

Installation Instructions for the SS490 Series Miniature Ratiometric Linear Hall-Effect Sensor ICs

PK 88840

Issue 6

SOLDERING INSTRUCTIONS

NOTICE

Do not wave solder surface mount sensor ICs (catalog listings with suffixes -S or -SP). Wave soldering may negatively affect sensor performance and reliability, and will void Honeywell's warranty.

Surface mount (catalog listings with suffixes -S or -SP): Use infrared reflow process with active flux, lead-free solder. Do not exceed peak temperature of 245 °C [473 °F] for a maximum of 10 seconds.

Through-hole leads: Wave solder at 250 °C to 260 °C [482 °F to 500 °F] for a maximum of 3 seconds. Burrs are allowed only if full length of leads will pass through hole.

CLEANING INSTRUCTIONS

CAUTION

PRODUCT DAMAGE

Use agitated rinse, not pressure wash, in order to avoid forcing contaminants into the sensor package.

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

Table 1. Absolute Maximum Ratings

Characteristic	Parameter
Supply voltage (Vs)	-0.5 Vdc to 11 Vdc
Output current	10 mA
Operating temperature	-40 °C to 150 °C [-40 °F to 302 °C]
Storage temperature	-55 °C to 165 °C [-67 °F to 329 °C]
Magnetic flux	no limit - circuit cannot be damaged by magnetic overdrive

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.



Table 2. Specifications (Vs = 5.0 Vdc, Ta = -40 °C to 125 °C [-40 °F to 257 °F] unless otherwise noted.)

Characteristic	Condition	Catalog Listing Prefix							Unit
		SS494A	SS495A1	SS495A2	SS495B	SS496A	SS496A1	SS496B	
Supply voltage	—	4.5 to 10.5							Vdc
Supply current: typical maximum	at 25 °C	7.0 8.7							mA
Output type (sink or source)	—	ratiometric							—
Output current: typical (sink or source) minimum (source) minimum (sink) minimum (sink)	Vs > 4.5 V Vs > 4.5 V Vs > 4.5 V Vs > 5.0 V	1.5 1.0 0.6 1.0							mA
Operating temperature	—	-40 to 150 [-40 to 302]							°C [°F]
Magnetic range: typical minimum	—	±670 ±600	±670 ±600	±670 ±600	±670 ±600	±840 ±750	±840 ±750	±840 ±750	Gauss
Output voltage span: typical maximum	—	0.2 to (Vs-0.2) 0.4 to (Vs-0.4)							V
Null	output at 0 Gauss	2.50 ±0.075	2.50 ±0.075	2.50 ±0.100	2.50 ±0.150	2.50 ±0.075	2.50 ±0.075	2.50 ±0.150	V
Sensitivity	—	3.125 ±0.125	3.125 ±0.094	3.125 ±0.156	3.125 ±0.250	2.50 ±0.100	2.50 ±0.075	2.50 ±0.200	mV/G
Linearity: typical maximum	—	-1.0 -1.5							% Span
Temperature error: Null drift Sensitivity drift	— ≥25 °C <25 °C	±0.06 -0.01, +0.05 -0.0, +0.06	±0.04 -0.02, +0.06 -0.0, +0.06	±0.07 -0.02, +0.06 -0.01, +0.07	±0.08 -0.01, +0.05 -0.02, +0.06	±0.048 -0.01, +0.05 -0.0, +0.06	±0.03 -0.01, +0.05 -0.0, +0.06	±0.06 -0.02, +0.06 -0.02, +0.06	%/°C

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Figure 1. Block/Electrical Diagram

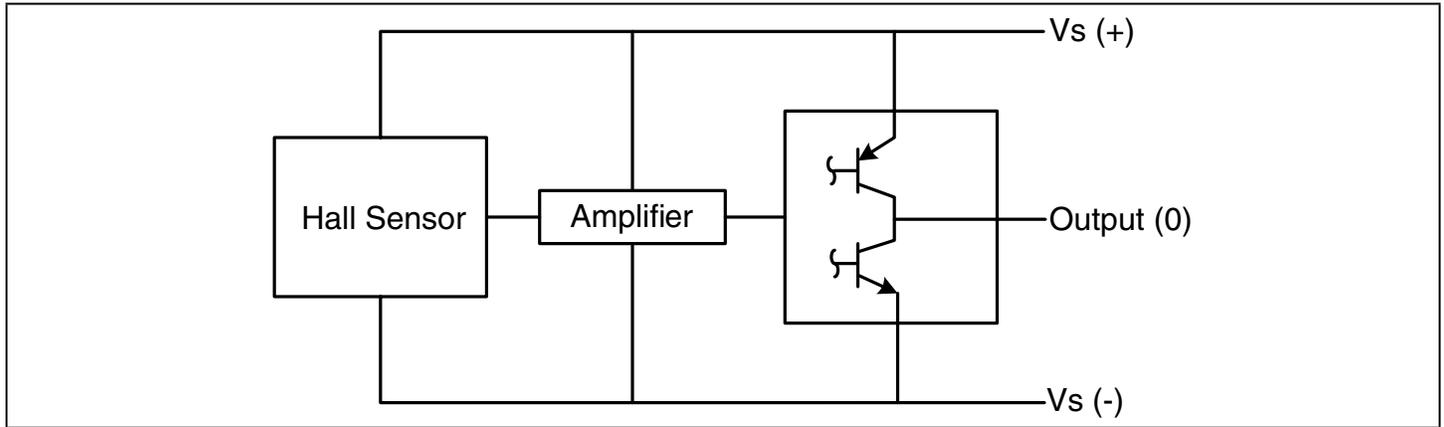


Figure 2. Typical Output vs Gauss ($V_s = 5.0$ Vdc)

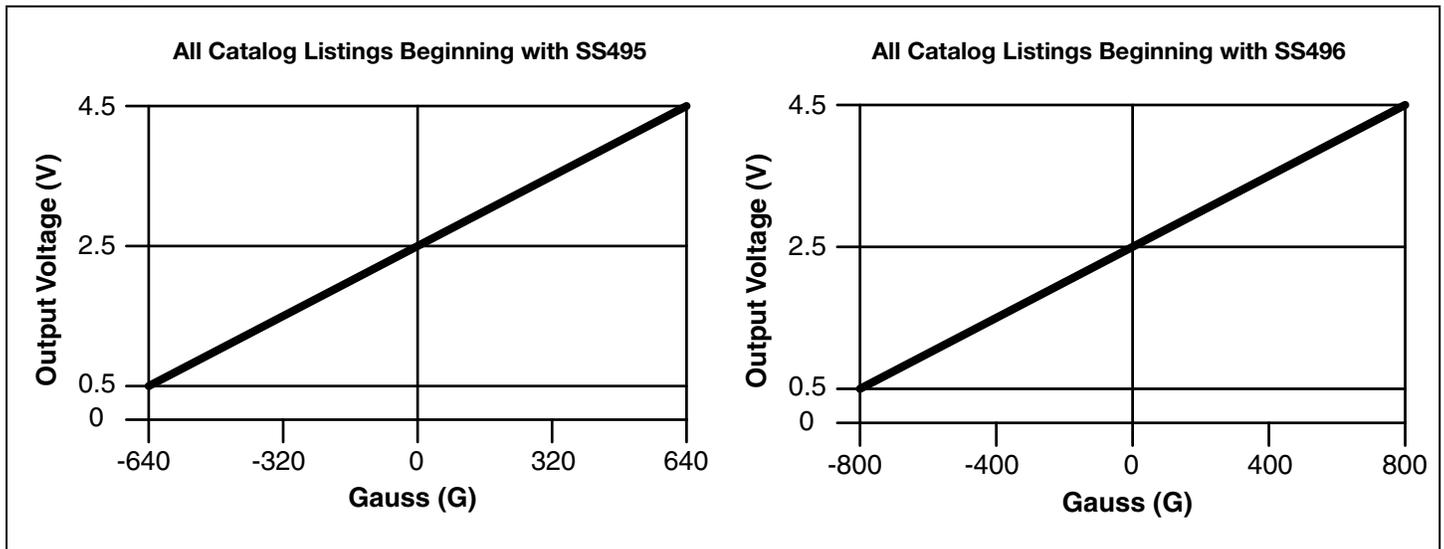
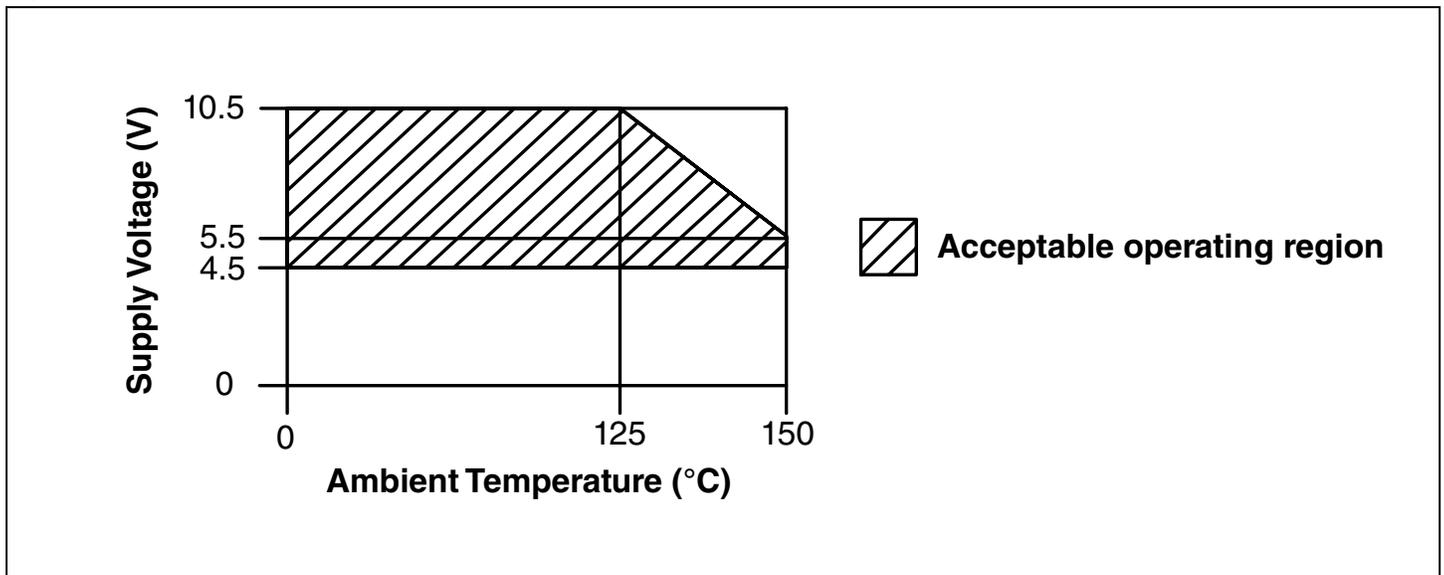


Figure 3. Maximum Allowable Ambient Temperature



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Table 3. Suffix Nomenclature for the SS4 Package:

Suffix	Description	Suffix	Description
-Blank	14,99 mm [0.590 in] straight standard leads, bulk pack	-S	3,30 [0.130 in] surface mount, bulk pack
-T3	14,99 mm [0.590 in] straight standard leads, ammo pack tape in box	-SP	3,30 [0.130 in] surface mount, pocket tape and reel
-F	14,99 mm [0.590 in] formed leads, bulk pack	-L	18,67 mm [0.735 in] straight long leads, bulk pack
-T2	14,99 mm [0.590 in] formed leads, ammo pack tape in box		

Figure 4. Dimensional Drawings for Catalog Listings with Suffixes -Blank and -T3 (For Reference Only: mm/[in].)

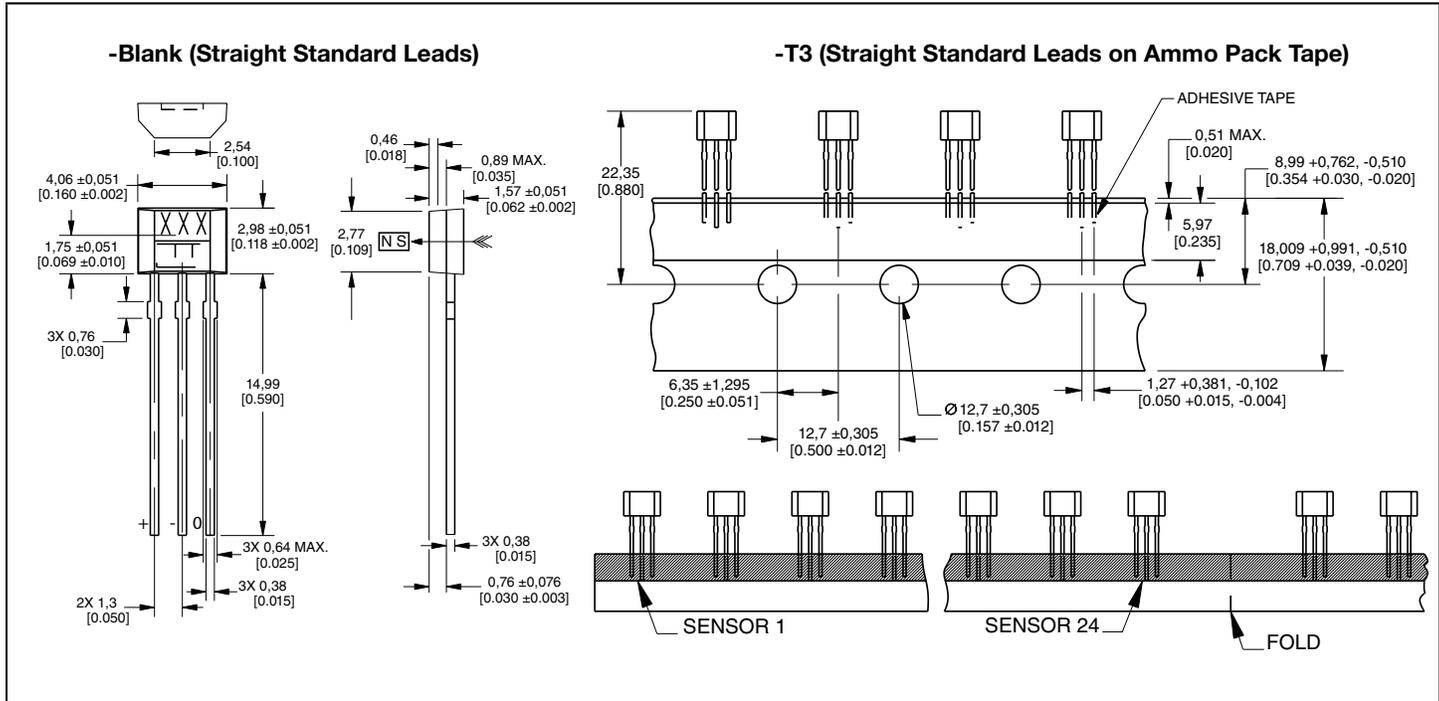
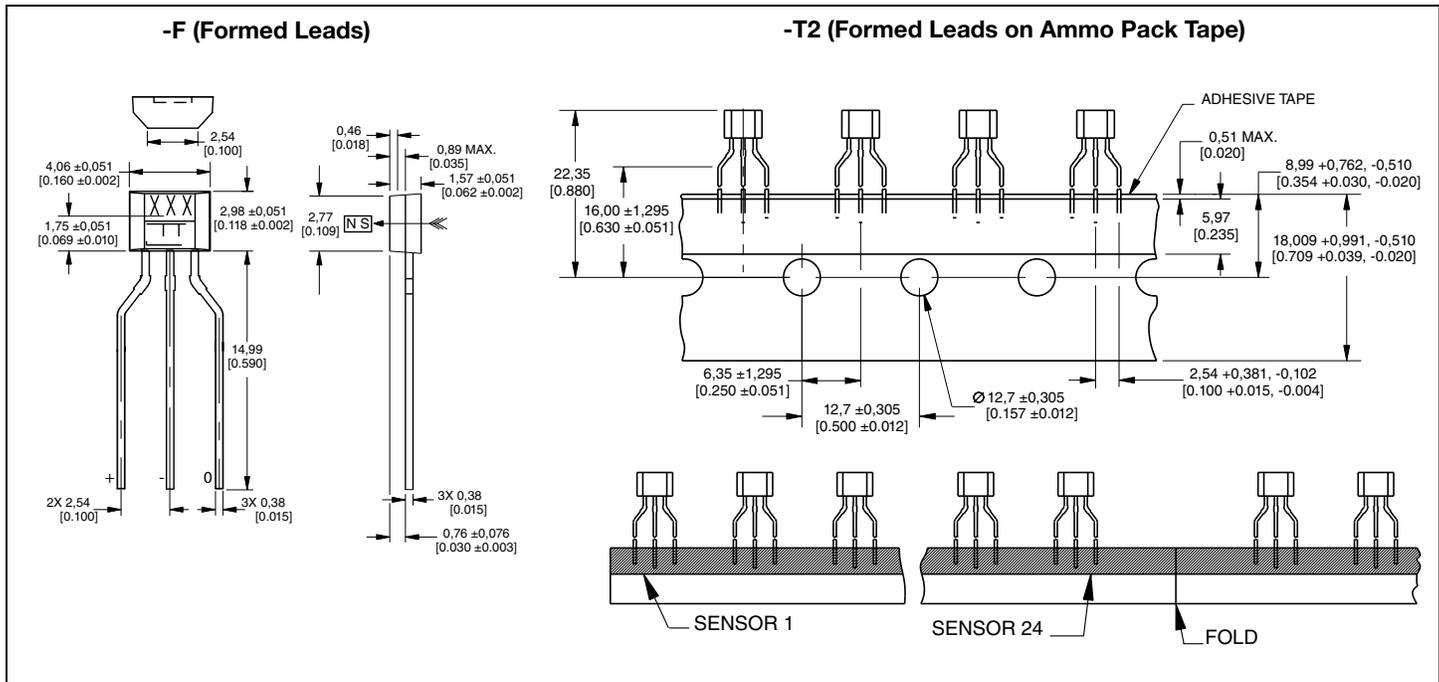


Figure 5. Dimensional Drawings for Catalog Listings with Suffixes -F and -T2 (For Reference Only: mm/[in].)



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Figure 6. Dimensional Drawings for Catalog Listings with Suffixes -S and -SP (For Reference Only: mm/[in].)

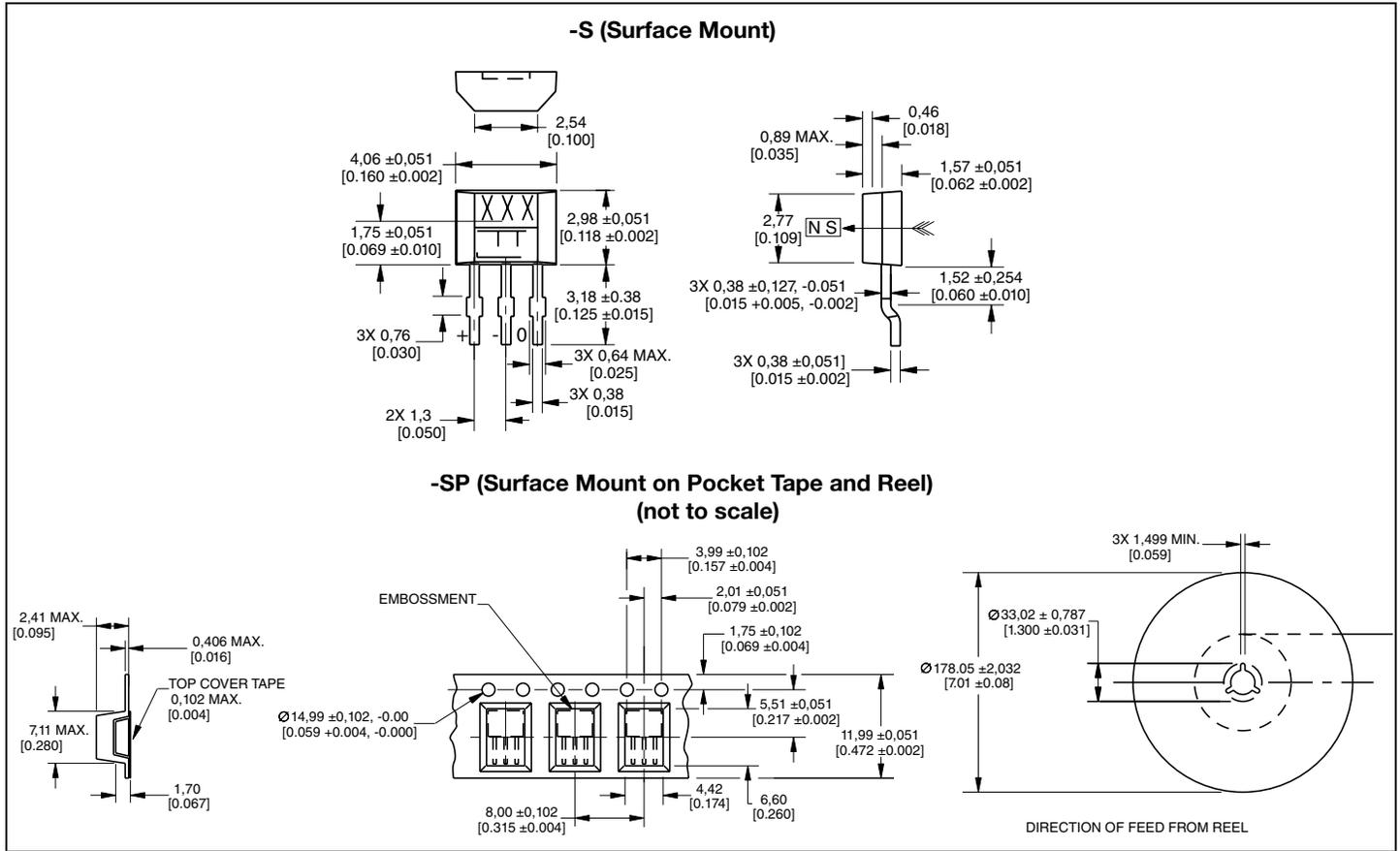
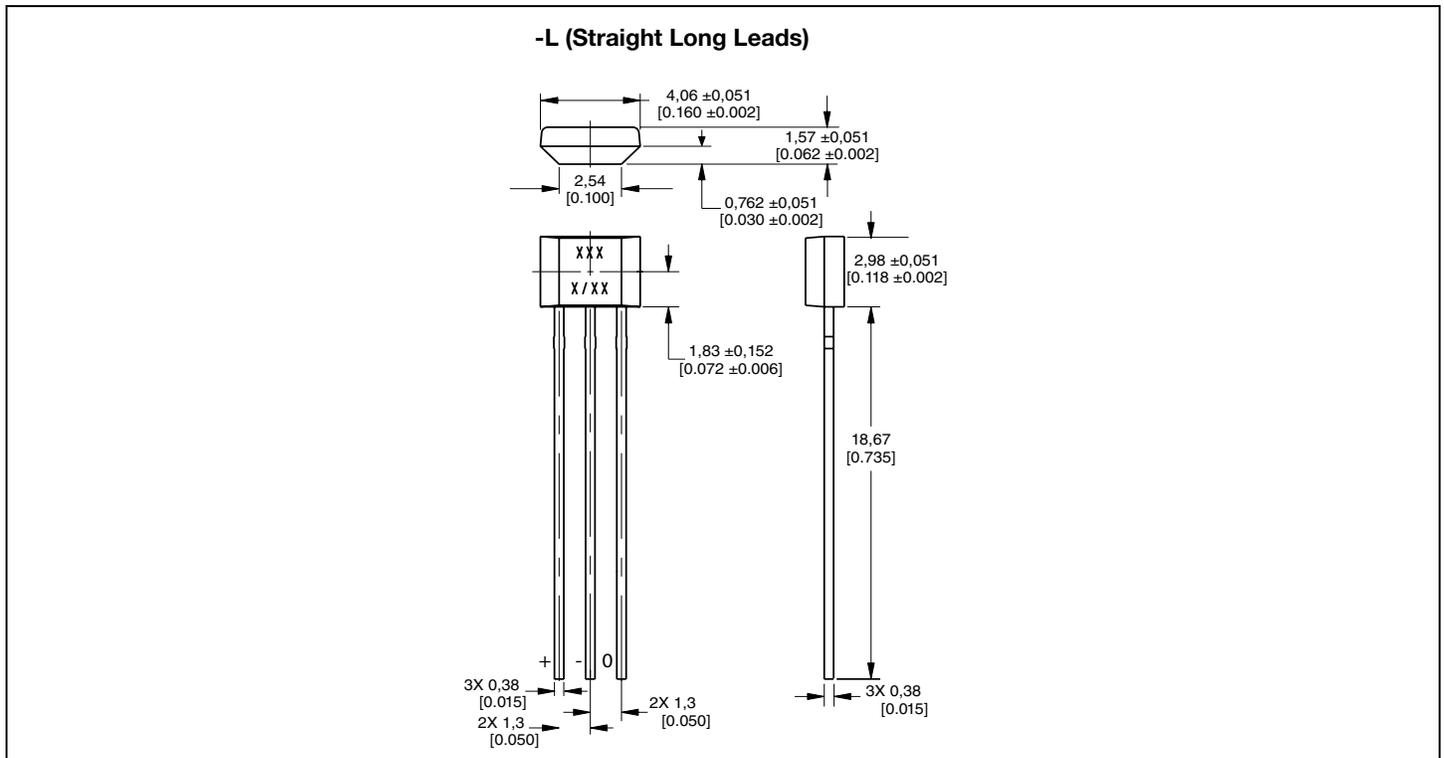


Figure 7. Dimensional Drawings for Catalog Listings with Suffix -L (For Reference Only: mm/[in].)



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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

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 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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