PCB PIEZOTRONICS
MTS SYSTEMS CORPORATION

SERIES **339A**

ACCELEROMETERS WITH EXCELLENT THERMAL STABILITY

- Temperature coefficient as low as 0.005 %/ °F (0.009 %/ °C)
- 1 mV/g, 10 mV/g, 50 mV/g and 100 mV/g sensitivities
- Measurement frequency up to 10 kHz at ± 5%
- Operating temperature from -100 to +356 °F (-73 to +180 °C)
- Titanium housed and hermetically sealed
- Available in stud, adhesive, and through hole mounting configurations
- Models TLD339A34, TLD339A36 & TLD339A37 feature TEDS

TYPICAL APPLICATIONS

- Powertrain Development & NVH
- Vehicle Systems NVH
  - Engine
  - Turbocharger
  - Exhaust
  - Brake
- Component and System Performance
  - Vehicle Road Load & Durability
  - Climatic Chamber Testing

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FOR POWERTRAIN TESTING

PCB® single and triaxial ICP® accelerometers are designed with a low temperature coefficient of sensitivity, wide operating temperature range, and high overload shock limits, making them ideal for powertrain development and powertrain NVH applications, or for any vibration measurement requiring tight control of amplitude sensitivity over a wide thermal gradient. With a temperature coefficient as low as 0.005 %/°F (0.009 %/ °C), these titanium housed and hermetically sealed units are available with sensitivities from 1 mV/g to 100 mV/g, a measurement frequency up to 10 kHz, and an operating temperature range from -100 to +356 °F (-73 to +180 °C). To alleviate the effects of high frequency overloads caused by metal-to-metal inputs, a low pass filter has been incorporated in all models, ensuring accurate data in the frequency range of interest. These sensors provide precision amplitude data for test applications with large thermal shifts such as powertrain vibration testing, powertrain NVH, certain vehicle systems NVH tests, road load data acquisition, and durability testing in climatic chambers. Sensors are available in stud, adhesive and through hole mounting configurations.

As with all PCB instrumentation, these sensors are complemented with toll-free applications assistance, 24-hour technical support, and are backed by a no-risk policy that guarantees total customer satisfaction or your money refunded.

pcb.com/LTC

SPECIFICATIONS

Model Number	320C52	320C53	339A30	339A31	339B32	TLD339A34 [1]	TLD339A36 [1]	TLD339A37 [1]
Performance								
Measurement Range	± 500 g pk	± 5000 g pk	± 500 g pk	± 500 g pk	± 500 g pk	± 100 g pk	± 500 g pk	± 50 g pk
Sensitivity (± 10 %)	10 mV/g	1 mV/g (± 20 %)	10 mV/g	10 mV/g	10 mV/g	50 mV/g	10 mV/g	100 mV/g
Broadband Resolution (1 to 10000 Hz)	0.004 g rms	0.04 g rms	0.008 g rms	0.008 g rms	0.003 g rms	0.005 g rms	0.003 g rms	0.002 g rms
Frequency Range (± 5 %)	1 to 10000 Hz	1 to 5000 Hz	2 to 8000 Hz	2 to 6000 Hz	2 to 10000 Hz	2 to 5000 Hz	2 to 5000 Hz	0.3 to 4000 Hz
Frequency Range (± 10 %)	0.6 to 15000 Hz	0.6 to 10000 Hz	—	1 to 8000 Hz	—	1 to 8000 Hz	1 to 8000 Hz	0.2 to 7000 Hz
Electrical Filter Corner Frequency	≥ 35 kHz	≥ 20 kHz	> 14 kHz	> 13 kHz	> 14 kHz	> 30 kHz	> 13 kHz	> 15 kHz
Resonant Frequency (x or y axis)	≥ 50 kHz	≥ 50 kHz	≥ 25 kHz	≥ 25 kHz	≥ 45 kHz	≥ 35 kHz	≥ 35 kHz	≥ 35 kHz
Resonant Frequency (z axis)	—	—	≥ 55 kHz	≥ 25 kHz	≥ 45 kHz	≥ 35 kHz	≥ 35 kHz	≥ 35 kHz
Non-Linearity	≤ 1 %	≤ 1 %	≤ 0.5 %	≤ 0.5 %	≤ 0.5 %	≤ 1 %	≤ 1 %	≤ 1 %
Transverse Sensitivity	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Environmental								
Overload Limit (Shock)	± 5000 g pk	± 10000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk
Temperature Range (operating)	-100 to +325 °F (-73 to +163 °C)	-100 to +325 °F (-73 to +163 °C)	-65 to +325 °F -54 to +163 °C	-65 to +325 °F (-54 to +163 °C)	-65 to +325 °F (-54 to +163 °C)	-65 to +325 °F (-54 to +163 °C)	-65 to +325 °F (-54 to +163 °C)	-65 to +356 °F (-54 to +180 °C)
Temperature Coefficient of Sensitivity	± 0.005 %/°F (± 0.009 %/°C)	± 0.005 %/°F (± 0.009 %/°C)	≤ 0.011 %/°F ≤ 0.020 %/°C	≤ 0.011 %/°F (≤ 0.020 %/°C)	≤ 0.011 %/°F (≤ 0.020 %/°C)	≤ 0.03 %/°F (≤ 0.06 %/°C)	≤ 0.03 %/°F (≤ 0.06 %/°C)	≤ 0.011 %/°F (≤ 0.020 %/°C)
Electrical								
Excitation Voltage	19 to 30 VDC	19 to 30 VDC	18 to 30 VDC	18 to 30 VDC	18 to 30 VDC	21 to 30 VDC	21 to 30 VDC	21 to 30 VDC
Constant Current Excitation	2 to 20 mA	2 to 20 mA	2 to 20 mA	2 to 20 mA	2 to 20 mA	2 to 20 mA	2 to 20 mA	2 to 4 mA [2]
Spectral Noise (10 Hz)	150 µg/√Hz	1500 µg/√Hz	500 µg/√Hz	500 µg/√Hz	178 µg/√Hz	400 µg/√Hz	250 µg/√Hz	40 µg/√Hz
Spectral Noise (100 Hz)	50 µg/√Hz	500 µg/√Hz	200 µg/√Hz	200 µg/√Hz	48 µg/√Hz	100 µg/√Hz	50 µg/√Hz	20 µg/√Hz
Spectral Noise (1000 Hz)	25 µg/√Hz	250 µg/√Hz	100 µg/√Hz	100 µg/√Hz	25 µg/√Hz	50 µg/√Hz	20 µg/√Hz	12 µg/√Hz
Spectral Noise (10000 Hz)	—	—	—	—	—	30 µg/√Hz	19 µg/√Hz	10 µg/√Hz
Physical								
Housing Material	Titanium	Titanium	Titanium	Titanium	Titanium	Titanium	Titanium	Titanium
Sealing	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic
Size (H x L x W) in (mm)	0.23 x 0.65 x 0.38 (5.84 x 16.4 x 9.6)	0.23 x 0.65 x 0.3 (5.84 x 16.4 x 9.6)	0.4 in Cube (10.2 mm Cube)	0.55 x 0.4 x 0.4 (14.0 x 10.2 x 10.2)	0.28 x 0.47 x 0.47 (7.0 x 12.0 x 12.0)	0.55 in Cube (14.0 mm Cube)	0.55 in Cube (14.0 mm Cube)	0.55 in Cube (14.0 mm Cube)
Weight	1.85 gm	1.85 gm	4.0 gm	5.5 gm	3.6 gm	10.5 gm	10.5 gm	10.5 gm
Electrical Connector	5-44 Coaxial	5-44 Coaxial	8-36 4-Pin	8-36 4-Pin	8-36 4-Pin	1/4-28 4-Pin	1/4-28 4-Pin	1/4-28 4-Pin
Mounting	Through Hole	Through Hole	Adhesive	5-40 Stud	Adhesive	5-40 Stud	5-40 Stud	5-40 Stud
Notes								

[1] TEDS Capable of Digital Memory and Communication Compliant with IEEE 1451.4
[2] Increased current up to 20 mA acceptable to 250 °F (121 °C)

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PCB Piezotronics, Inc. is a designer and manufacturer of microphones, vibration, pressure, force, torque, load, and strain sensors, as well as the pioneer of ICP® technology used by design engineers and predictive maintenance professionals worldwide for test, measurement, monitoring, and control requirements in automotive, aerospace, industrial, R&D, military, educational, commercial, OEM applications, and more. With a worldwide customer support team, and a global distribution network, PCB® is committed to Total Customer Satisfaction. Visit www.pcb. com for more information. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at www.mts.com.

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MTS SENSORS

MTS Sensors, a division of MTS Systems Corporation (NASDAQ: MTSC), vastly expanded its range of products and solutions after MTS acquired PCB Piezotronics, Inc. in July, 2016. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corp.; IMI Sensors and Larson Davis are divisions of PCB Piezotronics, Inc.; Accumetrics, Inc. and The Modal Shop, Inc. are subsidiaries of PCB Piezotronics, Inc.

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