

Installation Instructions for the SS39ET/SS49E/SS59ET Series Linear Hall-Effect Sensor ICs

ISSUE 2
50000353

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.



Table 1. Absolute Maximum Ratings

Supply voltage (V_s)	-0.5 Vdc to 8.0 Vdc
Output current	10 mA
Storage temperature	-55 °C to 165 °C [-67 °F to 329 °F]

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.

Figure 1. Current Sourcing Output Block Diagram

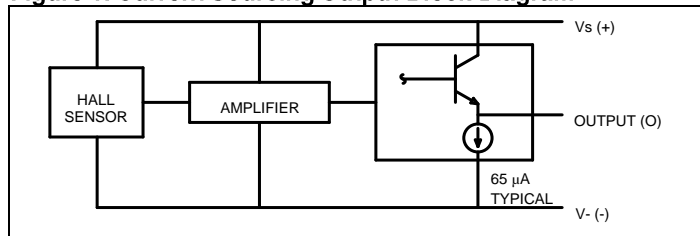
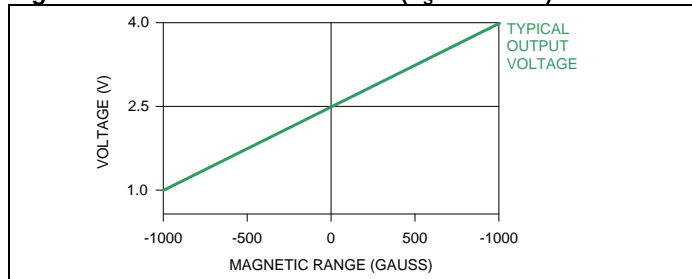


Figure 2. Transfer Characteristics ($V_s = 5.0$ Vdc)



SOLDERING/ASSEMBLY

CAUTION

SOLDERING INSTRUCTIONS

- 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.

Through-hole leads: Wave solder at 250 °C to 260 °C [482 °F to 500 °F] for 3 s max.

Surface-mount: Use an infrared reflow process with temperatures of 245 °C [473 °F] peak for 10 s max.

CLEANING

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

Figure 3. Null Shift versus Temperature

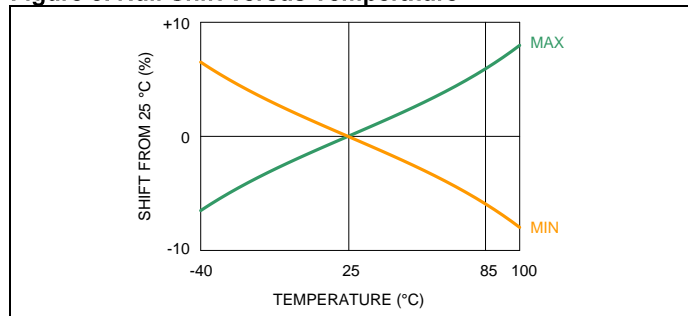


Figure 4. Sensitivity Shift versus Temperature

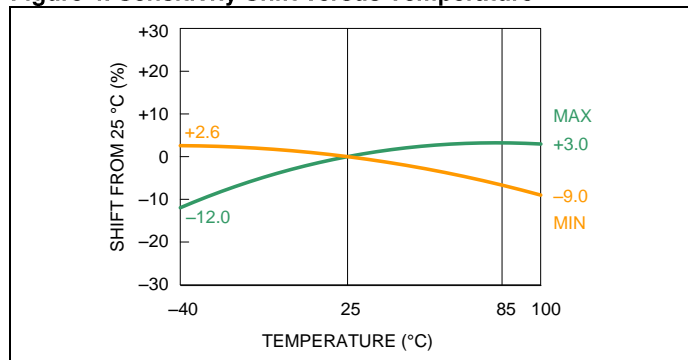


Figure 5. Typical Frequency Response

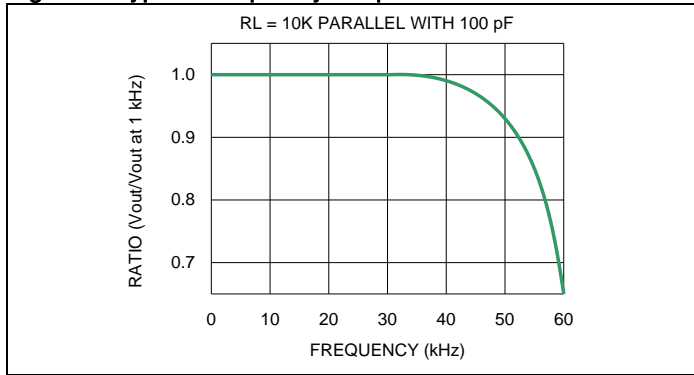


Figure 6. Supply Current versus Temperature

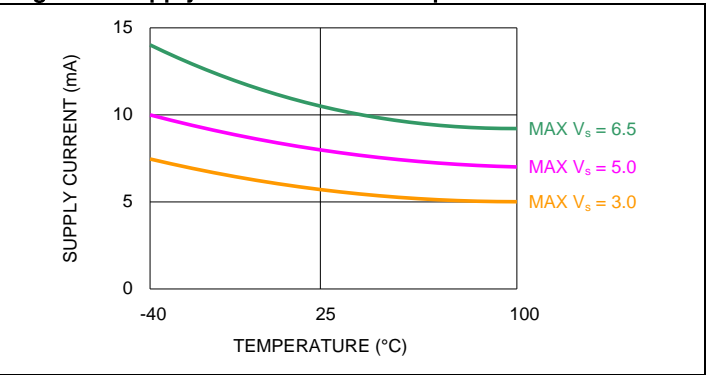


Figure 7. Sensitivity per Volt versus V_s

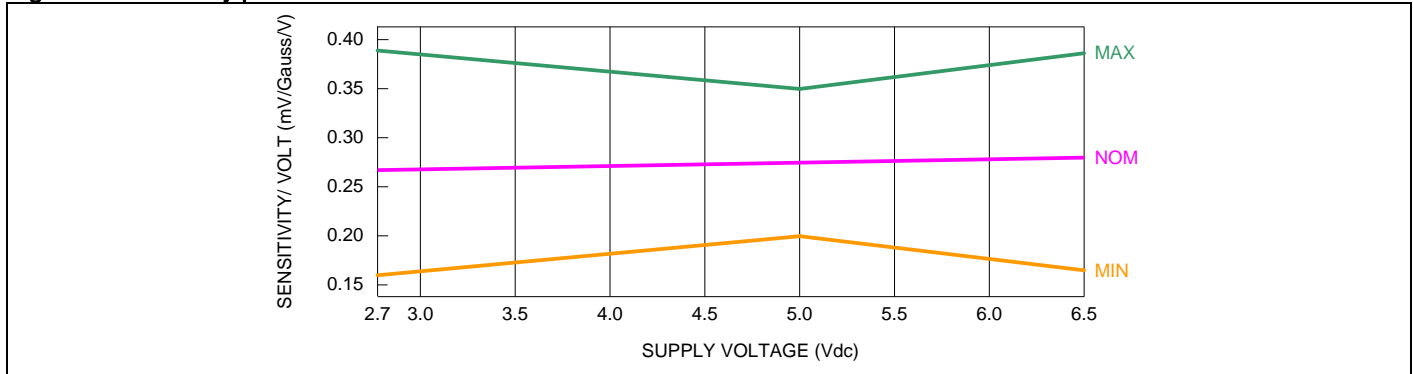


Table 2. Operating Characteristics ($V_s = 5.0$ V, $T_A = -40$ °C to 85 °C [-40 °F to 185 °F], except where noted)

Characteristic	Condition	Min.	Typ.	Max.	Unit
Output type	—	linear, sourcing			—
Magnetics type	—	analog			—
Supply voltage	—	2.7	—	6.5	Vdc
Supply current	25 °C [77 °F]	—	6	10	mA
Output voltage	—	1.0	1.4	1.75	mV/Gauss
Output current	$V_s > 3.0$ V	1.0	1.5	—	mA
Null	0 Gauss, 25 °C	2.25	2.50	2.75	Vdc
Output voltage span	—	1.05 to ($V_s - 1.05$)	0.95 to ($V_s - 0.95$)	—	Vdc
Magnetic range	—	±650	±1000	—	Gauss
Sensitivity	25 °C	1.0	1.4	1.75	mV/Gauss
Operating temperature	—	-40 [-40]	—	100 [212]	°C [°F]
Temperature error					
Null drift	—	-0.10	—	0.10	%°C
Sensitivity drift	≥25 °C	-0.15	—	0.05	
	<25 °C	-0.04	—	0.185	
Linearity	—	—	-0.7	—	% of span
Response time	—	—	3	—	μs

Figure 8. SS39ET Mounting Dimensions (for reference only, mm/[in])

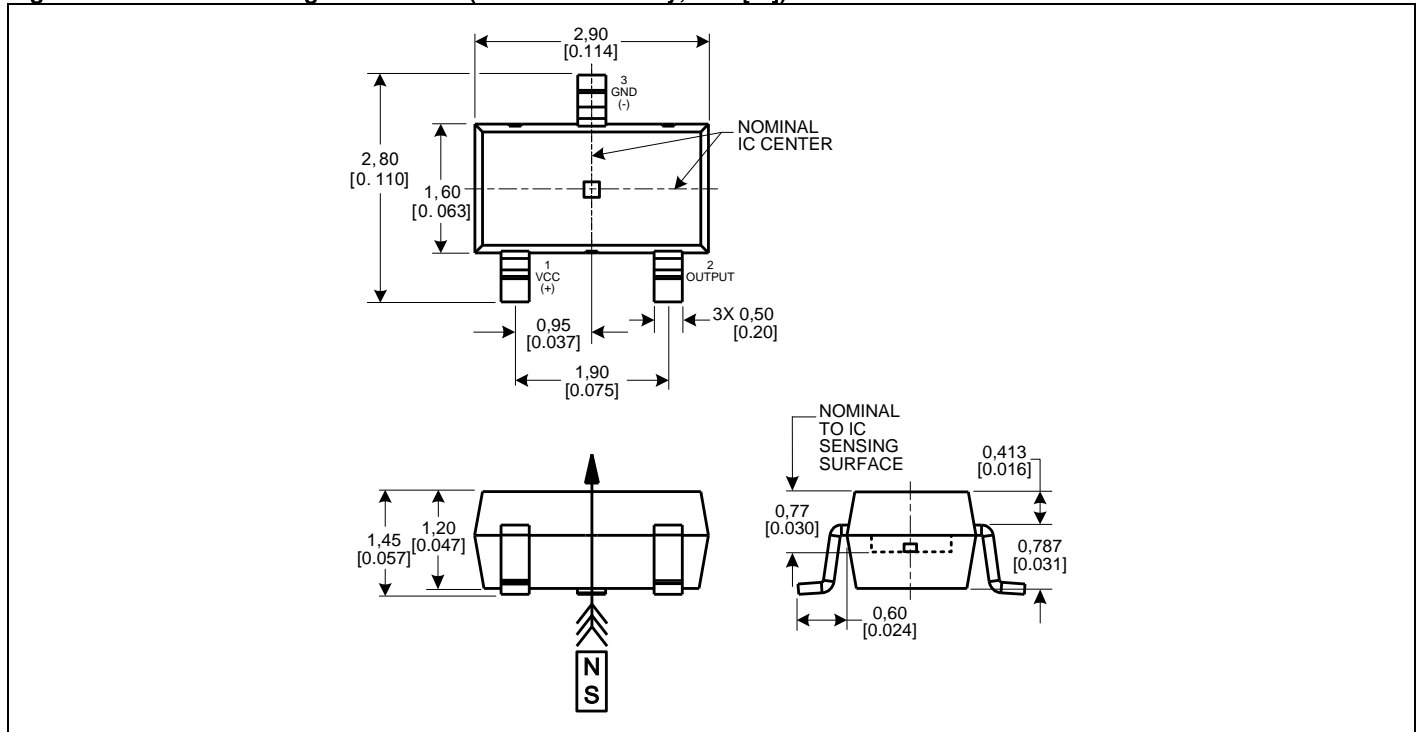


Figure 9. SS39ET Tape and Reel Dimensions (for reference only, mm/[in])

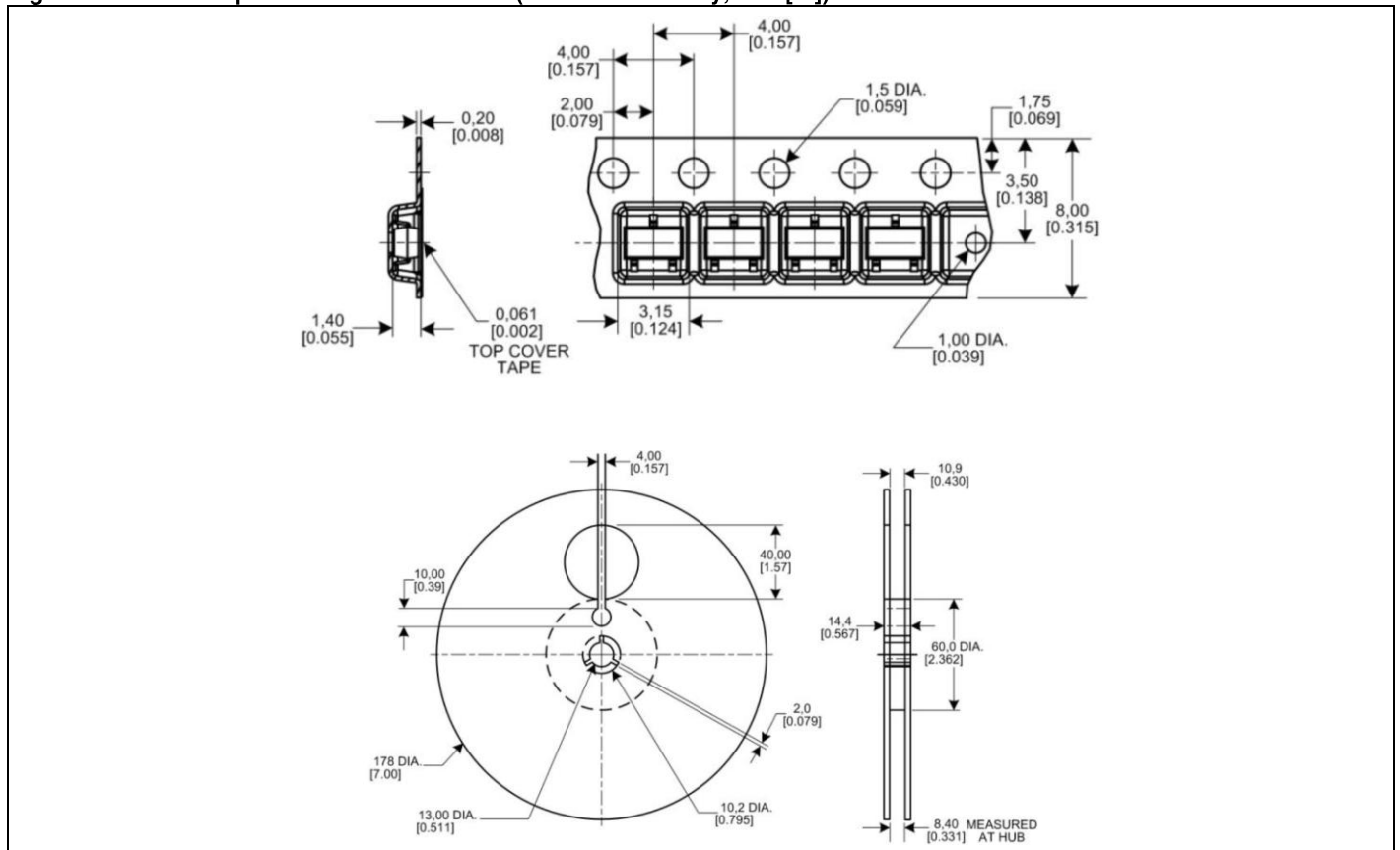


Figure 10. SS49E Mounting Dimensions (for reference only, mm/[in])

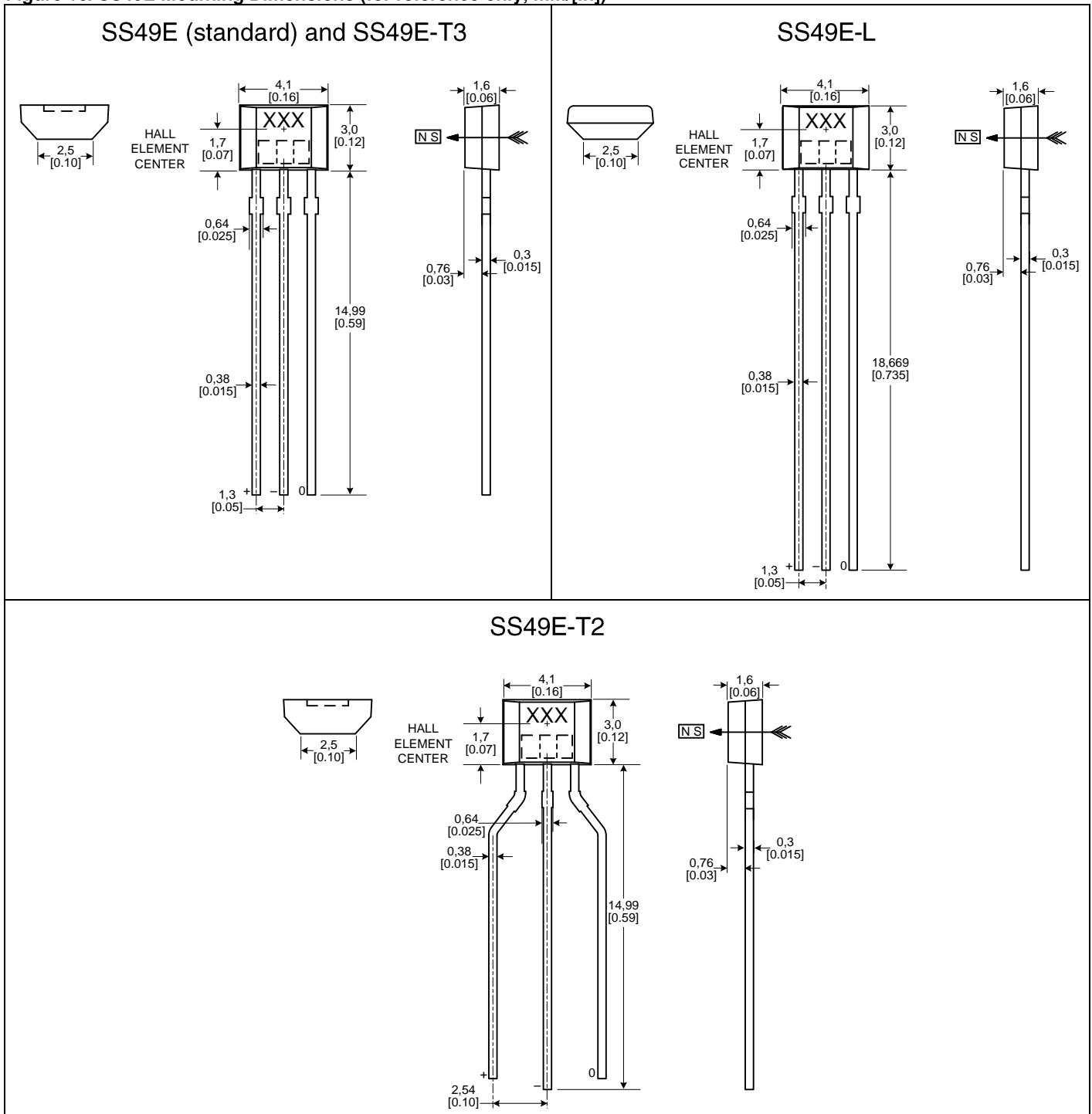


Figure 11. SS49E Tape Style T2

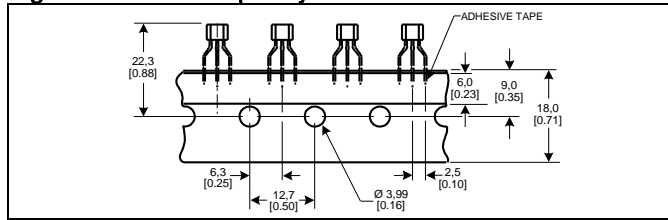


Figure 12. SS49E Tape Style T3

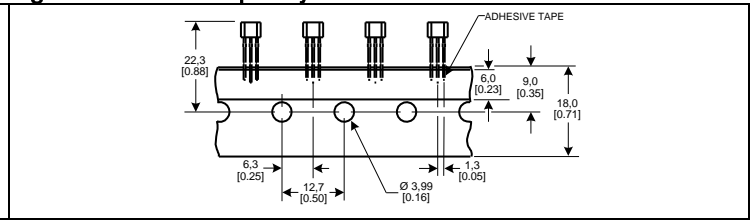


Figure 13. SS59ET Mounting Dimensions (for reference only, mm/[in])

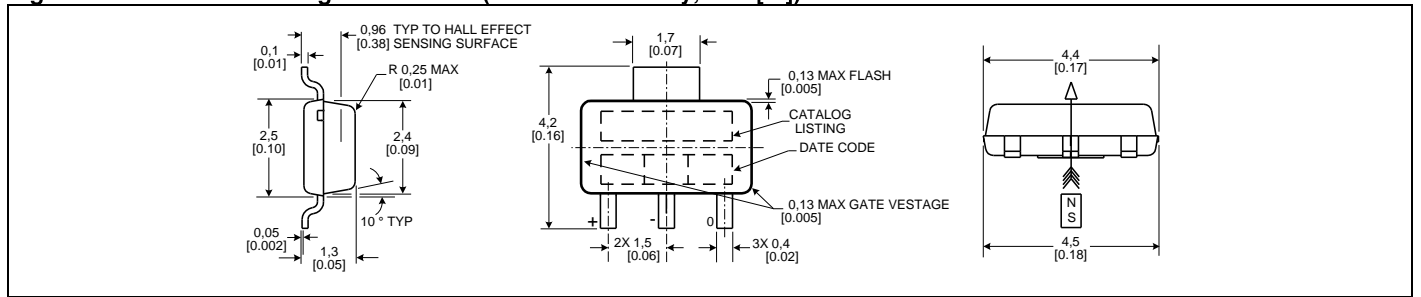
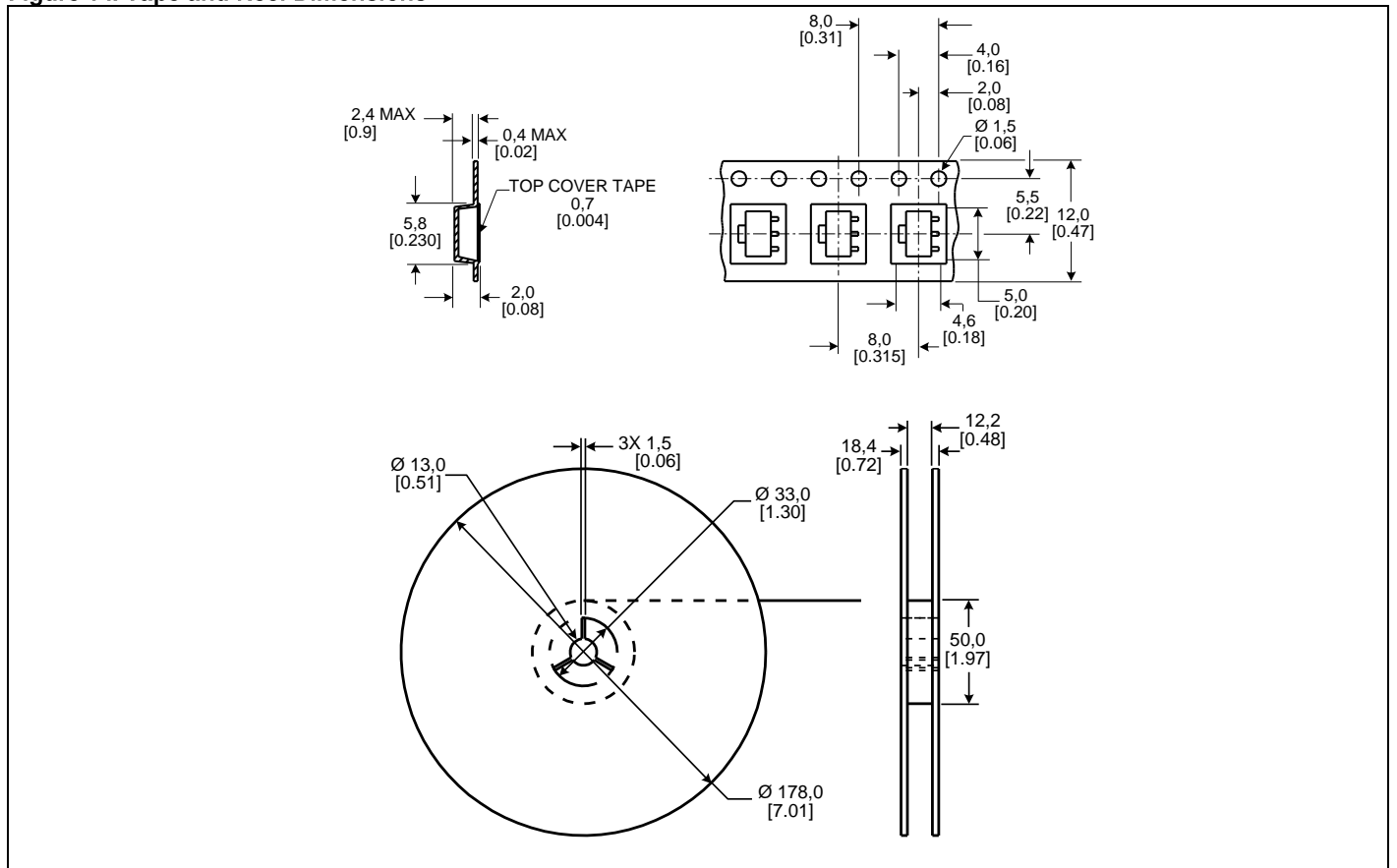


Figure 14. Tape and Reel Dimensions



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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