


Installation Instructions for the 50074541 High Sensitivity Latching Digital Issue C Hall-effect Sensor ICs: SS360NT, SS360ST, SS360ST-10K, SS460S, SS460S-T2, SS460S-T3, SS460S-LP

GENERAL INFORMATION

CAUTION
ELECTROSTATIC DISCHARGE DAMAGE

Ensure proper ESD precautions are followed when handling this product.
Failure to comply with these instructions may result in product damage.



CAUTION
ELECTROSTATIC SENSITIVE DEVICES
DO NOT OPEN OR HANDLE EXCEPT AT A STATIC FREE WORKSTATION
ESD SENSITIVITY: CLASS 2

- **Surface mount (SS360NT, SS360ST, SS360ST-10K):** Use infrared reflow process with active flux, lead-free solder. Do not exceed peak temperature of 245°C for a maximum of 10 seconds.
- **Through-hole leads (SS460S, SS460S-T2, SS460S-T3, SS460S-LP):** Wave solder at 250°C to 260°C for a maximum of three seconds. Burrs are allowed only if full lead length will pass through a 0,68 mm [0.027 in] dia. hole.

SOLDERING AND 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.

Failure to comply with these instructions may result in product damage

CLEANING

CAUTION
IMPROPER CLEANING

- Do not use pressure wash. High-pressure stream could force contaminants into the package.

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

Table 1. Electrical and Environmental Specifications
(At $V_s = 3.0$ Vdc to 24.0 Vdc, 20 mA load, $T_A = -40^\circ\text{C}$ to 150°C except where otherwise specified.)

Characteristic	Condition	Min.	Typ.	Max.	Unit
Supply voltage: SS360NT, SS360ST, SS360ST-10K SS360NT, SS360ST, SS360ST-10K SS460S, SS460S-T2, SS460S-T3, SS460S-LP	-40°C to 125°C 150°C	3.0 3.0 —	— — —	24.0 12.0 24.0	Vdc
Supply current	$V_{\text{supply}} = 3.0$ Vdc at 25°C	— —	3.5 —	6.0 8.0	mA
Output current	—	—	—	20	mA
V_{sat} : SS360NT, SS360ST, SS360ST-10K SS460S, SS460S-T2, SS460S-T3, SS460S-LP	Gauss > 55 15 mA, Gauss > 55	— —	— —	0.6 0.6	V
Output leakage current	Gauss < -55	—	—	10.0	μA
Rise/fall time	25°C	—	—	1.5	μs
Thermal resistance: SS360NT, SS360ST, SS360ST-10K SS460S, SS460S-T2, SS460S-T3, SS460S-LP	single layer, single sided PCB	— —	303 233	— —	°C/W
Magnetic characteristics: operate (Bop) release (Brp) differential	— — —	5 -55 40	30 -30 60	55 -5 80	Gauss
Operating temperature	—	-40	—	150	°C
Storage temperature: SS360NT, SS360ST, SS360ST-10K SS460S, SS460S-T2, SS460S-T3, SS460S-LP	— —	— -40	— -40	150 165	°C
Soldering temperature and time: SS360NT, SS360ST, SS360ST-10K SS460S, SS460S-T2, SS460S-T3, SS460S-LP	infrared reflow process: peak temperature 245°C for 10 s max. wave soldering process: 250°C to 260°C for 3 s max.				

High Sensitivity Latching Digital Hall-effect Sensor ICs:

SS360NT, SS360ST, SS360ST-10K, SS460S, SS460S-T2,
SS460S-T3, SS460S-LP

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NOTICE

These 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 μ s after supply voltage has reached 5 V (SS360NT, SS360ST, SS360ST-10K) or 3 V (SS460S, SS460S-T2, SS460S-T3, SS460S-LP) for the output voltage to stabilize.

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 limits, the switch must be placed in a uniform magnetic field.

Table 2. Absolute Maximum Specifications

Characteristic	Min.	Typ.	Max.	Unit
Supply voltage	-26.0	—	26.0	V
Applied output voltage	-0.5	—	26.0	V
Output current	—	—	25	mA
Magnetic flux	—	—	no limit	Gauss

NOTICE

Absolute maximum ratings are the extreme limits the device will momentarily withstand without damage to the device. Electrical and mechanical characteristics are not guaranteed if the rated voltage and/or currents are exceeded, nor will the device necessarily operate at absolute maximum ratings.

Figure 1. Sensor IC Block Diagram

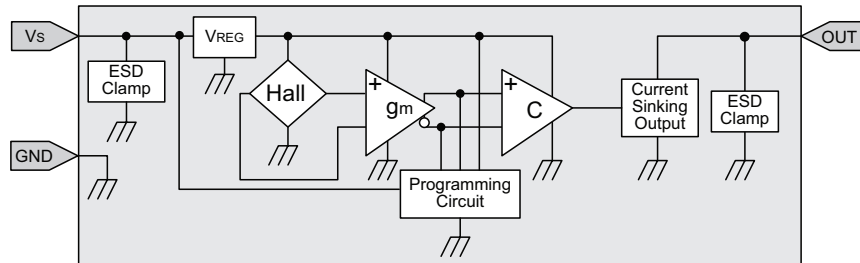


Figure 2. Typical Magnetic Characteristics vs Ambient Temperature at Supply Voltages

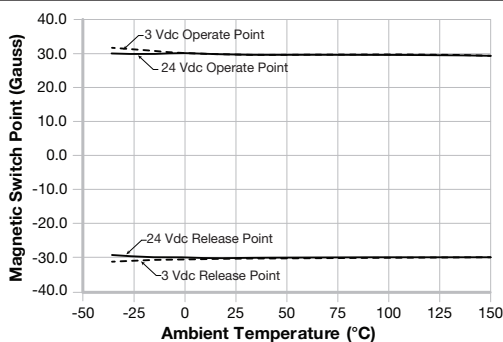


Figure 3. SS360NT, SS360ST, SS360ST-10K Maximum Rated Supply Voltage vs Temperature

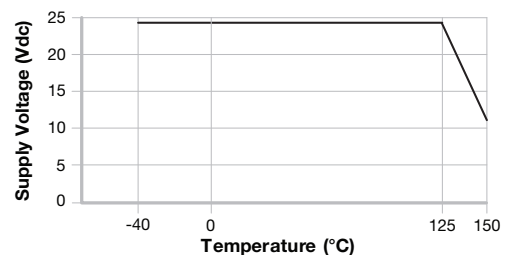
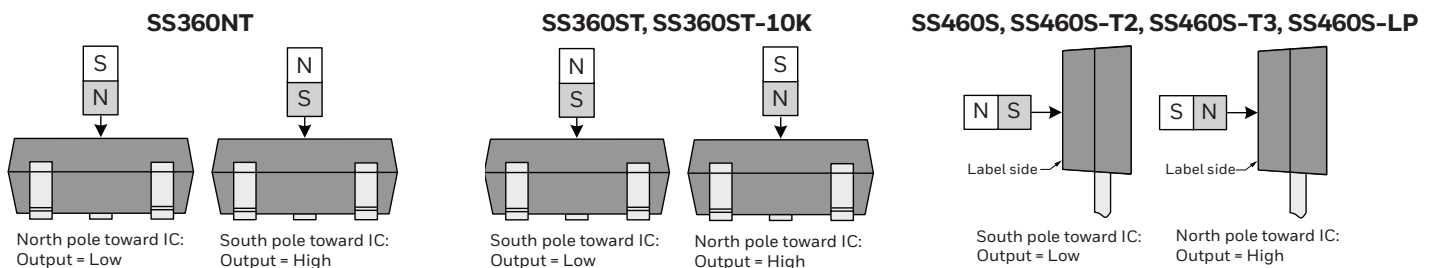


Figure 4. Magnetic Activation



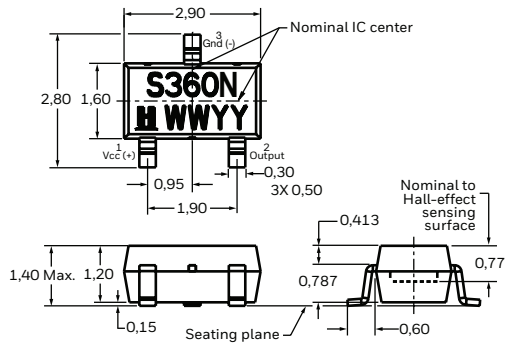
High Sensitivity Latching Digital Hall-effect Sensor ICs:

SS360NT, SS360ST, SS360ST-10K, SS460S, SS460S-T2, SS460S-T3, SS460S-LP

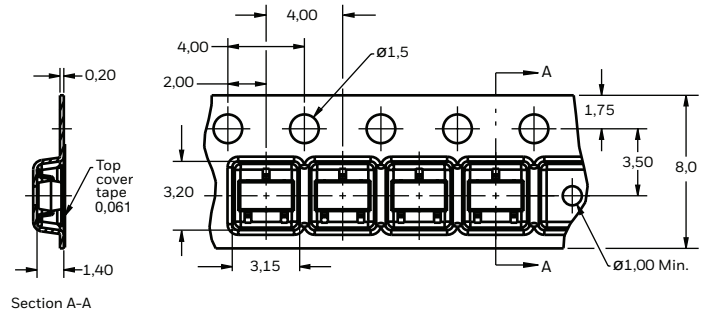
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Figure 5. SS360NT, SS360ST and SS360ST-10K Sensor IC, Tape and Reel Mounting Dimensions (For reference only. mm/in)

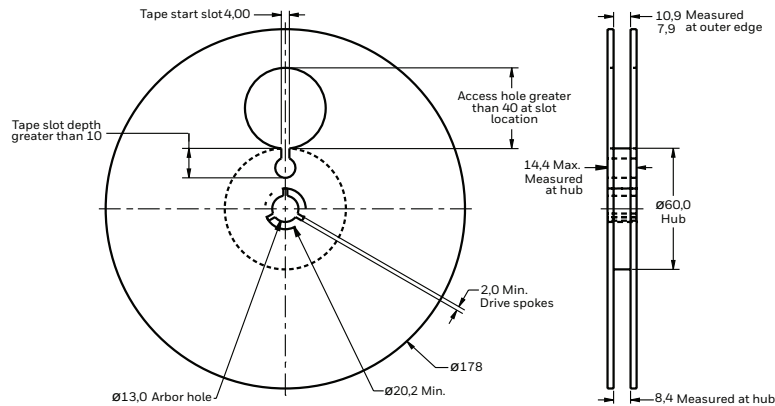
SS360NT, SS360ST, SS360ST-10K Sensor IC



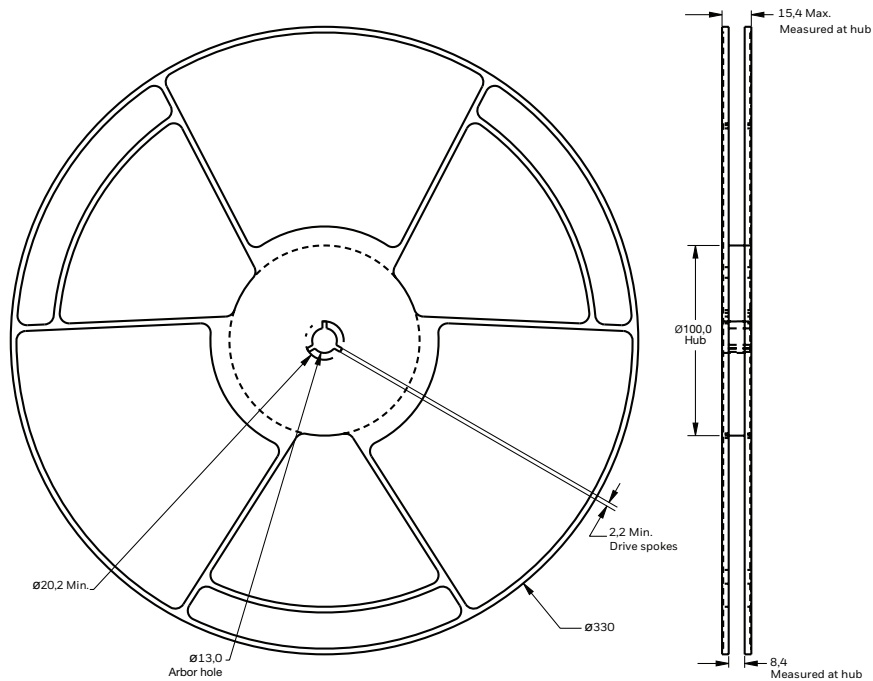
SS360NT, SS360ST, SS360ST-10K Tape



SS360NT, SS360ST 178 mm [7 in] Reel



SS360ST-10K 330 mm [13 in] Reel



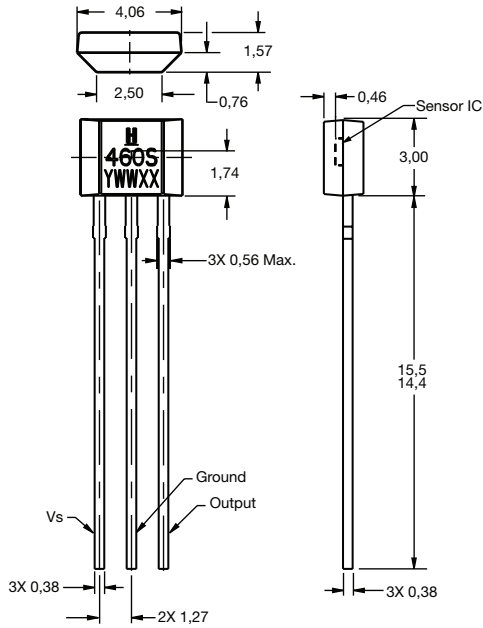
High Sensitivity Latching Digital Hall-effect Sensor ICs:

SS360NT, SS360ST, SS360ST-10K, SS460S, SS460S-T2,
SS460S-T3, SS460S-LP

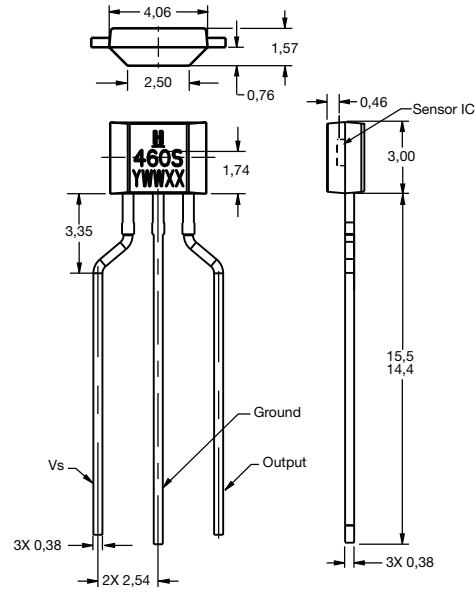
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Figure 6. SS460S Sensor IC, SS460S-T2 Sensor IC and Ammopack Tape-in-Box Mounting Dimensions (For reference only, mm/in)

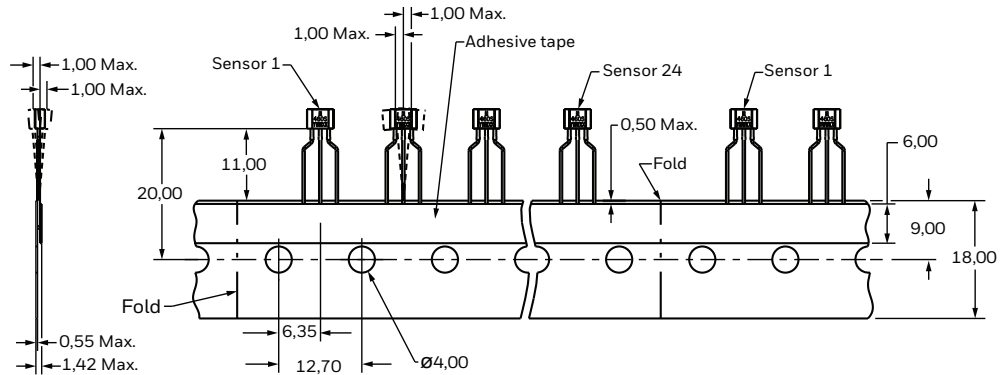
SS460S, SS460S-T3 Sensor IC



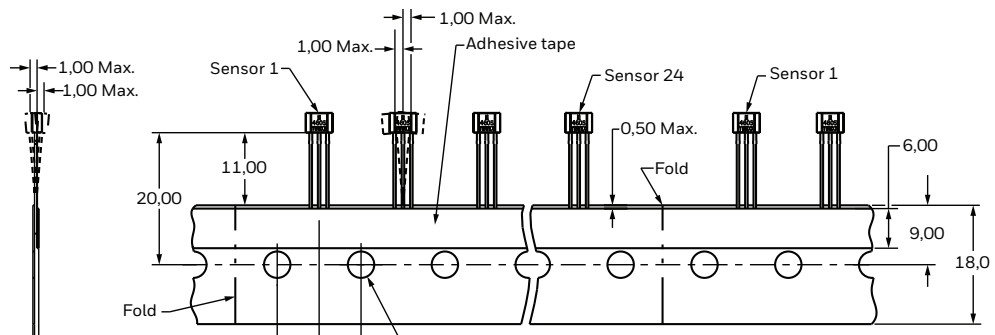
SS460S-T2 Sensor IC



SS460S-T2 Ammopack Tape-in-Box



SS460S-T3 Ammopack Tape-in-Box



Note: Ensure the minimum hole size in the PCB is 0,68 mm [0.027] dia. based on the IPC 2222 Level B standard.

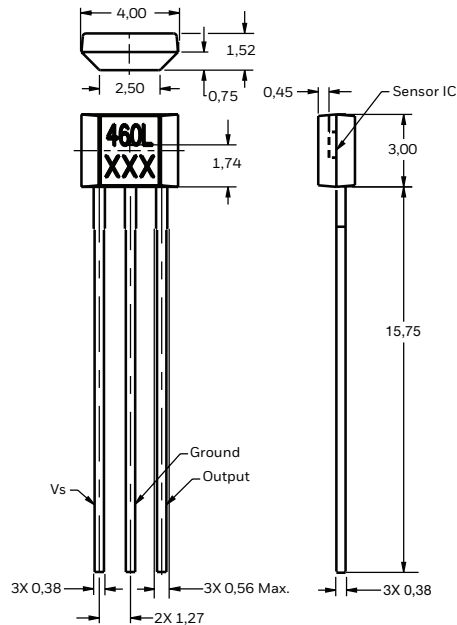
High Sensitivity Latching Digital Hall-effect Sensor ICs:

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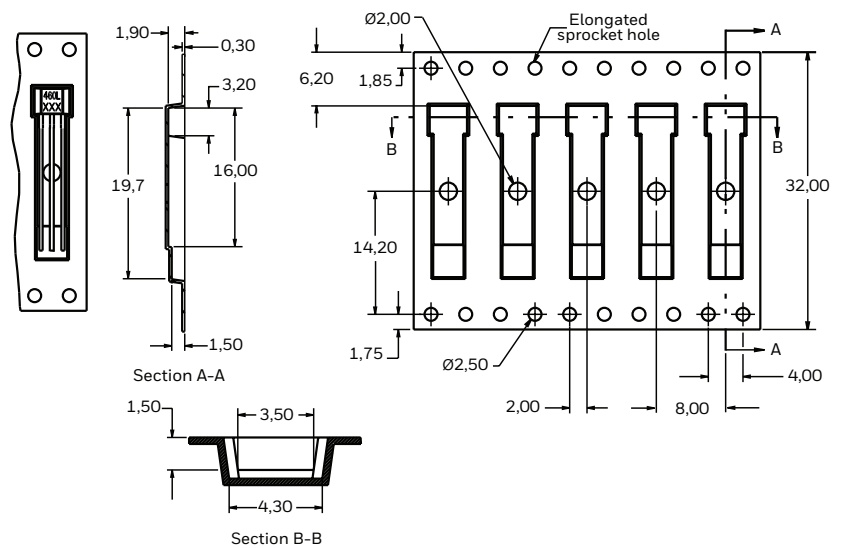
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Figure 7. SS460-LP Sensor IC, Tape and Reel Mounting Dimensions (For reference only. mm/in)

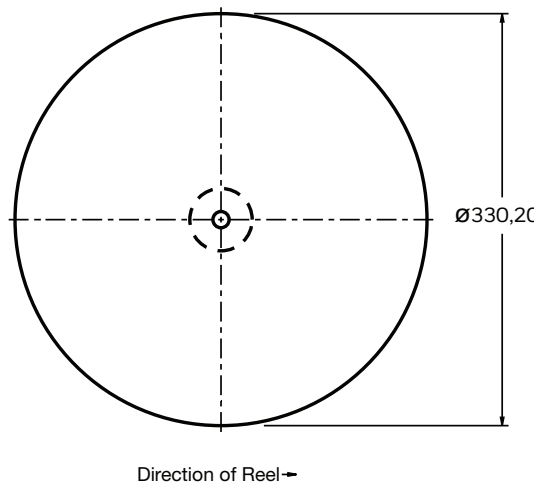
SS460-LP Sensor IC



SS460-LP Pocket Tape



SS460-LP 330 mm [13 in] Reel



Note: Ensure the minimum hole size in the PCB is 0,68 mm [0.027] dia. based on the IPC 2222 Level B standard.

⚠️ 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

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