

# Piezoresistive MEMS DC Response Circuit Board Mountable Low Cost

The Model 3022 is a silicon MEMS accelerometer in a Wheatstone bridge configuration. The accelerometer is packaged on a ceramic substrate with an epoxy sealed ceramic cover and is designed for adhesive mounting. The accelerometer is offered in ranges from ±2g to ±200g range and provides a flat frequency response to minimum 2000Hz. The silicon MEMS sensor is gas damped and incorporates overrange stops for high-g shock protection.

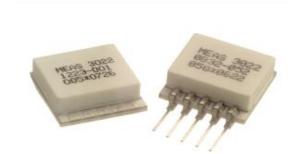
For a similar accelerometer designed for bolt mounting, see the Model 3028.

### **FEATURES**

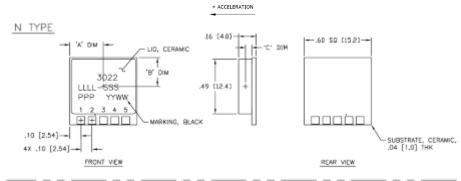
- Adhesive Mounted
- ±0.5% Non-linearity
- Open Wheatstone Bridge
- DC Response
- Gas Damping
- Built-in Overrange Stops
- Low Power Consumption

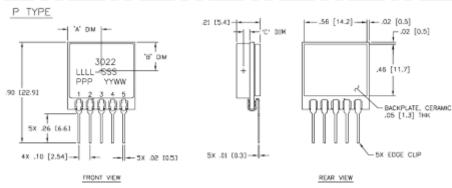
#### **APPLICATIONS**

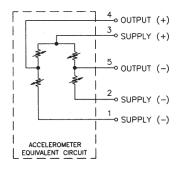
- Vibration & Shock Monitoring
- Motion Control
- Impact & Shock Testing
- Modal Analysis
- Embedded Applications
- Machinery



#### **Dimensions**







# **Model 3022 Accelerometer**



# 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. Measurement Specialties' family of <a href="https://document.org/leasurement-specialties">DC Response Embedded Accelerometers</a> are used for vibration/shock monitoring, structural analysis, motion control, impact testing, and transportation study. These MEMS sensors feature internal gas damping and outstanding shock survivability.

Parameters DYNAMIC Range (g) Sensitivity (mV/g) <sup>1</sup> Frequency Response (Hz) Natural Frequency (Hz) Non-Linearity (%FSO) Transverse Sensitivity (%) Damping Ratio Shock Limit (g)	±2 8.0-20.0 0-150 700 ±0.5 3 0.7 5000	±5 6.0-15.0 0-250 800 ±0.5 3 0.7 5000	±10 3.0-6.0 0-400 1000 ±0.5 3 0.7 5000	±20 1.5-3.0 0-600 1500 ±0.5 3 0.7 5000	±50 0.6-1.5 0-1000 4000 ±0.5 3 0.7 5000	±100 0.3-0.6 0-1500 6000 ±0.5 3 0.7 5000	±200 0.15-0.3 0-2000 8000 ±0.5 3 0.6 5000	Notes @5Vdc Excitation ±5%
ELECTRICAL Zero Acceleration Output (mV) Excitation Voltage (Vdc) Input Resistance ( $\Omega$ ) Output Resistance ( $\Omega$ ) Insulation Resistance ( $M\Omega$ ) Residual Noise ( $\mu$ V RMS) Ground Isolation	±25 2 to 10 2500- 6500 2500- 6500 >100 10 Isolated fr	±25 2 to 10 2500- 6500 2500- 6500 >100 10 om Mounting	±25 2 to 10 2500- 6500 2500- 6500 >100 10 g Surface	±25 2 to 10 2500- 6500 2500- 6500 >100 10	±25 2 to 10 2500- 6500 2500- 6500 >100 10	±25 2 to 10 2500- 6500 2500- 6500 >100 10	±25 2 to 10 2500- 6500 2500- 6500 >100 10	Differential  @50Vdc Maximum
ENVIRONMENTAL Thermal Zero Shift (%FSO/°C) Thermal Sensitivity Shift (%/°C) Operating Temperature (°C) Compensated Temperature (°C) Storage Temperature (°C)	-0.09 -0.15 -40 to +12 Not Comp -40 to +12	ensated	-0.09 -0.15	-0.09 -0.15	-0.09 -0.15	-0.09 -0.15	-0.09 -0.15	Typical Typical See Note 2

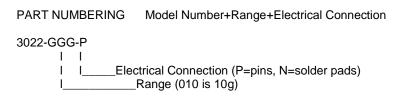
#### **PHYSICAL**

Case Material Ceramic Weight (grams) 3.1

Mounting Adhesive or solder

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## **Ordering Info**



Example: 3022-010-P

Model 3022, 10g, Pins

<sup>&</sup>lt;sup>1</sup> Output is ratiometric to excitation voltage

<sup>&</sup>lt;sup>2</sup> Order model 3022-XXX-10254 for temperature compensation resistor values included in the calibration certificate.

# **Mouser Electronics**

**Authorized Distributor** 

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TE Connectivity:

3022-020-N 3022-005-N 3022-002-N 3022-010-N