

Piezoelectric Accelerometer

**ENDEVCO
MODEL
33**

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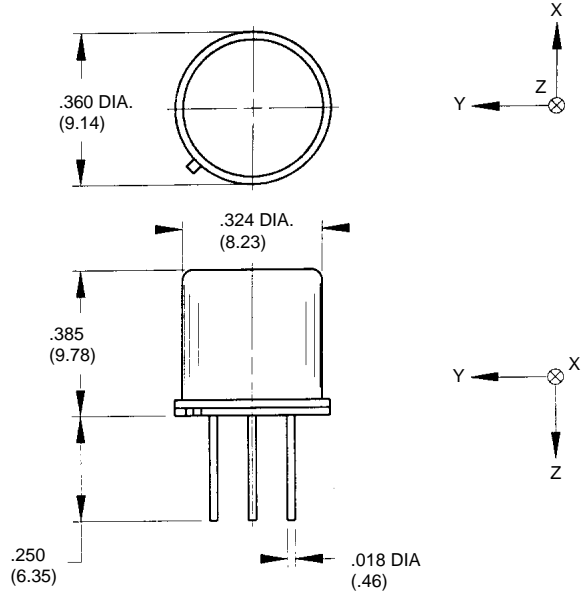
- **Triaxial Accelerometer**
- **Requires No External Power**
- **Light Weight (1.9 g)**
- **High Output Efficiency**
- **Low Cost/OEM Applications**

DESCRIPTION

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The ENDEVCO Model 33 is a high performance triaxial piezoelectric accelerometer enclosed in a standard TO-5 type electronics package. The configuration of the Model 33 allows for simple integration with custom signal conditioning circuits making it well suited for miniaturized shock and vibration measurement systems. The small size and low cost of the Model 33 make it ideal for high-volume, low-cost OEM applications.

The Model 33 features ENDEVCO's PIEZITE Type P-8 bimorph sensing element, operating in the bender mode, which provides low base strain sensitivity, low pyroelectric output and extremely high charge output versus size. Contact to the sensor is made through four signal leads on the bottom of the TO-5 can. The unit is designed to provide hermeticity with the case acting as common ground.



TYPICAL AMPLITUDE RESPONSE

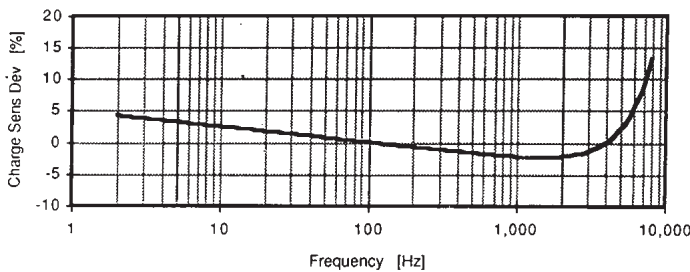
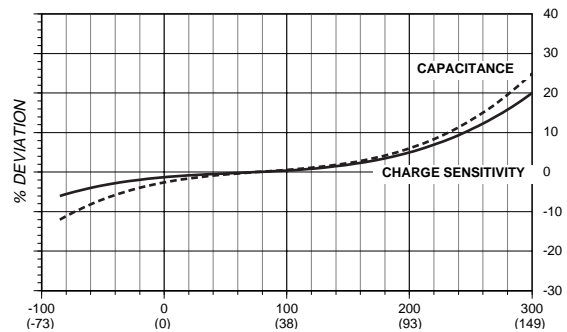


FIGURE 1

TYPICAL TEMPERATURE RESPONSE



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SPECIFICATIONS

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

DYNAMIC CHARACTERISTICS	Units	
CHARGE SENSITIVITY	pC/g	2.8
MINIMUM	pC/g	2.0
MAXIMUM	pC/g	3.6
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	20
AMPLITUDE RESPONSE [1]	Hz	2 to 4000
±5%		
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5

ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY		Acceleration directed into the metalized side of the unit produces positive output on the (+) designated contact
RESISTANCE	GΩ	≥ 10 @ 50 Vdc
At +302°F	MΩ	≥ 100
CAPACITANCE	pF	1550 @ 100 Hz

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-85°F to +302°F (-65°C to +150°C)
SINUSOIDAL VIBRATION LIMIT	g pk	500
SHOCK LIMIT	g pk	2000

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	1.9 (.067)
CASE MATERIAL		Header - Au Plated Kovar Cover - Grade A Nickel
MOUNTING [2]		Solder or Mating Socket

CALIBRATION

SUPPLIED:		
CHARGE SENSITIVITY	pC/g	
CAPACITANCE	pF	
RESISTANCE	GΩ	

NOTES

1. Low-end system response is a function of the associated electronics.
2. Take care to avoid overstressing the four leads supporting the case. If severe shock or vibration is anticipated, apply a non-conductive supporting medium between the base of the accelerometer and the mounting structure.

