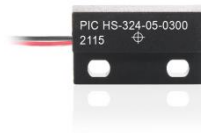


## HS-324-05-0300

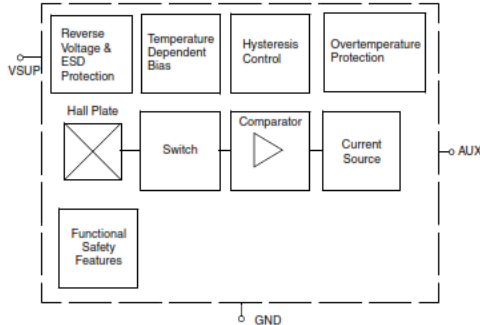


Product image serves as example only.

## HS-324-05-0300

Unipolar 2 - Wire  
Flatpack Hall Effect Sensor

### Block Diagram



### Features

- Customized types available
- Operates with magnetic fields up to 12 kHz
- Current interface
- Compact size

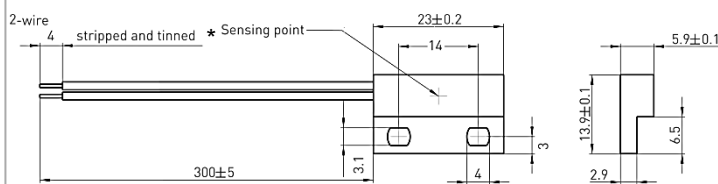
### Approvals



### Recommended Operating Conditions

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V <sub>SUP</sub>	Supply voltage	3	–	24	V	

### Dimensions



\* other positions on request

### Wire Assignment

Name	Function	Cable colour
V <sub>SUP</sub>	Supply voltage and output	red
GND	Ground	black

HS-324-05-0300  
 wire length (mm)

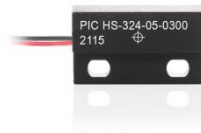
### Material Information

	Material	Colour
Housing	ABS	black
Cable	UL 1007 AWG 24	red, black
Potting	Epoxy	black

### Environmental Characteristics

Operating temperature	°C	- 20 to + 85
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HS-324-05-0300



**HS-324-05-0300**

Unipolar 2 - Wire  
Flatpack Hall Effect Sensor

**Characteristics**

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
<b>Supply</b>						
V <sub>UV</sub>	Undervoltage threshold	2	–	3	V	
I <sub>SUPlo</sub>	Low supply current 1	2,5	–	5	mA	
I <sub>SUP</sub>	Error current	0,8	–	1,9	mA	
			–		mA	
I <sub>SUPhi</sub>	High supply current	12	–	17	mA	
I <sub>SUPR</sub>	Reverse current	–	–	0,6	mA	for V <sub>SUP</sub> = –18 V
<b>Port Output</b>						
B <sub>noise</sub>	Effective noise of magnetic switching points (RMS) <sup>2)</sup>	–	72	–	µT	For square wave signal with 12 kHz
t <sub>i</sub>	Output jitter (RMS) <sup>1)</sup>	–	±0.58	±0.72	µs	For square wave signal with 1 kHz. Jitter is evenly distributed between –1 µs and +1 µs
t <sub>d</sub>	Delay time <sup>2)3)</sup>	–	16	21	µs	
t <sub>samp</sub>	Output refresh period <sup>2)</sup>	1,6	2,2	3	µs	
t <sub>en</sub>	Enable time of output after exceeding of V <sub>UV</sub>	20	50	60	µs	V <sub>SUP</sub> = 12 V B > B <sub>on</sub> + 2 mT or B < B <sub>off</sub> – 2 mT

1) Characterized on small sample size, not tested

2) Guaranteed by design

3) Systematic delay between magnetic threshold reached and output switching

**Absolute Maximum Ratings**

Symbol	Parameter	Min.	Max.	Unit	Conditions
V <sub>SUP</sub>	Supply voltage	–18	28	V	t < 96 h <sup>1)</sup>
		–	32	V	t < 5 min <sup>1)</sup>
		–	40	V	t < 10 x 400 ms “Load- Dump” <sup>1)</sup> with series resistor R <sub>V</sub> > 100 Ω.

1) No cumulative stress

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**HS-324-05-0300**

Unipolar 2 - Wire  
Flatpack Hall Effect Sensor

Magnetic Characteristics

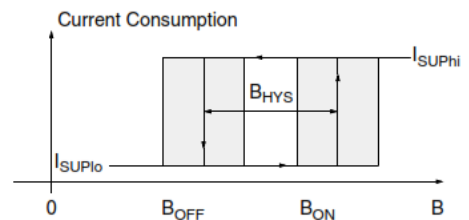
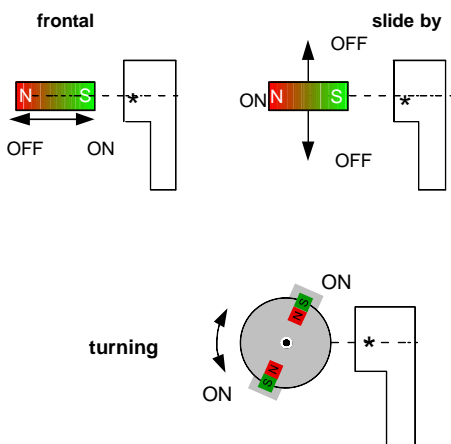
Parameter	On point $B_{ON}$			Off point $B_{OFF}$			Hysteresis $B_{HYS}$		Unit
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	
$T_J$									
-40 °C	5.0	6,4	8,5	3,2	4,5	6,7	-	1,9	mT
25 °C	4,3	6	7,7	2,9	4,1	6,1	-	1,9	mT
170 °C	3,7	5,6	7,7	2,4	4.0	6,4	-	1,9	mT

<sup>1)</sup> The hysteresis is the difference between the switching points  $B_{HYS} = B_{ON} - B_{OFF}$

Note: The sensor turns to high current consumption  $I_{SUPHi}$  with the magnetic north pole on the top side of the package and turns to low current consumption  $I_{SUPLo}$  if the magnetic field is removed. It does not respond to the magnetic north pole on the top side of the package. For correct function in the the application, the sensor requires only the magnetic south pole on the top side of the package.

Magnetic Approach (for example)

unipolar type



\* Sensing point