CXLTG-Series

HIGH PERFORMANCE ACCELEROMETER

The TG-Series 3-Axis accelerometers are high performance ±2g sensors, featuring precision three-layer silicon differential capacitive MEMS sensing elements that provide ultra low noise and excellent stability. The TG-Series sensors are fully signal conditioned and factory calibrated. The single-ended high level analog outputs do not require external signal conditioning and are easy to interface to standard data acquisition systems.
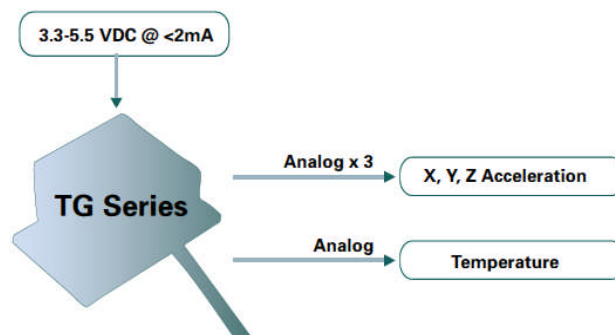
Platform Leveling   *Automotive Testing*

The TG-Series operates on a single DC supply from 3.3 V to 5.5 V and includes a high performance integrated temperature sensor for additional accuracy under extreme temperature applications. The typical current consumption of 1.5mA makes this triaxial device attractive for battery operated systems. The sensor is packaged in an industrial anodized aluminum package that is moisture resistant and rugged for industrial and automotive applications.

Features

- Range: ±2g
- High Stability
- Low Noise: 20µg/√Hz
- Low Power <10mW
- Internal Temperature Sensor

Applications

- Platform Leveling
- Automotive Testing
- Seismic Instrumentation

3.3-5.5 VDC @ <2mA
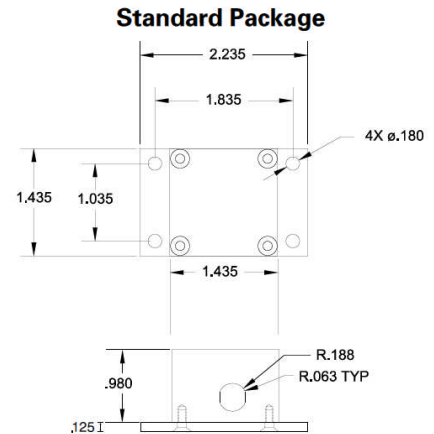
TG Series

Analog x 3 → X, Y, Z Acceleration

Analog → Temperature

Performance — TG-Series

Input	CXL02TG3
Range (g)	± 2

Bias	
Bias Stability[1] (mg)	± 8.5
Zero g Output (V)	2.5 ± 0.01
Zero g Drift Over Temperature (µV/°C)	170

Scale Factor	
Sensitivity (mV/g)	833 to ± 67
Span Output (Volts)	0.5 to 4.5
Cross-Axis[2] (% FS)	<3
Non-Linearity[3] (% FS)	<1.5
Mis-Alignment (% FS)	<1.0

Noise	
Noise Density (µg/√Hz)	20
Noise at 100 Hz Bandwidth (mg)	0.6

Bandwidth	
Frequency Response (Hz)	>200

Temperature Sensor	
Accuracy (°C)	<3
Transfer Function	Ta (ºC)=[44.4 ºC/V] *[$V_{tempsensor}$/(V_{supply}/5V)-1.375V]

Standard Package

2.235
1.835
4X ø.180
1.435   1.035
1.435
R.188
R.063 TYP
.980
.125

Specifications

Environment	
Operating Temperature (°C)	-40 to +85
Non-Operating Temperature (°C)	-40 to +85
Shock (g)	1000 (1ms)
Vibration 20Hz to 500Hz (g rms)	20

Electrical	
Supply Voltage[4] (V)	3.3 to 5.5
Supply Current (mA)	<2
Output Loading, Resistive (kΩ)	10 (min)
Output Loading, Capacitive (pF)	50 (max)

Physical		
Size	(in)	2.235 x 1.435 x 1.105
	(cm)	5.68 x 3.65 x 2.81
Weight	(oz)	3.5
	(kg)	< 0.11
Cable		3' Long, 6 Conductor, PVC Jacket 1" Pigtail End, Stripped & Tinned

Pin Diagram

Pin	Color	Function
1	Red	Input Power
2	Black	Ground
3	White	X-Axis Out
4	Yellow	Y-Axis Out
5	Green	Z-Axis Out
6	Blue	Temperature

Ordering Information

Model	Description
CXL02TG3	± 2g, Tri-axial Precision Accelerometer