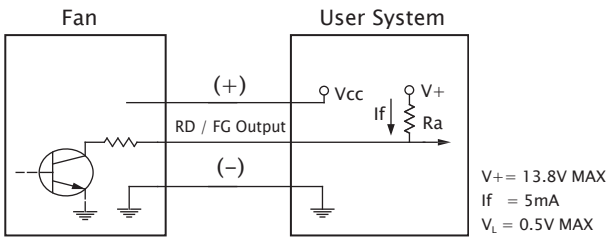

### External dimensions(mm)



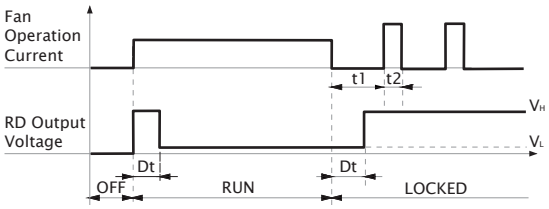

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

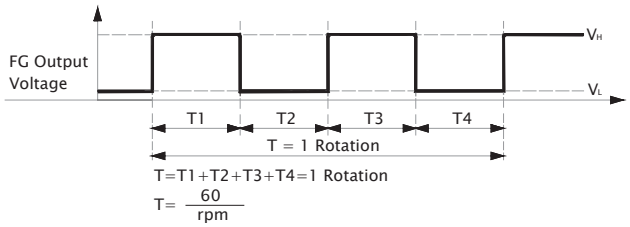
## RD / FG Output Signal

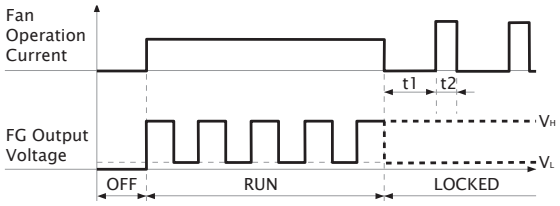



**[ RD Signal ]**




**[ FG Signal ]**



# 50x50x20 mm

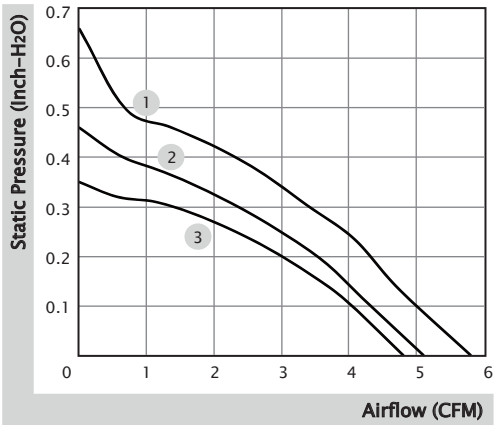
## 4.8~5.8 CFM

### Specification

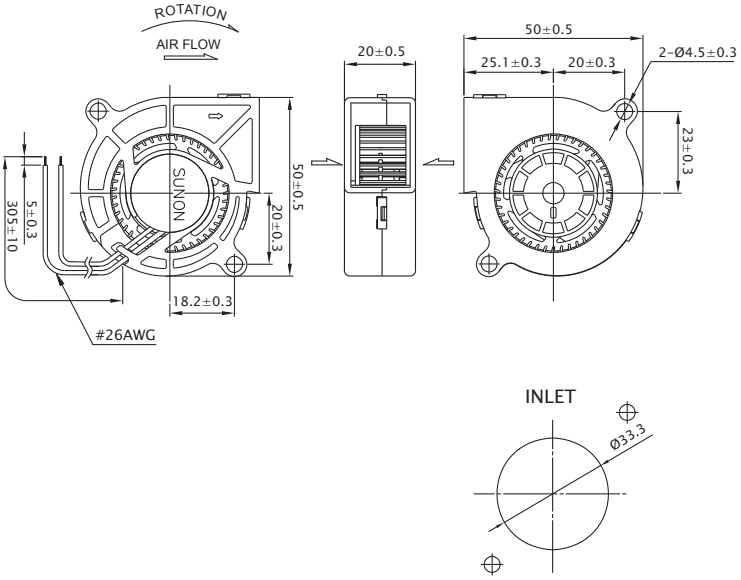
| MAGLev by SUNON | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● VAPO | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF50201V1-1B00U-A99 | ● | 12 | 124 | 1.49 | 5300 | 5.8 | 0.66 | 34.8 | 34.0 | 1 |
| MF50201V2-1B00U-A99 | ● | 12 | 100 | 1.20 | 4650 | 5.1 | 0.46 | 30.0 | 34.0 | 2 |
| MF50201V3-1B00U-A99 | ● | 12 | 75 | 0.90 | 4350 | 4.8 | 0.35 | 27.5 | 34.0 | 3 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



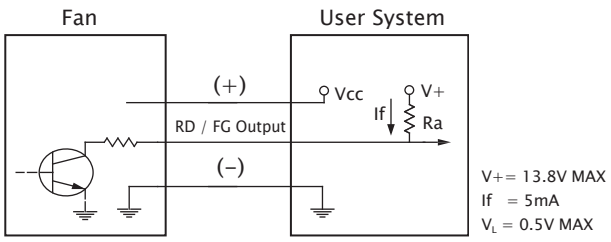

### External dimensions(mm)



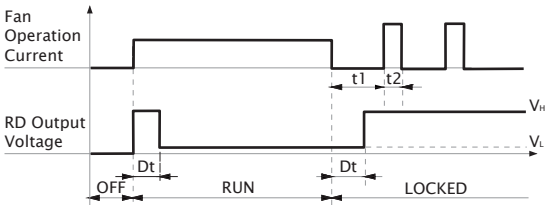

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

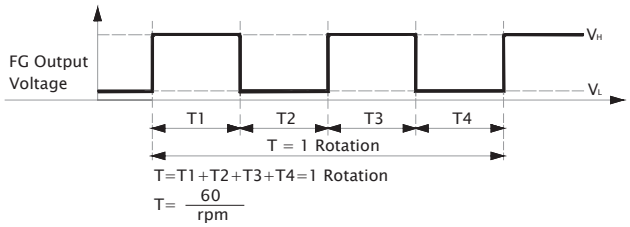
## RD / FG Output Signal

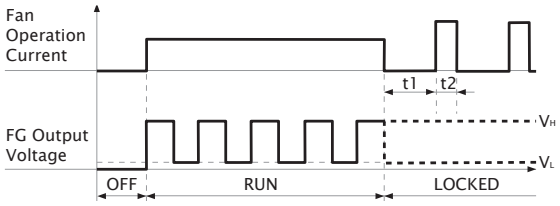



**[ RD Signal ]**




**[ FG Signal ]**



# 60x60x15 mm

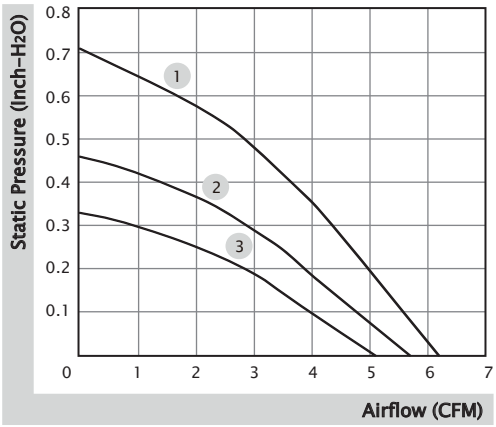
## 5.1~6.2 CFM

### Specification

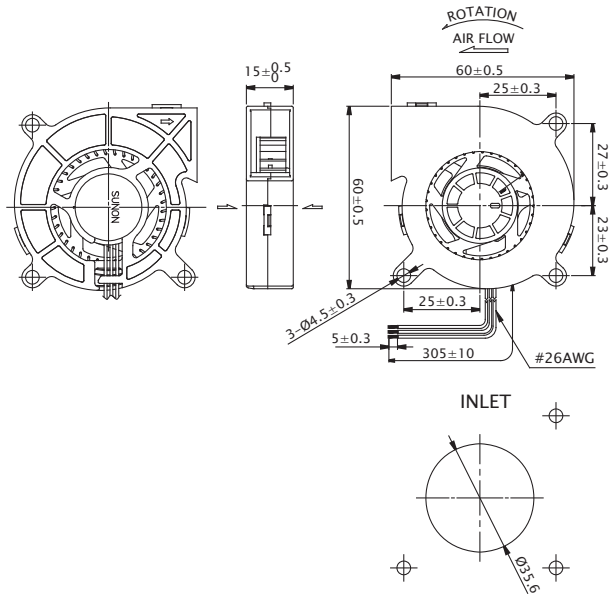
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| MF60151VX-1B00U-A99 | ◉ | 12 | 130 | 1.56 | 4500 | 6.2 | 0.71 | 37.7 | 36.0 | 1 |
| MF60151V1-1B00U-A99 | ◉ | 12 | 75 | 0.90 | 4000 | 5.7 | 0.46 | 32.8 | 36.0 | 2 |
| MF60151V2-1B00U-A99 | ◉ | 12 | 55 | 0.66 | 3600 | 5.1 | 0.33 | 29.0 | 36.0 | 3 |

### Function R Type : F99 ／ F Type : G99

### Air Flow-Static Pressure Characteristics



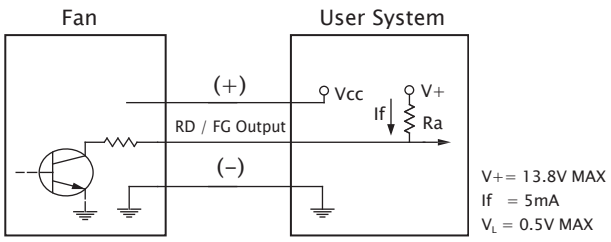

### External dimensions(mm)



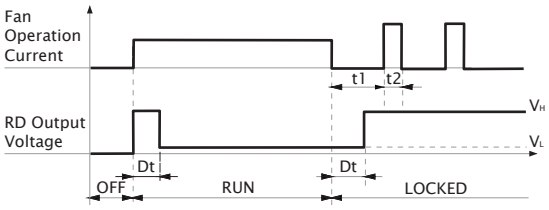

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

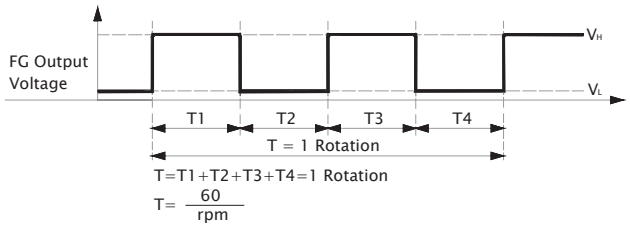
## RD / FG Output Signal

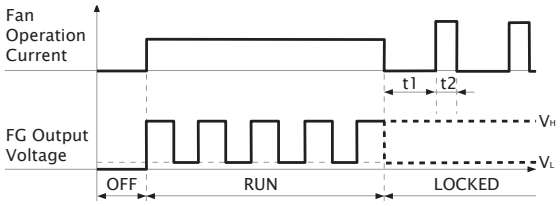



**[ RD Signal ]**




**[ FG Signal ]**



# 75x75x30 mm

## 10.8~15.5 CFM

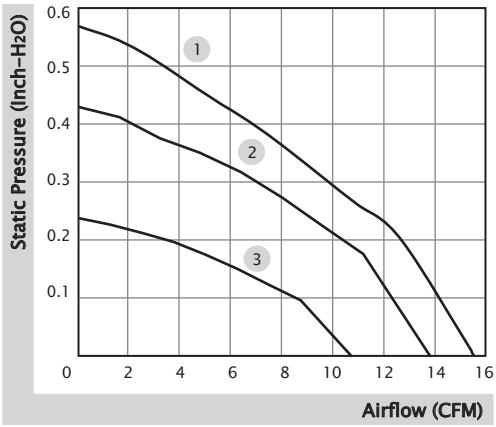
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF75301B1-1B00U-A99 | ● | 12 | 200 | 2.40 | 3400 | 15.5 | 0.57 | 42.0 | 85.0 | 1 |
| PF75301B2-1B00U-A99 | ● | 12 | 142 | 1.71 | 3000 | 13.8 | 0.43 | 38.6 | 85.0 | 2 |
| PF75301B3-1B00U-A99 | ● | 12 | 82 | 0.99 | 2400 | 10.8 | 0.24 | 32.9 | 85.0 | 3 |
| PF75302B1-1B00U-A99 | ● | 24 | 115 | 2.76 | 3400 | 15.5 | 0.57 | 42.0 | 88.0 | 1 |
| PF75302B2-1B00U-A99 | ● | 24 | 80 | 1.92 | 3000 | 13.8 | 0.43 | 38.6 | 88.0 | 2 |
| PF75302B3-1B00U-A99 | ● | 24 | 47 | 1.13 | 2400 | 10.8 | 0.24 | 32.9 | 88.0 | 3 |

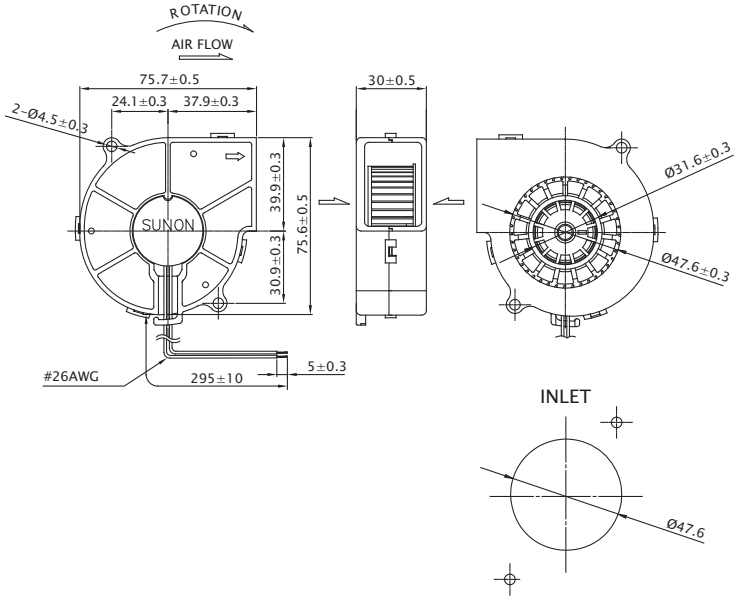
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics



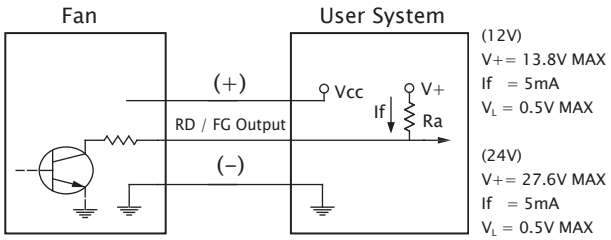

## External dimensions(mm)



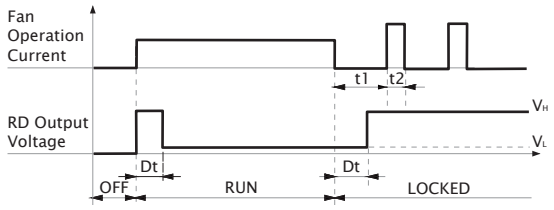

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

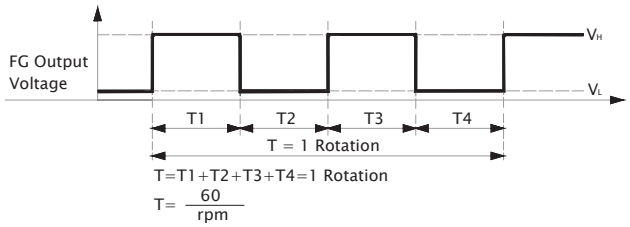
## RD / FG Output Signal

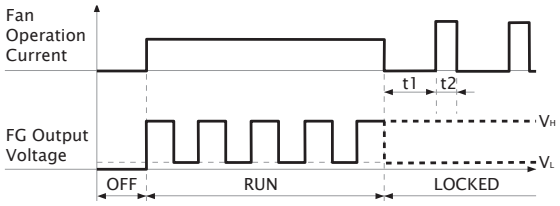



**[ RD Signal ]**

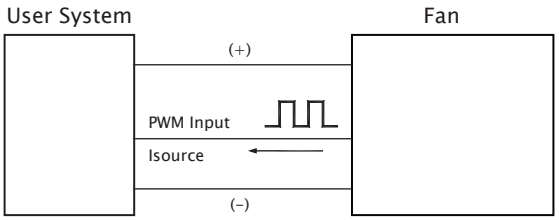



**[ FG Signal ]**




## PWM Input Signal

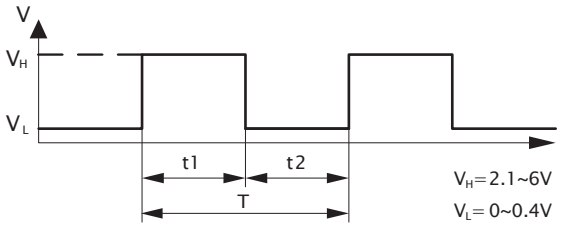



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

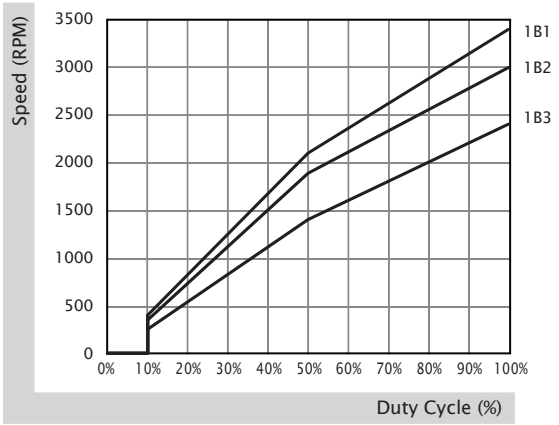
Min. start up duty cycle is 10%.

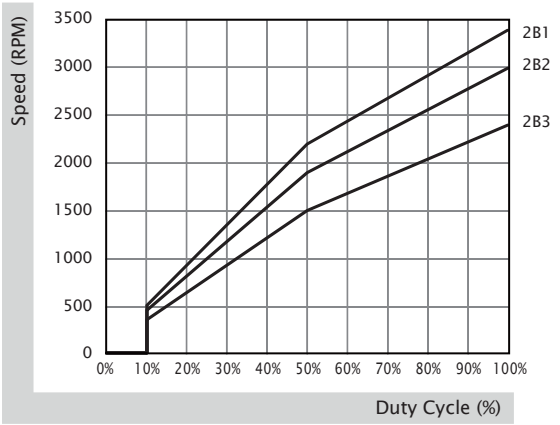



1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 97x94x33 mm

## 22.4~30.5 CFM

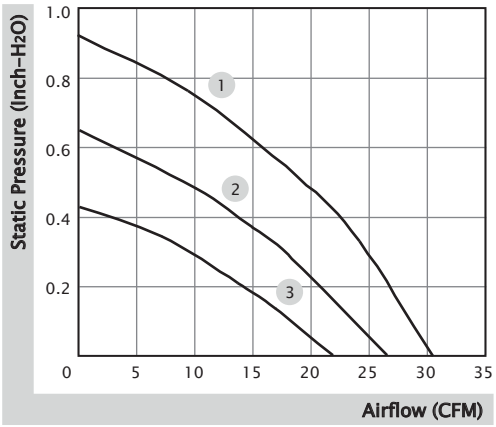
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMB1297PYB1-AY (2).GN | ◉ | 12 | 600 | 7.20 | 3600 | 30.5 | 0.92 | 55.8 | 185.00 | 1 |
| PMB1297PYB2-AY (2).GN | ◉ | 12 | 440 | 5.28 | 3200 | 26.6 | 0.65 | 53.1 | 185.00 | 2 |
| PMB1297PYB3-AY (2).GN | ◉ | 12 | 300 | 3.60 | 2700 | 22.4 | 0.43 | 50.0 | 185.00 | 3 |

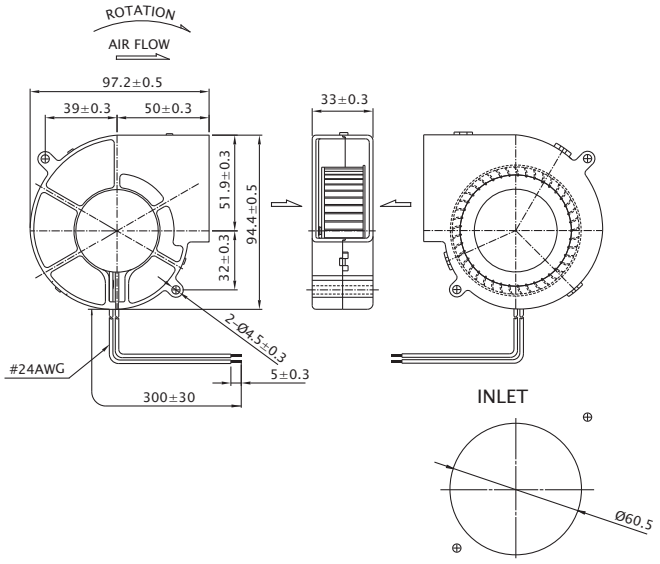
## Function

R Type : (2).R.GN ／ F Type : (2).F.GN

## Air Flow-Static Pressure Characteristics



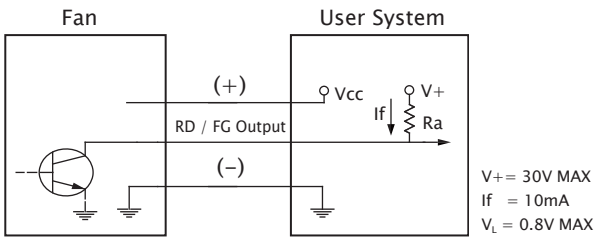

## External dimensions(mm)



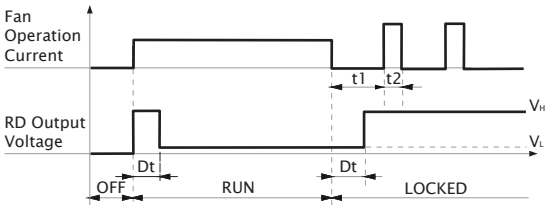

※ All model could be customized. Please contact with Sunon Sales.

※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

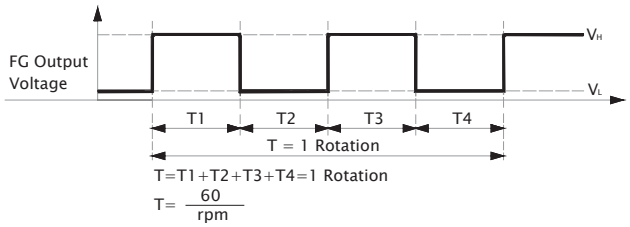
## RD / FG Output Signal

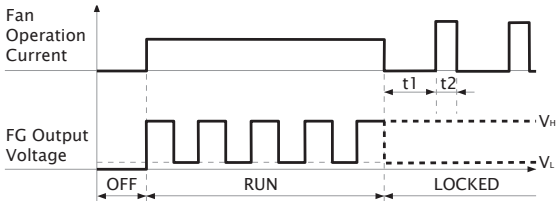



**[ RD Signal ]**




**[ FG Signal ]**



# 97x95x33 mm

## 44.2~54.7 CFM

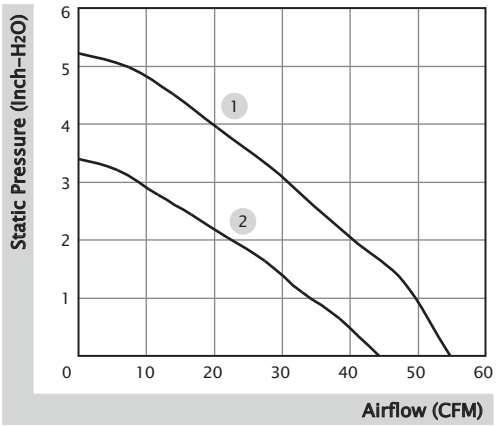
## Specification

| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PF97331BX-B00U-A99 | ● | 12 | 3500 | 42.00 | 6800 | 54.7 | 5.22 | 63.2 | 184.0 | 1 |
| PF97331B1-B00U-A99 | ● | 12 | 1600 | 19.20 | 5400 | 44.2 | 3.39 | 58.0 | 184.0 | 2 |

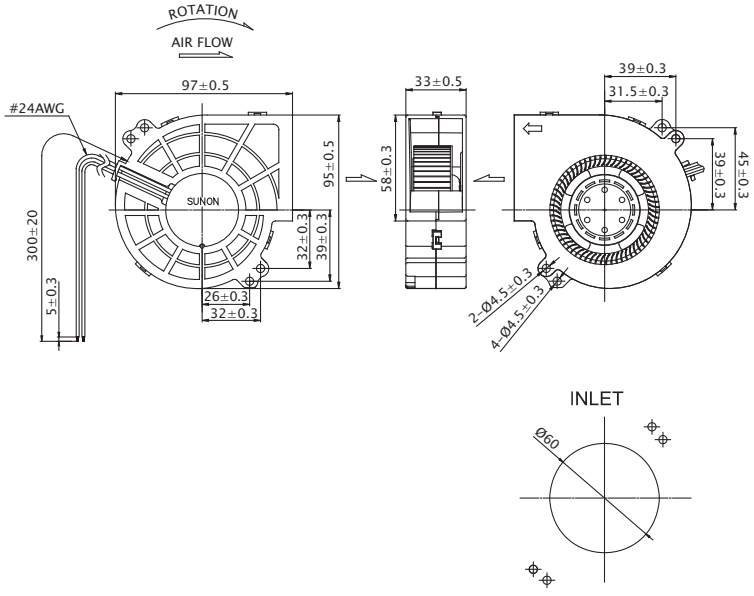
## Function

R Type : F99 ／ F Type : G99 ／ PWM : H99, Q99, S99

## Air Flow-Static Pressure Characteristics




## External dimensions(mm)

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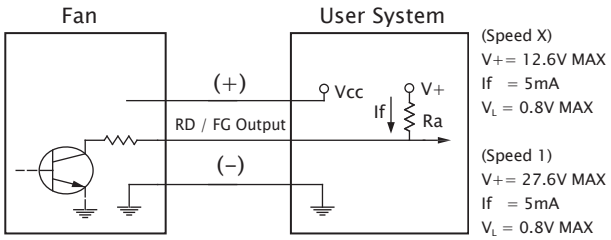
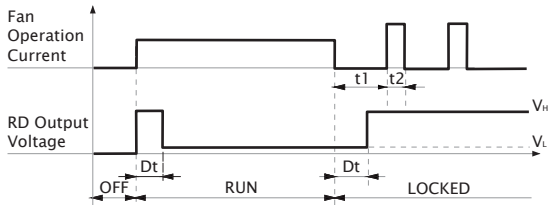
## RD / FG Output Signal



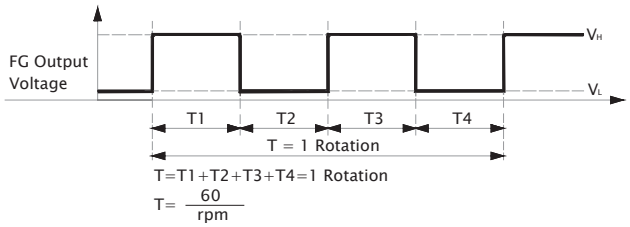

(Speed X)
V+= 12.6V MAX
If = 5mA
$V_L$ = 0.8V MAX

(Speed 1)
V+= 27.6V MAX
If = 5mA
$V_L$ = 0.8V MAX

**[ RD Signal ]**

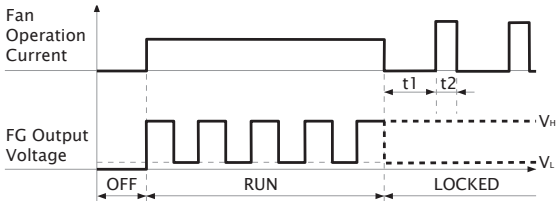



**[ FG Signal ]**

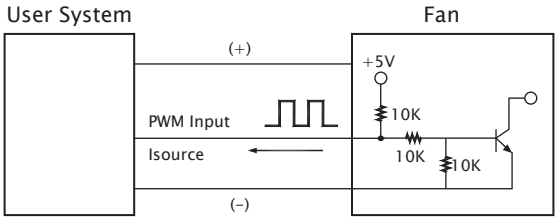



T=T1+T2+T3+T4=1 Rotation

$T = \frac{60}{rpm}$




## PWM Input Signal

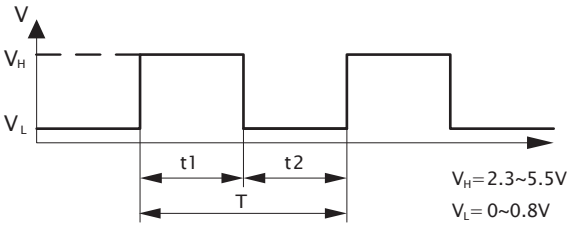



PWM FREQUENCY: 25KHZ

Isource=0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

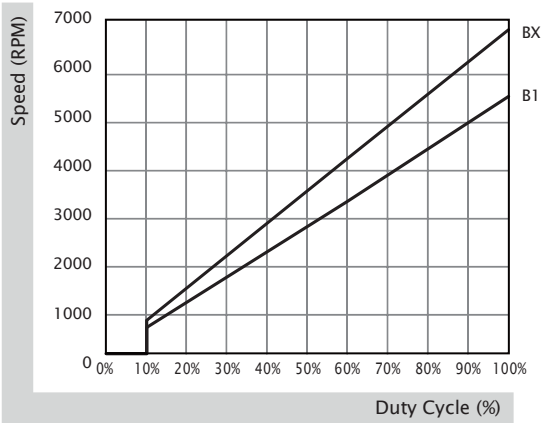
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2 (sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 100x100x25 mm

## for Automative Application | Meets AEC-Q100

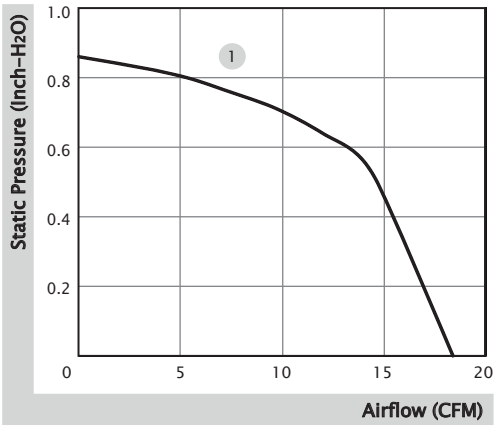
## 18.4 CFM

### Specification

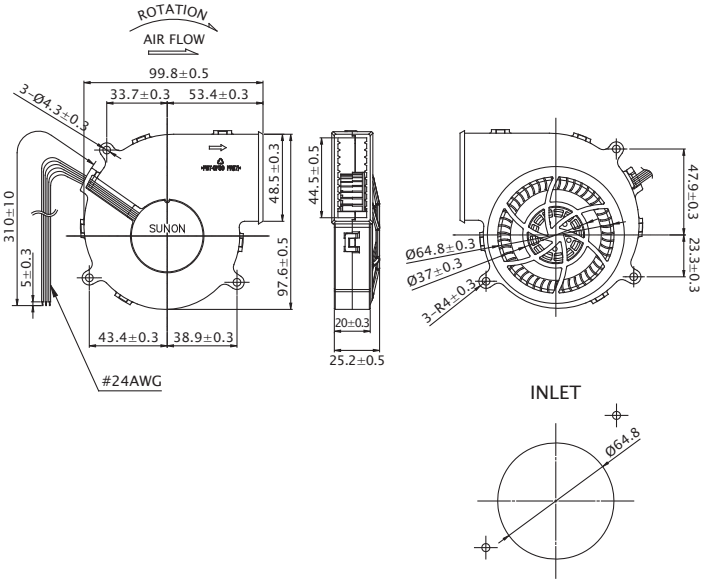
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ◉ 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| AFA0251B1-1B00U-H99 | ◉ | 13.5 | 520 | 7.02 | 3800 | 18.4 | 0.86 | 52.3 | 110 | 1 |

### Function PWM : S99

### Air Flow-Static Pressure Characteristics



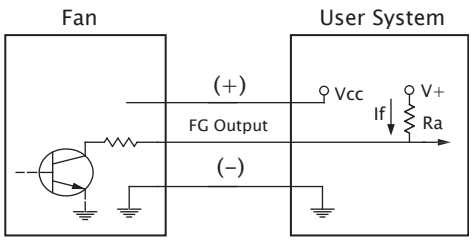

### External dimensions(mm)



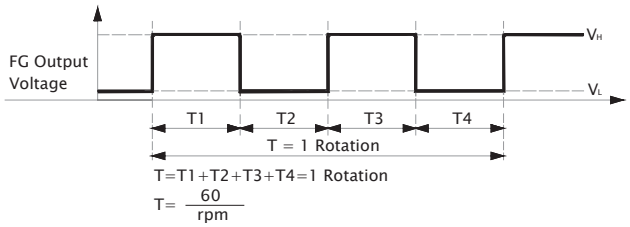

※ All model could be customized. Please contact with Sunon Sales.

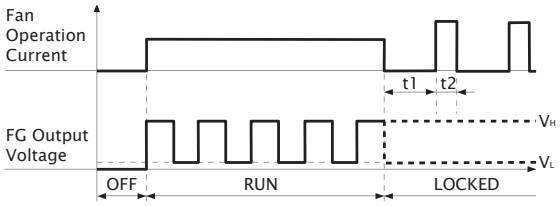
※ Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

## FG Output Signal

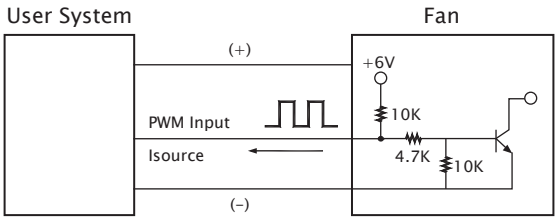



**[ FG Signal ]**




## PWM Input Signal

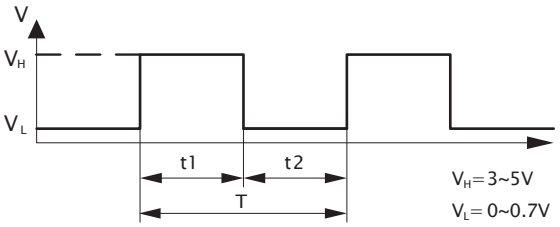



PWM FREQUENCY: 25KHZ

Isource=2mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

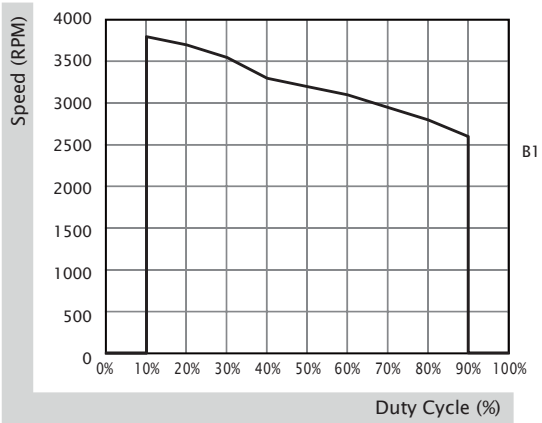
Min. start up duty cycle is 10%.




1. Period : $T = \frac{1}{f_{PWM}} = t1 + t2(sec)$

2. Duty Cycle（D.C.）: $\frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%)$

## PWM Curve



# 120x120x32 mm

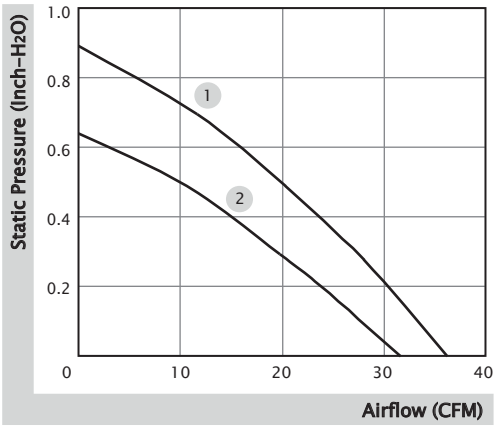
## 31.4~35.9 CFM

## Specification

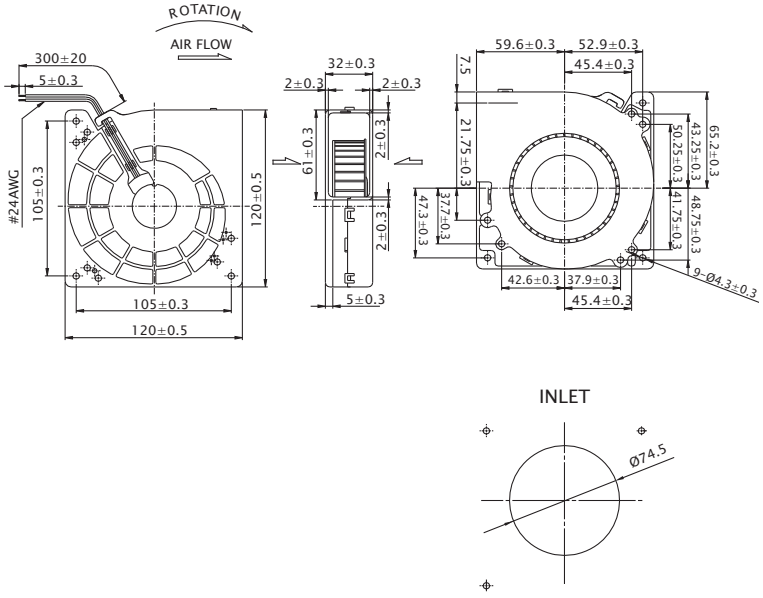
| Model | Bearing | Rated Valtage | Power Current | Power Consumption | Speed | Airflow | Static Pressure | Noise | Weight | Curve |
|---|---|---|---|---|---|---|---|---|---|---|
| | ● 2BALL ○ Sleeve | (VDC) | (mA) | (WATTS) | (RPM) | (CFM) | (inch-$H_2O$) | (dB(A)) | (g) | |
| PMB1212PLB2-A (2).GN | ● | 12 | 820 | 9.8 | 2500 | 35.9 | 0.89 | 53.8 | 250.0 | 1 |
| PMB1212PLB3-A (2).GN | ● | 12 | 450 | 5.4 | 2100 | 31.4 | 0.64 | 49.6 | 250.0 | 2 |

## Function R Type : (2).R.GN ／ F Type : (2).F.GN

## Air Flow-Static Pressure Characteristics




## External dimensions(mm)

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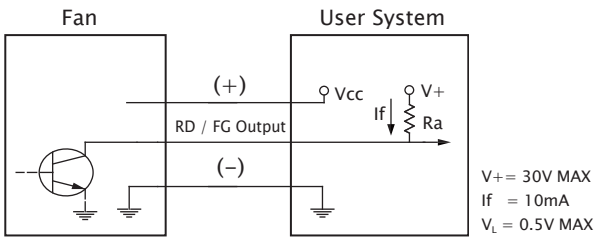
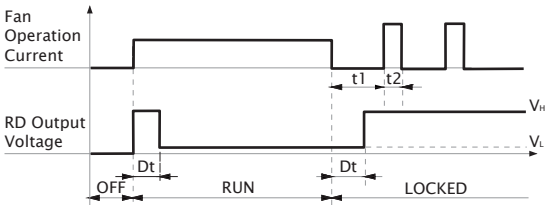
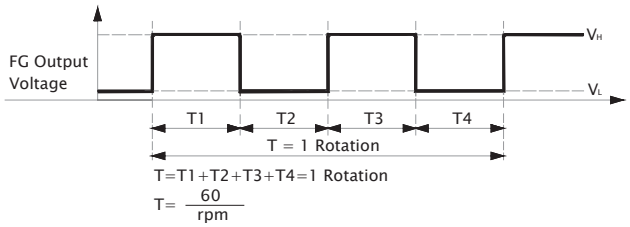
## RD / FG Output Signal

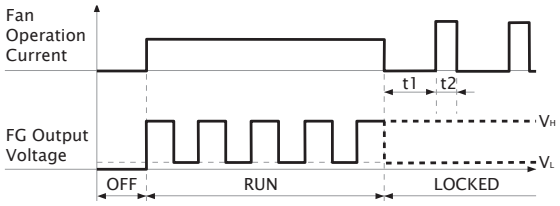



**[ RD Signal ]**




**[ FG Signal ]**



# Notes

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2023/02/28 (255-E)

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