



# PT3603

## General purpose Hall-effect Latch

### Applications

- DC brushless motor
- VCD/DVD loader, CD/DVD-Rom
- Cover detector
- Speed Measurement
- Home appliances
- Home safety

### Features

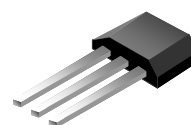
- 2.5V to 18V operation
- Built-in dynamic offset cancellation
- Small size
- High balance and low thermal drift magnetic sensing
- Output with pull-up resistor
- Reversed pin assignment to PT3602

### Order information

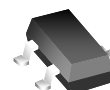
- PT3602-LH /PKG:SOT23
- PT3602-UA /PKG:TO92
- Temperature(T): K

P/N: PT3603-XX-X

TO92-3L (UA)



SOT23-3L (LH)



### Specifications

#### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Conditions	Rating	Units
Maximum supply voltage	V <sub>DDmax</sub>		18	V
Allowable power dissipation	Pd	TO-92(UA)	550*	mW
		SOT-23(LH)	300*	mW
Operating temperature	Ta	Suffix 'K'	-40~+125	°C
Storage temperature	Ts		-50~+150	°C
Max. output current	I <sub>OMAX</sub>		25	mA

\*: On 50mm x 50mm x 1.6mm glass epoxy board

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**PROLIFIC TECHNOLOGY INC.**

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**Electrical Characteristics (T<sub>A</sub>=+25°C, V<sub>DD</sub>=12V)**

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Units
Supply Voltage	V <sub>DD</sub>		2.5		18	V
Output Sink Voltage	V <sub>DS(ON)</sub>	@ I <sub>OUT</sub> =15mA		0.3	0.5	V
Output Breakdown Voltage	V <sub>BV</sub>		18			V
Supply Current	I <sub>DD</sub>	Output open		6	8	mA
Internal Pull-up resistor	R <sub>L</sub>		6		14	KΩ

**Magnetic Characteristics (T<sub>A</sub>=+25°C, V<sub>DD</sub>=12V)**

Operate Point	B <sub>OP</sub>		-	30	60	G
Release Point	B <sub>RP</sub>		-60	-30	-	G
Hysteresis	B <sub>HYS</sub>		20	60	100	G

**General Specifications**

The PT3603 is designed for magnetic actuating using a bipolar magnetic field. The built-in dynamic offset cancellation of pre-amplifier stage achieves optimal symmetrical magnetic sensing. This Hall effect IC is optimal for DC brushless fan application. The supply voltage range is from 2.5V to 18V and the maximum output current is 25mA.

This Hall effect sensor IC integrate the sensor, pre-amplifier with dynamic offset cancellation and the hysteresis comparator in single chip. The architecture block diagram is shown in Fig. 1.

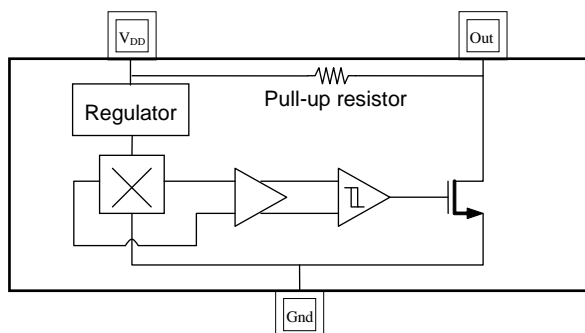
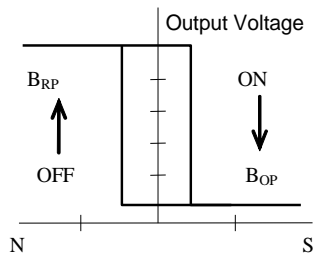
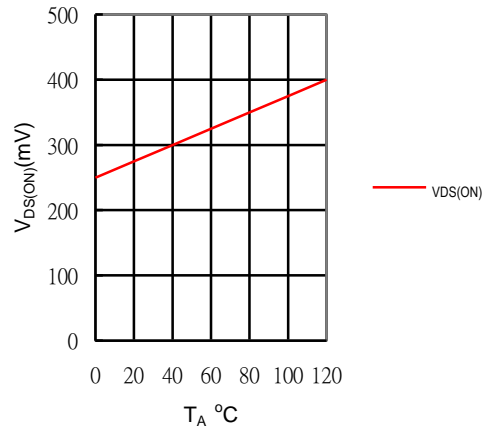


Fig. 1. Functional diagram

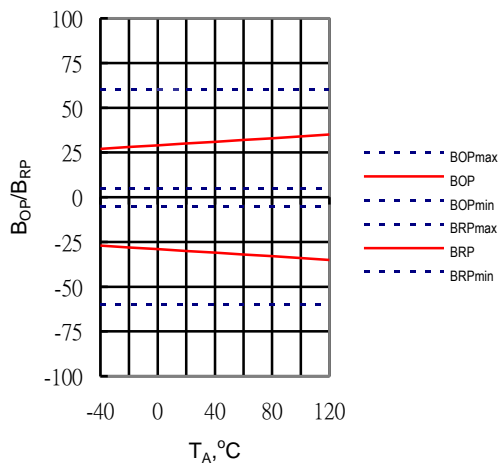
Magnetic Flux Density in Gauss



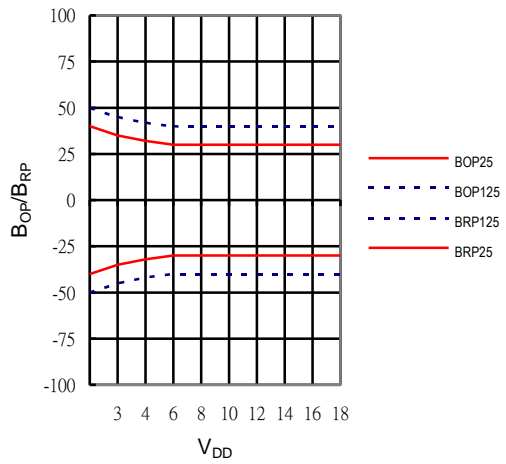
Output sink voltage versus temperature



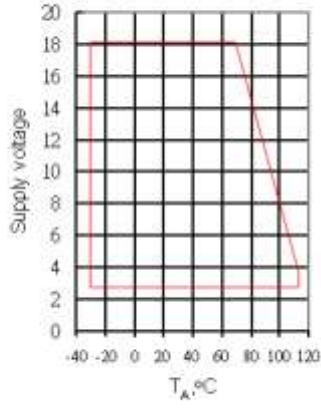
B<sub>OP</sub>, B<sub>RP</sub> versus temperature



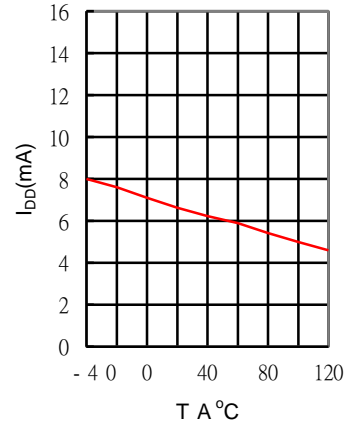
B<sub>OP</sub>, B<sub>RP</sub> versus supply voltage



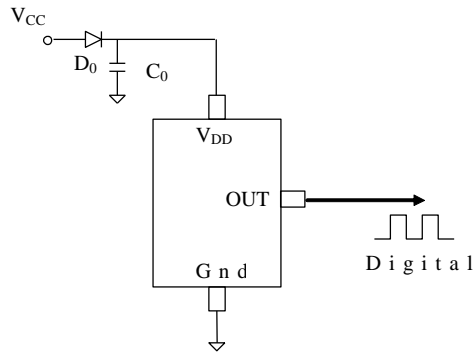
Supply voltage vs  $T_A$  °C



$I_{DD}$  versus  $t_e$



### Application circuits

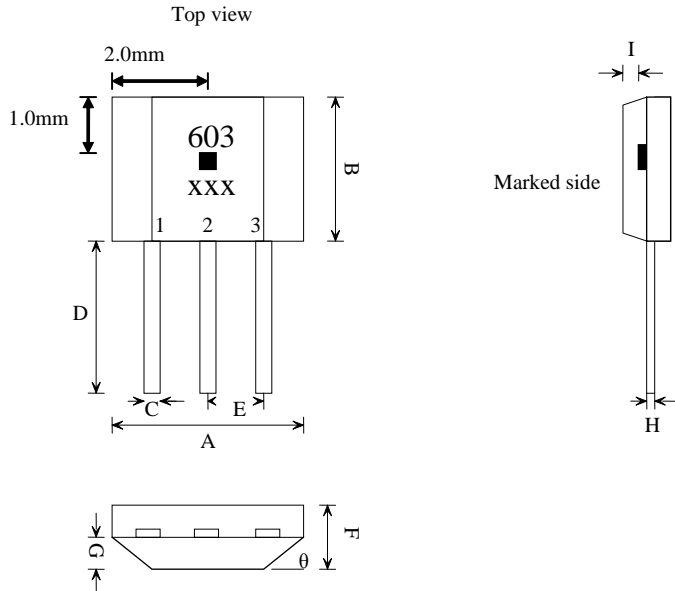


NOTE :

D0: general diode

C0: decoupling capacitor 1uF (recommended)

**Package Outline  
TO-92(UA)**



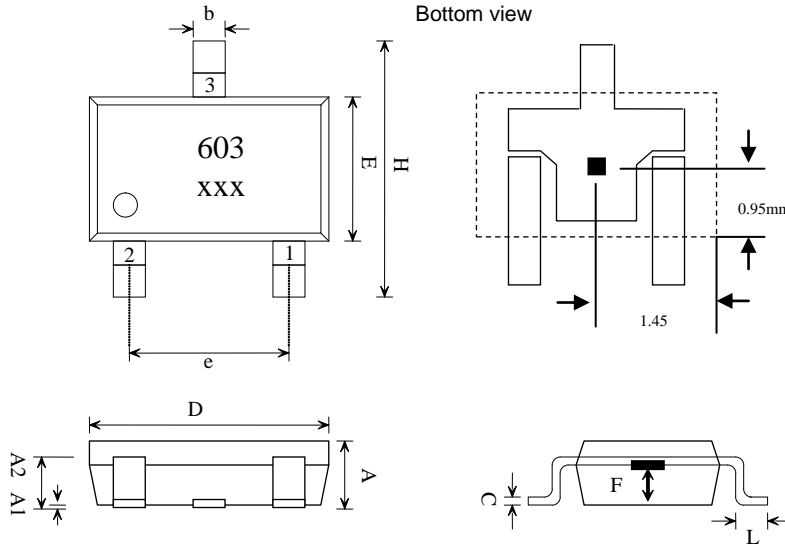
Marking:  
Part Number : 603  
Date Code : X(Year) XX(Week)

- 1. VDD/DC power supply
- 2. GND/DC ground
- 3. OUT/output pin

SYMBOLS	DIMENSIONS IN MILLIMETERS(mm)		
	MIN	NOM	MAX
A	3.80	4.00	4.20
B	2.90	3.10	3.30
C	0.38	0.45	0.52
D	14.40	14.60	14.80
E	1.24	1.27	1.30
F	1.45	1.50	1.55
G	0.68	0.73	0.78
H	0.36	0.43	0.50
I	0.41	0.43	0.45
θ		45°	

**Package Outline**  
**SOT-23(LH)**

**Sensor Location**



Marking:  
Part Number : 603  
Date Code : X(Year) XX(Week)

- 1. VDD/DC power supply
- 2. OUT/output pin
- 3. GND/DC ground

SYMBOLS	DIMENSIONS IN MILLIMETERS(mm)		
	MIN	NOM	MAX
A	1.00	1.10	1.30
A1	0.00	-	0.10
A2	0.70	0.80	0.90
b	0.35	0.40	0.50
C	0.10	0.15	0.25
D	2.70	2.90	3.10
E	1.40	1.80	2.00
F	0.35	0.50	0.65
H	2.60	2.8	3.00
e	1.7	1.9	2.1
L	0.20	-	-

**Order information**

Part Number	Temperature Range	Package Type	Package Qty	Prolific Type Code
PT3603UAK	-40°C~+125°C	TO92-3L	1000pcs/Bulk	PT3603C1OAG7P1
PT3603LHK	-40°C~+125°C	SOT23-3L	3000pcs/Reel	PT3603C1SAG8P1

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