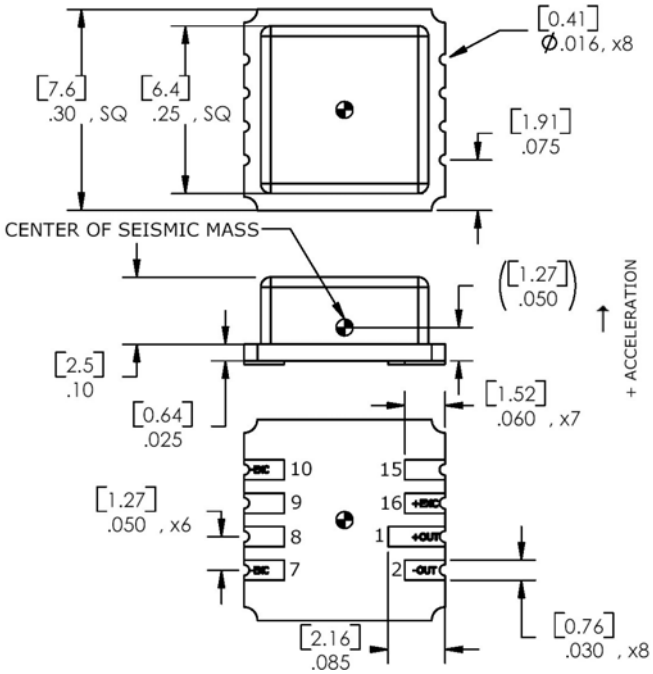
Model 3031 Accelerometer

SMD Accelerometer
Miniature DC Response
Piezoresistive MEMS
High-g Over-Range Protection

The Model 3031 is a silicon MEMS accelerometer designed for demanding mid to high volume applications. The accelerometer is ideal for applications requiring a miniature light weight accelerometer with wide frequency bandwidth. The model 3031 incorporates a 3rd generation MEMS sensing element providing superior long-term stability. The accelerometer provides a millivolt output signal and features mechanical overload stops that provide high-g shock protection.

dimensions

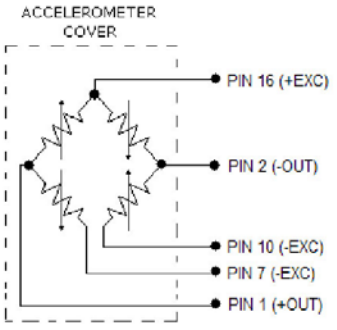


FEATURES

- ±50g to ±100g Range (higher ranges available on model 3038)
- Surface Mount Package
- 3rd Generation MEMS Element
- Light Weight
- DC Response, Gas Damping
- Over-Range Stops
- Low Power Consumption

APPLICATIONS

- Vibration & Shock Monitoring
- Embedded Applications
- Surface Mount Package
- Machinery
- Transportation
- Instrumentation



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	
Sensitivity (mV/g)[1]	0.6-1.5	0.3-0.6	@5Vdc Excitation
Frequency Response (Hz)	0-1000	0-1400	±5%
Natural Frequency (Hz)	4000	6000	
Non-Linearity (%FSO)	±1	±1	
Transverse Sensitivity (%)	3	3	
Damping Ratio	0.4-0.9	0.4-0.9	
Shock Limit (g)	5000	5000	
ELECTRICAL			
Zero Acceleration Output (mV)	±25	±25	Differential
Excitation Voltage (Vdc)	2 to 10	2 to 10	
Input Resistance (Ω)	2400 to 6500	2400 to 6500	
Output Resistance (Ω)	2400 to 6500	2400 to 6500	
Insulation Resistance (MΩ)	>100	>100	@50Vdc
Residual Noise (µV RMS)	10	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)	-40 to 125		
Compensated Temperature (°C)	Not Compensated		See Note 2
Storage Temperature (°C)	-40 to 125		
Humidity	Epoxy Sealed		
PHYSICAL			
Case Material	Ceramic		
Weight (grams)	0.3		
Mounting	Solder		

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

[2] Order model 3031-XXX-10196 for temperature compensation resistor values included in the calibration certificate.

[3] The maximum recommended soldering temperature is +260°C

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

ordering info

PART NUMBERING Model Number+Range

3031-GGG
I
I_____Range (050 is 50 g)

Example: 3031-050
Model 3031, 50g

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