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# Product Specification

for

**CRS03-11-PS**

**Rev 4**

(Commercial Rate Sensor)



TITLE	DOC. NUMBER	REV.
<b>PRODUCT SPECIFICATION FOR SINGLE AXIS SILICON VIBRATING STRUCTURE GYRO (CRS03-11)</b>	<b>SST - 0014</b>	<b>4</b>

ジャイロCRS03-11仕様書(書類番号SST-0014)

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SSS UK

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**1. DESCRIPTION・概要**

The silicon vibrating structure gyroscope (Si-VSG) is a solid state single axis rate sensor. It is a stand alone unit and dc output is proportional to the rate of rotation and supply voltage. The new concept ring-shaped micro-machined resonator shows distinguished resistance against external shocks and vibrations over a wide range of temperature.

本シリコン振動ジャイロは1軸ソリッドステート角速度センサであり角速度と供給電圧に比例した直流電圧を出力する。マイクロマシニングのリング型振動子により広い温度範囲で外部衝撃や振動に対し優れた耐性を発揮するものである。

**2. MODEL NUMBER・製品型名**

CRS03 - 11

CRS03 Basic Model Number 基本製品番号  
-xx Design Number タイプ識別番号

**3. MECHANICAL DESCRIPTION・外形**

The nominal dimensions are shown in Fig.1. 図1参照

**4. PERFORMANCE**

	Parameter	Min	Typ	Max	Unit単位	Notes 備考
Absolute Maximum Ratings 絶対最大定格	Supply voltage 電源	0.00	5.00	6.00	V	
	Storage temperature 保存温度	-40		85	deg C	
	Operatable Acceleration 動作可能加速度			981.0	m/sec <sup>2</sup>	
Operating conditions 動作環境	Supply voltage 電源	4.75	5.00	5.25	V	
	Temperature 温度	-20	23	60	deg C	Not condensing 結露無し

The following specifications apply for Vdd=5.00V and Temp=23deg C unless otherwise specified.  
特に指定なき場合下記はVdd=5.00V、温度23℃を条件とする

Parameter 項目	Limit 限度	Unit 単位	Notes 備考
Rate range 測定範囲	+/- 573	deg/sec	Reference 参考値
Rate range 測定範囲	+/- 10	rad/sec	
Scale Factor 感度	3.490	mV/(deg/sec) typ.	Reference 参考値
Scale Factor 感度	4	% of Vdd/(rad/sec) typ.	
Initial Scale Factor accuracy 感度初期設定確度	+/- 5	%	
Scale Factor variation with temp. 感度温度変動	+/- 5	%	Operating temp. range
Bias ゼロ点	50	% typ. of Vdd	
Bias initial error ゼロ点初期設定誤差	+/- 0.1	V	
Bias variation with temp. ゼロ点温度変動	+/- 0.1	V	Operating temp. range
Quiescent noise 静止ノイズ	< 1	mVrms typ. (3~30Hz)	
Bandwidth 帯域	55	Hz typ.	Gain (-3dB)
Bandwidth 帯域	> 30	Hz	Gain (-3dB)
Power up time 起動時間	< 0.5	Sec	From Vdd = 4.50V
Current dissipation 消費電流	< 50	mA	170mA when initializing(起動時)

**5. TYPICAL RATE OUTPUT・出力電圧**

$$V_o = \frac{1}{2} \times V_{dd} + \left( R_a \times SF \times \frac{V_{dd}}{5} \right) \text{ (Unit: Volts typ.)}$$

where V<sub>o</sub>: Rateout (V), V<sub>dd</sub>: Supply voltage (V), R<sub>a</sub>: Applied rate (deg/s), SF: Scale Factor (V/(deg/s))  
ここで V<sub>o</sub>: ジャイロ出力(V), V<sub>dd</sub>: 電源電圧(V), R<sub>a</sub>: 角速度, SF: 感度(V/(deg/sec))

**6. SOLDERING**

The product may not be subjected to beyond the maximum storage temperature (e.g. solder reflow chamber) at any time. Hand soldering is recommended. 本製品は何時も最高保存温度以上の環境(例えば半田リフロー内)に置かれてはならない。従い手半田が推奨される。

