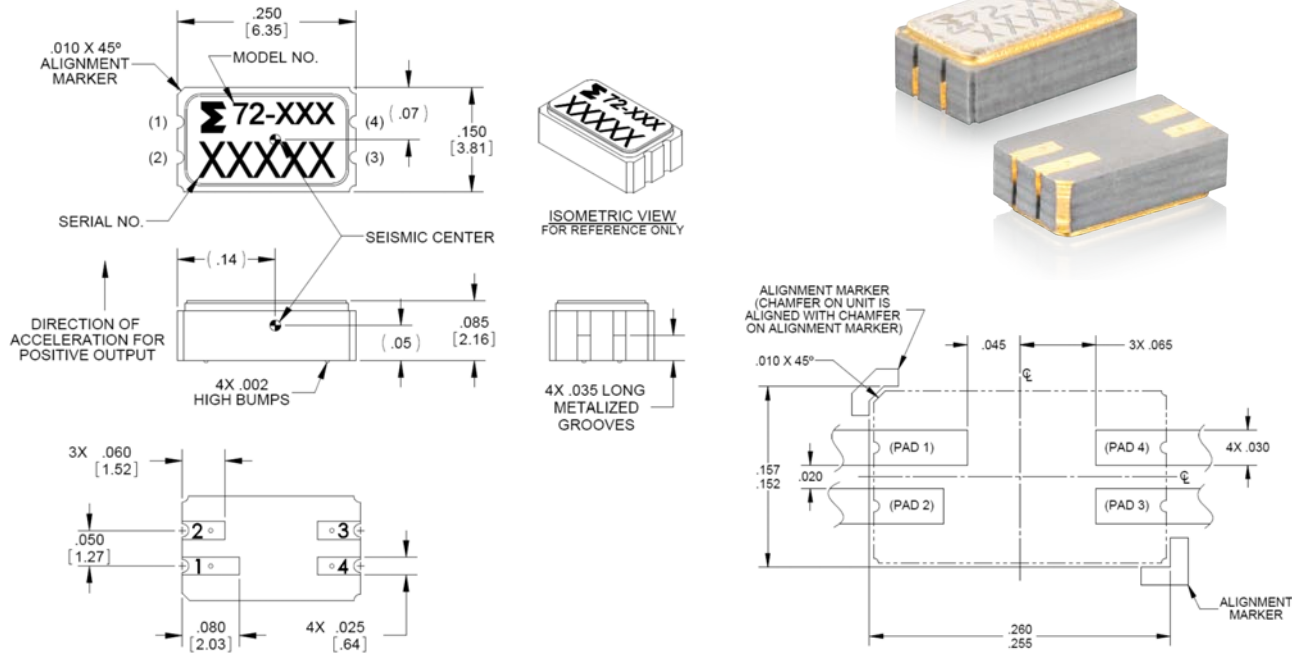


# Piezoresistive accelerometer

## 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.

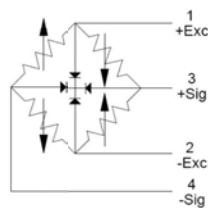
# Piezoresistive accelerometer | Model 72

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.

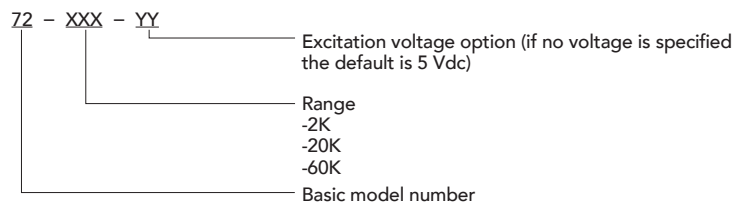
Specifications				
Dynamic characteristics		-2K	-20K	-60K
Range	g	2000	20000	60000
Sensitivity (min/typ)	μV/V/g	15/30	0.8/1.6	0.25/0.5
Non-linearity	%	±2.0	±2.0	±2.0
Zero measurand output	mV/V	±20	±20	±20
Transverse sensitivity	%	3.0	3.0	3.0
Frequency response (±1db typical)	Hz	0 to 10000	0 to 10000	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



www.endevco.com | Tel: +1 (866) ENDEVCO [+1 (866) 363-3826] | 10869 NC-903, Halifax, NC 27839 USA

© 2021 PCB Piezotronics of North Carolina, Inc. (doing business as Endevco). In the interest of constant product improvement, specifications are subject to change without notice. PCB®, ICP®, Swiveler®, Modally Tuned®, and IMI® with associated logo are registered trademarks of PCB Piezotronics, Inc. in the United States. ICP® is a registered trademark of PCB Piezotronics Europe GmbH in Germany and other countries. UHT-12TM is a trademark of PCB Piezotronics, Inc. SensorLine<sup>SM</sup> is a servicemark of PCB Piezotronics, Inc. MTS®, MTS Sensors logo, Temposonics®, SWIFT®, R Series V®, TempoLink®, and RefineMe® are registered trademarks of MTS Systems Corporation in the United States. These marks may be registered or otherwise protected in other countries. Endevco® is a registered trademark of PCB Piezotronics of North Carolina, Inc. d/b/a Endevco in the United States.

EDV-DS-72-052521



Endevco is an assumed name of PCB Piezotronics of North Carolina, Inc. and is a designer and manufacturer of sensors, instrumentation, and cables for vibration, shock and pressure measurements, known for innovation of sensor technology for the automotive, aerospace and military markets. Visit www.endevco.com for more information. PCB Piezotronics of North Carolina, Inc. (doing business as Endevco) is a wholly owned subsidiary of PCB Piezotronics, Inc. PCB Piezotronics, Inc. is a designer and manufacturer of microphones, and vibration, pressure, force, torque, load, and strain sensors, as well as the pioneer of ICP® technology used by design engineers and predictive maintenance professionals worldwide for test, measurement, monitoring, and control requirements in automotive, aerospace, industrial, R&D, military, educational, commercial, and OEM applications. PCB also manufactures the Endevco product line of sensors, instrumentation and cables for vibration, shock and pressure measurements. With a worldwide customer support team, 24-hour SensorLine<sup>SM</sup>, and a global distribution network, PCB® is committed to Total Customer Satisfaction. Visit www.pcb.com for more information. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at www.mts.com.