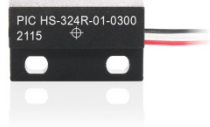
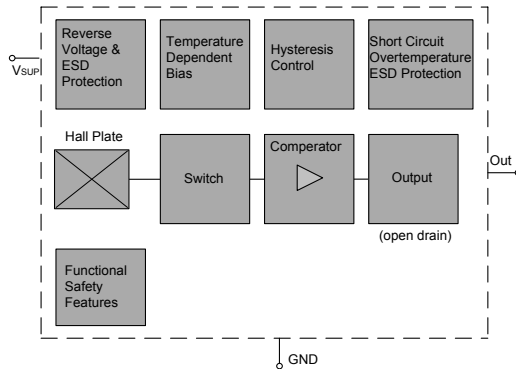


**HS-324R-01-0300**



Product image serves as example only.

**Block Diagram**



**HS-324R-01-0300**

**Bipolar 3 - Wire**

Flatpack Hall Effect Sensor

**Features**

- › Compact size
- › Various switching sensitivity
- › Various switching points available
- › Customized types available

**Approvals**

RoHS

REACH

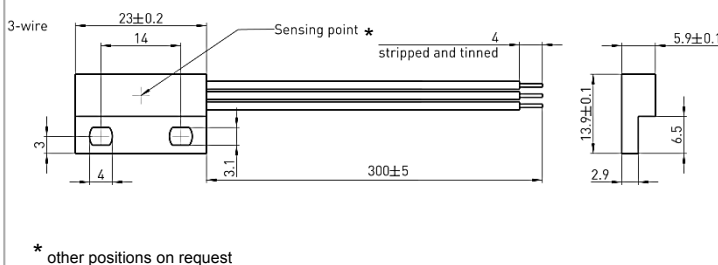
**Absolute Maximum Ratings**

Stresses beyond those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device  
Functional operation of the device at these conditions is not implied. Exposure to the absolute rating conditions for extended periods will affect device reliability

Symbol	Parameter	wire colour	Min.	Max.	Unit	Conditions
V <sub>SUP</sub>	Supply voltage	red	- 18		V	t < 1000 h <sup>1)</sup>
			-	28	V	t < 96 h <sup>1)</sup>
			-	32	V	t < 5 min <sup>1)</sup>
			-	40	V	t < 5 x 400 ms <sup>1)</sup> with series resistor R <sub>V</sub> > 100 Ohm
V <sub>OUT</sub>	Output voltage	white	- 0.5		V	t < 1000 h <sup>1)</sup>
			-	28	V	t < 96 h <sup>1)</sup>
			-	32	V	t < 5 min <sup>1)</sup>
			-	40	V	t < 5 x 400 ms <sup>1)</sup> with series resistor R <sub>V</sub> > 100 Ohm
I <sub>O</sub>	Output current	white	-	65	mA	
I <sub>OR</sub>	Reverse output current	white	- 50		mA	

<sup>1)</sup> No cumulative stress      All voltages listed are referenced to ground (GND)

**Dimensions**



**Wire Assignment**

Name	Function	Cable colour
VSUP	Supply voltage	red
OUT	Output	white
GND	Ground	black

HS-324R-01-0300  
□ wire length [mm]

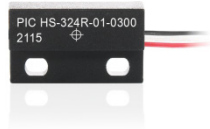
**Material Information**

	Material	Colour
Housing	ABS	black
Cable	UL1007/1569, AWG 24	red, white, black
Potting compound	Epoxy	black

**Environmental Characteristics**

Operating temperature	°C	- 20 to + 85
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HS-324R-01-0300



**HS-324R-01-0300**

**Bipolar 3 - Wire**

Flatpack Hall Effect Sensor

### Characteristics

At recommended operation conditions if not otherwise specified in the column "Conditions".

Typical characteristics for  $T_J = 25\text{ }^\circ\text{C}$  and  $V_{SUP} = 12\text{ V}$

Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
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### Supply

$I_{SUP}$	Supply current	red		1.6	2.4	mA	
$I_{SUPhi}$	Reverse current				1	mA	for $V_{SUP} = -18\text{ V}$

### Output

$V_{ol}$	Port low output voltage	white		0.13	0.4	V	$I_o = 20\text{ mA}$
					0.5	V	$I_o = 25\text{ mA}$
$t_f$	Output fall time <sup>1)</sup>				1	$\mu\text{s}$	<sup>1)</sup> $V_{SUP} = 12\text{ V}$ ;
$t_r$	Output rise time				1	$\mu\text{s}$	$R_L = 820$ ; $C_L = 20\text{ pF}$
$t_d$	Delay time <sup>1)</sup>			16		$\mu\text{s}$	
$t_{samp}$	Output refresh period		1.6	2	2.66	$\mu\text{s}$	
$t_{en}$	Enable time of output after settling of $V_{SUP}$			50		$\mu\text{s}$	$V_{SUP} = 12\text{ V}$ $B > B_{on} + 2\text{ mT}$ or $B < B_{off} - 2\text{ mT}$

### Power-on-self-test

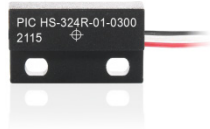
Self test can be triggered externally; details on request

<sup>1)</sup> Guaranteed by design

### Recommended Operating Conditions

Symbol	Parameter	wire colour	Min.	Max.	Unit	Conditions
$V_{SUP}$	Supply voltage	red	2.7	24	V	
$V_{OUT}$	Output voltage	white		24	V	
$I_{OUT}$	Output current	white		25	mA	

HS-324R-01-0300



**HS-324R-01-0300**

Bipolar 3 - Wire

Flatpack Hall Effect Sensor

Magnetic Characteristics Overview

Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
$B_{ONth}$	ON threshold range <sup>1)</sup>	-	- 30		30	mT	
$B_{OOth}$	OFF threshold range <sup>1)</sup>	-	- 30		30	mT	
$B_{th}$	Adjustable step size <sup>2)</sup>	-		0.5		mT	
$T_C$	Temperatur compensation of magnetic thresholds <sup>3)</sup>	-	0		- 3000	ppm/K	

<sup>1)</sup> Available range

<sup>2)</sup> Small steps at small values, bigger steps at higher values. May not be undercut

<sup>3)</sup> Different temperature compensation available on request

Magnetic Characteristics

Switching Type	Temp. koef. of magnetic thresh. TC [ppm/K]	On point $B_{ON}$			Off point $B_{OFF}$			Hysteresis $B_{HYS}$ <sup>1)</sup>		
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
bipolar	0	tbd.	0.5	tbd.	tbd.	- 0.5	tbd.	-	1.0	-
		A	B	C	D	E	F			

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

Magnetic Approach (for example)

bipolar  
frontal

ON

OFF

\* Sensor center point