

# 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.

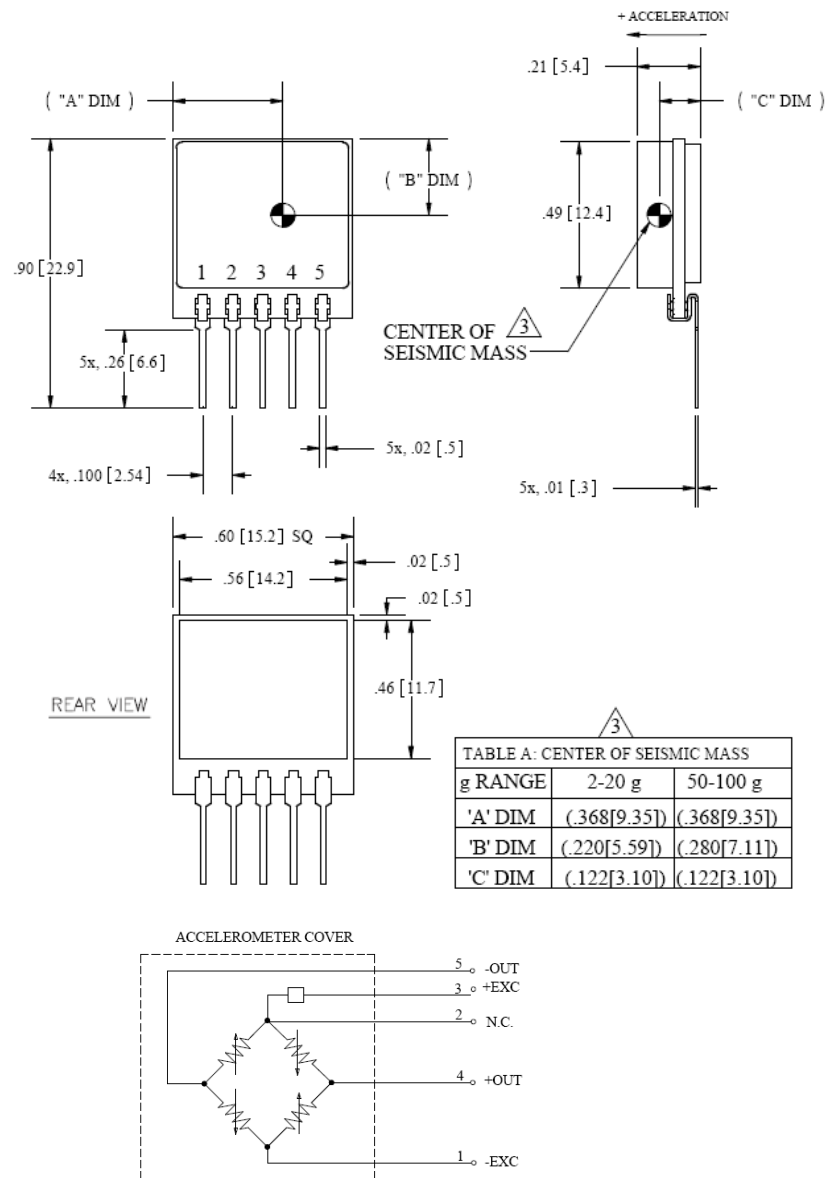
## FEATURES

- 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



# Model 3052A 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) <sup>1</sup>	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

<sup>1</sup> 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

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.

## 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