

Installation Instructions for the SS360NT/SS360ST/SS460S High Sensitivity Latching Digital Hall-Effect Sensor ICs

ISSUE 1
50074541

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 may result in product damage.



SOLDERING/ASSEMBLY

CAUTION

IMPROPER SOLDERING

- Ensure leads are adequately supported during any forming/shearing operation so that they are not stressed inside the plastic case.
- Limit exposure to high temperatures.
- Do not wave solder the SS360NT or the SS360ST.

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

SS360NT and SS360ST: Use an infrared reflow process with temperatures of 245 °C [473 °F] peak for 10 s max.

SS460S: PC board wave soldering temperature is 250 °C to 260 °C [482°F to 500 °F] peak for 3 s max.

Table 1. Absolute Maximum Ratings¹

Characteristic	Min.	Typ.	Max.	Unit
Supply voltage	-26.0	–	26.0	Vdc
Applied output voltage	-0.5	–	26.0	Vdc
Output current	–	–	20.0	mA
Magnetic flux	–	–	no limit	Gauss

Note 1: 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.

NOTICE

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

NOTICE

Bipolar Hall-Effect sensor ICs 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 μs for output voltage to stabilize after supply voltage has reached 5 V.

Table 2. SS360NT/SS360ST/SS460S Performance Specifications

(At 3 Vdc to 24 Vdc supply, 20 mA load, T_A = -40 °C to 150 °C [-40 °F to 302 °F] unless otherwise specified.)

Characteristic	Condition	Min.	Typ.	Max.	Unit
Supply voltage	-40 °C to 150 °C [-40 °F to 302 °F]	3	–	24	Vdc
Supply current	V _{supply} = 3 V at 25 °C [77 °F]	–	3.5	6	mA
		–	3.5	5	
		–	–	8	
V _{sat}	Gauss >55	–	–	0.6	V
Output leakage current	Gauss >55	–	–	10	μA
Rise/fall time	V _{supply} = 12 V at 25 °C [77 °F] R _L = 1.6 kOhm, C _L = 20 pF	–	–	1.5	μs
rise		–	–	1.5	
fall		–	–	1.5	
Thermal resistance:					
SS460S (Flat TO-92)	–	–	233	–	°C/W
SS360NT/ST (SOT-23)	–	–	303	–	
Operate	-40 °C to 125 °C [-40 °F to 257 °F]	5	30	55	Gauss
Release	-40 °C to 125 °C [-40 °F to 257 °F]	-55	-30	-5	Gauss
Differential	-40 °C to 125 °C [-40 °F to 257 °F]	40	60	80	Gauss
Operating temperature	V _{supply} = 4 Vdc to 24 Vdc	-40 [-40]	–	150 [302]	°C [°F]
Storage temperature	–	-40 [-40]	–	165 [329]	°C [°F]

Figure 1 . Current Sinking Output Block Diagram

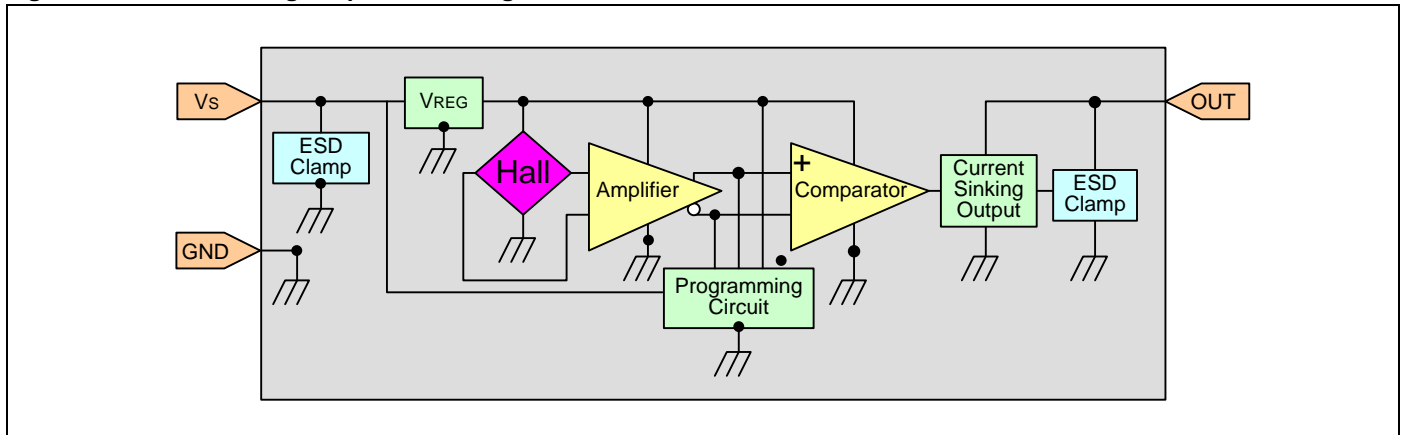


Figure 2. Typical Magnetic Characteristics vs Ambient Temperature and Supply Voltage

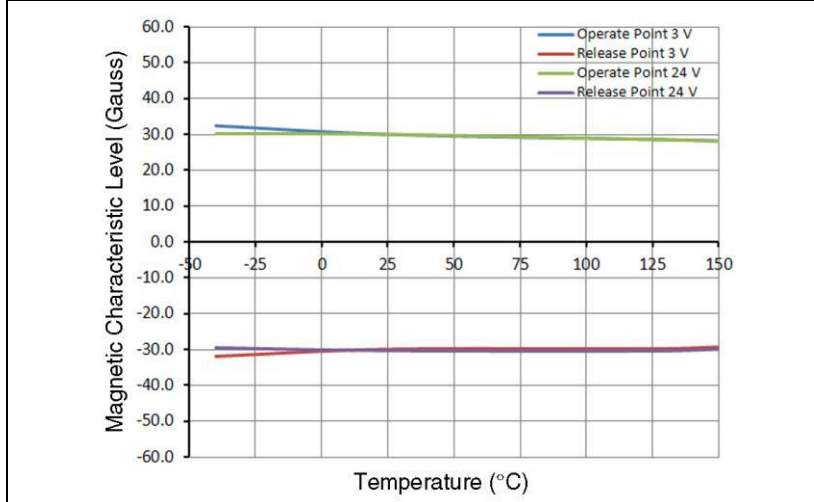


Figure 3. SS360NT and SS360ST Rated Supply Voltage vs Temperature

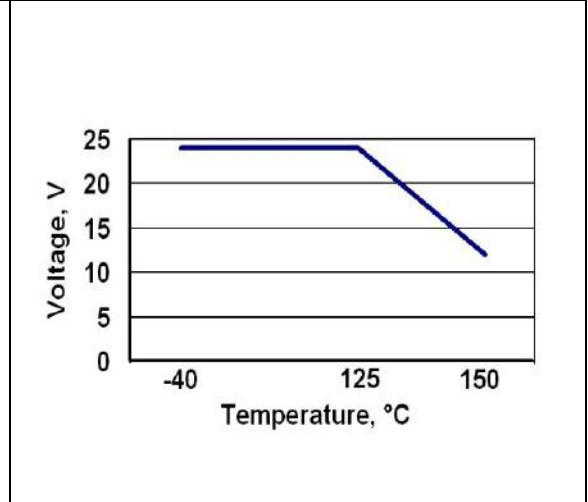


Figure 4. Magnetic Activation

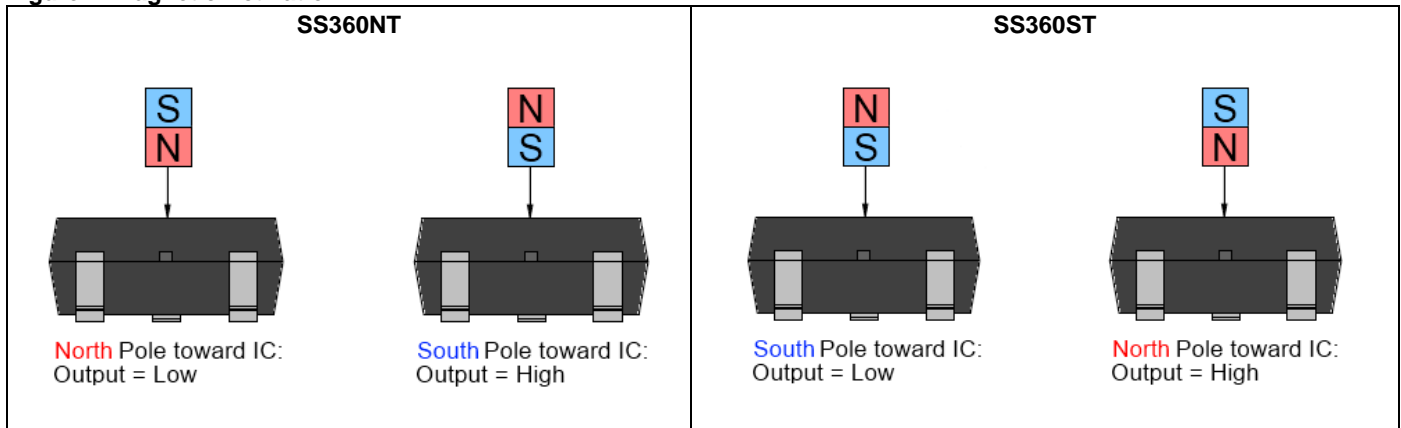


Figure 5. SS360NT/SS360ST Mounting and Tape/Reel Dimensions (For reference only. mm/[in].)

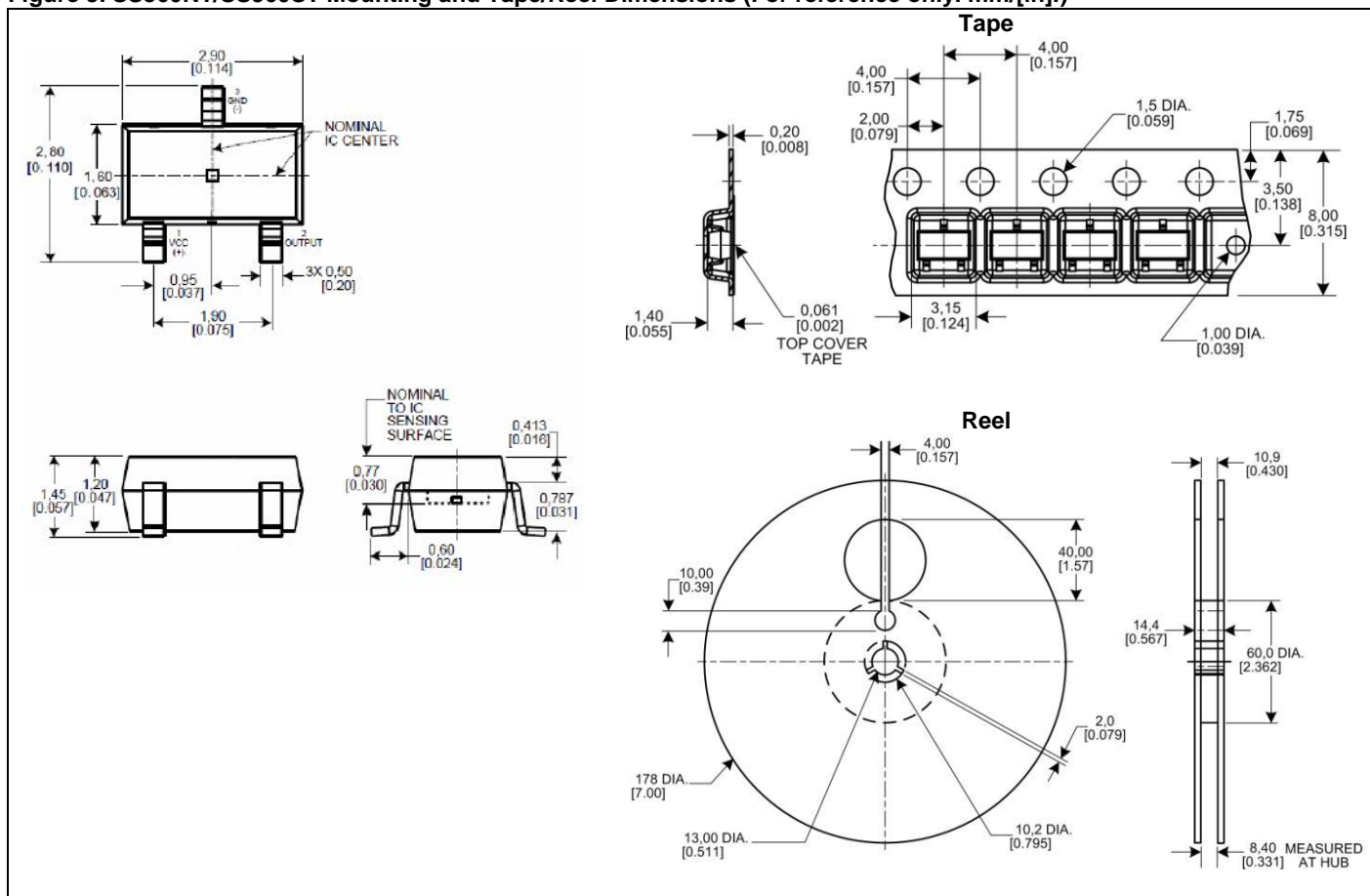
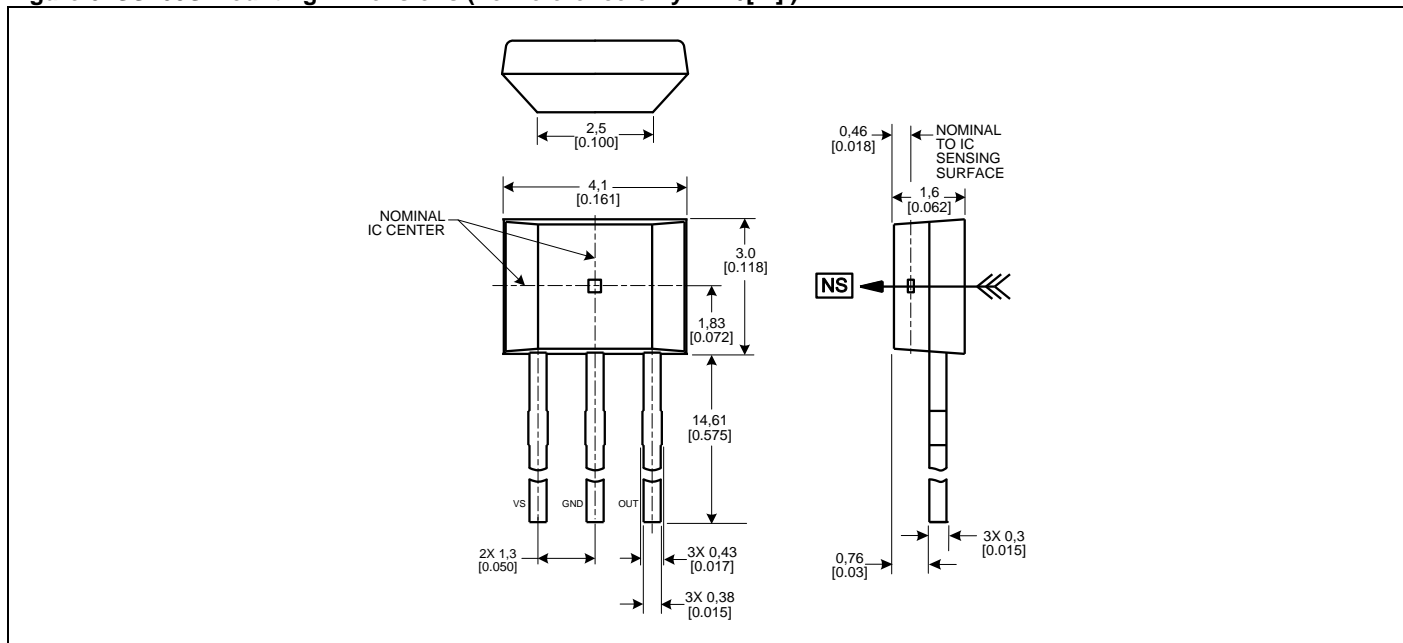


Figure 6. SS460S Mounting Dimensions (For reference only. mm/[in].)



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.

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.**

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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.

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