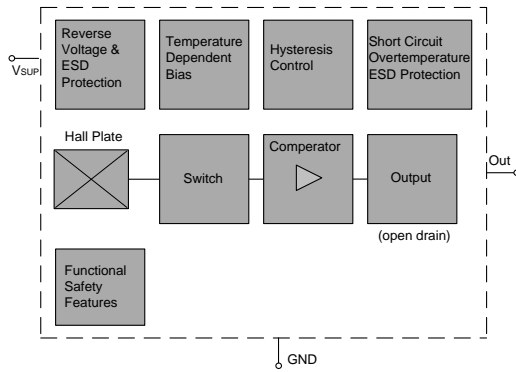


HS-3511-01-0300



Product image serves as example only.

### Block Diagram



## HS-3511-01-0300

Bipolar 3 - Wire

Flatpack Hall Effect Sensor

### Features

- › Compact size
- › Various switching sensitivities
- › Customized types available

### Approvals



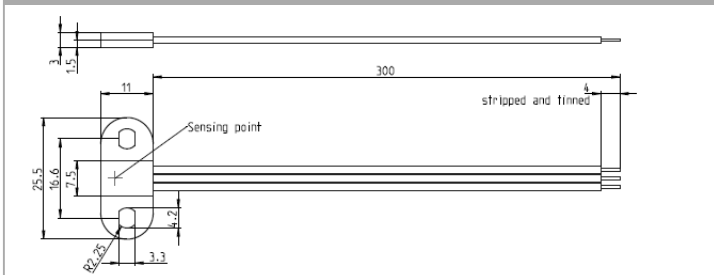
### Absolute Maximum Ratings

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-3511-01-0300

└ wire length [mm]

### Environmental Characteristics

Operating temperature	°C	- 20 to + 85
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### Material Information

	Material	Colour
Housing	PA6	black
Cable	UL1007/1569, AWG 24	red, white, black
Potting compound	Epoxy	black

HS-3511-01-0300



**HS-3511-01-0300**

**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> $V_{SUP} = 12\text{ V}$ ; $R_L = 820$ ; $C_L = 20\text{ pF}$
$t_r$	Output rise time				1	$\mu\text{s}$	
$t_d$	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**

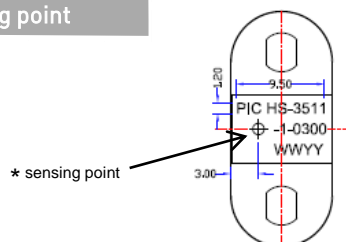
Self test can be triggered externally; details on request

<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	

**Off-center position of sensing point**



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**HS-3511-01-0300**

**Bipolar 3 - Wire**  
Flatpack Hall Effect Sensor

**Magnetic Characteristics Overview**

Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
B <sub>ONth</sub>	ON threshold range <sup>1)</sup>	-	- 30		30	mT	
B <sub>OOth</sub>	OFF threshold range <sup>1)</sup>	-	- 30		30	mT	
B <sub>th</sub>	Adjustable step size <sup>2)</sup>	-		0.5		mT	
T <sub>C</sub>	Temperature 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. coeff. of magnetic thresh. TC [ppm/K]	On point B <sub>ON</sub>			Off point B <sub>OFF</sub>			Hysteresis BHYS <sup>1)</sup>		
		Min.	Typ. [mT]	Max.	Min.	Typ. [mT]	Max.	Min.	Typ. [mT]	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<sub>HYS</sub> = B<sub>ON</sub> - B<sub>OFF</sub>

**Magnetic Approach (for example)**

