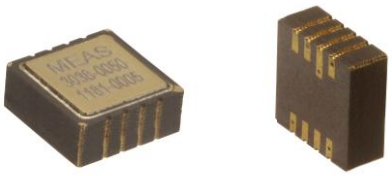
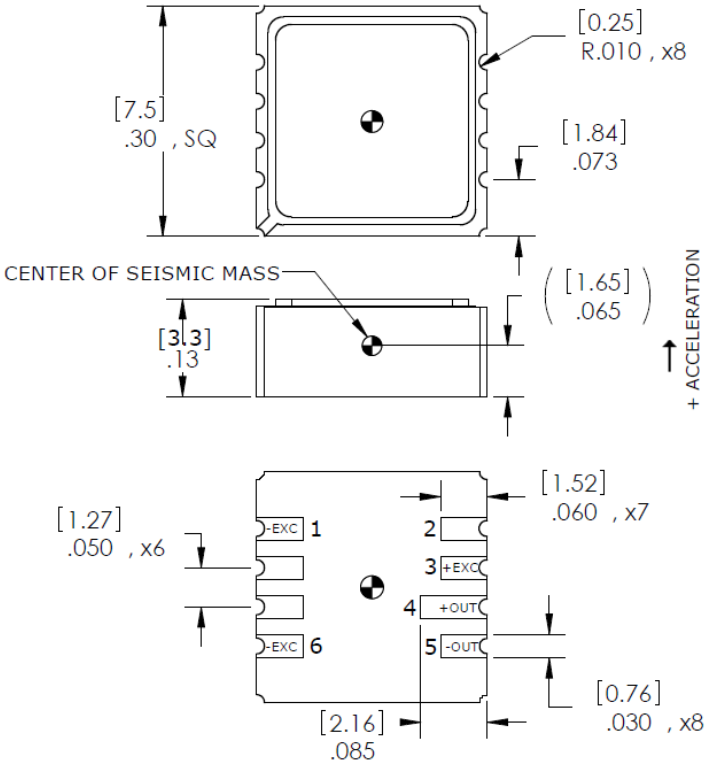
Model 3038 Accelerometer

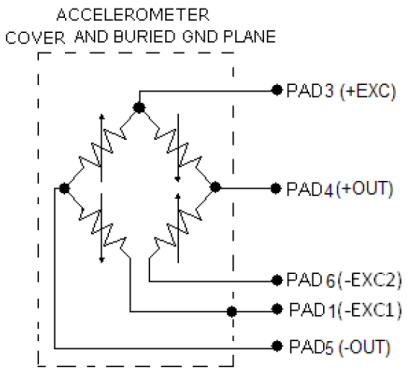
Miniature Piezoresistive MEMS SMD Accelerometer Hermetically Sealed 10,000g Shock Protection



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

- ±50g to ±6000g Dynamic Ranges
- Board Mountable Accelerometer
- Low Power Consumption
- Hermetic LCC Package
- DC Response, Gas Damping
- 5000Hz Bandwidth

APPLICATIONS

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

US Patents 5,103,667; 5,253,510; 5,445,006 apply

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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							**Notes**
Range (g)	±50	±100	±200	±500	±2000	±6000	
Sensitivity (mV/g)[1]	1.0	0.50	0.40	0.20	0.08	0.05	@5Vdc Excitation
Frequency Response (Hz)	0-1000	0-1200	0-1400	0-2000	0-4500	0-5000	±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	Differential
Excitation Voltage (Vdc)	2 to 10	
Input Resistance (Ω)	2400-6500	
Output Resistance (Ω)	2400-6500	
Insulation Resistance (MΩ)	>100	@50Vdc
Residual Noise (µV RMS)	10	Maximum
Ground Isolation	Isolated from Mounting Surface	
ENVIRONMENTAL		
Thermal Zero Shift (%FSO/°C)	-0.09	Typical
Thermal Sensitivity Shift (%/°C)	-0.15	Typical
Operating Temperature (°C)	-55 to 125	
Compensated Temperature (°C)	Uncompensated	
Storage Temperature (°C)	-55 to 125	
Humidity	Hermetically Sealed	
PHYSICAL		
Case Material	Ceramic	
Weight (grams)	0.6	
Mounting	Solder	

[1] Output is ratiometric to excitation voltage. 10Vdc excitation will increase output by a factor of 2x.

[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

ordering info

PART NUMBERING Model Number+Range

3038-GGGG-ZZ
I I_____Options (otherwise leave blank)
I_____Range (0100 is 100g)

Optional Dash Numbers
-01 10Vdc Calibration

Example: 3038-0100
Model 3038, 100g Range, No Options

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TE Connectivity:
3038-0500