

# SiRRS01

## Angular Rate Sensor



The SiRRS01 angular rate sensor has evolved from the highly successful Vibrating Structure Gyroscope developed by BAE SYSTEMS, which has been in service since 1990.

This MEMS implementation of our VSG technology, offers continued advancement in miniaturisation and reliability.

Designed to provide high performance operation under harsh environmental conditions, the SiRRS01 is ideally suited for a wide range of applications.

The SiRRS01 is underpinned by Silicon Sensing's commitment to the technical backup and long term support necessary for major procurement programmes.

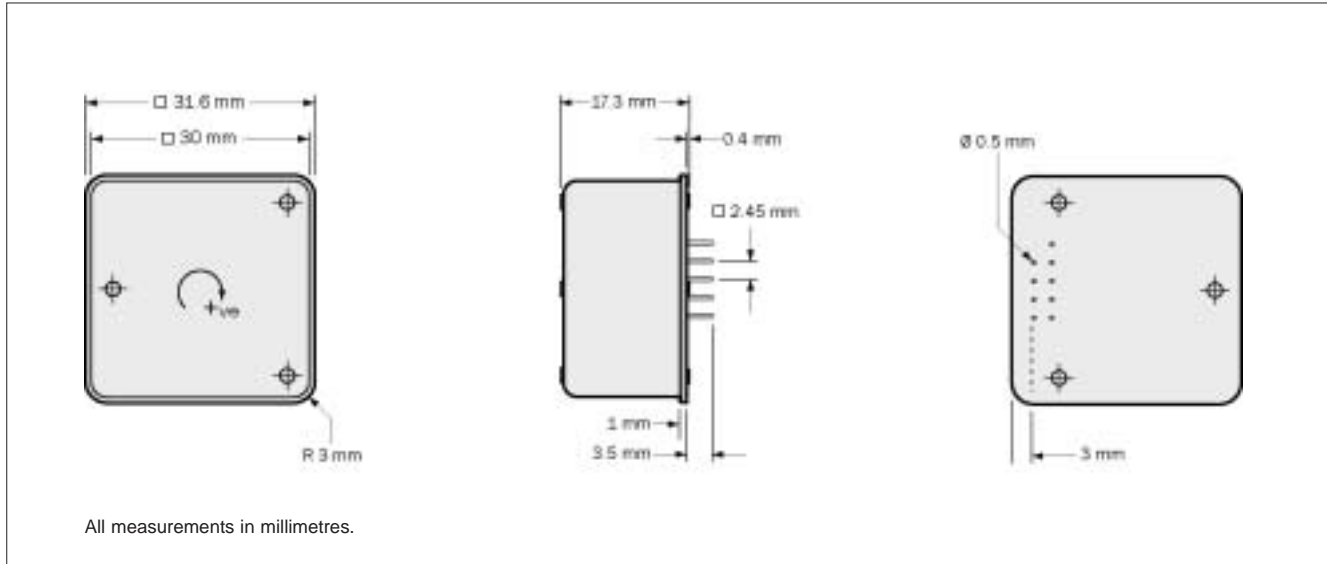
### Key Features

- Micro machined silicon (MEMS) technology
- Affordable, robust and rugged design
- Hermetically sealed
- Excellent shock and vibration performance
- Long life and exceptional reliability
- Comprehensive Built in Test
- Integrated temperature sensor
- Compact and lightweight
- Low power consumption
- Sensor modelling data available
- High temperature operation



# SiRRS01

## Angular Rate Sensor



### Specification

Specification (Typical data)	RRS01-01
<b>Rate Range</b>	110°/sec other ranges available see table
<b>Scale Factor</b>	
Nominal	18.2mV/°/s
Linearity	±1% of full scale
Variation with temperature	±3%
Repeatability	±0.1%1σ
<b>Bias</b>	
Setting (@20°C)	±0.3°/sec
Variation with temperature	±2°/sec
Instability	3°/hr
Repeatability	0.1°/sec 1σ
Angular Random Walk	0.2°/hr
Sensitivity	7°/hr/g
<b>Bandwidth</b>	50Hz (90° phase)
<b>Noise</b>	0.25°/s rms
<b>Environment</b>	
Operating temperature	-40°C to 75°C
Relative Humidity	100%
Vibration (operational)	10g rms (20Hz to 2kHz)
Shock (operational)	60g (30ms, 1/2 sine)
<b>Mass</b>	35gram
<b>Electrical</b>	
Supply Voltage +/- Vs	15V DC
Supply Current	50mA
<b>General</b>	
Built in Test	Command BIT, Alarm BIT
Start-up Time	300ms
Temperature Output	16.9mV/°C (0V at 25°C)
MTBF	300.000hrs

Part Number	Rate Range
RRS01-01	±110°/
RRS01-02	
RRS01-03	
RRS01-05	
RRS01-07	

Pin Connections	
	9 Case Ground
-Vs 4	4 8 Rate Reference
Command BIT	3 7 Rate Output
Alarm BIT	2 6 OV
+ Vs	1 5 Temperature

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