

Model 3052A Accelerometer



Piezoresistive MEMS
DC Response, Gas Damped
Circuit Board Mountable
Integral Temp Compensation



The **Model 3052A** 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 3058A.

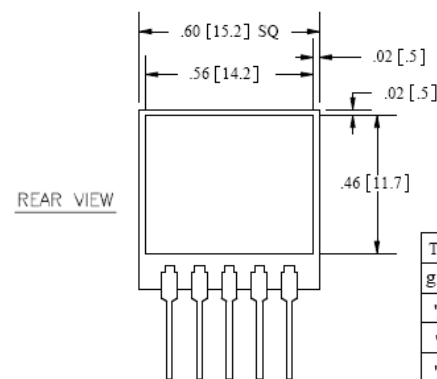
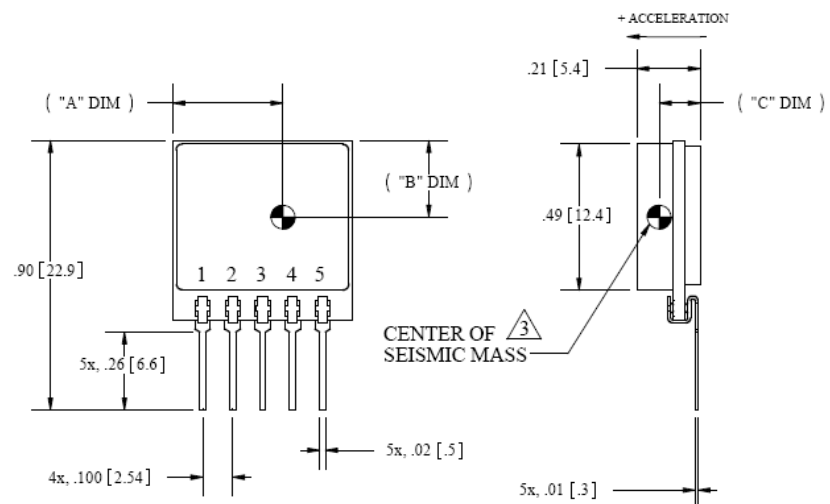
FEATURES

- Adhesive Mounted
- $\pm 1.0\%$ Non-Linearity
- 0 to $+50^{\circ}\text{C}$ Temp Compensation
- Built-in Over-range Stops
- Low Power Consumption

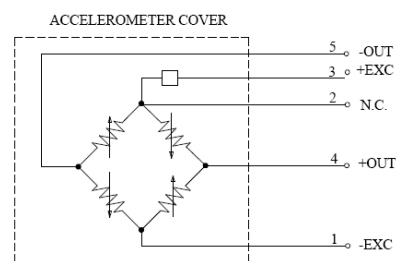
APPLICATIONS

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

dimensions



g RANGE	2-20 g	50-100 g
'A' DIM	(.368[9.35])	(.368[9.35])
'B' DIM	(.220[5.59])	(.280[7.11])
'C' DIM	(.122[3.10])	(.122[3.10])



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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	8.0-16.0	4.8-7.2	2.4-3.6	1.2-1.8	0.48-0.72	0.24-0.36	@5Vdc Excitation
Frequency Response (Hz)	0-150	0-250	0-350	0-550	0-1000	0-1300	±5%
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	
Non-Linearity (%FSO)	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.6	0.5	
Shock Limit (g)	3000	3000	3000	3000	5000	5000	

ELECTRICAL

Zero Acceleration Output (mV)	±2						Differential	
Excitation Voltage (Vdc)	2.7 to 12							
Input Impedance (Ω)	1200-6500							
Output Impedance (Ω)	1200-6500							
Insulation Resistance (MΩ)	>100						@50Vdc	
Residual Noise (μV RMS)	10						Maximum	
Ground Isolation	Isolated from Mounting Surface							

ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	±0.060						0 to +50°C	
Thermal Sensitivity Shift (%/°C)	±0.060						0 to +50°C	
Operating Temperature (°C)	-40 to +125							
Compensated Temperature (°C)	0 to +50							
Storage Temperature (°C)	-40 to +125							
Humidity	Epoxy Sealed, IP61							

PHYSICAL

Case Material	Ceramic
Weight (grams)	3.1
Mounting	Adhesive or solder

¹ Output is ratiometric to excitation voltage

Calibration supplied: CS-SENS-0100 NIST Traceable Amplitude Calibration at 100Hz

Optional accessories: 101 Three Channel DC Signal Conditioner Amplifier
 140 Auto-Zero Inline Amplifier

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ordering info

PART NUMBERING Model Number+Range+Electrical Connection

3052A-GGG-P

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

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

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