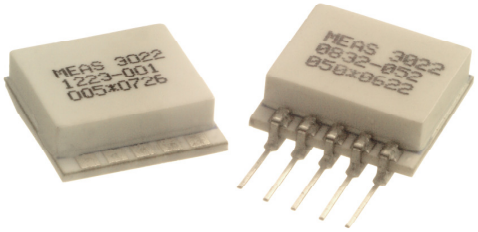
measurement SPECIALTIES

Model 3022 Accelerometer

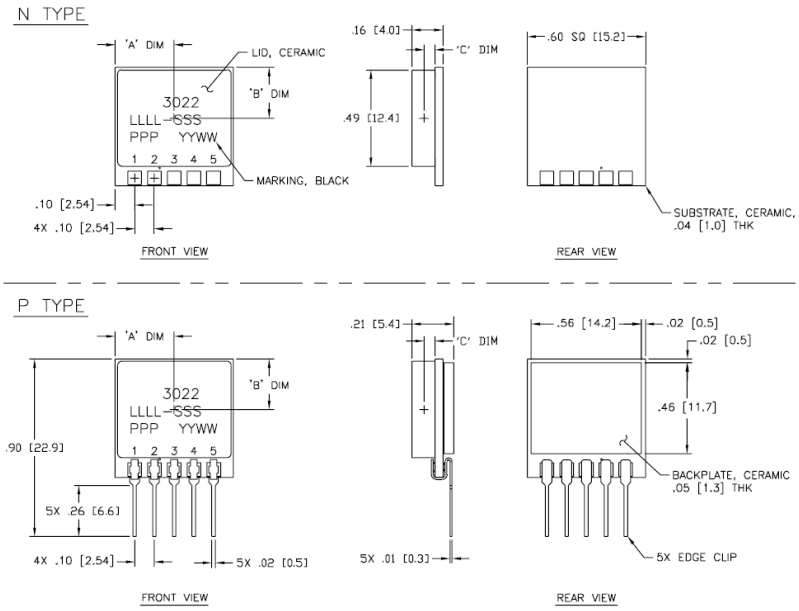
Piezoresistive MEMS
DC Response
Circuit Board Mountable
Low Cost



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 ±2g to ±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.

dimensions

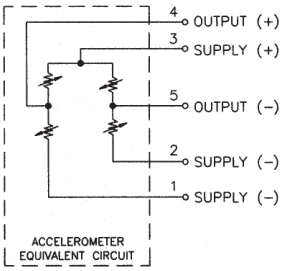


FEATURES

- 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



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Model 3022 Accelerometer

performance specifications

All values are typical at +24℃, 100Hz and 5Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

Parameters								
DYNAMIC								**Notes**
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	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.6	
Shock Limit (g)	5000	5000	5000	5000	10000	10000	10000	
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/℃)	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	Typical
Thermal Sensitivity Shift (%/℃)	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	Typical
Operating Temperature (℃)	-40 to +125							
Compensated Temperature (℃)	Uncompensated							
Storage Temperature (℃)	-40 to +125							
PHYSICAL								
Case Material	Ceramic							
Cable	Not applicable							
Weight (grams)	3.1							
Mounting	Adhesive or solder							
Mounting Torque	Not applicable							
AWG	Not applicable							

[1] Output is ratiometric to excitation voltage

Wiring color code: See schematic

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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

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