

OH9253 Omnipolar Hall-Effect Switch

General Description:

Part Number: OH9253 Temperature Range:-40 to 125°C Package: 3000pcs/reel

OH9253 Hall-effect sensor is a temperature stable, stress-resistant switch, including the following items on a single silicon chip: voltage regulator, Hall voltage generator, small-signal amplifier, chopper stabilization, Schmitt trigger, open-drain output. Advanced CMOS wafer fabrication processing is used to take advantage of low-voltage requirements, component matching, very low input-offset errors, and small component geometries.

Features

- CMOS Hall IC Technology
- Solid-State Reliability much better than reed switch
- Omni polar output switches with absolute value of North or South pole from magnet
- Low power consumption(2.6mA)
- High Sensitivity for reed switch replacement
- ESD HBM $\pm 4\text{KV}$ Min
- COST competitive

Applications

- Solid state switch
- Lid close sensor for power supply devices
- Magnet proximity sensor for reed switch replacement
- Omipolar hall IC in high duty cycle applications.
- Safety Key Revolution counter
- Speed sensor
- Position Sensor
- Rotation Sensor

Absolute Maximum Ratings (T_A=25°C)

Supply Voltage VCC..... 6V

Supply Current (Average) ICC2.6 mA

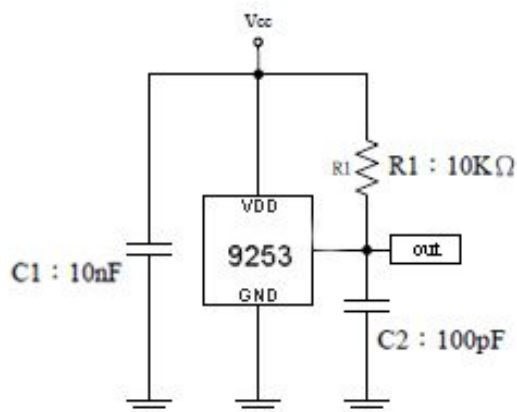
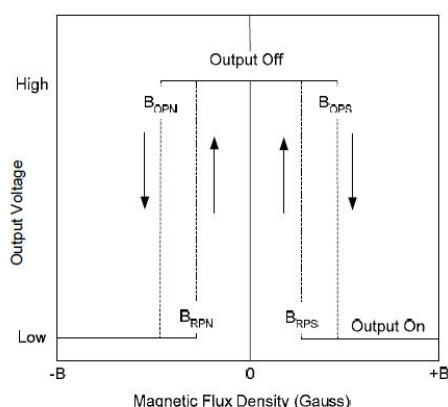
Output Voltage VOUT6V

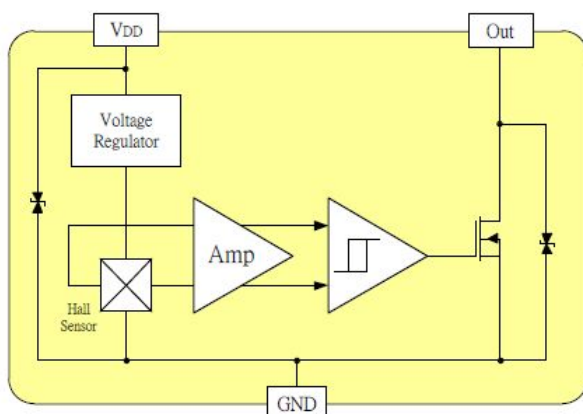
Output Current IOUT25 mA

Storage Temperature-55 to 150 °C

Junction Temperature150 °C

Output Voltage vs. Magnetic Flux Density Typical Application



Functional Block Diagram


NOTE : Electronic semiconductor products are sensitive to Electro Static Discharge (ESD). Always observe Electro Static Discharge control procedures whenever handling semiconductor products.

Electrical Characteristics $V_{CC} = 5V, T_A = 25^\circ C$, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	V_{CC}		2.5	-	6	V
Supply Current	I_{CC}			2.6	6.0	mA
Output Current	I_{OUT}				25	mA
Output Leakage Current	I_{LEAK}	$B < BRP $	-	-	1.0	μA
Saturation Voltage	V_{SAT}	$I_{OUT} = 1.0mA$	-	-	0.4	V
Output Rise Time	t_r	$V_{CC} = 5V, R_L = 10k\Omega, C_L = 20pF$	-	-	0.45	μS
Output Falling Time	t_f		-	-	0.45	μS

Magnetic Characteristics $V_{CC} = 5V, T_A = 25^\circ C$, (1mT = 10 Gauss)

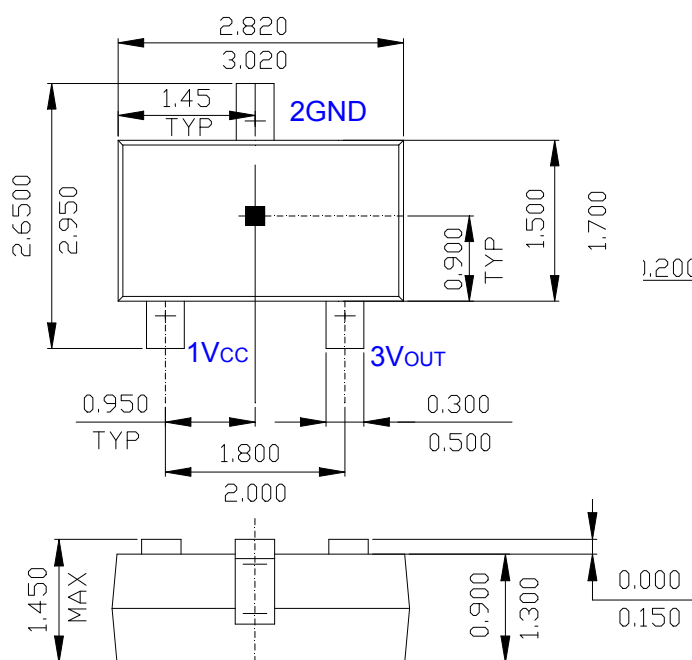
Parameter	symbol	Conditions	Value			Unit
			Min	Typ	Max	
Operate Point	B_{OPS}	South pole to branded side $B > BOPS, V_{OUT} = low(output\ on)$		30	60	GS
	B_{OPN}	North pole to branded side $B > BOPN, V_{OUT} = low(output\ on)$	-60	-30		GS
Release Point	B_{RPS}	South pole to branded side $B < BRPS, V_{OUT} = high(output\ off)$	5	25		GS
	B_{RPN}	North pole to branded side $B < BRPN, V_{OUT} = high(output\ off)$		-25	-5	GS
Hysteresis	B_H	$ B_{OPX} - BRPX $	-	10	-	GS

B_{OPX} =operating point(output turns on);

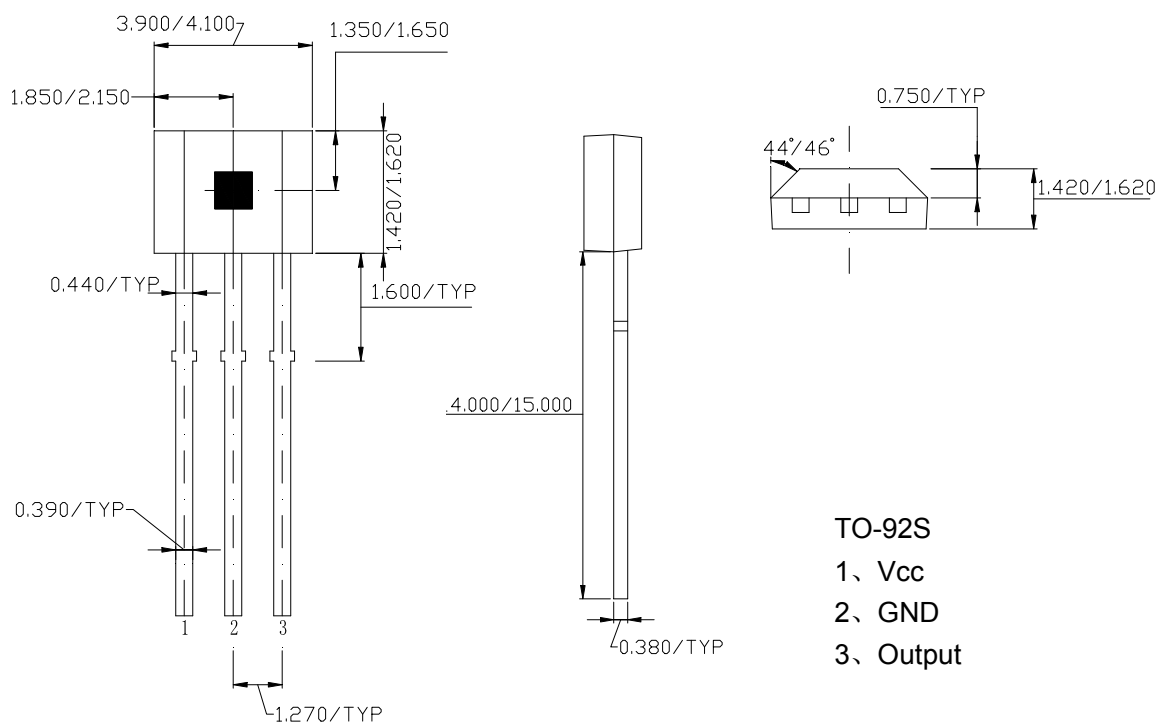
$BRPX$ =releasing point(output turns off)



Mechanical Dimension Unit:(mm)



SOT23-3
1、Vcc
2、GND
3、Output



TO-92S
1、Vcc
2、GND
3、Output

