

Model 3022 Accelerometer



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 $\pm 2g$ to $\pm 200g$ range and provides a flat frequency response to minimum 2000Hz. The silicon MEMS sensor is gas damped and incorporates over-range stops for high-g shock protection.

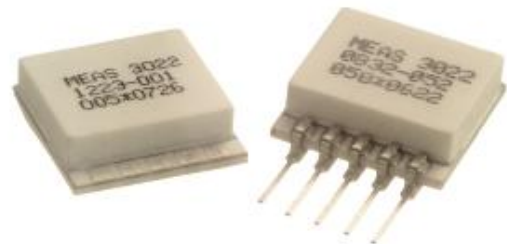
For a similar accelerometer designed for bolt mounting, see the [Model 3028](#).

FEATURES

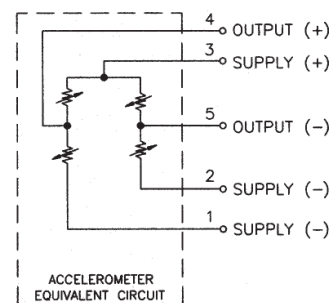
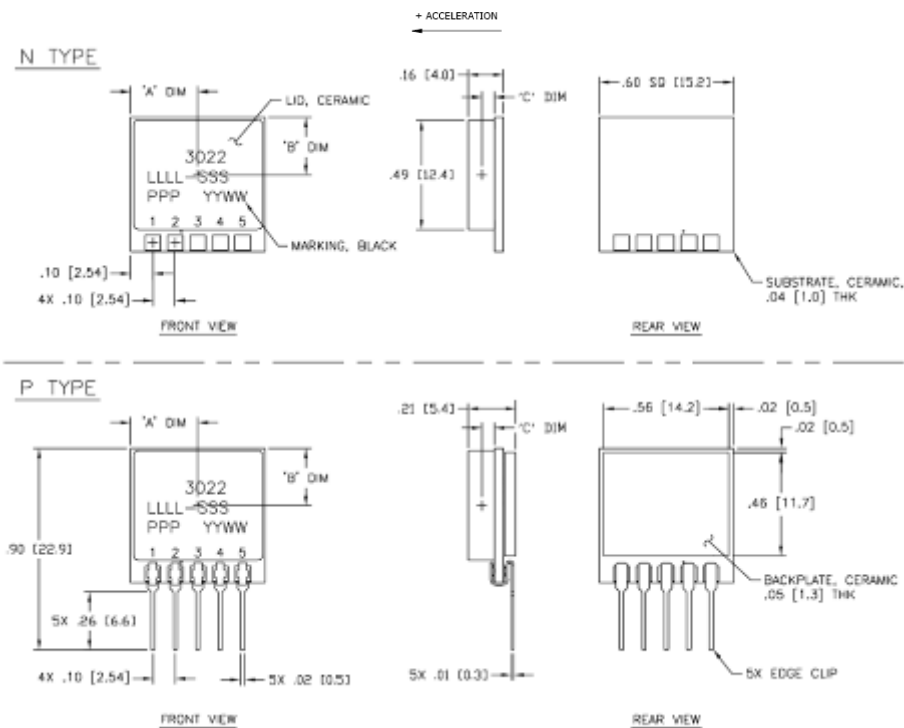
- Adhesive Mounted
- $\pm 0.5\%$ Non-linearity
- Open Wheatstone Bridge
- DC Response
- Gas Damping
- Built-in Overrange Stops
- Low Power Consumption

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 [DC Response Embedded Accelerometers](#) 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 | | | | | | | | Notes |
|----------------------------------|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|
| DYNAMIC | | | | | | | | |
| Range (g) | ±2 | ±5 | ±10 | ±20 | ±50 | ±100 | ±200 | |
| Sensitivity (mV/g) ¹ | 8.0-20.0 | 6.0-15.0 | 3.0-6.0 | 1.5-3.0 | 0.6-1.5 | 0.3-0.6 | 0.15-0.3 | @5Vdc Excitation |
| Frequency Response (Hz) | 0-150 | 0-250 | 0-400 | 0-600 | 0-1000 | 0-1500 | 0-2000 | ±5% |
| Natural Frequency (Hz) | 700 | 800 | 1000 | 1500 | 4000 | 6000 | 8000 | |
| Non-Linearity (%FSO) | ±0.5 | ±0.5 | ±0.5 | ±0.5 | ±0.5 | ±0.5 | ±0.5 | |
| Transverse Sensitivity (%) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Damping Ratio | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | |
| Shock Limit (g) | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | |
| ELECTRICAL | | | | | | | | |
| Zero Acceleration Output (mV) | ±25 | ±25 | ±25 | ±25 | ±25 | ±25 | ±25 | Differential |
| Excitation Voltage (Vdc) | 2 to 10 | 2 to 10 | 2 to 10 | 2 to 10 | 2 to 10 | 2 to 10 | 2 to 10 | |
| Input Resistance (Ω) | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | |
| Output Resistance (Ω) | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | 2500-6500 | |
| Insulation Resistance (MΩ) | >100 | >100 | >100 | >100 | >100 | >100 | >100 | @50Vdc |
| Residual Noise (µV RMS) | 10 | 10 | 10 | 10 | 10 | 10 | 10 | Maximum |
| Ground Isolation | Isolated from Mounting Surface | | | | | | | |
| ENVIRONMENTAL | | | | | | | | |
| Thermal Zero Shift (%FSO/°C) | -0.09 | -0.09 | -0.09 | -0.09 | -0.09 | -0.09 | -0.09 | Typical |
| Thermal Sensitivity Shift (%/°C) | -0.15 | -0.15 | -0.15 | -0.15 | -0.15 | -0.15 | -0.15 | Typical |
| Operating Temperature (°C) | -40 to +125 | | | | | | | |
| Compensated Temperature (°C) | Not Compensated | | | | | | | See Note 2 |
| Storage Temperature (°C) | -40 to +125 | | | | | | | |
| PHYSICAL | | | | | | | | |
| Case Material | Ceramic | | | | | | | |
| Weight (grams) | 3.1 | | | | | | | |
| Mounting | Adhesive or solder | | | | | | | |

¹ Output is ratiometric to excitation voltage

² Order model 3022-XXX-10254 for temperature compensation resistor values included in the calibration certificate.

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Ordering Info

PART NUMBERING Model Number+Range+Electrical Connection

3022-GGG-P

| |
 | |____ Electrical Connection (P=pins, N=solder pads)
 |____ Range (010 is 10g)

Example: 3022-010-P
Model 3022, 10g, Pins



Стандарт Электрон Связь

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Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331