

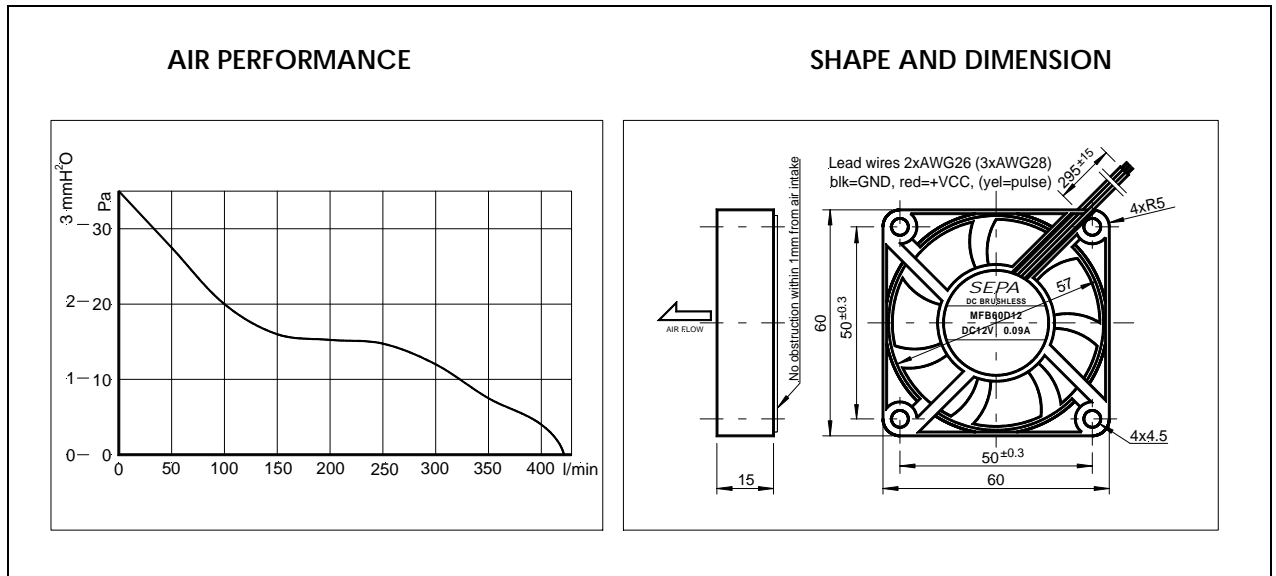
# SEPA<sup>®</sup> BRUSHLESS DC FAN

MFB60D05, MFB60D12, MFB60D24



**HIGH RELIABILITY FAN**

**AUTOMOTIVE FAN**



## PERFORMANCE

CE	MFB60D05(A)	MFB60D12(A)	MFB60D24(A)
Operating Voltage [VDC]	4.5 ... 5.0 ... 5.5	10.2 ... 12 ... 13.8	20.4 ... 24 ... 27.6
Operating Current [mA]	180	90	50
Start Current [mA]	500	200	110
Max. Air Flow [l/min - m <sup>3</sup> /h]	420 - 25.2	420 - 25.2	420 - 25.2
Max. Air Pressure [mmH <sub>2</sub> O - Pa]	3.6 - 35	3.6 - 35	3.6 - 35
Typ. Noise @ 1m [dB(A)]	26	26	26
Operating Temp. (1h max, not blocked) [°C]	-40...+80 (85)		
Rotor Speed [RPM]	3800	3800	3800
Life Expectancy L <sub>10</sub> /MTBF @ 20° [h]	95000/280000		
Bearing System	Ball Bearings ZZ / Steel Flange		
Weight [g]	38		
Pulse Output (MFB60DxxA only)	2 pulse / rev.		
Packing Quantity [PCs]	50 - 100 - 250		

This **SEPA**<sup>®</sup> high-tech miniature fans are suitable for industrial use and has a remarkable air flow performance despite its small dimensions. Due to a nearly linear air performance characteristic, the fans are applicable for different uses. They are permanently protected electrically against reverse polarity, blocking and thermal overloading. Due to the low rotor weight and precision balancing, it is virtually vibration-free. It is also insensitive to shock.

Further features of these fans are its extremely robust and torsionally rigid plastic housing of PBT (UL E54695), ball bearings with narrow tolerances, of special steel, polyester-based PCB (UL E44247) and absolute reliability due to 100% burn-in.

• **Alarm Signal (Optional)**

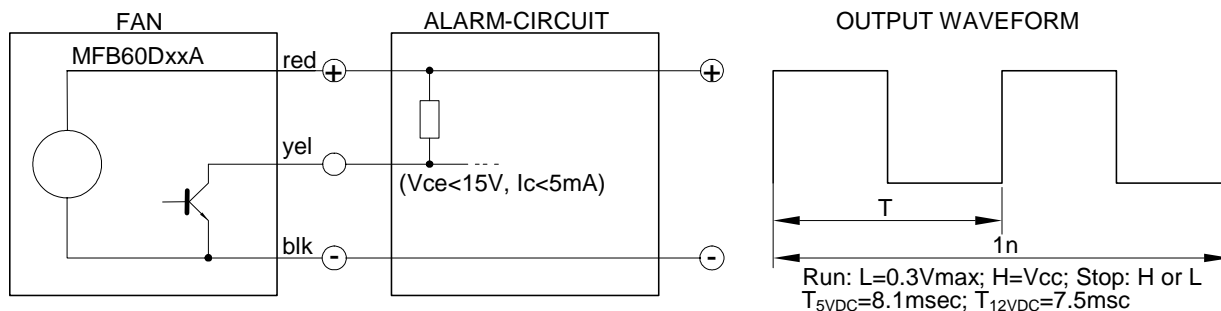
The **SEPA**® MFB60DxxA include a speed impulse output, which enables monitoring the correct function of the fan. An alarm-board is available on request.

The pulse is like a rectangular wave, the frequency correlates to 2 x rotor speed. At blocked rotor the output signal could be L ( $\leq 0.3V$ ) or H ( $V_{cc}$ ).

**IMPORTANT:** The pulse output is *not* protected against short circuit and must not connect to GND or  $V_{cc}$  without series-resistor. A pull-up-resistor is permitted.

Do not connect pulse output wire to GND or  $V_{cc}$  (insolate).

The MFB60Dxx(A) have tinned lead wire ends (without connector).



**IMPORTANT:** Do not touch the impeller!

• **Accessories:**

ALG01 **SEPA** ALARM, monitor-circuit, generates an acoustic signal in case of missing pulses.  
CONNECTOR on request

• **Order information:**

MFB60D05	<b>SEPA</b> fan, 60x60x15mm, 5VDC, ball bearing, <b>CE</b>	516041000
MFB60D05A	<b>SEPA</b> fan, 65x60x15mm, 5VDC, pulse, ball bearing, <b>CE</b>	516041010
MFB60D12	<b>SEPA</b> fan, 60x60x15mm, 12VDC, ball bearing, <b>CE</b>	516042000
MFB60D12A	<b>SEPA</b> fan, 65x60x15mm, 12VDC, pulse, ball bearing, <b>CE</b>	516042010
MFB60D24	<b>SEPA</b> fan, 60x60x15mm, 12VDC, ball bearing, <b>CE</b>	516043000
MFB60D24A	<b>SEPA</b> fan, 65x60x15mm, 12VDC, pulse, ball bearing, <b>CE</b>	516043010

**SEPA**® is the brand name for fans and CPU-Cooler, made by Nippon Keiki Works LTD., Tokyo

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