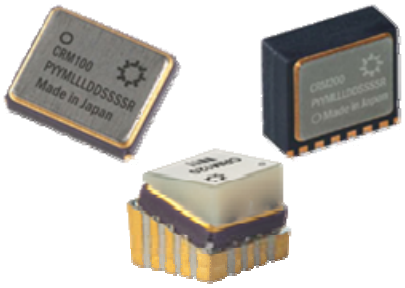
CRM100 | CRM200 | CRM120

PinPoint® - Gyroscopes



- **Measurement ranges from ±75°/s to ±900°/s**
- **Output signal: analogue and digital outputs (SPI®)**
- **Supply voltage +2.7 ... 3.6 VDC**
- **Bandwidth >75 Hz (-3 dB)**

PinPoint® sensors are tiny, yet powerful new MEMS gyroscopes, suitable for applications where navigation and pointing accuracy is essential, but size and power is at a premium. Suitable for automotive, industrial, commercial and consumer applications.

Features

- Small (5.7 x 4.8 x 1.2 - CRM100)
- Proven and robust silicon MEMS vibrating ring gyro
- Class-leading bias and noise over temperature for precision navigation and pointing
- In-plane, orthogonal and 20º (inclined) sensing options (part numbers CRM100, CRM200 and CRM120)
- User selectable dynamic ranges; 75º/s, 150º/s, 300º/s and 900º/s (maximum 1000º/s)
- User adjustable bandwidth (to 160 Hz)
- 3 V supply voltage
- Low power consumption (4 mA)
- High shock and vibration rejection
- Hermetically sealed ceramic LCC surface mount package for temperature and humidity resistance
- Integral temperature sensor
- Low integration cost
- Development facilities available
- RoHS compliant
- AEC Q100/200 tested

Applications

- Automotive in-car navigation
- GPS vehicle and personal navigation aiding
- Vehicle yaw, pitch and roll rate sensing
- Motion control
- Pointing devices
- Precision agriculture
- Antenna stabilisation
- Industrial and robotics

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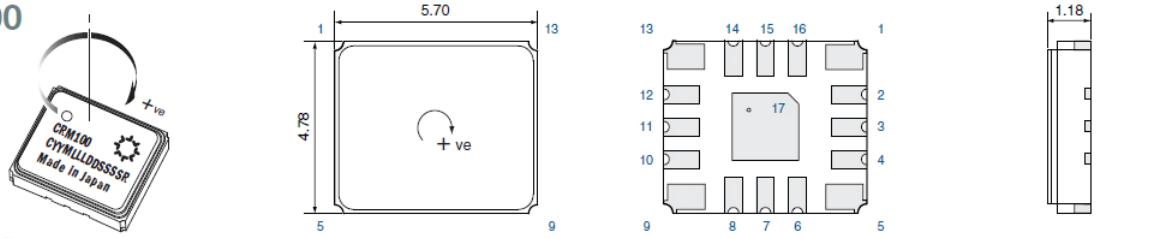
Specifications and Typical Values for Models CRM100, CRM120 and CRM200

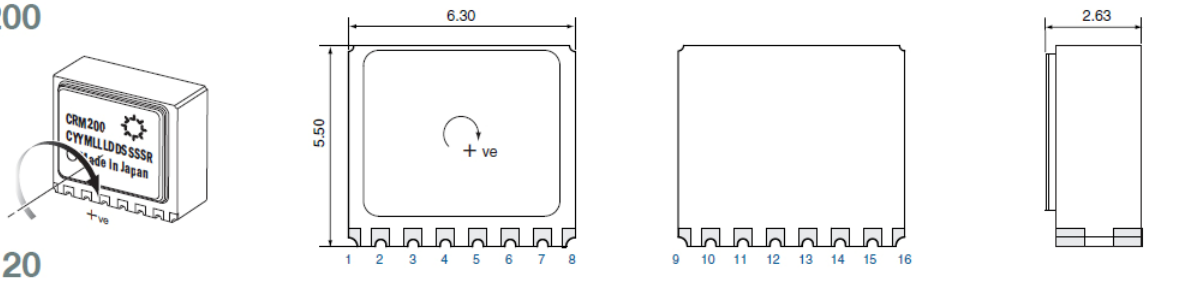
	Specification Limit	Typical
Supply voltage Vdd	2.7 … 3.6 V	--
Dynamic range	75°/s, 150°/s, 300°/s, 900°/s (set by customer using PCBA connection)	--
Scale factor SF (analogue output - ratiometric)	13.3 mV/°/s, 6.7 mV/°/s, 3.3 mV/°/s, 1.0 mV/°/s	--
SF over temperature	±3 %	±1 %
Null	½ x Vdd	--
Bias over temperature	±3°/s	±1.5°/s
Bias instability	--	24°/h (75°/s range)
Bandwidth (-3 dB)	>75 Hz (set by customer using an external capacitor)	Up to 160 Hz
Noise spectral density	0.025°/s/rt Hz	0.008°/s/rt Hz
ARW – Angular Random Walk	--	0.28°/rt hr
Temperature	-40 … +85 °C (operating full performance) -40 … +105 °C (operating - reduced performance) -55 … +125 °C (storage)	--
Shock	3500 g, 500 µs (unpowered) 500 g, 1 ms, 1/2 sine (powered) 100 g, 6 ms (powered)	--
Vibration	3.5 g rms, 10 … 5 kHz (powered)	--
Start-up time	0.5 s	<0.3 s
Mass	--	0.1 gram
Current consumption	5 mA	4 mA

Dimensions

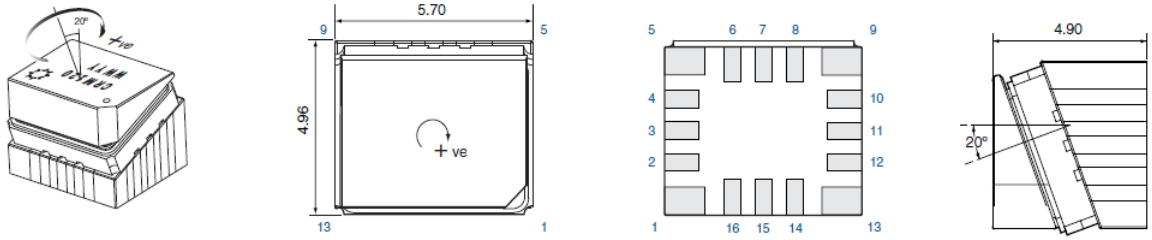
CRM100



CRM200



CRM120



All dimensions in mm, approx. values.

These drawings are for information only and not intended for construction purpose.
Please ask for detailed drawings.

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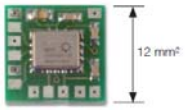
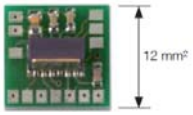
PinPoint®-Models

CRM100	CRM200	CRM120
		
CRM100 is an 'in-plane' version of the PinPoint® single-axis gyro, sensing angular rate about an axis perpendicular to the customer's host PCBA. CRM100 is a ceramic 17-pin LCC surface-mount device with a welded Kovar metal lid to create a fully hermetically sealed package..	CRM200 is an 'orthogonal' version of the PinPoint® single-axis gyro and senses angular rate about an axis parallel to the customer's host PCBA. CRM200 is a ceramic 16-pin LCC surface-mount device with a welded Kovar metal lid to create a fully hermetically sealed package.	CRM120 is a new 'inclined-plane' version of the PinPoint® single-axis gyro and senses angular rate about an axis at 70° to the customer's host PCBA. Suitable for in-dash car navigation applications. CRM120 combines a standard CRM100 gyro attached to a 20º inclined LCP Moulded Interconnect Device which has the same footprint and pad layout as CRM100, thus allowing the customer's host PCBA to accept both 0º and 20º gyros.

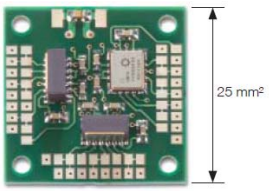
Evaluation Boards



1-axial Evaluation Board with CRM100
P/N 400046-0100



1-axial Evaluation Board with CRM200
P/N 400046-0200



3-axial Evaluation Board with a
CRM100 and two CRM200
P/N 400046-0300

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