



Model 12M1A Piezoelectric accelerometer - OEM

Features

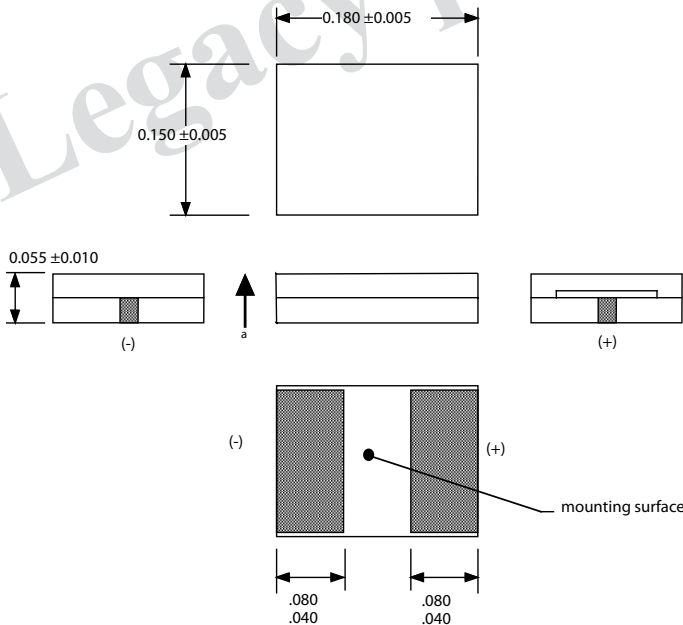
- Low cost/OEM applications
- High output efficiency
- Light weight (120 mg)
- For SMT installation



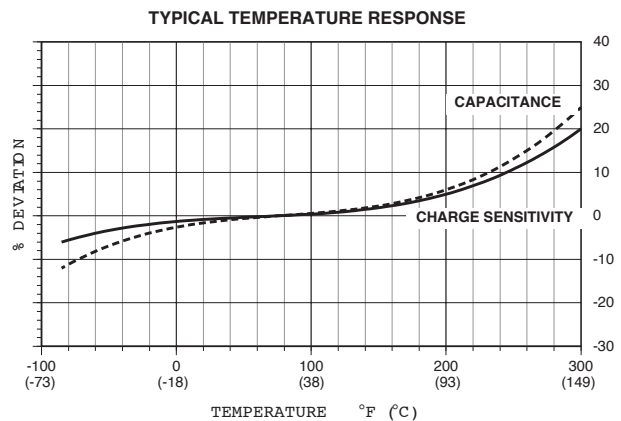
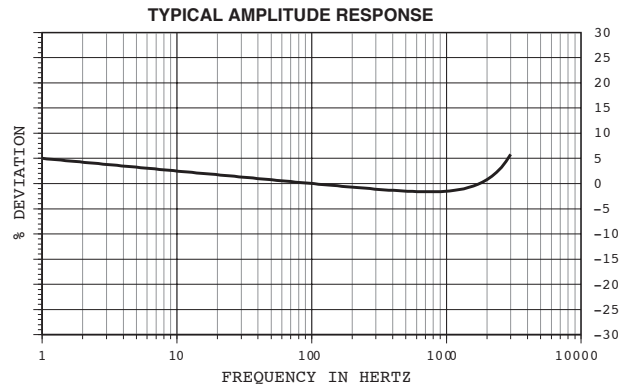
Description

The Endevco model 12M1A Picochip™ is a high performance piezoelectric accelerometer packaged as a surface mount chip component. The unit is engineered for integration in standard hybrid or SMT electronics packages along with custom designed signal conditioning circuits, allowing the user to create miniaturized shock and vibration measurement systems in one completely integrated package.

The model 12M1A 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 sensing element is made through two thick film gold metallized mounting pads on the bottom surface of the alumina case. The unit is designed to be mounted with conductive adhesives or solder. Since the model 12M1A is a high impedance piezoelectric device, extreme care must be exercised in shielding it from stray electromagnetic noise.



All dimensions are in inches
Shaded areas denote gold metallization
(+) and (-) indicates output polarity for an acceleration indicated by the bold arrow



Model 12M1A

Piezoelectric accelerometer - OEM

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smart engineering for
extreme environments

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	1.9
Minimum	pC/g	1.4
Maximum	pC/g	2.4
Frequency response		See typical amplitude response
Resonance frequency	kHz	9
Amplitude response $\pm 5\%$ [1]	Hz	1 to 2000
Temperature response		See typical curve
Transverse sensitivity	%	≤ 5

Electrical characteristics

Output polarity	Acceleration produces positive output on the (+) designated contact as shown in Figure 1
Capacitance	pF 550 @ 1000 Hz

Environmental characteristics

Temperature range	-85°F to +302°F (-65°C to +150°C)
Processing temp (re-flow solder assy)	+446°F (+230°C), 30 seconds maximum
Shock limit	g pk 1000

Physical characteristics

Dimensions	See outline drawing
Weight	gm (oz) 0.12 (0.0042)
Base	Alumina with selective gold metalization
Cover	Alloy 42 gold plated
Mounting	Twin electrical contact for conductive epoxy or solder mounting

Notes:

1. Low-end system response is a function of the associated electronics.
2. Maintain high levels of precision and accuracy using Endevo's factory calibration services. Call Endevo's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.