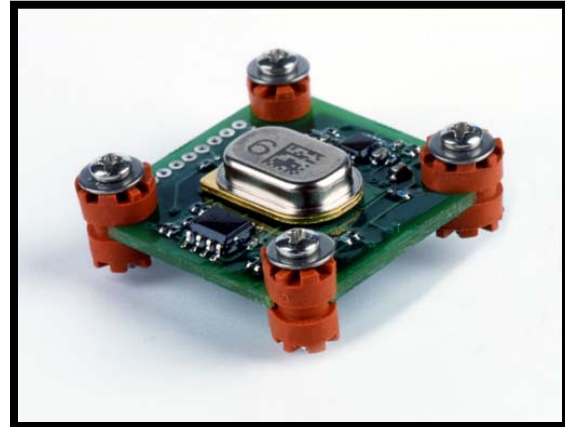


LCG50

Applications

The LCG50 has a wide variety of applications:

- Vehicle Instrumentation
- Robotics
- Flight Testing
- Guidance and Control Systems
- Short Term Navigation
- Ride Control - Stabilization



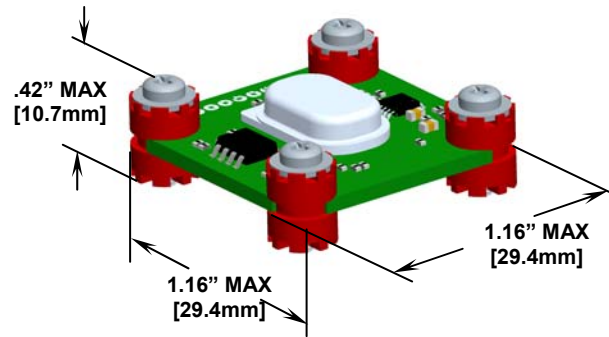
Description

The LCG50 (Low Cost Gyro 50) offers a MEMS (Micro Electro Mechanical System) single axis angular rate sensor on a small PC board. The sensor is a complete unit and requires only a single DC voltage input to measure angular rate. The LCG50 is ideally suited for embedded applications, where mounting versatility is required, unit price is low, robustness is essential, and the performance characteristics must match that of much more expensive instrument grade rate sensors.

Key Performance Features

- Proven MEMS Technology
- DC Voltage Input
- Wide Bandwidth
- Analog Voltage Output
- Low Power Consumption
- High Reliability
- Wide Operating Temperature Range
- Small Size
- Fast Start-Up
- DC In DC Out
- Temperature Sensor Output





DIMENSIONS IN INCHES & MILLIMETERS

PARAMETER	SUMMARY SPECIFICATIONS			
PART NUMBER	LCG50-00020-100	LCG50-00100-100	LCG50-00250-100	LCG50-00500-100
Power Requirements				
Input Voltage	+5.0 Vdc			
Input Current	< 8 mA @ +5.0 Vdc			
Performance				
Standard Ranges	$\pm 20^\circ/\text{s}$	$\pm 100^\circ/\text{s}$	$\pm 250^\circ/\text{s}$	$\pm 500^\circ/\text{s}$
Scale Factor Calibration at 22°C	50 mV/°/sec $\pm 15\%$	16 mV/°/sec $\pm 15\%$	6.4 mV/°/sec $\pm 15\%$	3.2 mV/°/sec $\pm 15\%$
Scale Factor over Temperature	< 0.1%/°C			
Bias Calibration at 22°C	+2.5 Vdc ± 0.6 Vdc	+2.5 Vdc ± 0.2 Vdc	+2.5 Vdc ± 0.2 Vdc	+2.5 Vdc ± 0.2 Vdc
Bias Variation over Temperature	10°/sec	8°/sec	10°/sec	20°/sec
G Sensitivity	< 0.05°/sec/g			
Start-Up Time	< 2 sec			
Bandwidth (-3dB)	> 50 Hz			
Non-Linearity - % Full Range	< 0.05%			
Output Noise (DC to 100 Hz)	< 0.005°/s/ $\sqrt{\text{Hz}}$	< 0.005°/s/ $\sqrt{\text{Hz}}$	< 0.006°/s/ $\sqrt{\text{Hz}}$	< 0.01°/s/ $\sqrt{\text{Hz}}$
Temp Sensor				
Scale Factor	6.25 mV/°C Typical			
Output Voltage at 0°C	+ 424 mV Typical			
Environments				
Operating Temperature	-40°C to +85°C			
Storage Temperature	-55°C to +100°C			
Vibration Operating	5 g _{rms}			
Vibration Survival	10 g _{rms}			
Shock	500g PK ½ sine 2 msec			
Weight	< 0.4 oz. [12 grams]			

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