

## 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<sub>A</sub>=25°C)

Supply Voltage VCC..... 6V

Supply Current (Average) I<sub>CC</sub> .....2.6 mA

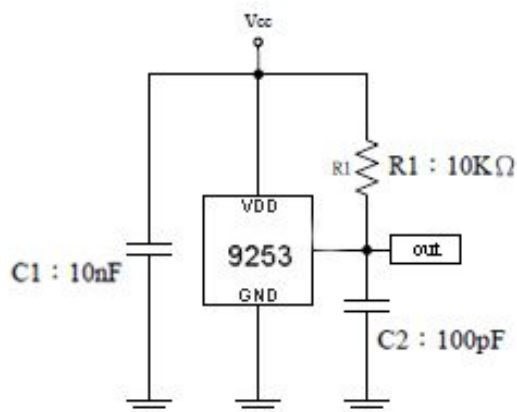
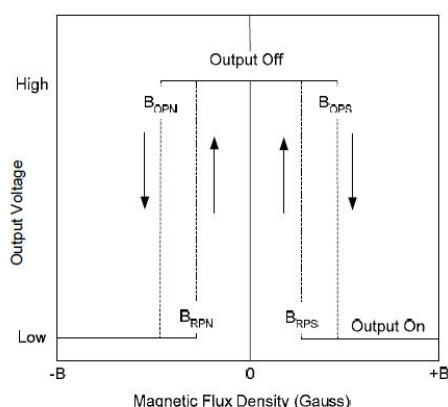
Output Voltage V<sub>OUT</sub> .....6V

Output Current I<sub>OUT</sub> .....25 mA

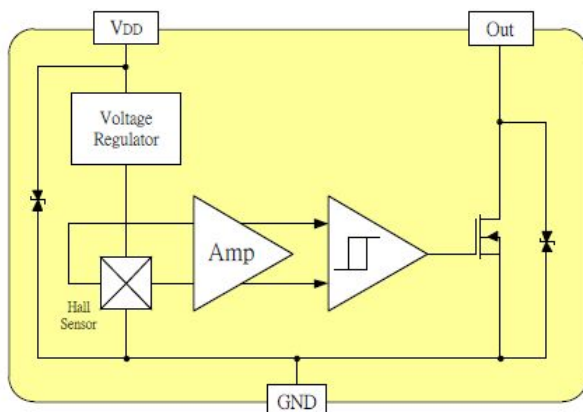
Storage Temperature .....-55 to 150 °C

Junction Temperature .....150 °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	$\mu A$
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	$\mu S$
Output Falling Time	$t_f$		-	-	0.45	$\mu S$

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

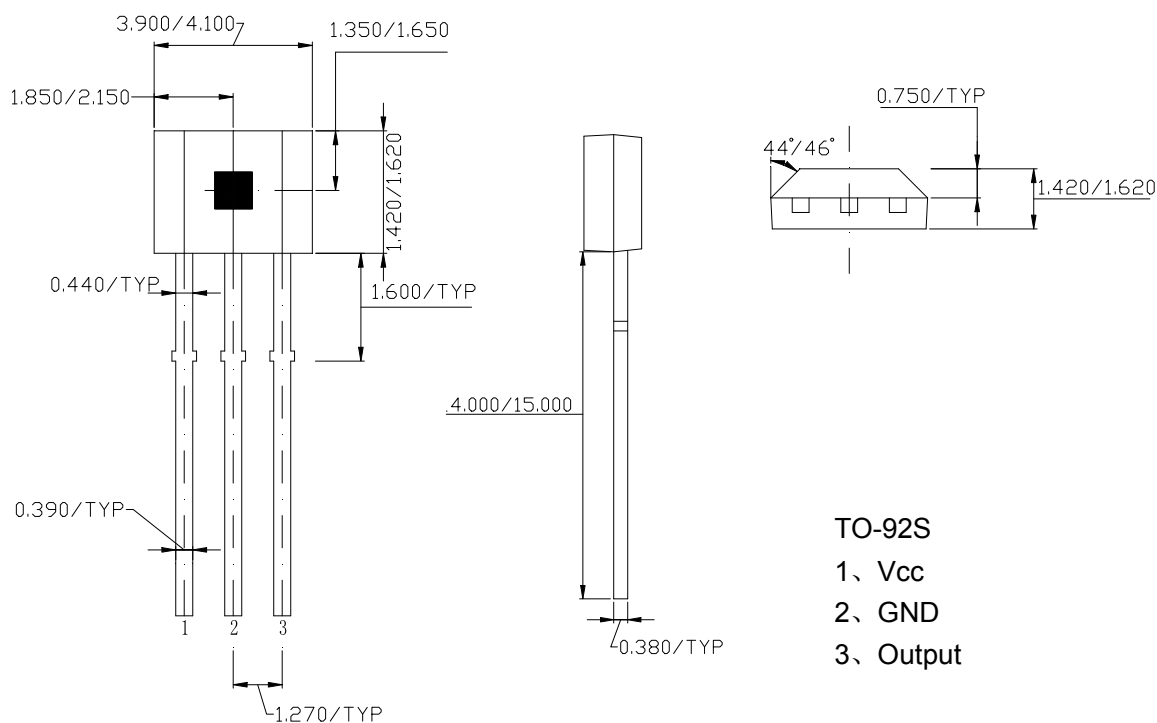
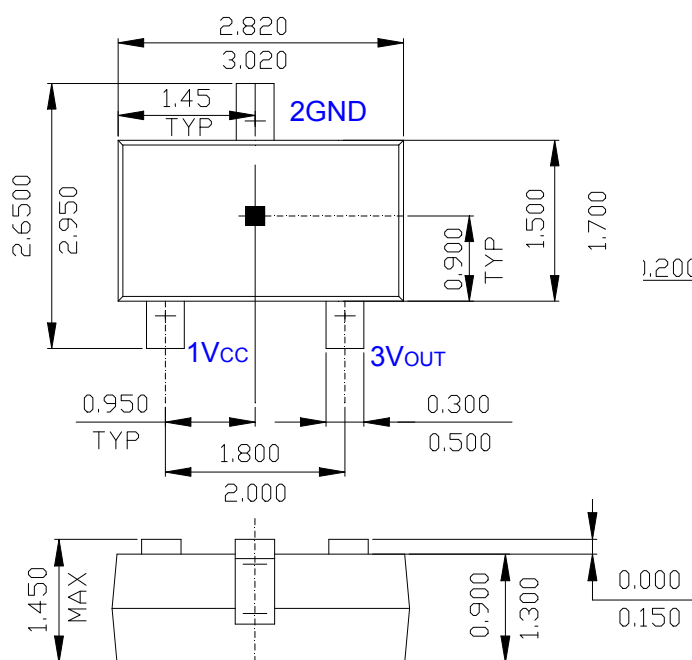
Parameter	symbol	Conditions	Value			Unit
			Min	Typ	Max	
Operate Point	$B_{OPS}$	South pole to branded side $B > BOPS, V_{OUT} = low(output\ on)$		30	60	GS
	$B_{OPN}$	North pole to branded side $B > BOPN, V_{OUT} = low(output\ on)$	-60	-30		GS
Release Point	$B_{RPS}$	South pole to branded side $B < BRPS,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

$BOPX$ =operating point(output turns on);

$BRPX$ =releasing point(output turns off)



**Mechanical Dimension Unit:(mm)**



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