

# Magnetoresistive Sensor ICs

## 2SS52M Series

**Table 1. Electrical and Environmental Specifications**

(At  $V_{\text{supply}} = 3.8 \text{ Vdc}$  to  $30 \text{ Vdc}$ ,  $T_A = -40^\circ\text{C}$  to  $150^\circ\text{C}$  [ $-40^\circ\text{F}$  to  $302^\circ\text{F}$ ] except where otherwise specified.)

Characteristic	Condition	Min.	Typ.	Max.	Unit
Supply voltage	no load	3.8	—	30	Vdc
Supply current:					
operated	$24^\circ\text{C} \pm 2^\circ\text{C}$ , $16 \text{ Vdc} \pm 0.5\% V_{\text{supply}}$	—	6	11	mA
released	$24^\circ\text{C} \pm 2^\circ\text{C}$ , $16 \text{ Vdc} \pm 0.5\% V_{\text{supply}}$	—	6	10	
Output leakage current (released)	—	—	—	10.0	$\mu\text{A}$
Output voltage (operated)	sinking, 20 mA max.	—	0.25	0.40	V
Output switching time:					
rise (10 % to 90 %)	1600 Ohm, 20 pF load	—	0.2	1.5	$\mu\text{s}$
fall (90 % to 10 %)	1600 Ohm, 20 pF load	—	0.1	1.5	
Operating temperature range	—	-40 [-40]	—	150 [302]	$^\circ\text{C}$ [ $^\circ\text{F}$ ]
Soldering temperature and time:					
SS552MT	infrared reflow process: peak temperature $245^\circ\text{C}$ [ $473^\circ\text{F}$ ] for 10 s max.				
all other catalog listings	wave soldering process: $250^\circ\text{C}$ to $260^\circ\text{C}$ [ $482^\circ\text{F}$ to $500^\circ\text{F}$ ] for 3 s max.				

**Table 2. Magnetic Characteristics (At  $V_{\text{supply}} = 3.8 \text{ Vdc}$  to  $30 \text{ Vdc}$ .)**

Temperature Range	Operate		Release	Differential	
	Minimum	Maximum	Minimum	Minimum	Maximum
$-20^\circ\text{C}$ to $85^\circ\text{C}$ [ $-4^\circ\text{F}$ to $185^\circ\text{F}$ ]	—	25 Gauss	5 Gauss	—	7 Gauss
$-40^\circ\text{C}$ to $150^\circ\text{C}$ [ $-40^\circ\text{F}$ to $302^\circ\text{F}$ ]	—	25 Gauss	4 Gauss	—	8 Gauss

**Table 3. Absolute Maximum Specifications**

Characteristic	Min.	Typ.	Max.	Unit
Supply voltage	-0.5	—	30	Vdc
Voltage externally applied to output:				
OFF condition only	—	—	30	Vdc
OFF or ON condition	-0.5	—	—	
Output current	—	—	20	mA
Storage temperature	-40 [-40]	—	150 [302]	$^\circ\text{C}$ [ $^\circ\text{F}$ ]
Magnetic flux	—	—	no limit	Gauss

### NOTICE

Absolute maximum ratings are the extreme limits the device will withstand without damage to the device. Electrical and mechanical characteristics are not guaranteed as maximum limits (above recommended operating conditions) are approached, nor will the device necessarily operate at absolute maximum ratings.

**CAUTION**

ELECTROSTATIC SENSITIVE DEVICES

DO NOT OPEN OR HANDLE EXCEPT AT A STATIC FREE WORKSTATION

**ESD SENSITIVITY:**

**CLASS 2**

# Magnetoresistive Sensor ICs

## 2SS52M Series

Figure 1. Block Diagram for Current Sinking Output (NPN)

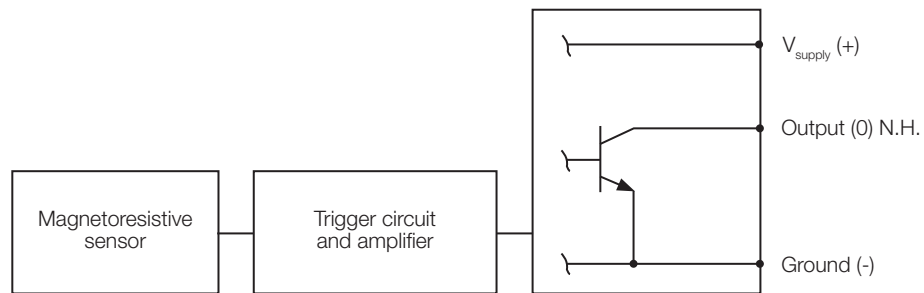
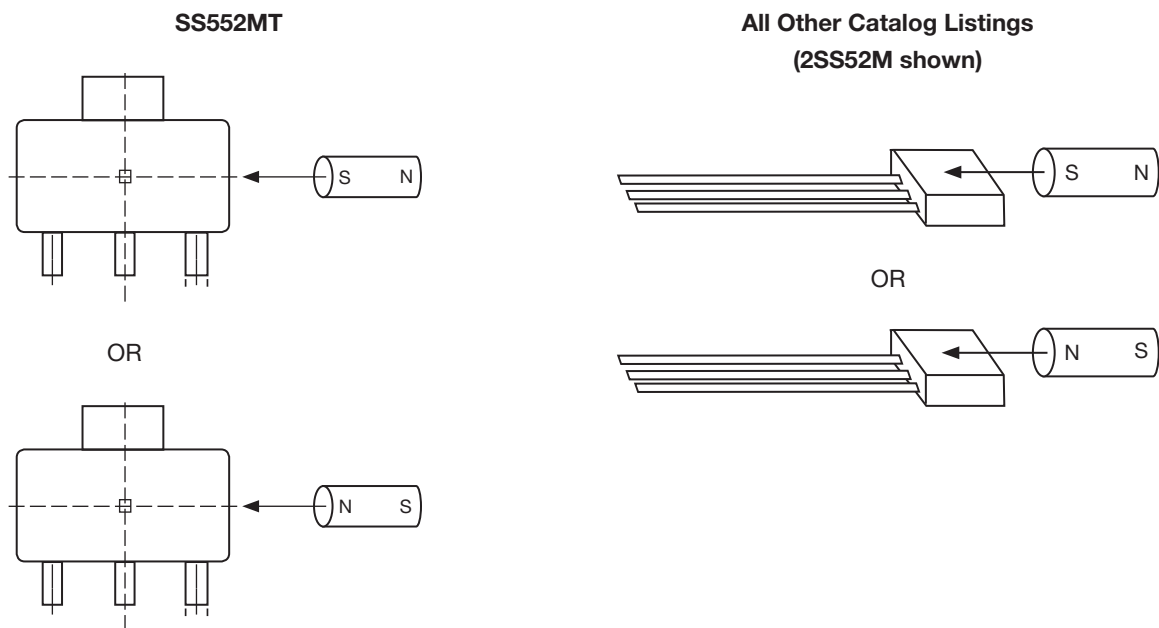


Figure 2. Magnet Alignment to the Sensor IC



- Operated by magnetic fields (North or South pole) that are parallel to the sensor IC; arrows indicate direction of magnetic flux.
- Due to the inherent high sensitivity of these sensor ICs, stray magnetic fields that are parallel to the sensor IC may affect operation.

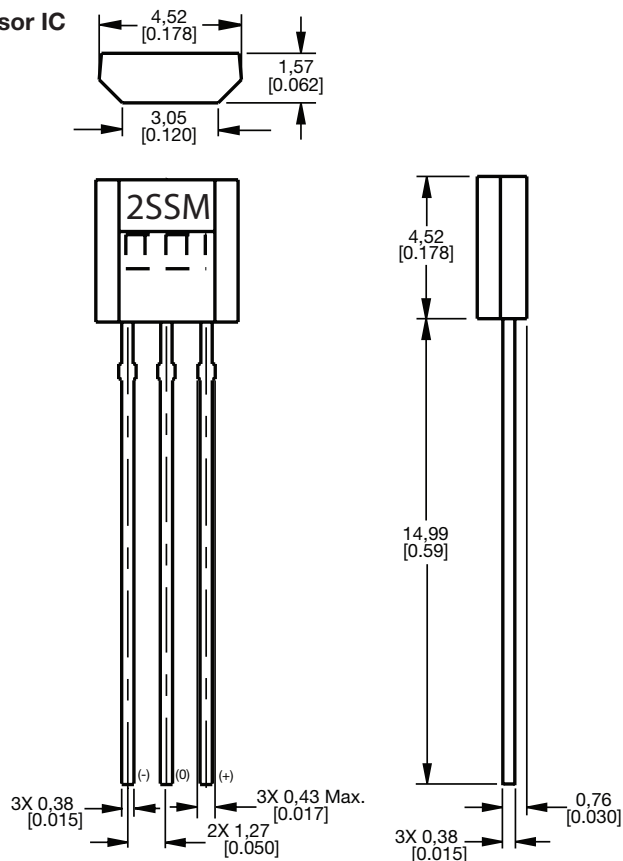
# Magnetoresistive Sensor ICs

## 2SS52M Series

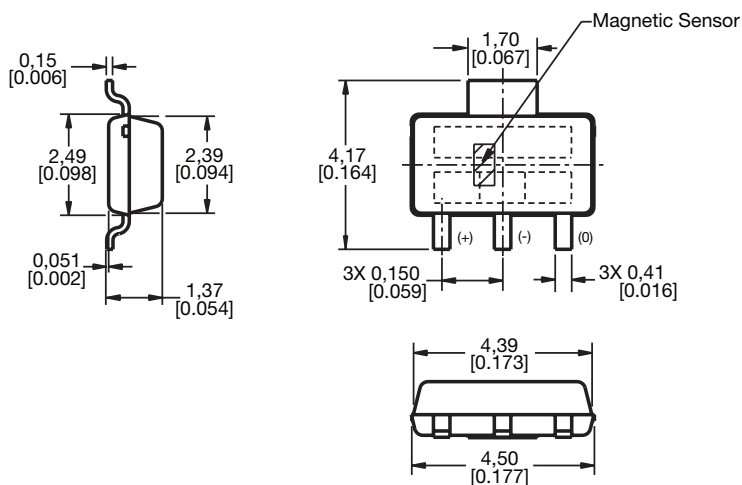
**Figure 3. Mounting Dimensions (For reference only. mm/in.)**

## 2SS52M

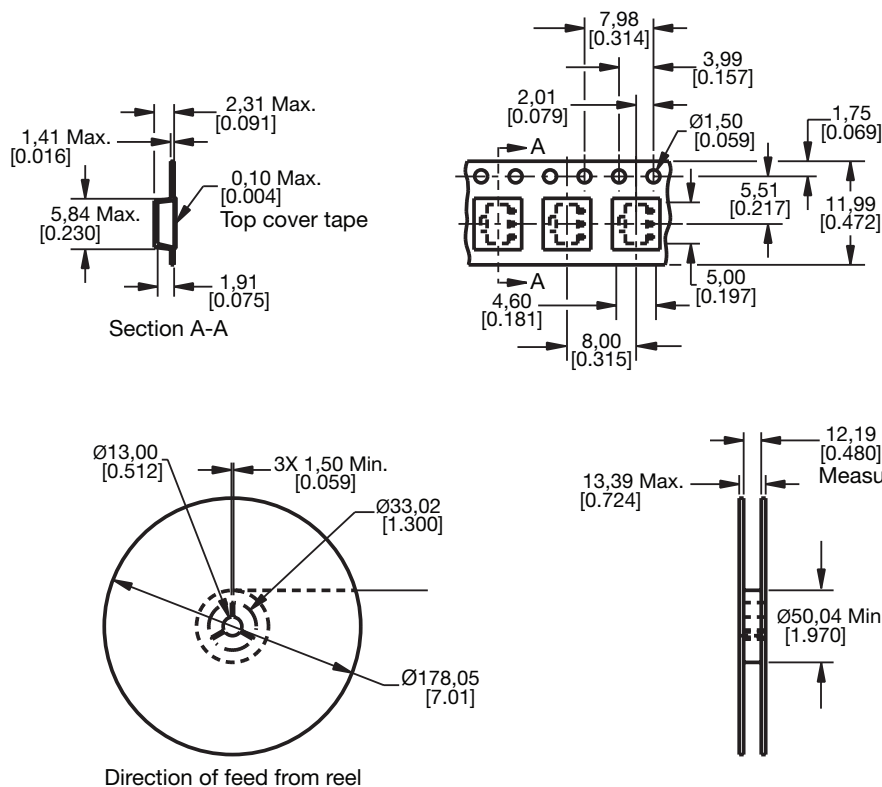
### Sensor IC



## SS522MT Sensor IC



**SS522MT**  
**Tape and Reel**

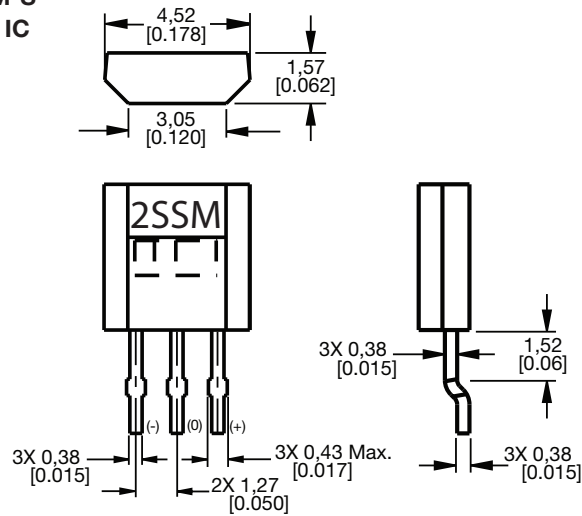


# Magnetoresistive Sensor ICs

## 2SS52M Series

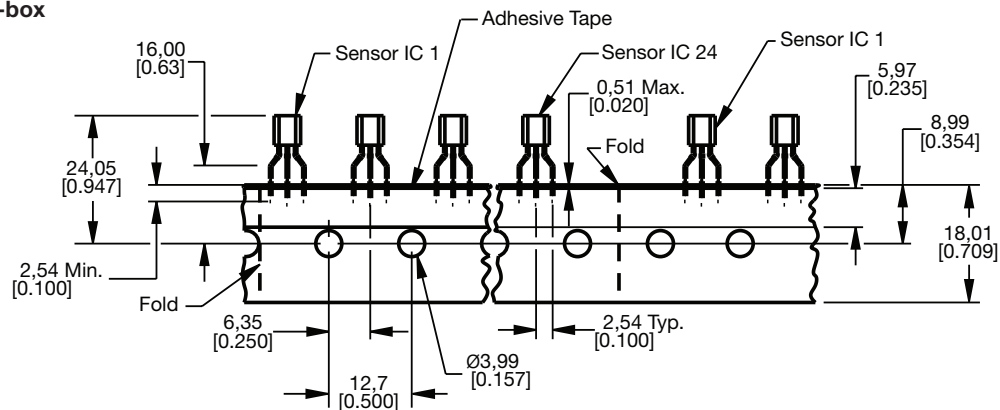
Figure 3. Mounting Dimensions (continued)

### 2SS52M-S Sensor IC



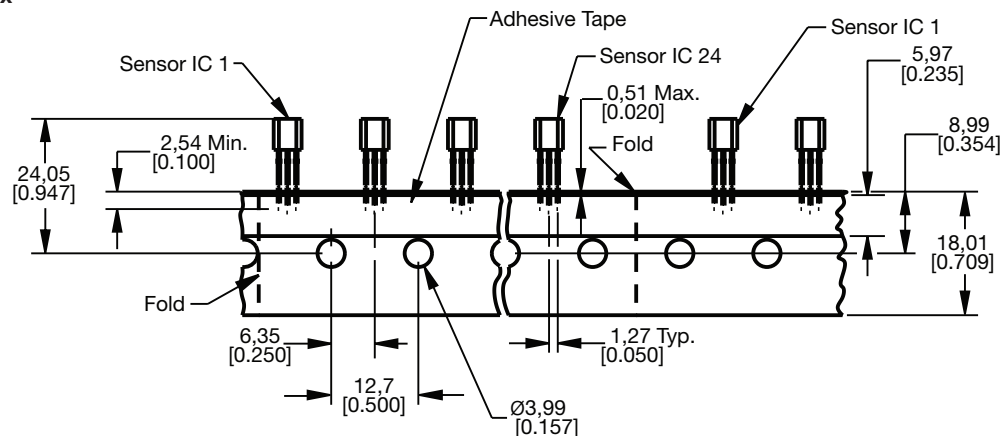
### 2SS52M-T2

#### Ammo pack tape-in-box



### 2SS52M-T3

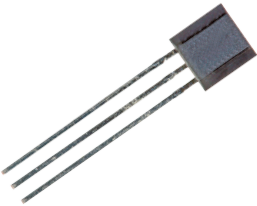
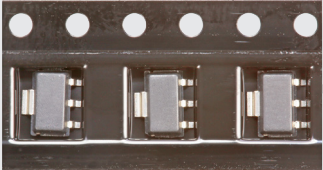

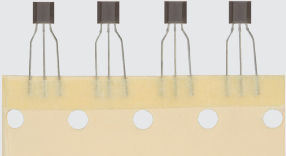
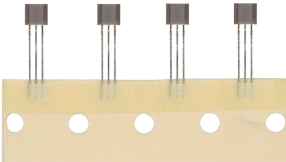
#### Ammo pack tape-in-box



# Magnetoresistive Sensor ICs

## 2SS52M Series

Table 4. Order Guide

Catalog Listing	Description	
2SS52M	Magnetoresistive sensor IC, omnipolar, U-pack, straight leads 14,99 mm [0.590 in] long, bulk packaging (1000 units per bag)	
SS552MT	Magnetoresistive sensor IC, omnipolar, SOT-89B surface-mount package, tape and reel packaging (1000 units per reel)	
2SS52M-S	Magnetoresistive sensor IC, omnipolar, U-pack, surface-mount package, bulk packaging (1000 units per bag)	
2SS52M-T2	Magnetoresistive sensor IC, omnipolar, U-pack, formed leads 14,99 mm [0.590 in] long, ammo pack tape-in-box packaging (5000 units per box)	
2SS52M-T3	Magnetoresistive sensor IC, omnipolar, U-pack, straight leads 14,99 mm [0.590 in] long, ammo pack tape-in-box packaging (5000 units per box)	

## ADDITIONAL MATERIALS

The following associated literature is available on the Honeywell website at [sensing.honeywell.com](http://sensing.honeywell.com):

- Product line guide
- Product range guide
- SS552MT installation instructions
- Magnetic sensor IC selection chart
- Application Notes:
  - Magnetoresistive sensors: Position and solid state sensor
  - Blood Recovery System
- Technical Notes:
  - Solid-State Sensors Glossary of Terms
  - Interpreting Operating Characteristics for Solid-State Sensors

### Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office.

To learn more about Honeywell's sensing and switching products, call **+1-815-235-6847** or **1-800-537-6945**, visit **[sensing.honeywell.com](http://sensing.honeywell.com)**, or e-mail inquiries to **[info.sc@honeywell.com](mailto:info.sc@honeywell.com)**

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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.**

## **WARNING** **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**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.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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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