

Model 3052 Accelerometer



Piezoresistive MEMS
DC Response
Circuit Board Mountable
Integral Temp Compensation

The Model 3052 is a silicon MEMS accelerometer with integral temperature compensation. The accelerometer is packaged on a ceramic substrate with an epoxy sealed ceramic cover and is designed for adhesive mounting. The accelerometer is offered in ranges from $\pm 2g$ to $\pm 100g$ range and provides a flat frequency response to minimum 1500Hz. The silicon MEMS sensor is gas damped and incorporates over-range stops for high-g shock protection.

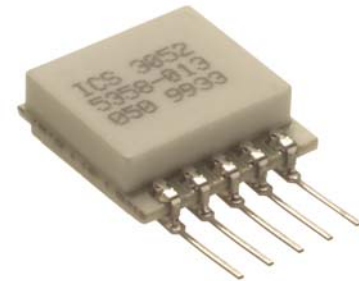
For a similar accelerometer designed for bolt mounting, see the model 3058.

FEATURES

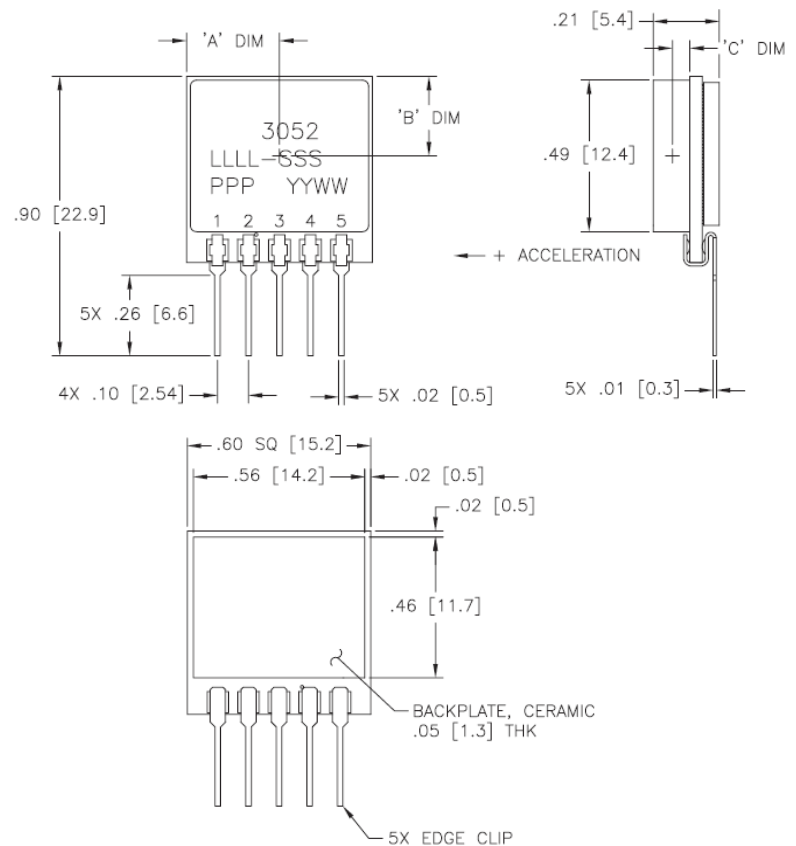
- Adhesive Mounted
- $\pm 0.5\%$ Non-Linearity
- $\pm 1.0\%$ Temperature Performance (Typical)
- DC Response
- Gas Damping
- Built-in Overrange Stops
- Low Power Consumption

APPLICATIONS

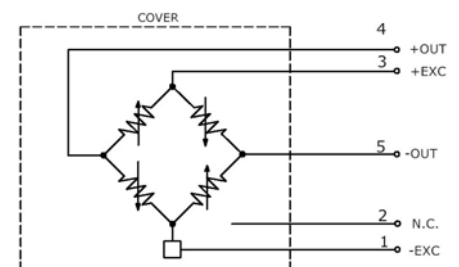
- Vibration & Shock Monitoring
- Motion Control
- Impact & Shock Testing
- Transportation Measurements
- Embedded Applications
- Machinery



dimensions



REAR VIEW



Model 3052 Accelerometer

performance specifications

All values are typical at +24°C, 100Hz and 5Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1002 for Embedded DC Accelerometers.

Parameters

DYNAMIC

	±2	±5	±10	±20	±50	±100	Notes
Range (g)							
Sensitivity (mV/g) ¹	5.0-9.0	2.4-3.6	1.2-1.8	0.6-0.9	0.24-0.36	0.12-0.18	@5Vdc Excitation
Frequency Response (Hz)	0-150	0-250	0-400	0-600	0-1000	0-1500	±5%
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	
Shock Limit (g)	10000	10000	10000	10000	10000	10000	

ELECTRICAL

Zero Acceleration Output (mV)	±25	±25	±25	±25	±25	±25	Differential
Excitation Voltage (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	2 to 10	2 to 10	
Output Resistance (Ω)	1900-6500	1900-6500	1900-6500	1900-6500	1900-6500	1900-6500	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	@50Vdc
Residual Noise (µV RMS)	10	10	10	10	10	10	Maximum
Ground Isolation	Isolated from Mounting Surface						

ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.060	±0.060	±0.060	±0.060	±0.060	±0.060
Thermal Sensitivity Shift (%/°C)	±0.060	±0.060	±0.060	±0.060	±0.060	±0.060
Operating Temperature (°C)	-40 to +125					
Compensated Temperature (°C)	0 to +50					
Storage Temperature (°C)	-40 to +125					

PHYSICAL

Case Material	Ceramic
Cable	Not applicable
Weight (grams)	3.1
Mounting	Adhesive or solder
Mounting Torque	Not applicable
AWG	Not applicable

¹ Output is ratiometric to excitation voltage

Wiring color code: +Excitation = Pin 3; -Excitation = Pin 1; +Output = Pin 4; -Output = Pin 5; No Connection = Pin 2 (Pin 2 is used for trimming during assembly and should not be connected)

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ordering info

PART NUMBERING Model Number+Range+Electrical Connection

3052-GGG-P

| |
 | |____ Electrical Connection (P=pins)
 |____ Range (010 is 10g)

Example: 3052-010-P
Model 3052, 10g, Pins