

Installation Instructions for the SS500 Series Temperature Compensated Hall Effect Sensors

ISSUE 5
PK 80079

⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

CAUTION

ELECTROSTATIC DISCHARGE DAMAGE

This component is sensitive to electrostatic discharge (ESD). Take normal ESD precautions in handling this product to prevent ESD-induced damage and/or degradation.

Failure to comply with these instructions will result in product damage.

CAUTION

WAVE SOLDER DAMAGE

DO NOT wave solder this product. Wave soldering may negatively affect the sensor performance and reliability. Subjecting the sensor to wave soldering will void Honeywell's warranty.

Failure to comply with these instructions will result in product damage.

ABSOLUTE MAXIMUM RATINGS*

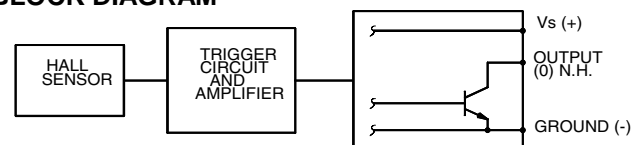
Supply Voltage	-1 to +30 VDC
Voltage externally applied to output	+30 VDC max. (OFF only) -0.5 VDC min. (OFF or ON)
Output ON Current	See Table A.
Operating Temperature	-50 to +160°C (-67 to +320°F)
Storage Temperature	-65 to +160°C (-85 to +320°F)
Magnetic Flux	No limit. Circuit cannot be damaged by magnetic overdrive.

* 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.

SOLDERING INSTRUCTIONS

Honeywell recommends an infrared reflow process with peak temperatures not to exceed 245°C (473°F) for 10 seconds maximum.

BLOCK DIAGRAM



OPERATING CHARACTERISTICS (over Operating Voltage and Temperature, unless otherwise noted)

	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	μA
Output Switching Time				$V_{CC} = 12\text{ V}$,
Rise, 10 to 90%	—	.05 μs	1.5 μs	$R_L = 1.6\text{ K } \Omega$,
Fall, 90 to 10%	—	.15 μs	1.5 μs	$C_L = 20\text{ pF}$
Operating Temperature Range	-40°C to +125°C (-40°F to 302°F)			

TABLE A	
Output Current Absolute Limits	
Supply Voltage	Output Current Max. mA
-1 to 24	50
24 to 25	37
25 to 26	33
26 to 27	28
28 to 29	19
29 to 30	15

Note: To prevent damage to the leads, SS500 Series surface mounted sensors are supplied **only** on tape and reel.

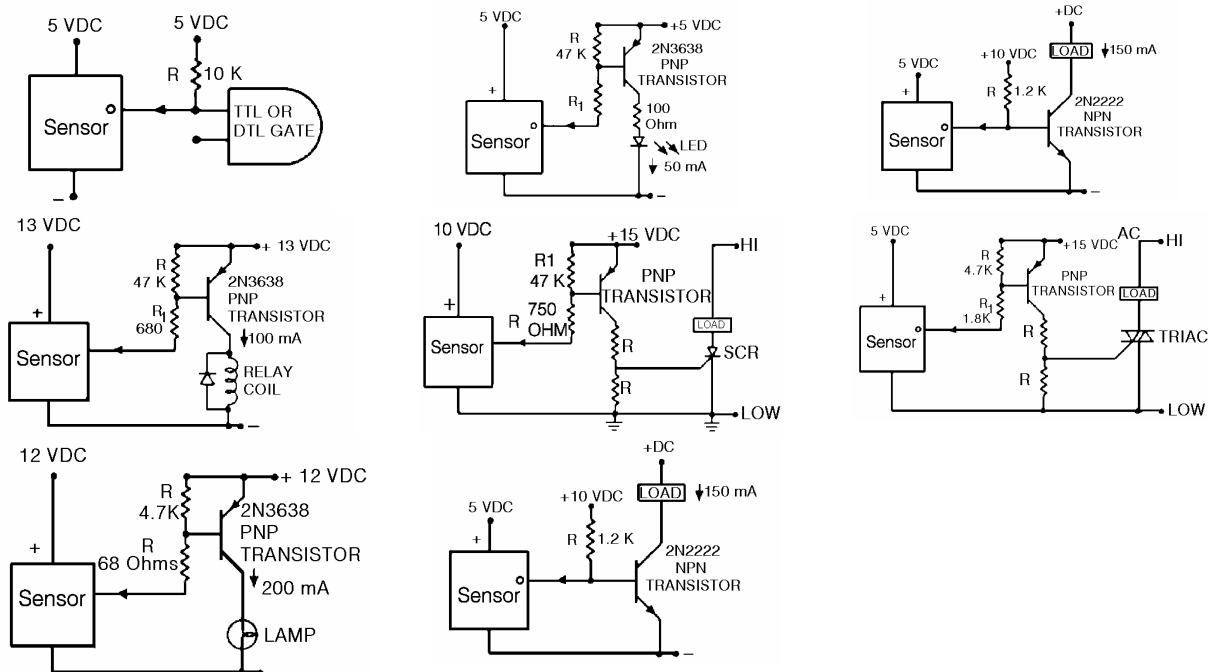
MAGNETIC CHARACTERISTICS

		SS511AT	SS513AT	SS541AT	SS543AT	SS549AT	SS561AT	SS566AT
Magnetic Type		Bipolar	Bipolar	Unipolar	Unipolar	Unipolar	Latching	Latching
-40°C	Max. Op.	70	140	135	215	435	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	15	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
150°C	Max. Op.	70	140	125	200	420	110	185
	Min. Rel.	-70	-140	10	55	185	-110	-185
	Min. Dif.	10	20	5	5	30	50	140

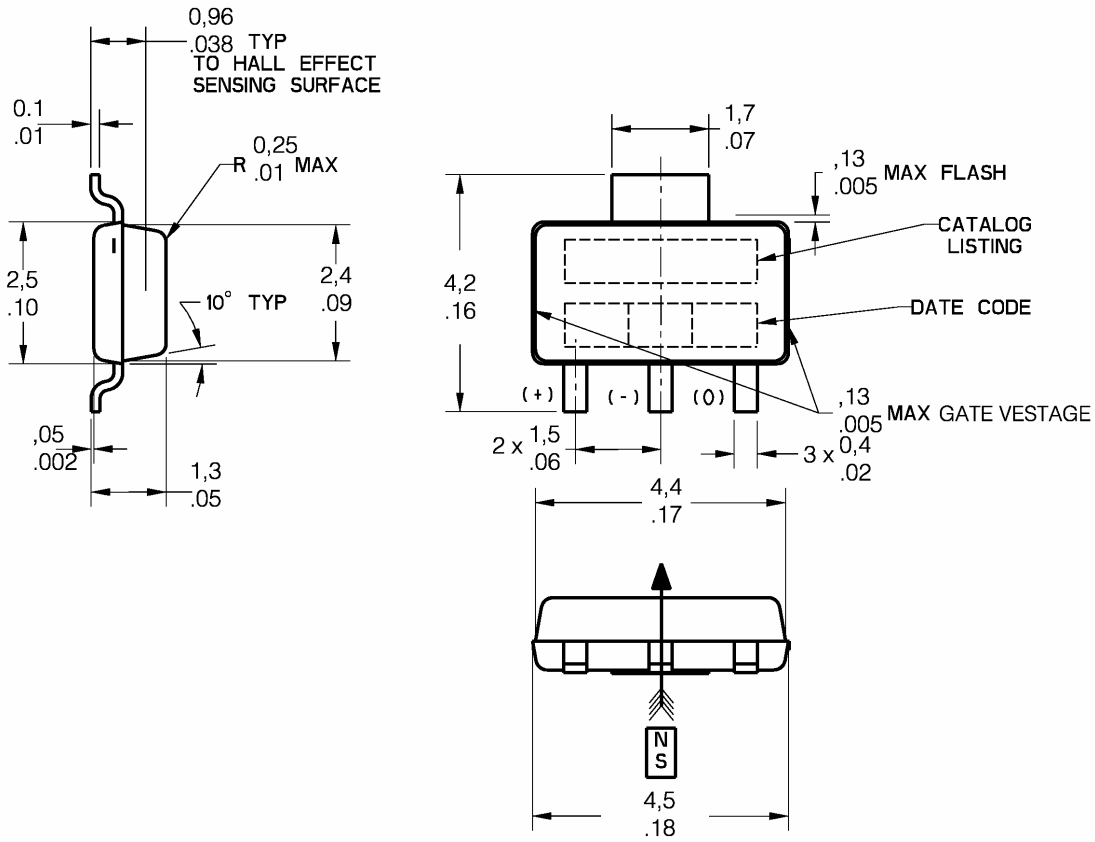
NOTICE

Bipolar Hall effect sensors may have an initial output in either the On or Off state if powered up with an applied magnetic field in the differential zone (applied magnetic field > Brp and < Bop). Honeywell recommends allowing 10 μsec for output voltage to stabilize after supply voltage has reached 5 volts.

INTERFACE DIAGRAMS

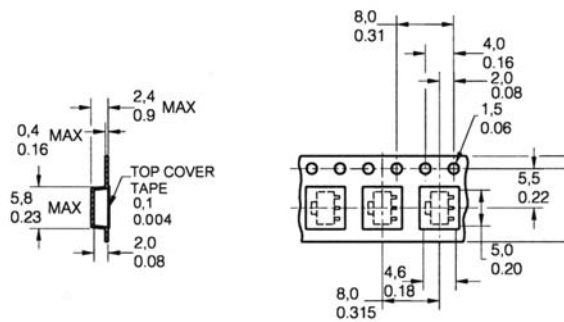


MOUNTING DIMENSIONS (for reference only) mm/in



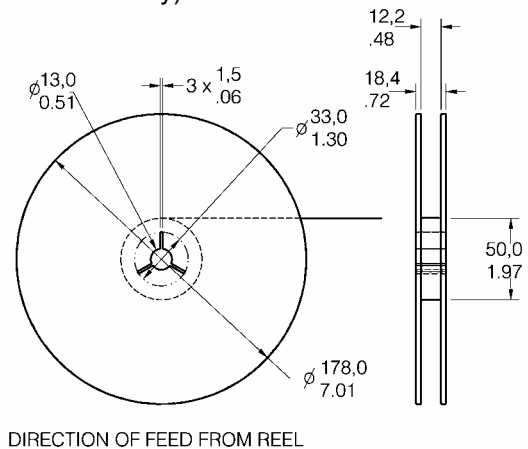
TAPE DIMENSIONS

(for reference only) mm/in



REEL DIMENSIONS

(for reference only) mm/in



NOTE: This product is sold in tape and reel form only, per EIA STD 481. There are 1,000 parts per reel.

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.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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

1-800-537-6945 USA/Canada
1-815-235-6847 International

FAX

1-815-235-6545 USA

INTERNET

www.honeywell.com/sensing
info.sc@honeywell.com

Honeywell

Sensing and Control
www.honeywell.com/sensing
Honeywell
11 West Spring Street
Freeport, Illinois 61032