

CYD512 Latching Hall-effect Switch IC

CYD512 Hall Effect latch ICs are composed of a reverse protector, voltage regulator, Hall voltage generator, differential amplifier, Schmitt trigger and an open-collector output (bipolar latch) on a single silicon chip. ICs can convert the changeable magnetic field signal into digital voltage output.

FEATURES

- High Sensitivity
- Resistant to Physical Stress
- Wide Supply Voltage Range
- Interfacing with All Kinds of Logic Circuits Directly

TYPICAL APPLICATION

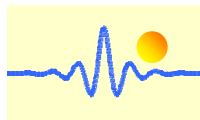
- High Sensitive Non-contact Switch
- DC Brushless Motor
- DC Brushless Fan

ABSOLUTE MAXIMUM RATINGS

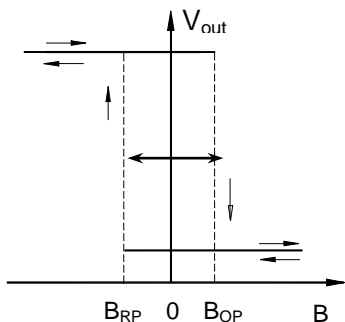
	Symbol	Value		Unit
		Min	Max	
Supply Voltage	V _{CC}	4.5	18	
Output Current	I _O	-	15	mA
Operating Temperature Range	T _A	-40	150	°C
Storage Temperature Range	T _S	-50	150	°C

ELECTRICAL & MAGNETIC CHARACTERISTICS

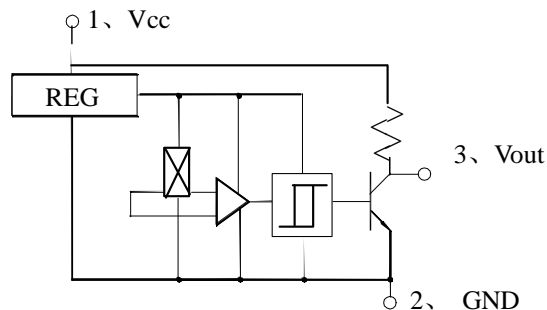
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Supply Voltage		V _{CC}	4.5	-	18	V
Output Low Voltage	V _{CC} = 4.5 V~18V	V _{OL}	-	0.2	0.4	V
Supply Current	V _{CC} = 18V	I _{CC}	-	-	8	mA
Operate Point	V _{CC} = 4.5 V~18V	B _{OP}	1	-	6	mT
Release Point	V _{CC} = 4.5 V~18V	B _{RP}	-6	-	-1	mT
Hysteresis	V _{CC} = 4.5 V~18V	B _H	2	-	7	mT
Internal Load Resistance		R _L	7		13	KΩ



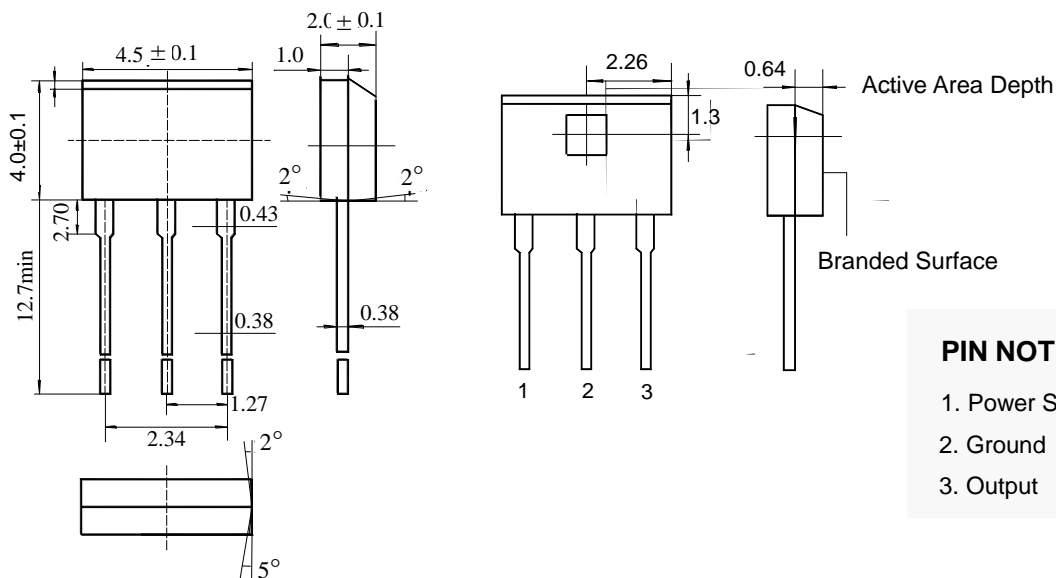
**Magnetic-Electrical
Transfer Characteristics**



FUNCTIONAL BLOCK DIAGRAM



Package Unit: (mm)



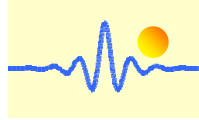
PIN NOTES

- 1. Power Supply
- 2. Ground
- 3. Output

TO-92T Package and position of sensitive point

Cautions:

- 1) It is possible that outside mechanical stress affects the operating point and the release point of Hall-effect circuit, therefore, mechanical stress should be lessened as far as possible in the process of assembly;
- 2) Pay attention to the soldering temperature (<260°C) at the leads; keep it lower in a short time (<3s) to guarantee good soldering quality.



Connection

This sensor has an OC (NPN) output voltage. Therefore it is necessary to connect a pull-up resistor in value from $1\text{k}\Omega$ to $10\text{k}\Omega$ between the power supply V_{cc} and output pins.

