

Installation Instructions for the SS340RT and SS440R Series Unipolar Hall-Effect Digital Position Sensors

ISSUE 1
50045530

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 SS340RT.

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

SS340RT Series: Use an infrared reflow process with temperatures of 245 °C [473 °F] peak for 10 s max.

SS440R Series: 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	-28.0	–	28.0	V
Applied output voltage	-0.5	–	28.0	V
Output current	–	–	20	mA
Magnetic flux	–	–	no limit	gauss

Note:

1. 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

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. SS340RT Rated Supply Voltage

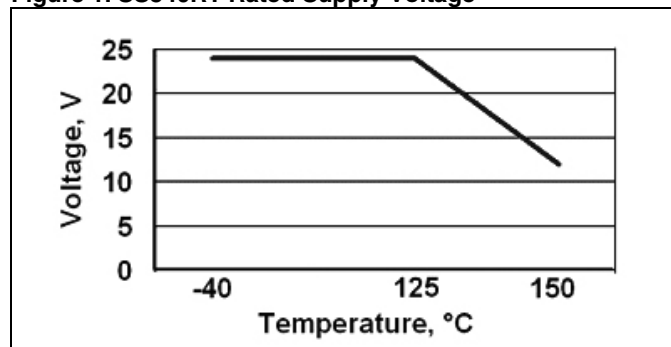


Figure 2. Current Sinking Output Block Diagram

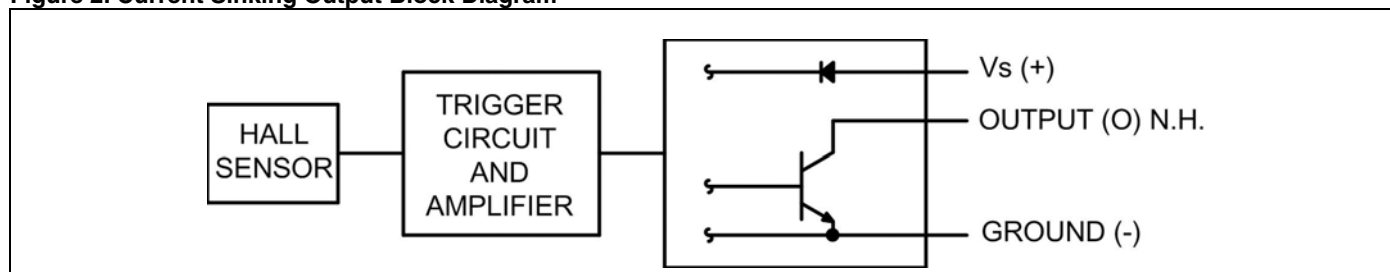


Table 1. SS340RT and SS440R Series Specifications (At Vs=3.0 to 24 Vdc, 20 mA load, TA = -40 °C to 150 °C [-40 °F to 257 °F])

Characteristic	Condition	Minimum	Typical	Maximum	Unit
Supply voltage: ¹					
SS440R Series	-40 °C to 150 °C [-40 °F to 302 °F]	3	–	24	Vdc
SS340RT Series	-40 °C to 125 °C [-40 °F to 257 °F]	3	–	24	
SS340RT Series	150 °C [302 °F]	3	–	12	
Supply current	Vsupply = 5 V at 25 °C [77 °F] Vsupply = 3 V at 25 °C [77 °F]	– –	4 3.5	6 5	mA
Vsat	at 20 mA, gauss >Bop	–	–	0.4	Vdc
Output leakage current	gauss >Bop	–	–	10	µA
Output switching time: rise fall	Vsupply = 12 V at 25 °C [77 °F], RL = 1.6 kOhm, CL = 20 pF	– –	– –	1.5 1.5	µs
Thermal resistance:					
SS440R Series	–	–	233	–	°C/W
SS340RT Series			303		
Operate:					
SS341RT/SS441R	–	35	85	135	gauss
SS343RT/SS443R		45	125	205	
SS349RT/SS449R		240	350	460	
Release:					
SS341RT/SS441R	–	10	50	120	gauss
SS343RT/SS443R		40	90	180	
SS349RT/SS449R		135	250	370	
Differential:					
SS341RT/SS441R	–	5	35	80	gauss
SS343RT/SS443R		5	35	120	
SS349RT/SS449R		30	100	170	
Operating temperature	–	-40 [-40]	–	150 [302]	°C [°F]
Storage temperature	–	-40 [-40]	–	150 [302]	°C [°F]

Note:

1. See Figure 1.

Figure 3. Wiring Diagrams

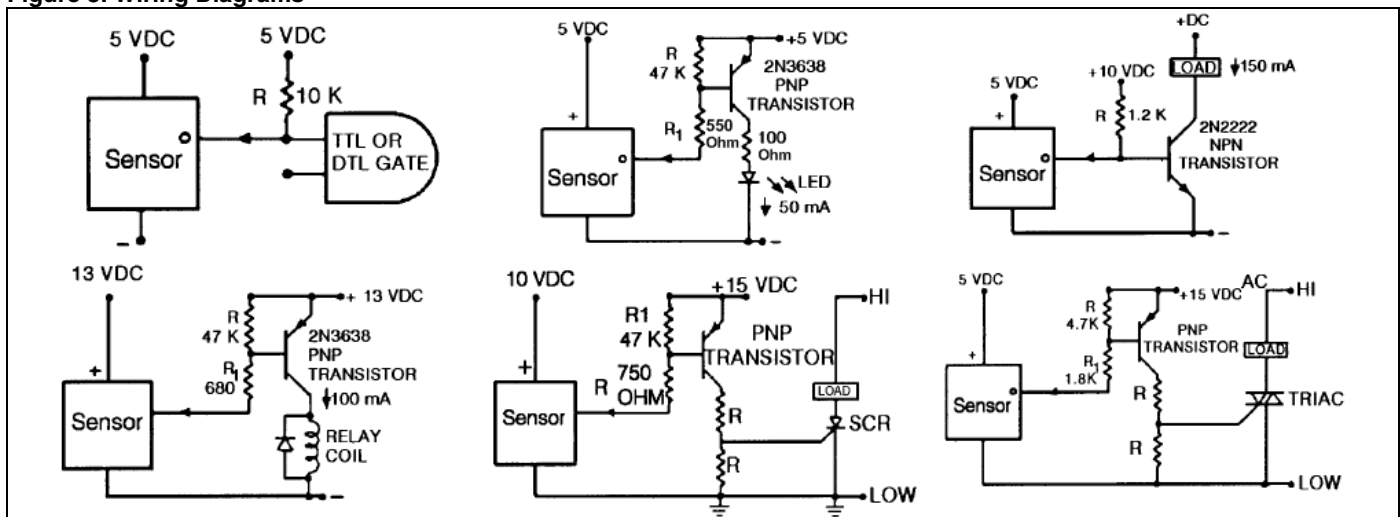


Figure 4. SS340RT Series Mounting/Tape and Reel Dimensions (For reference only. mm/[in])

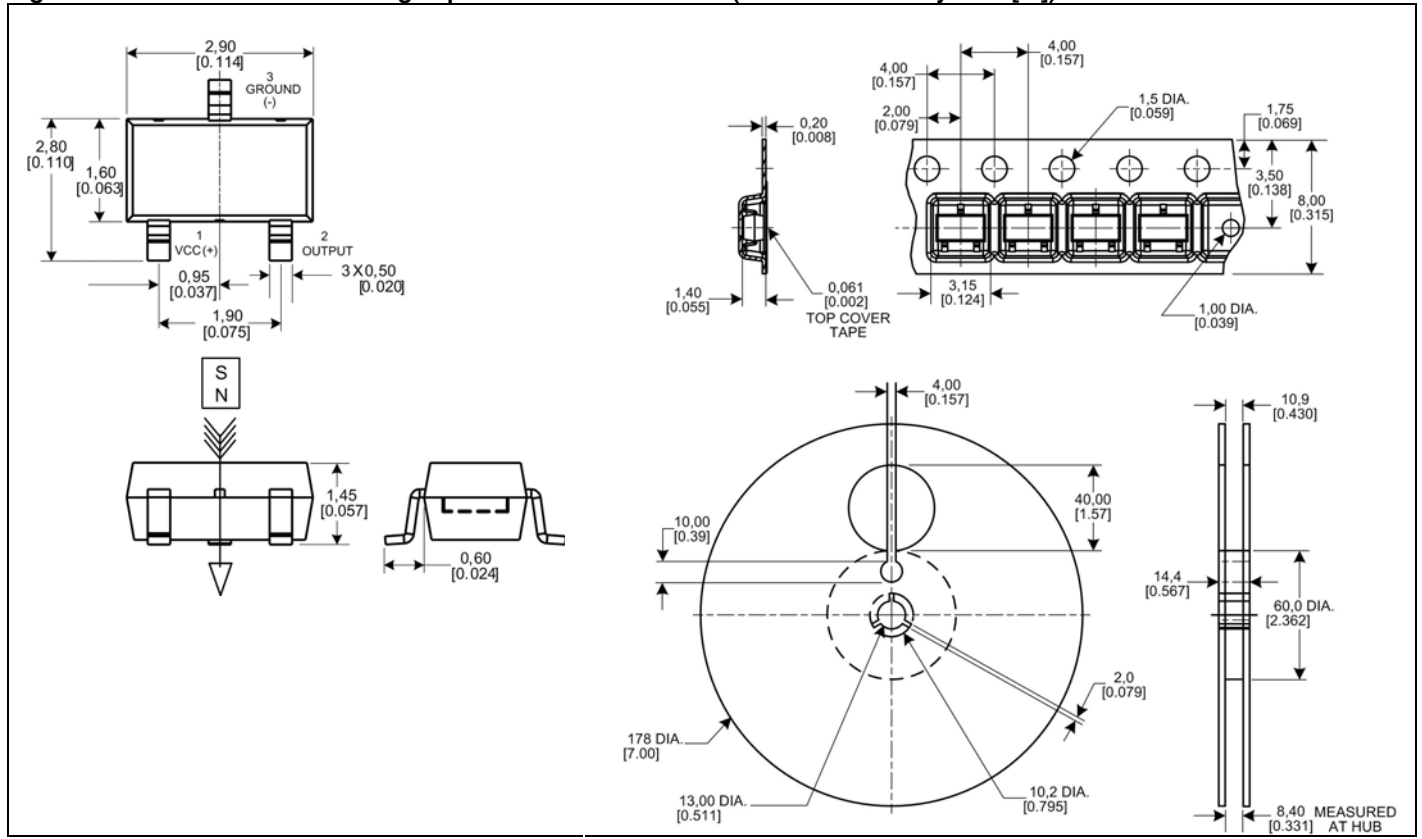
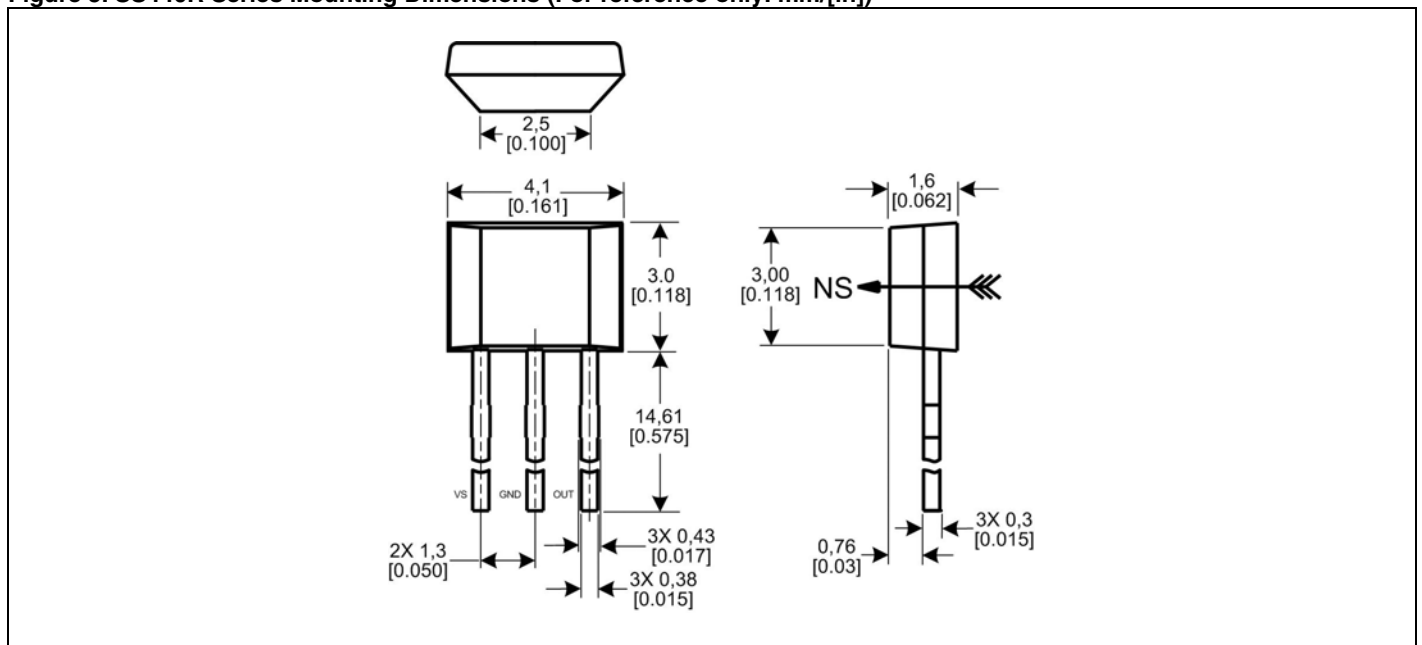


Figure 5. SS440R Series Mounting Dimensions (For reference only. mm/[in])



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.

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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
Minneapolis, MN 55422
www.honeywell.com/sensing

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