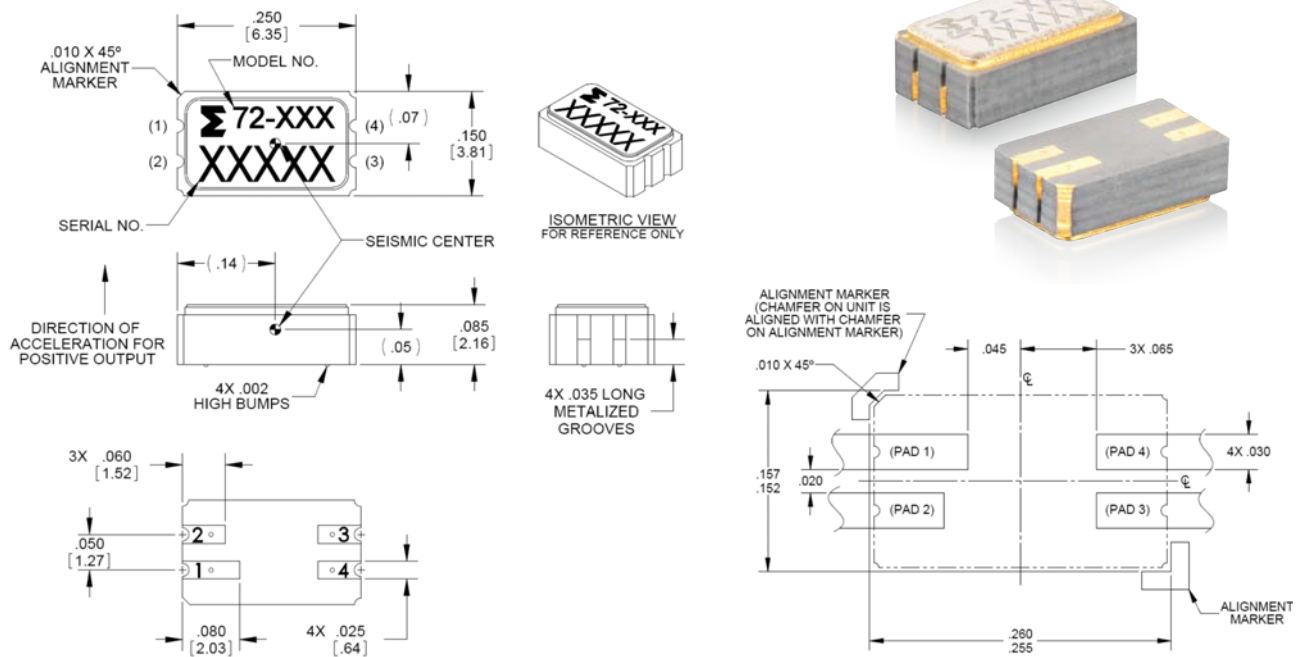


Piezoresistive accelerometer

Model 72



Key features

- 2,000, 20,000 and 60,000 g ranges
- Lightly damped to attenuate resonance
- DC response
- Minimal zero shift after shock
- Miniature SMT package (0.16 grams)
- High overrange capability
- Integral ESD protection

Description

The Endevco model 72 series are low mass accelerometers suitable for SMT mounting. The accelerometers are intended to be used in a wide range of acceleration, vibration, and shock applications. The model 72 features minimal mass loading, broad frequency response, minimum zero shift following a shock event and a Class 3 Rating (>4000 V – Human Body Model) for ESD Protection. For high g applications, the strength of the solder joints is not sufficient to withstand high forces, so the model 72 must be epoxied (underfilled) to the PCB, or hard potted.

The model 72 uses a unique micro-machined, piezoresistive sensor with light gas damping to attenuate resonant amplitudes, and mechanical stops to reduce breakage under overload conditions. The monolithic sensor incorporates the latest MEMS technology for ruggedness, stability and reliability to 4X overrange. The accelerometer features a four-active arm bridge circuit. With a frequency response extending down to dc (steady state acceleration) and a minimum post shock zero shift, this accelerometer is ideal for measuring long duration shocks.

U.S. Patent 6,988,412 applies to this unit.

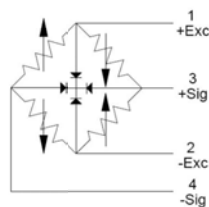
Piezoresistive accelerometer | Model 72

All specifications are referenced at +75°F (+24°C) and 5 Vdc, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

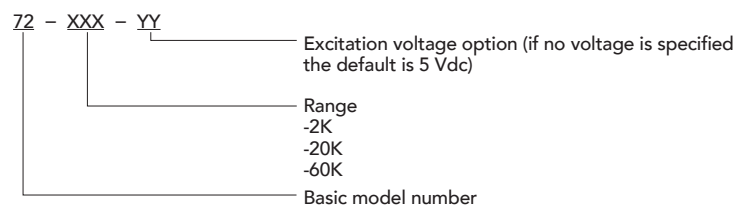
Specifications				
Dynamic characteristics		-2K	-20K	-60K
Range	g	2000	20000	60000
Sensitivity (min/typ)	$\mu\text{V}/\text{V}/\text{g}$	15/30	0.8/1.6	0.25/0.5
Non-linearity	%	± 2.0	± 2.0	± 2.0
Zero measurand output	mV/V	± 20	± 20	± 20
Transverse sensitivity	%	3.0	3.0	3.0
Frequency response ($\pm 1\text{db}$ typical)	Hz	0 to 10000	0 to 10000	0 to 20000
Thermal zero shift				
-54° to 71°C	%FSO/°C	0.06	0.06	0.06
-65° to 160°F	%/°F	-0.11	-0.11	-0.11
Thermal sensitivity shift				
-54° to 71°C	%/°C	-0.2	-0.2	-0.2
-65° to 160°F	%/°F	-0.11	-0.11	-0.11
Electrical characteristics				
Excitation	Vdc	5 Standard/15 Maximum		
Resistance	ohms	6,500 +/- 2,500		
Physical characteristics				
Case	Alumina Leadless Chip Carrier (LCC) with .002 inch bumps to facilitate epoxy underfill			
Lid	Kovar with Nickel plating			
Solder pads	Tungsten with ENIG plating			
Weight	g	0.16		
Environmental characteristics				
Shock limit	g	10,000	80,000	240,000
Temperature				
Operating	-54°C to + 71°C (-65°F to + 160°F)			
Storage	-65°C to + 121°C (-85°F to + 250°F)			
Humidity/Altitude	Hermetic (<10X-3 atm-cc/sec)			
ESD Protection	>4,000V - Human Body Model			
Calibration data				
Sensitivity @ 5V	2K tested at 1,000g; 20K and 60K tested at 5,000g			
ZMO @ 5V	mV			
Input and output resistance	ohms			

Notes

- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.
- Model number definition:



SCHEMATIC



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