

# Installation Instructions for the MICRO SWITCH SS100 Series Surface Mount Hall Effect Sensors

ISSUE 2  
PK 88830

## GENERAL INFORMATION

SS100 Series Hall effect sensors have an NPN (current sinking) output. The small SOT89 style package surface mounts on PC boards and flexible circuits.

### WARNING

These products are **NOT** suitable for protection against personal injury.

To **AVOID** personal injury or death, **DO NOT USE** these products as emergency stop or safety devices, or in any other application where human safety is at risk.

### NOTICE

SS100 Series sensors are Category 2 ESD sensitive per DOD-STD-1686A. Perform assembly operations on tables with conductive tops, with operators grounded.

## SOLDERING INSTRUCTIONS

Exposure to high temperatures should be kept at a minimum.

MICRO SWITCH recommends a convection infrared reflow process with peak temperatures not to exceed 220°C (428°F) for 20 seconds maximum. **DO NOT wave solder this product.** Performance and reliability may be negatively affected. Subjecting these products to wave soldering will void MICRO SWITCH's warranty.

## CLEANING

Use agitated rinse. **Do not use pressure wash.** High pressure stream could force contaminants into sensor package.

## ABSOLUTE MAXIMUM RATINGS

Supply Voltage	-1 to +30 VDC
Voltage externally applied to output	+30 VDC max. (OFF condition only) -0.5 VDC min. (OFF or ON condition)
Output ON current	50 mA max.
Temperature	
Operating	-40 to +150°C (-40 to +302°F)
Storage	-55 to +150°C (-67 to +302°F)
Magnetic Flux	No limit. Circuit cannot be damaged by magnetic overdrive.

### NOTICE

Absolute maximum ratings are the extreme limits that the device will withstand without damage to the device. However, the electrical and mechanical characteristics are not guaranteed as the maximum limits (above recommended operating conditions) are approached, nor will the device necessarily operate at absolute maximum ratings.

## OPERATING CHARACTERISTICS

	Min.	Typ.	Max.	Remarks
Supply Voltage	3.8	—	30	VDC
Current Consumption	—	—	10	mA
Output Voltage (operated)	—	0.15	0.40	Sinking 20 mA max.
Output Current (operated)	—	—	20 mA	
Output Leakage Current (released)	—	—	10 $\mu$ A	
Output Switching Time				$V_{CC} = 12 V,$
Rise, 10 to 90%	—	.05 $\mu$ s	1.5 $\mu$ s	$R_i = 1.6 K \Omega,$
Fall, 90 to 10%	—	.15 $\mu$ s	1.5 $\mu$ s	$C_L = 20 pF$
Operating Temperature Range	-40°C	—	+125°C	



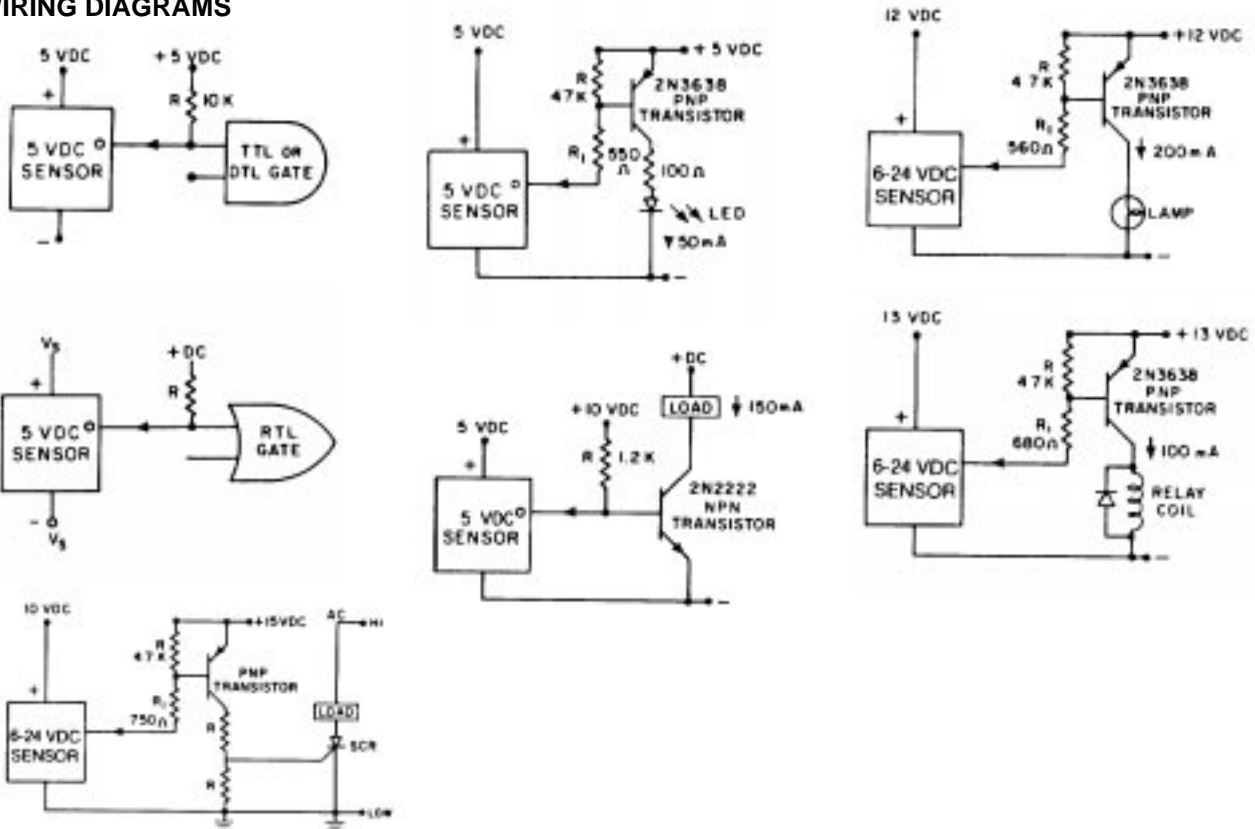
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## MAGNETIC CHARACTERISTICS

Catalog Listing		SS111A	SS113A	SS141A	SS143A	SS149A	SS161A	SS166A
Magnetic Type		Bipolar	Bipolar	Unipolar	Unipolar	Unipolar	Latching	Latching
Magnetic Characteristics (Gauss)								
-40°C	Max. Op.	70	140	135	215	440	110	200
	Min. Rel.	-70	-140	20	80	210	-110	-200
	Min. Dif.	15	20	15	25	30	50	200
0°C	Max. Op.	65	140	117	190	400	90	185
	Min. Rel.	-65	-140	20	80	230	-90	-185
	Min. Dif.	15	20	18	25	30	50	200
25°C	Max. Op.	60	140	115	180	390	85	180
	Min. Rel.	-60	-140	20	75	235	-85	-180
	Min. Dif.	15	20	20	25	30	50	200
85°C	Max. Op.	60	140	120	180	400	85	180
	Min. Rel.	-60	-140	15	70	215	-85	-180
	Min. Dif.	12	20	15	15	30	50	190
125°C	Max. Op.	65	140	123	190	410	100	180
	Min. Rel.	-65	-140	15	60	200	-100	-180
	Min. Dif.	12	20	8	10	30	50	160

## WIRING DIAGRAMS

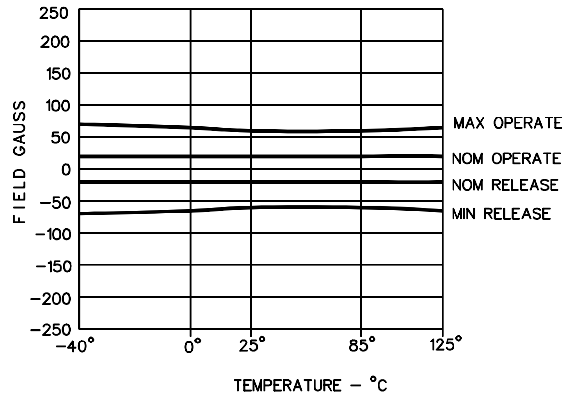


# SS100 Series

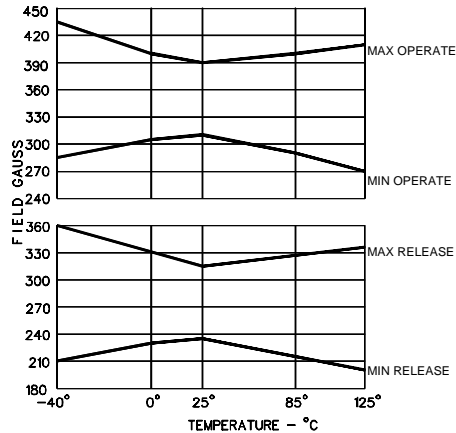
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## OPERATE AND RELEASE POINTS

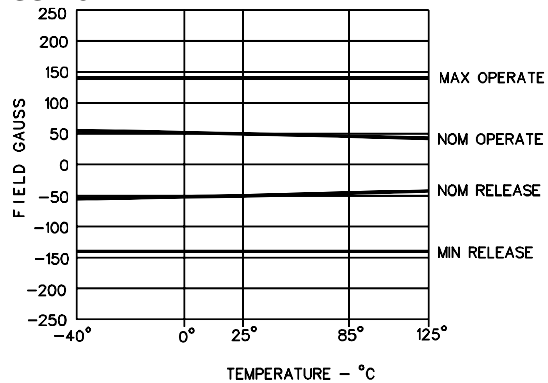
**SS111A**



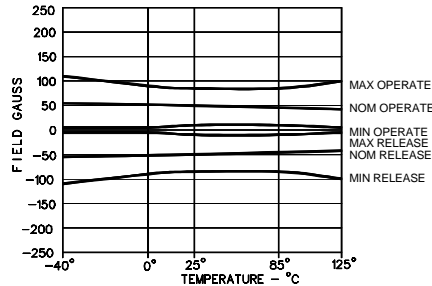
**SS149A**



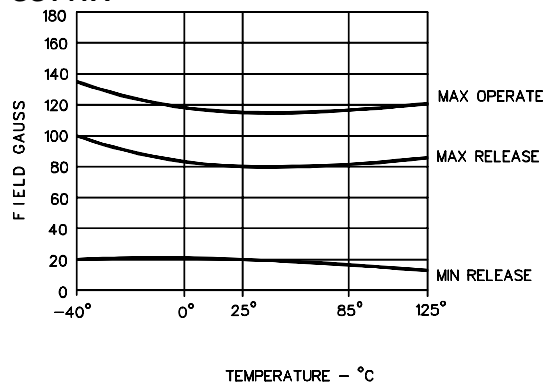
**SS113A**



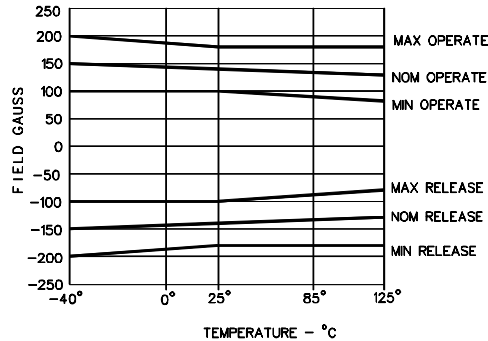
**SS161A**



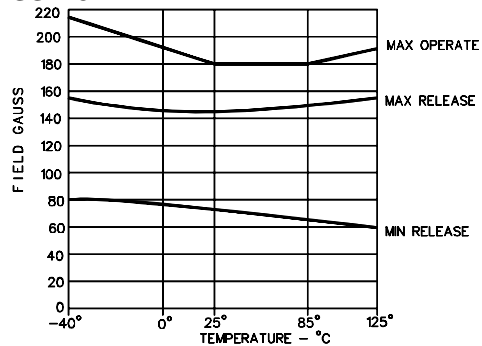
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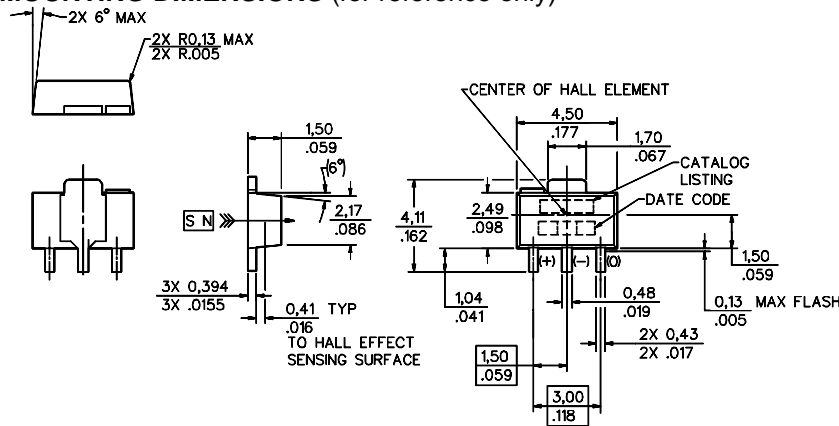
**SS166A**



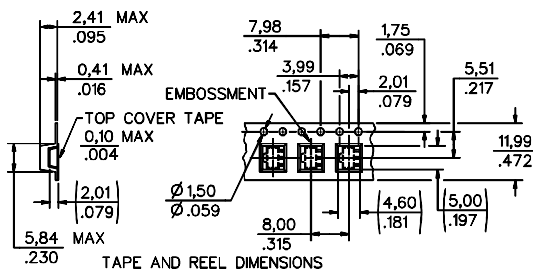
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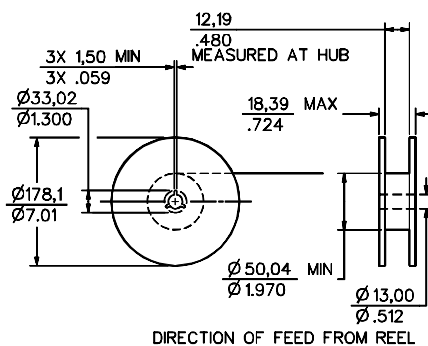
## MOUNTING DIMENSIONS (for reference only)



## TAPE DIMENSIONS



## REEL DIMENSIONS



## WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

1-800-537-6945 USA

1-800-737-3360 Canada

1-815-235-6847 International

**FAX 1-815-235-6545 USA**

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# Honeywell

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