

Hall Effect Sensor Flange Mount

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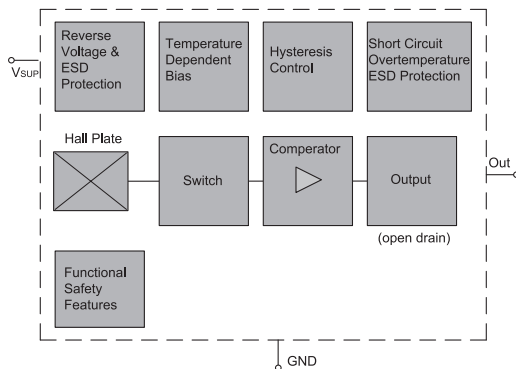
RoHS
Compliant



Features

- Compact size
- Various switching sensitivities
- Customized types available

Block Diagram



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 _{SUP}	Supply voltage	Red	-18		V	t < 1000 h ¹⁾
			--	28		t < 96 h ¹⁾
			--	32		t < 5 min ¹⁾
			--	40		t < 5 x 400 ms ¹⁾ with series resistor R _V > 100Ω
V _{OUT}	Output voltage	White	-0.5		V	t < 1000 h ¹⁾
			--	28		t < 96 h ¹⁾
			--	32		t < 5 min ¹⁾
			--	40		t < 5 x 400 ms ¹⁾ with series resistor R _V > 100Ω
I _O	Output current		--	65	mA	
I _{OR}	Reverse output current		-50			

1) No cumulative stress All voltages listed are referenced to ground (GND)

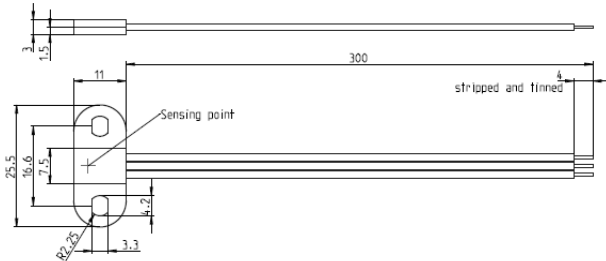
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Dimensions



Wire Assignment		
Name	Function	Cable colour
VSUP	Supply voltage	Red
OUT	Output	white
GND	Ground	Black

Environmental Characteristics

Operating temperature - 20°C to + 85°C

Material Information		
	Material	Colour
Housing	PA6	Black
Cable	UL1007/1569, AWG 24	Red, White, Black
Potting compound	Epoxy	Black

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
Supply							
I_{SUP}	Low supply current	Red		1.6	2.4	mA	for $V_{SUP} = -18\text{ V}$
I_{SUPhi}	Reverse current				1		
Output							
V_{ol}	Port low output voltage	white		0.13	0.4	V	$I_o = 20\text{ mA}$
					0.5		$I_o = 25\text{ mA}$
t_f	Output fall time ¹⁾				1	μs	¹⁾ $V_{SUP} = 12\text{ V}$; $R_L = 820$; $C_L = 20\text{ pF}$
t_r	Output rise time				1		
t_d	Delay time ¹⁾			16	--		
t_{samp}	Output refresh period		1.6	2	2.66		
t_{en}	Enable time of output after settling of V_{SUP}			50			

Recommended Operating Conditions

Symbol	Parameter	Wire colour	Min.	Max.	Unit
V_{SUP}	Supply voltage	Red	2.7	24	V
V_{OUT}	Output voltage	White			
I_{OUT}	Output current			25	mA

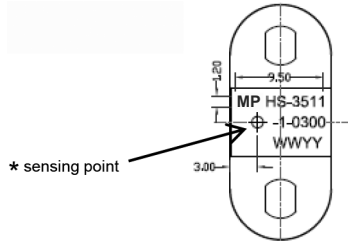
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Off-center position of sensing point



Magnetic Characteristics Overview

Symbol	Parameter	Min.	Typ.	Max.	Unit
B _{ONth}	ON threshold range ¹⁾	-30		30	mT
B _{OFFth}	OFF threshold range ¹⁾	-30		30	
B _{th}	Adjustable step size ²⁾		0.5		
T _C	Temperature compensation of magnetic thresholds ³⁾	0		-3000	ppm/K

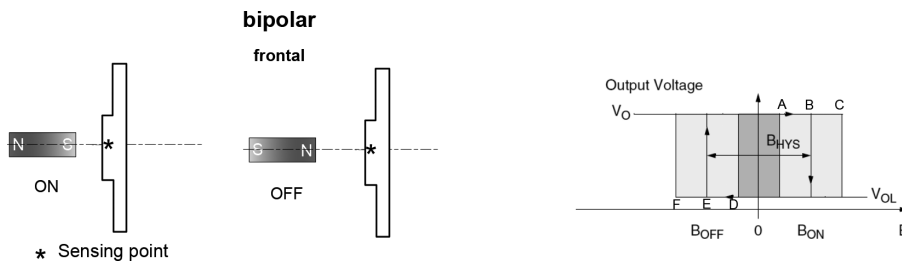
1) Available range
2) Small steps at small values, bigger steps at higher values. May not be undercut
3) Different temperature compensation available on request

Magnetic Characteristics

SwitchingType	Temp. coeff. of magnetic thresh. TC [ppm/K]	On point B _{ON} [mT]			Off point B _{OFF} [mT]			Hysteresis B _{HYS} ¹⁾ [mT]		
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
Bipolar	0	tbd.	0.5	tbd.	tbd.	-0.5	tbd.	-	1	-
		A	B	C	D	E	F			

¹⁾The hysteresis is the difference between the switching points B_{HYS} = B_{ON} - B_{OFF}

Magnetic Approach (for example)



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Part Number Table

Description	Part Number
3 Wire, Flange Mount Hall Effect Sensor, Bipolar	MP-HS-3511-01-0300

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