

Installation Instructions for SS30AT/SS40A/SS50AT Bipolar Hall-Effect Magnetic Position Sensors

ISSUE 1
50042245

WARNING

OPENING PRODUCTS HAZARD

DO NOT OPEN these products when energized or in a flammable gas atmosphere.

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

WARNING

IMPROPER CONDUIT THREAD USE

DO NOT USE any other conduit thread than the one identified on the product. Verify that the mating threaded fitting is identical with the conduit thread shown on the product nameplate

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

GENERAL INFORMATION

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.



NOTICE

Absolute maximum ratings are the extreme limits 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.

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 μ s for output voltage to stabilize after supply voltage has reached 5 V.

TABLE 1. ABSOLUTE MAXIMUM RATINGS*

Parameter	Min.	Typ.	Max.	Unit
Supply voltage	-28	–	28	V
Applied output voltage	-0.5	–	28	V
Output current	–	–	20	mA
Magnetic flux	–	–	No limit	Gauss

*Absolute maximum ratings are the extreme limits 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.

TABLE 2. ELECTRICAL CHARACTERISTICS

At $V_s = 4.5\text{ V}$ to 24 V with 20 mA load with $T_a = -40\text{ }^\circ\text{C}$ to $125\text{ }^\circ\text{C}$ [$-40\text{ }^\circ\text{F}$ to $257\text{ }^\circ\text{F}$] unless otherwise noted.

Parameter	Cond.	Min.	Typ.	Max.	Unit
Supply voltage	–	4.5	–	24.0	V
Supply current	25 °C [77 °F]	–	6.8	10.0	mA
Supply current	25 °C [77 °F], $V_s = 4.5\text{ V}$	–	4.4	7.06	mA
Supply current	–	–	–	11.3	mA
Output current	–	–	–	20.0	mA
V_{sat} @ 15 mA	Gauss >170	–	–	0.4	V
Output leakage	Gauss <-170	–	–	10.0	μA
Rise time	25 °C [77 °F]	–	0.5	1.5	μs
Fall time	25 °C [77 °F]	–	0.2	1.5	μs
Response time	25 °C [77 °F]	–	4.0	5.0	μs
Operate	25 °C [77 °F]	–	45	110	Gauss
Operate	0 °C to 85 °C [32 °F to 185 °F]	–	50	130	Gauss
Operate	–	–	55	170	Gauss
Release	25 °C [77 °F]	-110	-45	–	Gauss
Release	-40 °C to 85 °C [-40 °F to 185 °F]	-130	-50	–	Gauss
Release	–	-170	-55	–	Gauss
Differential	–	50	–	–	Gauss
Operating temperature	-40 °C to 125 °C [-40 °F to 257 °F]				
Storage temperature	-55 °C to 165 °C [-67 °F to 329 °F]				

Note: The magnetic field strength (Gauss) required to cause the sensor to change state (operate and release) will be as specified in the magnetic characteristics. To test the sensor against the specified magnetic characteristics, the sensor must be placed in a uniform magnetic field.

FIGURE 1. WIRING DIAGRAMS

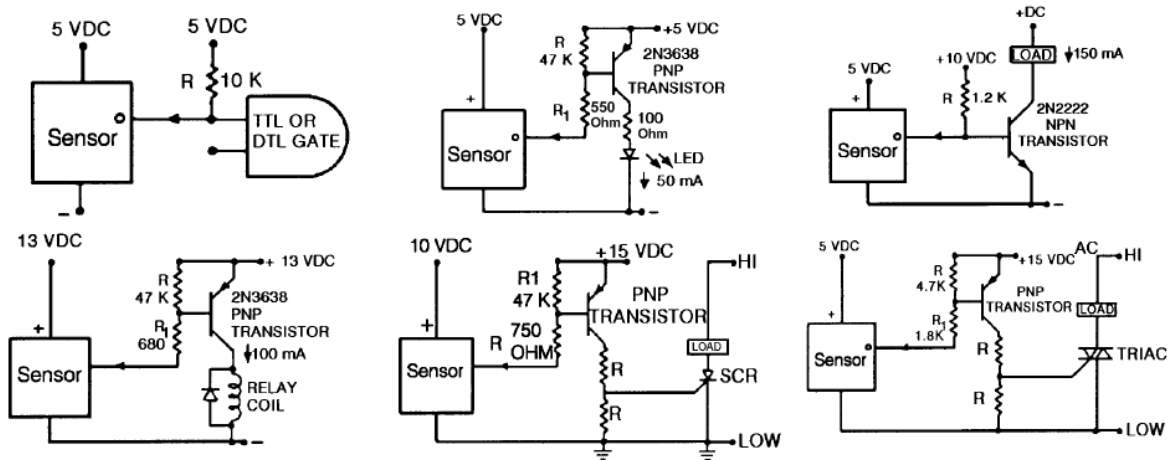


FIGURE 2. SS30AT/SS40A/SS50AT OPERATE AND RELEASE POINTS

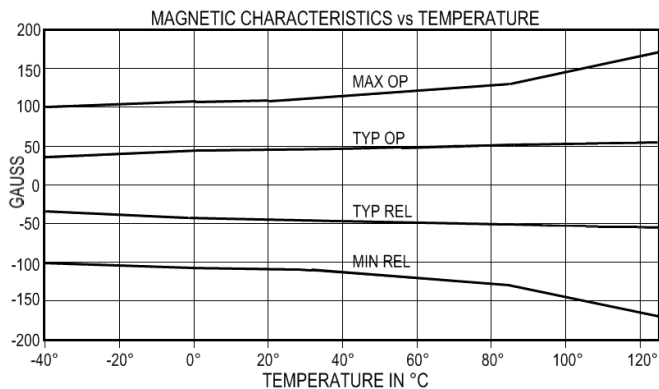


FIGURE 3. CURRENT SINKING OUTPUT BLOCK DIAGRAM

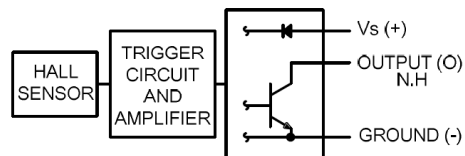


FIGURE 4. SS40A SERIES MOUNTING DIMENSIONS (for reference only) mm/[in]

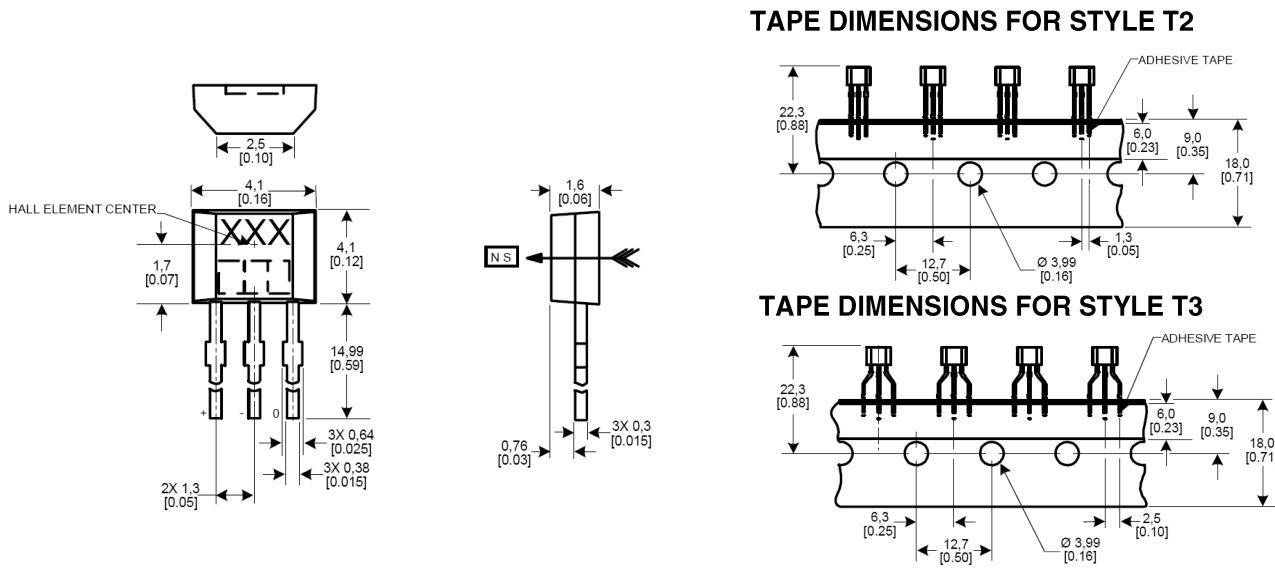


FIGURE 5. SS30AT SERIES MOUNTING DIMENSIONS (for reference only) mm/[in]

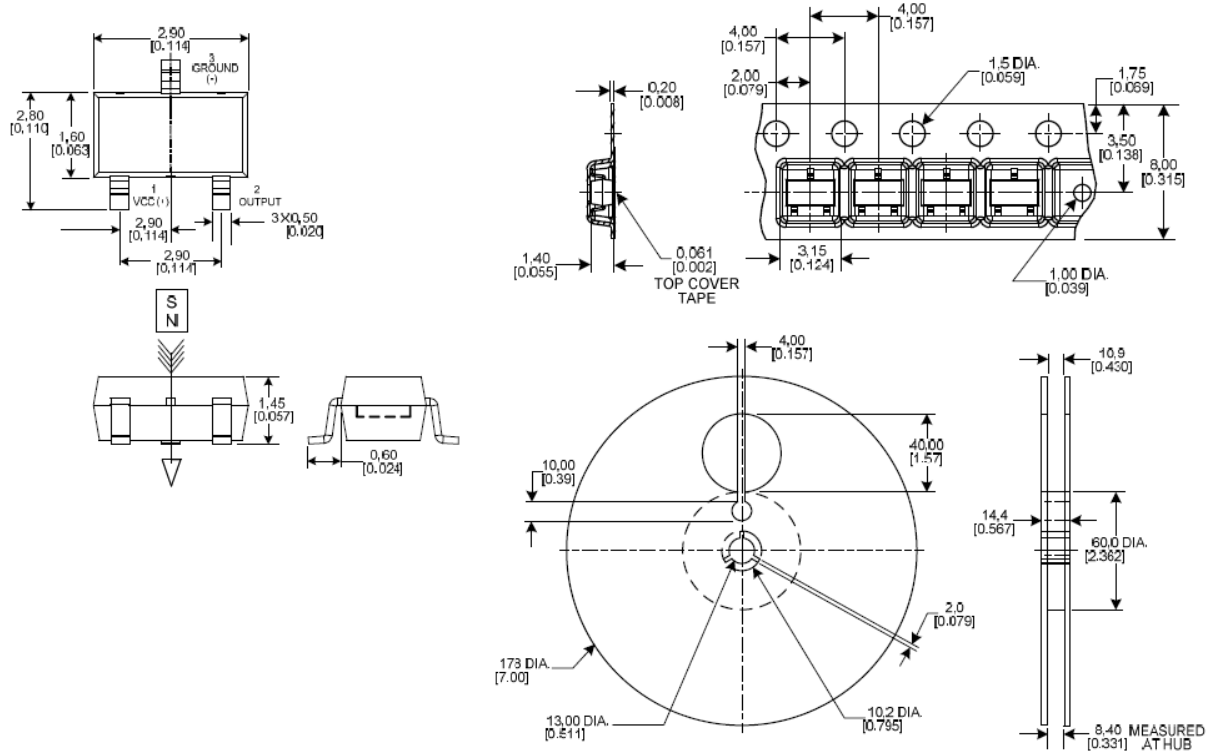
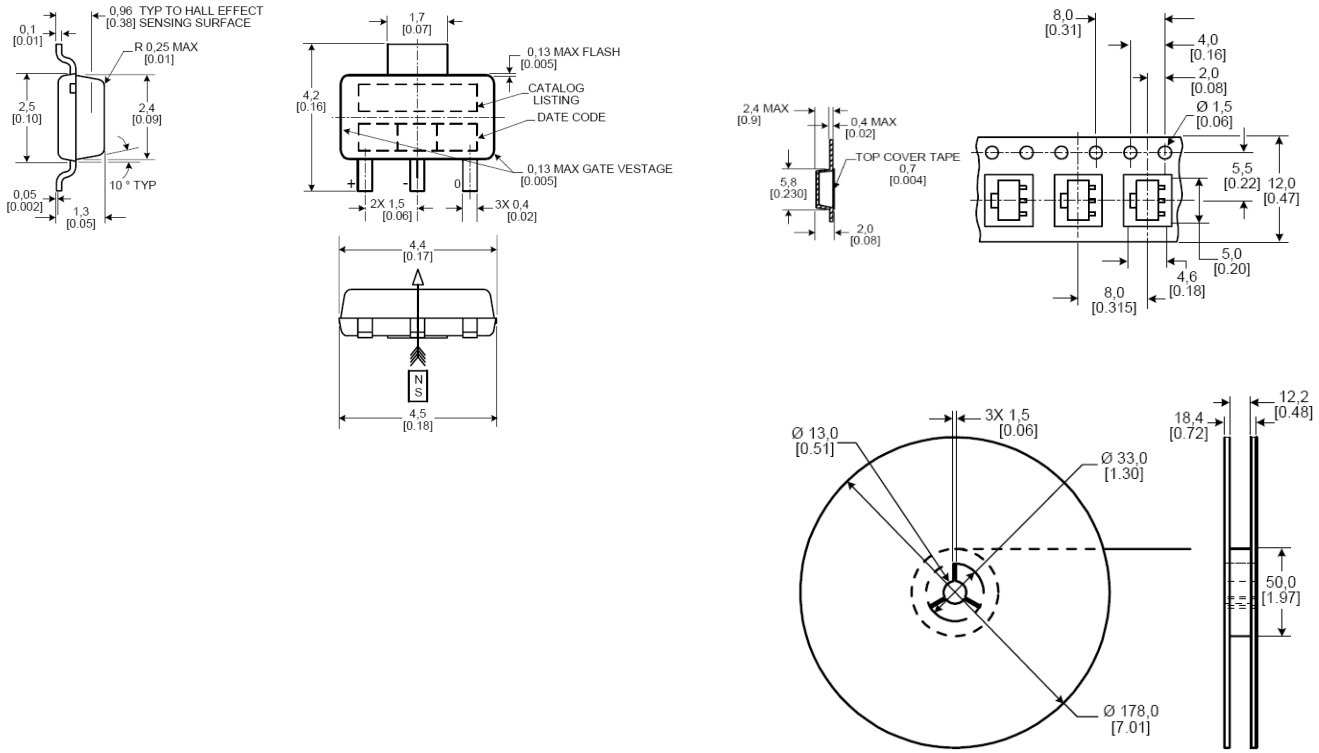


FIGURE 6. SS50AT SERIES MOUNTING DIMENSIONS (for reference only) mm/[in]



WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, 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. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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.

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.

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

E-mail: info.sc@honeywell.com

Internet: www.honeywell.com/sensing

Phone and Fax:

Asia Pacific	+65 6355-2828 +65 6445-3033 Fax
Europe	+44 (0) 1698 481481 +44 (0) 1698 481676 Fax
Latin America	+1-305-805-8188 +1-305-883-8257 Fax
USA/Canada	+1-800-537-6945 +1-815-235-6847 +1-815-235-6545 Fax

Sensing and Control
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422
www.honeywell.com

50042245-1-EN IL50 GLO Printed in USA
July 2009
© 2009 Honeywell International Inc.

Honeywell