

CRS05

Angular Rate Sensor



A robust and affordable mass-produced gyroscope for automotive and commercial customers.

Angular rate sensors are used wherever rate of turn sensing is required without a fixed point of reference. The sensor will output a DC voltage proportional to the rate of turn and input voltage.

High performance motion sensing even under severe shock and vibration.

Whatever your application, the unique silicon ring technology, coupled with closed loop electronics, gives advanced and stable performance over time and temperature, overcoming the mount sensitivity problems experienced with simple beam or tuning fork based sensors.

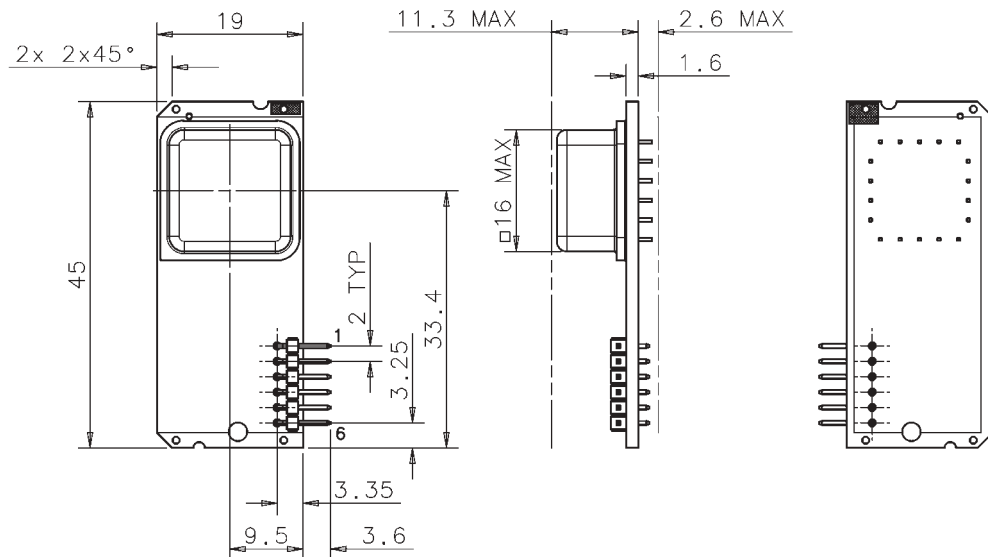
Key Features

- Excellent performance over temperature
- Repeatable drift characteristic
- High shock and vibration operation
- Automotive approved part
- Low mass and small size
- High temperature operation
- Built in Test (BIT)



CRS05

Angular Rate Sensor



All measurements in millimetres.

Specification

| Specification (Typical Data) | -01 | -02 | -75 |
|----------------------------------|--------------------------------|-----------|-----------|
| Rate Range | ±50°/s | ±200°/s | ±75°/s |
| Output | Analogue voltage (ratiometric) | | |
| Scale Factor | | | |
| Nominal | 40mV/°/s | 10mV/°/s | 27mV/°/s |
| Variation over temperature range | < ±3% | | |
| Non Linearity | < ±1.0% of full scale | | |
| Bias | | | |
| Setting tolerance | < ±1.5°/s | | |
| Variation over temperature range | < ±3°/s | | |
| Ratiometric error | < ±1°/s | | |
| Drift vs. Time | < ±0.5°/s | | |
| g Sensitivity | < ±0.025°/s/g on any axis | | |
| Bandwidth (-90° Phase) | 80Hz | 30Hz | 40Hz |
| Quiescent Noise | < 85mV rms | < 4mV rms | < 8mV rms |
| Environment | | | |
| Temperature | -40°C to +100°C | | |
| Linear acceleration | < 100g | | |
| Shock | 200g (1ms, 1/2 sine) | | |
| Vibration | 2g rms (20Hz to 2kHz, random) | | |
| Cross axis sensitivity | < 5% | | |
| Mass | <11 gram | | |
| Electrical | | | |
| Voltage (supply) | +4.75V to +5.25V | | |
| Current (supply) | < 35mA (running) | | |
| Noise and Ripple | < 10mV rms (up to 10kHz) | | |
| Ready Time | < 0.5s | | |

Pin Connections

| Pin | Function |
|-----|-------------|
| 1 | Rate Output |
| 2 | +5V |
| 3 | CBIT |
| 4 | Ground |
| 5 | BIT |
| 6 | N/C |

Cliffatford Road Southway
Plymouth Devon
PL6 6DE United Kingdom

T: +44 (0)1752 723330
F: +44 (0)1752 723331
E: sales@siliconsensing.com
W: siliconsensing.com

1-10 Fuso-Cho
Amagasaki
Hyogo 6600891 Japan

T: +81 6 6489 5868
F: +81 6 6489 5910
E: sales@siliconsensing.com
W: siliconsensing.com

Specification subject to
change without notice.

© Copyright 2004 Silicon Sensing
All rights reserved.
Printed in England 12532 09/04