

Model 3038 Accelerometer

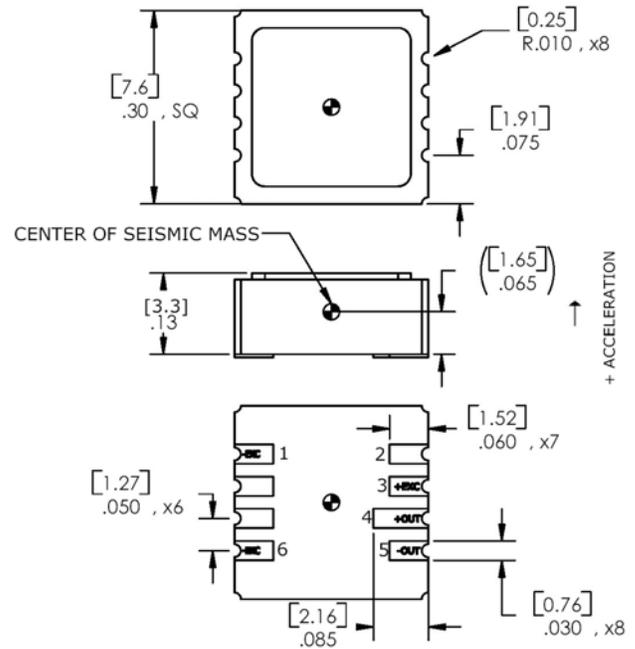


Miniature Piezoresistive MEMS
SMD Accelerometer
Hermetically Sealed
>10,000g Shock Protection

The **Model 3038** is a hermetically sealed SMD accelerometer designed for high performance applications. The accelerometer incorporates a gas-damped piezoresistive MEMS sensing element providing outstanding long-term stability. The model 3038 provides a millivolt output signal and features mechanical overload stops that provide shock protection to loads greater than 10,000g.



dimensions

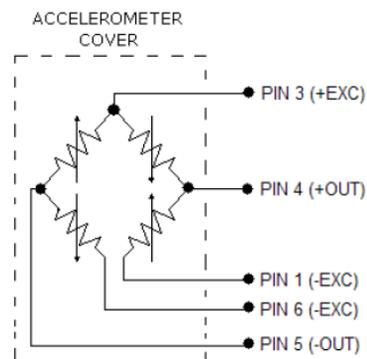


FEATURES

- $\pm 50g$ to $\pm 6000g$ Dynamic Ranges
- Board Mountable Accelerometer
- Low Power Consumption
- Hermetic LCC Package
- DC Response, Gas Damping
- 6000Hz Bandwidth

APPLICATIONS

- Harsh Environments
- Vibration & Shock Monitoring
- Impact Testing
- Embedded Applications
- Instrumentation
- Machinery



Model 3038 Accelerometer

performance specifications

All values are typical at +24°C, 100Hz and 10Vdc 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

	±50	±100	±200	±500	±2000	±6000	Notes
Range (g)	±50	±100	±200	±500	±2000	±6000	
Sensitivity (mV/g) ¹	2.0	1.0	0.6	0.4	0.15	0.10	@10Vdc Excitation
Frequency Response (Hz)	0-1000	0-1500	0-2000	0-3000	0-5000	0-6000	±5%
Natural Frequency (Hz)	4000	6000	8000	15000	24000	26000	
Non-Linearity (%FSO)	±1	±1	±1	±1	±1	±2	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.4-0.9	0.4-0.9	0.2-0.6	0.2-0.6	0.05-0.30	0.05-0.30	
Shock Limit (g) ³	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	
Input Resistance (Ω)	2400-6500	2400-6500	2400-6500	2400-6500	2400-6500	2400-6500	
Output Resistance (Ω)	2400-6500	2400-6500	2400-6500	2400-6500	2400-6500	2400-6500	
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)	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	Typical
Thermal Sensitivity Shift (%/°C)	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	Typical
Operating Temperature (°C)	-55 to 125						
Compensated Temperature (°C)	Uncompensated						
Storage Temperature (°C)	-55 to 125						

PHYSICAL

Case Material	Ceramic
Weight (grams)	0.6
Mounting	Solder

¹ Output is ratiometric to excitation voltage

² The maximum recommended soldering temperature is +260°C

³ 10,000g shock limit in normal axis; 5,000g in transverse axes

Calibration supplied: CS-SENS-0100 NIST Traceable Amplitude Calibration at 100Hz and 5Vdc Excitation

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ordering info

PART NUMBERING Model Number+Range

3038-GGGG

|
| _____ Range (0100 is 100 g)

Example: 3038-0100
Model 3038, 100g