

# CRS07

## Angular Rate Sensor

### Packaged



A robust and affordable mass-produced miniature gyroscope for applications in which space is critical.

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.

### Unpackaged



### Key features

- Ultra-small size
- Excellent performance over temperature
- Repeatable drift characteristic
- High shock and vibration operation
- Available packed or unpackaged
- High rate range option - unpackaged only



# CRS07

## Angular Rate Sensor

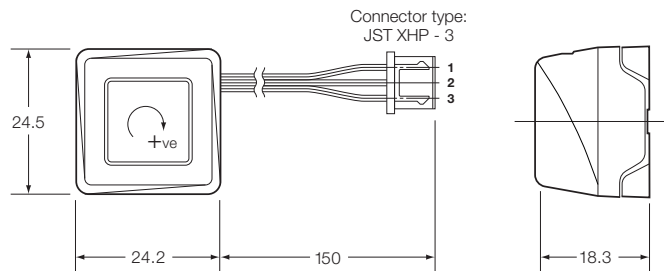


For full technical datasheets please go to our website where the documents can be downloaded

### CRS07-02S

#### Packaged

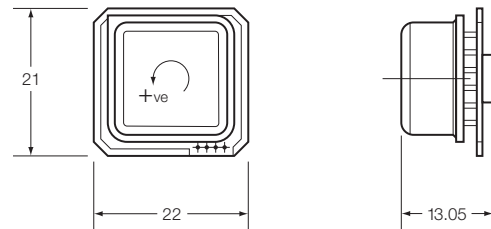
All dimensions in millimetres



### CRS07-11S - 13S

#### Unpackaged

All dimensions in millimetres



#### Typical Data

	CRS07-02S	CRS07-11S	CRS07-13S
<b>Angular Rate Range</b>	$\pm 100^\circ/\text{s}$	$\pm 573^\circ/\text{s}$	$\pm 100^\circ/\text{s}$
<b>Output</b>	Analogue voltage (ratiometric)		
<b>Scale Factor</b>			
Nominal	20mV/ $^\circ/\text{s}$	3.49mV/ $^\circ/\text{s}$	20mV/ $^\circ/\text{s}$
Variation over temperature range	< $\pm 5\%$		
Non-linearity	< $\pm 0.5\%$ of full scale		
<b>Bias</b>			
Setting tolerance	< $\pm 3^\circ/\text{s}$	< $\pm 30^\circ/\text{s}$	< $\pm 3^\circ/\text{s}$
Variation over temperature range	< $\pm 3^\circ/\text{s}$	< $\pm 30^\circ/\text{s}$	< $\pm 3^\circ/\text{s}$
Ratiometric error	< $\pm 1^\circ/\text{s}$		
Drift vs time	< $\pm 55^\circ/\text{s}$ in any 30s period (after start-up time)		
g sensitivity	< $\pm 0.1^\circ/\text{s/g}$ on any axis		
<b>Bandwidth</b>	10Hz (-3dB)	> 30Hz (-3dB)	> 10Hz (-3dB)
<b>Quiescent Noise</b>	< 1mV rms		
<b>Environment</b>			
Temperature	-40°C to +85°C	-20°C to +60°C	-40°C to +85°C
Linear acceleration	< 100g		
Shock	200g (1ms, 1/2 sine)		
Vibration	2g rms (20Hz to 2kHz, random)		
Cross-axis sensitivity	< 5%		
<b>Mass</b>	< 10 gram		
<b>Electrical</b>			
Supply voltage	+4.75V to +5.25V		
Supply current	< 35mA (steady state)		
Noise and ripple	< 15mV rms (DC to 100Hz)		
Start-up time	< 0.2s		
<b>RoHS Compliant</b>	Yes		

#### Pin Connections

<b>1</b>	+5V
<b>2</b>	0V
<b>3</b>	Rate Output
<b>4</b>	Not Used

Silicon Sensing Systems Limited  
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

Silicon Sensing Systems Japan Limited  
1-10 Fuso-Cho,  
Amagasaki,  
Hyogo 6600891, Japan

T +81 (0)6 6489 5868  
F +81 (0)6 6489 5919  
E sssj@spp.co.jp  
W siliconsensing.com

Specification subject to change without notice.

© Copyright 2013  
Silicon Sensing Systems Limited  
All rights reserved. Printed in England 07/13

CRS07-00-0100-131 Rev 2  
DCR No. 710005023