



CRG20

Angular Rate Sensor



CRG20 uses the latest (capacitive) silicon MEMS sensor technology from Silicon Sensing. The gyro is optimised for high-volume production programmes where both performance and cost are key drivers.

This new 'gyro on a chip' is derived from Silicon Sensing's high volume supply to the automotive industry, now being made available to broader markets. To aid initial evaluation, a range of development tools is available, from simple break-out boards to USB-based PC interface boards.

Fully digital closed loop control eliminates any temperature and aging effects associated with analogue electronics, and provides exceptionally stable performance over a wide range of operating conditions.

CRG20 is underpinned by Silicon Sensing's commitment to the technical backup and long-term support necessary to major procurement programmes.

Key Features

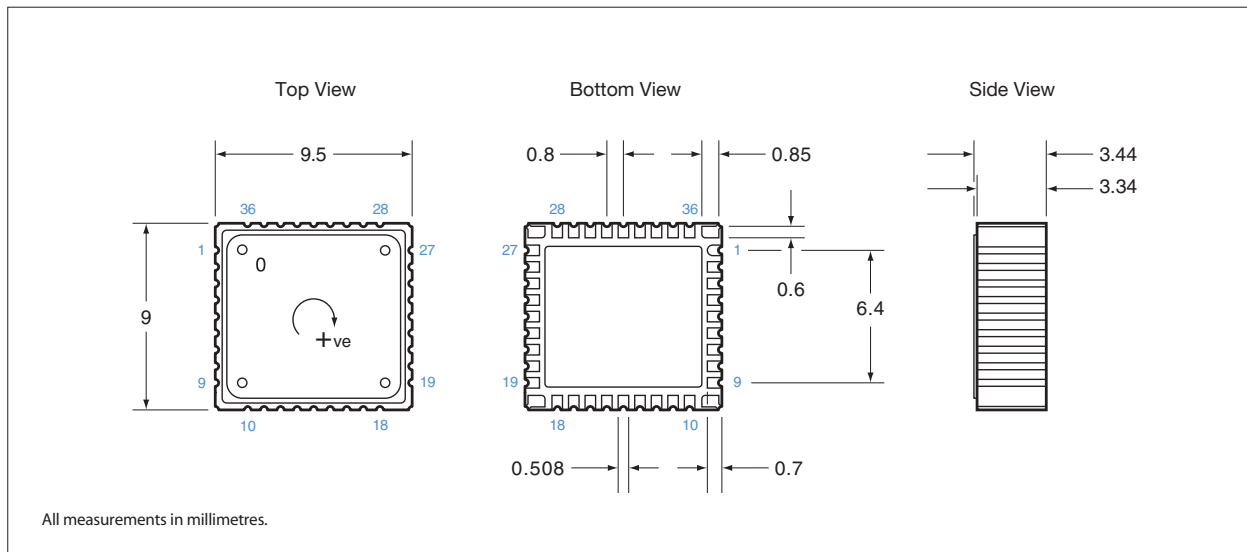
- Affordable high-volume solution
- Leadless Chip Carrier construction
- Supplied on tape and reel
- Excellent performance over temperature
- Integrated temperature sensor
- Digital (SPI®) and analogue outputs
- Development facilities available
- Several rate range options
- Electronically-readable serial number



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Typical Data

	CRG20 all variants	CRG20-01	CRG20-02 CRG20-22
Output format	Digital (SPI)	Analogue voltage (ratiometric)	
Rate Range	$\pm 300^\circ/\text{s}$	$\pm 75^\circ/\text{s}$	$\pm 300^\circ/\text{s}$
Scale Factor			
Nominal	0.03125 $^\circ/\text{bit}$	26.67mV/ $^\circ/\text{s}$	6.67mV/ $^\circ/\text{s}$
Variation over temperature range	$< \pm 0.7\%$	0.9%	
Nonlinearity	$< \pm 0.06\%$	$< \pm 0.1\%$	
Bias			
Variation over temperature range	$< \pm 0.4^\circ/\text{s}$	$< \pm 1.0^\circ/\text{s}$	$< \pm 1.0^\circ/\text{s}$
Angular Random Walk	0.3 $^\circ/\text{rt hr}$		
Bias instability	5 $^\circ/\text{hr}$		
Bandwidth (typical)	$\leq 40\text{Hz}$ (CRG20-1), $\leq 75\text{Hz}$ (CRG20-02), $\leq 90\text{Hz}$ (CRG20-22)		
Quiescent Noise			
1 to 25Hz	0.2 $^\circ/\text{s rms}$	0.3 $^\circ/\text{s rms}$	
Environment			
Temperature (operating)	-40°C to $+105^\circ\text{C}$		
Linear acceleration	$< 100\text{g}$		
Shock	95g		
Vibration	9g rms (20Hz to 2kHz, random)		
Cross-axis sensitivity	$< +2\%$		
Mass	0.8 gram		
Electrical			
Supply voltage (-20°C to $+80^\circ\text{C}$)	$+4.75\text{V}$ to $+5.25\text{V}$		
Supply current	60mA		
Noise and ripple	$< 5\text{mV}$ peak to peak		
Start-up time	$< 0.5\text{s}$		
RoHS Compliant	Yes		



Development facilities available
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