PCB PIEZOTRONICS
AN AMPHENOL COMPANY

MODEL **3753A**

TRIAXIAL VC MEMS ACCELEROMETER

- Measurement ranges of 2g, 5g, 10g, 20g and 40g
- Amplified (VDC) output
- Excellent performance over wide temperature range
- Compact, lightweight anodized aluminum package
- IP67 rated for reliable outdoor use

TYPICAL APPLICATIONS

- Structural monitoring of bridges and foundations
- Automotive ride quality or RLDA (Road Load Data Acquisition)
- Flight simulators and flight testing
- Motorsports measurements
- Rail ride quality

DC RESPONSE IN A LOW PROFILE, LIGHTWEIGHT PACKAGE

The 3753A Series of VC MEMS sensors provides three axes of high performance measurement in a very compact package. The anodized Aluminum design encases PCB's lowest profile and lightest weight triaxial VC MEMS accelerometer. These sensors provide DC response, which makes them ideal for measuring constant acceleration and low frequency vibration.

These models feature variable capacitance (VC) MEMS technology for stable and accurate measurement over a wide operating temperature range of -40 to +121 °C. Internal electronics enable low noise output and input voltage from 5 to 32 VDC. The 3753A Series is designed for single-ended output and offers a +/-2V swing around a 2.5V bias voltage, resulting in a full scale signal between 0.5 and 4.5V. The 3753A is sealed to IP67 and rugged to 5,000g shocks.

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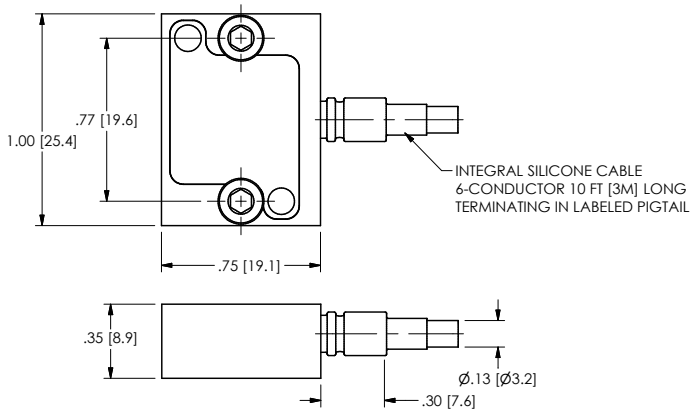
SPECIFICATIONS

Model Number	3753A122G	3753A125G	3753A1210G	3753A1220G	3753A1240G
Performance					
Sensitivity	1000 mV/g	400 mV/g	200 mV/g	100 mV/g	50 mV/g
Measurement Range	±2 g pk	±5 g pk	±10 g pk	±20 g pk	±40 g pk
Frequency Range (±5%)	0 to 750 Hz	0 to 750 Hz	0 to 550 Hz	0 to 550 Hz	0 to 550 Hz
Frequency Range (±3dB)	0 to 1,500 Hz	0 to 1,500 Hz	0 to 1,500 Hz	0 to 1,500 Hz	0 to 1,500 Hz
Resonant Frequency (Typical)	2.4 kHz	2.4 kHz	5.5 kHz	5.5 kHz	5.5 kHz
Phase Response (100Hz)	<2.5°	<10°	<10°	<10°	<10°
Non-Linearity (Typical)	0.20%	0.30%	0.30%	1%	1%
Broadband Resolution (0.5 to 100Hz) (Typical)	160 µg rms	400 µg rms	800 µg rms	1000 µg rms	1500 µg rms
Transverse Sensitivity (Typical)	1%	1%	1%	1%	1%
Environmental					
Overload Limit (Shock)	±5000 g pk				
Temperature Range (Operating)	-40 to +250 °F (-40 to +121 °C)				
Temperature Coefficient of Sensitivity (Typical)	+/-1%				
Zero g Offset Temperature Coefficient (Typical)	+/-1% FSO				
Base Strain Sensitivity (Typical)	0.0006 g/με				
Electrical					
Bias Voltage	2.4 to 2.6 VDC				
Excitation Voltage	5 to 32 VDC				
Current Consumption	≤3 mA				
Output Impedance	≤450 Ohm				
Spectral Noise (1 Hz) (Typical)	15 µg/√Hz	25 µg/√Hz	70 µg/√Hz	90 µg/√Hz	120 µg/√Hz
Spectral Noise (10 Hz) (Typical)	18 µg/√Hz	50 µg/√Hz	85 µg/√Hz	120 µg/√Hz	200 µg/√Hz
Spectral Noise (100 Hz) (Typical)	15 µg/√Hz	30 µg/√Hz	75 µg/√Hz	80 µg/√Hz	115 µg/√Hz
Electrical Isolation (Case)	$>10^8$ Ohm				
Physical					
Housing Material	Anodized Aluminum				
Sealing	IP67				
Size (Length x Width x Height)	1.00 x 0.75 x 0.35 in (25.4 x 19.1 x 8.9 mm)				
Weight (without cable) (Typical)	0.42 oz (12 gm)				
Electrical Connector	Integral Cable Pigtails (Optional TE = Triple splice assembly with (3) 1 ft 4-conductor cables)				
Cable	6-conductor, 10 ft (3 m) length				
Mounting	Through Holes (2)				
Supplied Accessories					
Model 081A136	Mounting Screw Assembly 4-40 x 1/2" (2)				
Model M081A136	Mounting Screw Assembly M3 x 0.5 x 14mm (2)				
Model ACS-1T	NIST traceable triaxial amplitude response, 10 Hz to upper 5% frequency				



CABLE TERMINATION:
1.) RED (POWER)
2.) BROWN (X OUTPUT)
3.) GREEN (Y OUTPUT)
4.) WHITE (Z OUTPUT)
5.) BLACK (GROUND)
6.) BLUE (NOT USED, TRIMMED FLUSH)
7.) DRAIN WIRE (SHIELD/CASE GROUND)

OUTPUT SIGNAL:
REFERENCE TO GROUND

POWER:
CONNECT TO DC VOLTAGE
POWER SUPPLY. SEE SPECIFICATION
SHEET FOR PROPER EXCITATION VOLTAGE

SHIELD:
CASE GROUND

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3425 Walden Avenue, Depew, NY 14043 USA

pcb.com | info@pcb.com | 800 828 8840 | +1 716 684 0001