

## BIPOLAR HALL EFFECT LATCH

### ◆ General Description

GH141F series high temperature bipolar Hall effect integrated sensor is a magnetic sensing circuit composed of internal voltage stabilizing unit, Hall voltage generator, differential amplifier, temperature compensation unit, Schmitt trigger and open collector output stage. Its input is magnetic induction strength and its output is a digital voltage signal.

It is a magnetic sensing circuit with two magnetic poles, which is suitable for working under rectangular or cylindrical magnets. GH141F series can operate at - 40 °C ~150 °C . The operating range of power supply voltage is 3.8V~30V, and the maximum load current capacity is 40mA. The package is SIP3L(TO92S).

### ◆ Features

- Wide power supply voltage range and large output current
- Fast switching speed, no instantaneous jitter
- Operating frequency width (0~100KHz)
- Long service life, small size and convenient installation
- Can interface with logic circuit directly

### ◆ Applications

- DC brushless motor
- Automobile igniter
- Contactless switch
- Current sensor
- Safety alarm device
- Isolation detection
- Position control



### ◆ Ordering Information

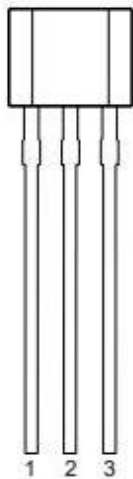
Product	Temp.Range	Package	Voltage	Packing
GH141FLUA	L(Note1)	UA(Note2)	3.8V-30V	1000PCS/BAG

**Note:**

1. L represents the operating temperature range of -40°C~150°C;
2. UA represents that the packaging form is SIP-3L (TO-92S).

## BIPOLAR HALL EFFECT LATCH

### ◆ Pin Configuration



Pin Number	Pin Name	Function
1	VCC	IC Power Supply Voltage
2	GND	IC Groud
3	OUT	Open Collector Output,a pull-up resistor is needed

Figure 1. Pin Configuration of GH141F

### ◆ Functinal Block Diagram

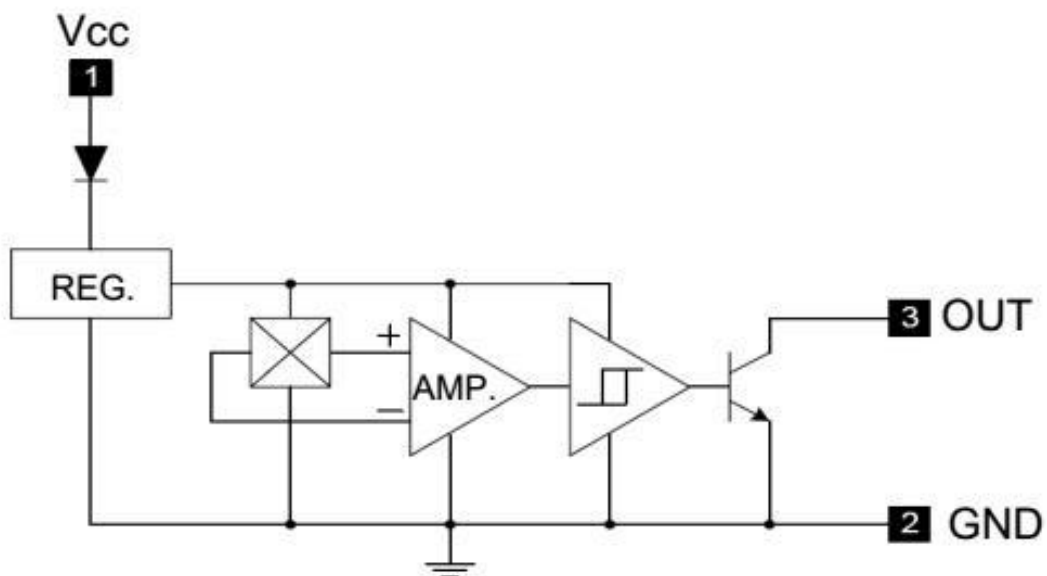


Figure 2. Functional Block Diagram of GH141F

## BIPOLAR HALL EFFECT LATCH

### ◆ Absolute Maximum Ratings (Note3)

Parameter	Symbol	Value	Unit
Supply Voltage	VCC	-30~+40	V
Magnetic Flux	B	unlimited	Gauss
Reverse Output Voltage	VCE	-40	V
Output Current	IOL	40	mA
Power Dissipation	PD	450	mW
Operating Temperature	TO	-40~+150	°C
Junction Temperature	TJ	+150	°C
Storage Temperature Range	TS	-65~+170	°C

### ◆ Electrical Characteristics (VCC=12V, TA=25°C, unless otherwise specified.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Supply Voltage	VCC	Operating	3.8	-	30	V
Output Saturation Voltage	Vsat	IOUT=25mA, B>BOP	100	-	250	mV
		IOUT=45mA, B>BOP	250	-	600	mV
Output Leakage Current	IOL	VOUT=30V B<BRP	-	0.1	10	uA
Supply Current	ICC	OPEN	-	3.5	9.0	mA
Rise Time	tr	RL=820Ω CL=20PF	-	0.2	-	uS
Fall Time	tf	RL=820Ω CL=20PF	-	0.5	-	uS

Note 3: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.

### ◆ Magnetic Characteristics (VCC=12V, TA=25°C, unless otherwise specified.)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Point	BOP	-	-	120	Gauss
Releasing Point	BRP	-120	-	-	Gauss
Hysteresis	BHYS	40	80	-	Gauss

## BIPOLAR HALL EFFECT LATCH

### ◆ Output Characteristics

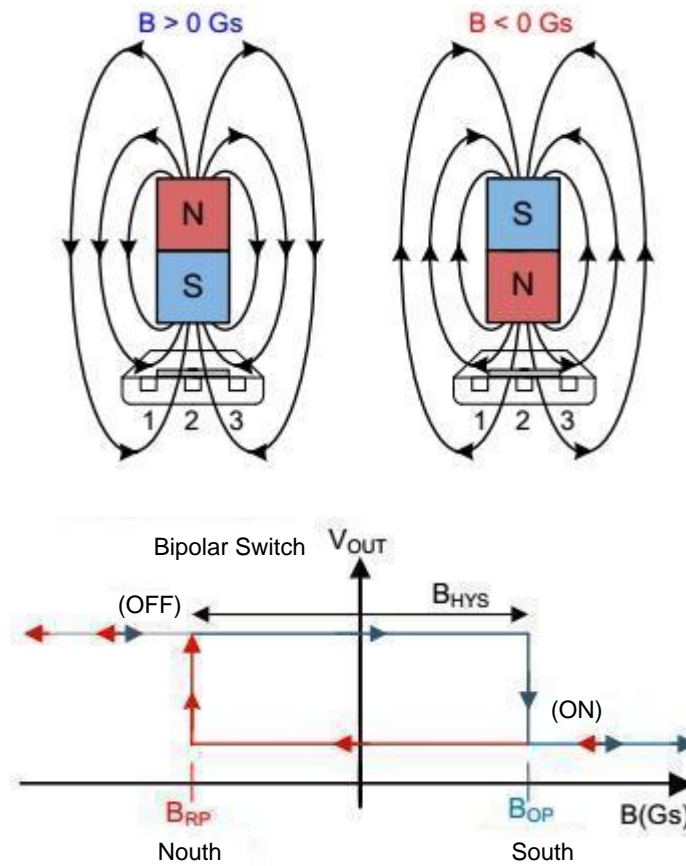
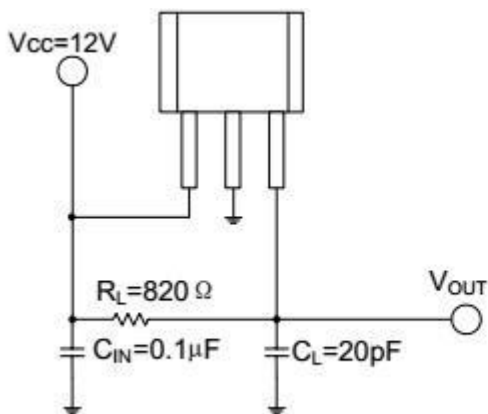


Figure 3. Output characteristics of GH141F

### ◆ Typical Application



**Note:**

$C_{IN}$  is used to stabilize external power supply;  $R_L$  is the pull-up resistance necessary for open collector output, with a value range of  $820 \Omega \sim 100K \Omega$ , depending on the current capacity required by the back-end input;  $C_L$  is used to filter out the output noise. This capacitor will affect the rise time of the waveform.

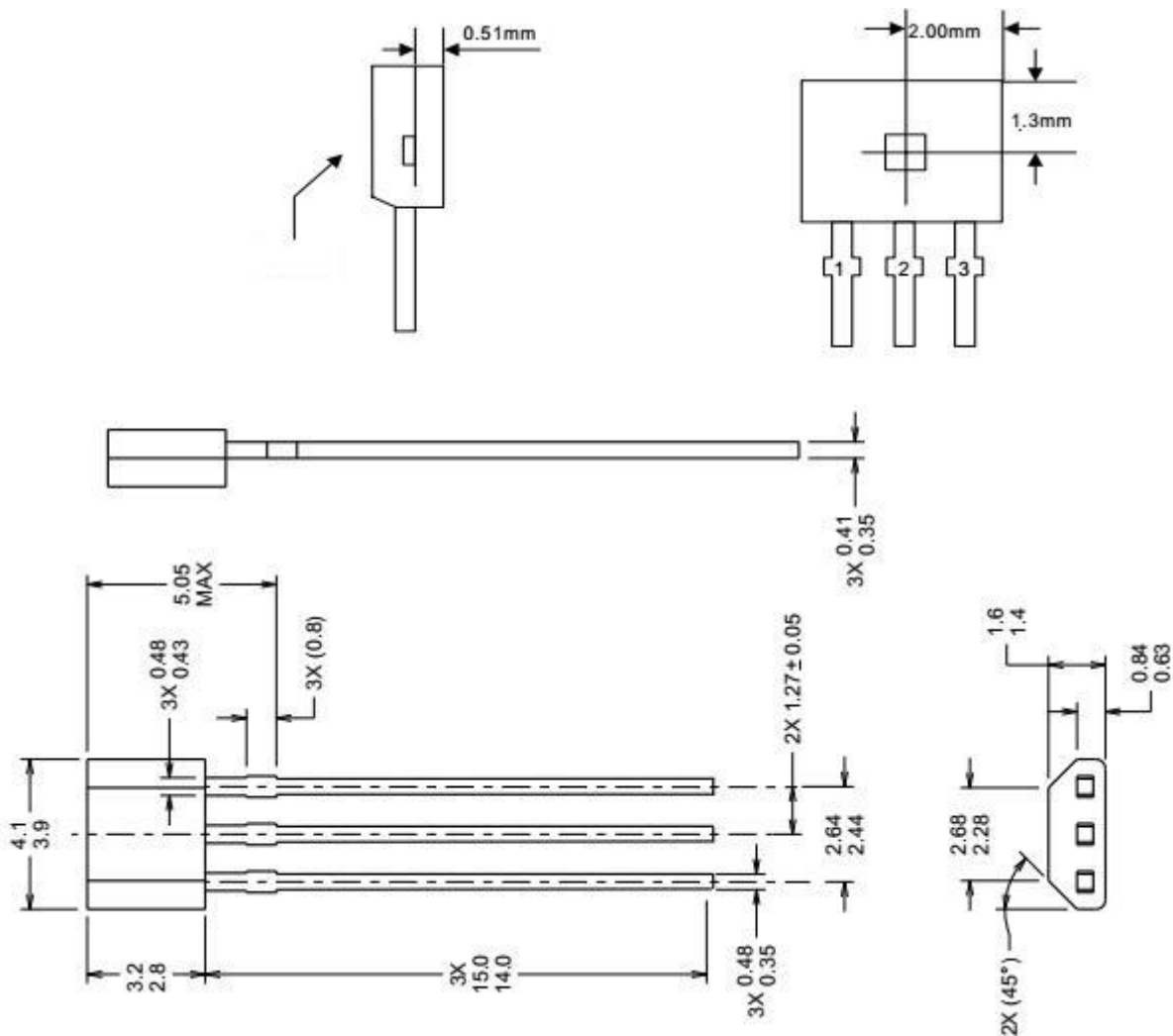
Figure 4. Typical application of GH141F

## BIPOLAR HALL EFFECT LATCH

### ◆ Marking Information



### ◆ Package Information






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