ICP® Accelerometers with Excellent Thermal Stability

For Powertrain Testing

Highlights

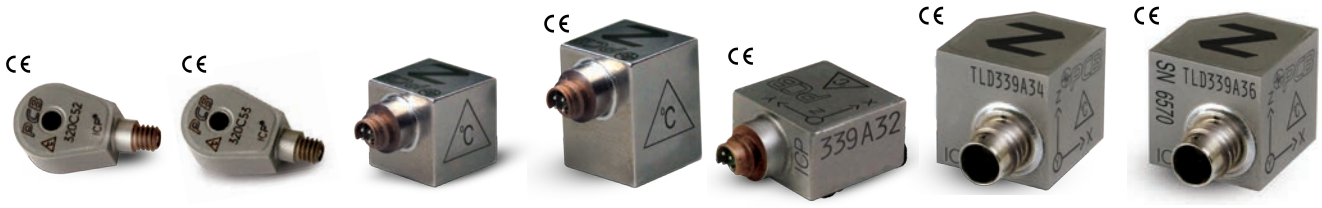
- Temperature coefficient as low as 0.005% / °F (0.009% / °C)
- 10 mV/g and 50 mV/g sensitivity
- Measurement frequency to 10 kHz at ± 5%
- Operating temperature from -100 to +325 °F (-73 to +163 °C)
- Titanium housed and hermetically sealed
- Available in stud, adhesive and through hole mounting configurations
- Models TLD339A34 and TLD339A36 feature TEDS

Applications

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

PCB® single and triaxial ICP® accelerometers are designed with a low temperature coefficient, wide operating temperature range, and good broadband measurement resolution, 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 have a 10 mV/g or 50 mV/g sensitivity, a measurement frequency to 10 kHz, and an operating temperature range from -100 to +325 °F (-73 to +163 °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.



Model 320C52 | Model 320C53 | Model 339A30 | Model 339A31 | Model 339A32 | Model TLD339A34 | Model TLD339A36

PCB PIEZOTRONICS INC
MTS SYSTEMS CORPORATION

Automotive Sensors Division ☎ Toll-Free in USA 888-684-0014 ☎ 716-684-0001 www.pcb.com

Technical Specifications

Model Number	320C52	320C53	339A30	339A31	339A32	TLD339A34 [1]	TLD339A36 [1]
Measurement Range	± 500 g pk	± 5,000 g pk	± 500 g pk	± 500 g pk	± 500 g pk	± 100 g pk	± 500 g pk
Sensitivity	10 mV/g	1 mV/g	10 mV/g	10 mV/g	10 mV/g	50 mV/g	10 mV/g
Broadband Resolution	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
Frequency Range (± 5 %)	1 to 10 kHz	1 to 5 kHz	2 to 8 kHz	2 to 8 kHz	2 to 8 kHz	2 to 5 kHz	2 to 5 kHz
Resonant Frequency (x or y axis)	≥ 50 kHz	≥ 50 kHz	≥ 25 kHz	≥ 25 kHz	≥ 45 kHz	≥ 35 kHz	≥ 35 kHz
Resonant Frequency (z axis)	—	—	≥ 55 kHz	≥ 25 kHz	≥ 45 kHz	—	—
Non-Linearity	≤ 1 %	≤ 1 %	≤ 0.5 %	≤ 0.5 %	≤ 0.5 %	≤ 1 %	≤ 1 %
Transverse Sensitivity	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Environmental							
Overload Limit (Shock)	± 5000 g pk	± 10,000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk	± 5000 g pk
Temperature Range	-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
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
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
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
Spectral Noise (10 Hz)	150 µg/√Hz	1,500 µg/√Hz	500 µg/√Hz	500 µg/√Hz	178 µg/√Hz	400 µg/√Hz	250 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
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
Physical							
Housing Material	Titanium	Titanium	Titanium	Titanium	Titanium	Titanium	Titanium
Sealing	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic
Size (H x L x W)	0.23 x 0.65 x 0.38 in 5.84 x 16.4 x 9.6 mm	0.23 x 0.65 x 0.38 in 5.84 x 16.4 x 9.6 mm	0.4 in Cube 10.2 mm Cube	0.55 x 0.4 x 0.4 in 14 x 10.2 x 10.2 mm	0.28 x 0.47 x 0.47 in 7.0 x 12.0 x 12.0 mm	0.55 x 0.80 x 0.55 in 14.0 x 23.3 x 14.0 mm	0.55 x 0.80 x 0.55 in 14.0 x 23.3 x 14.0 mm
Weight	1.85 gm	1.85 gm	4.0 gm	5.5 gm	3.6 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
Mounting	Through Hole	Through Hole	Adhesive	5-40 Stud	Adhesive	5-40 Stud	5-40 Stud
Supplied Accessories							
Adhesive Mounting Base	—	—	—	080A	—	080A145	080A145
Mounting Studs	—	—	—	081A27 081A90 M081A27	—	081A27 M081A27	081A27 M081A27
Allen Wrench	039A20 M039A20	039A20 M039A20	—	—	—	—	—
Insulated Cap Screw	081B36 M081B36	081B36 M081B36	—	—	—	—	—
Wax/Adhesive	—	—	080A109 080A90	080A109 080A90	080A109 080A90	080A109 080A90	080A109 080A90
Cables	—	—	034K10	034K10	034K10	—	
Notes							
[1] TEDS Capable of Digital Memory and Communication compliant with IEEEP1451.4							

Recommended Signal Conditioners

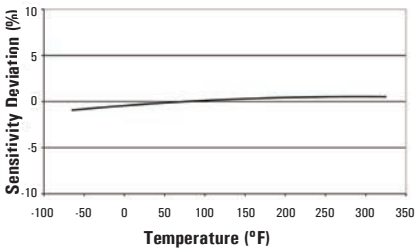
482C16 Series:

4-channel, line-powered, ICP®/ voltage sensor signal conditioner, incremental gain x0.1 to x200, RS-232

482C05 Series:

4-channel, line-powered, ICP®/ voltage sensor signal conditioner, unity gain, BNC input/output connection

Typical Sensitivity Deviation vs. Temperature



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AS9100 CERTIFIED ■ ISO 9001 CERTIFIED ■ A2LA ACCREDITED to ISO 17025

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