

# CMR3100

3-axis Low Power Gyro for Consumer Electronics



LOW POWER | SMALL SIZE | HIGH PERFORMANCE

SMALL SIZE MAKES A BIG DIFFERENCE. FOR A SAFER, MORE ENJOYABLE WORLD.

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## 3-axis Low Power Gyro for Consumer Electronics

### Key features (CMR3100-D01)

- Low 2.5mA active current consumption
- Very small 3x3x0.9mm<sup>3</sup> size
- 16 bit angular rate output
- 2.5 V - 3.6 V supply voltage range
- Compatible with low 1.6 V - 3.6 V digital I/O voltage
- Flexible user selectable configurations:
  - Two active measurement modes
  - Stand By and Power Down modes
  - Measurement range  $\pm 250 \dots \pm 2000$  °/s
  - Signal bandwidth 8Hz ... 160Hz with low pass and high pass filtering options
- Integrated FIFO
- Programmable interrupt functionality
- Advanced self diagnostics
- SPI and I<sup>2</sup>C digital interface
- Wide -40°C ..+85°C operating temperature range
- High shock durability
- RoHS compliant / lead free soldering
- Drop in replacement for CMR3000-D01

### Applications

Thanks to the very low power consumption CMR3100 is particularly suitable for battery operated devices, such as

- Mobile phones
- Tablets
- Gaming input devices
- Computer peripherals and remote controllers



### CMR3100-D01 Typical Performance Characteristics

| Parameter                     | Condition   | Typical value | Units     |
|-------------------------------|---|---------------|-----------|
| Vdd                           |   | 2.5-3.6       | V         |
| Digital I/O Vdd               | Vdd $\geq$ Digital I/O Vdd                        | 1.6-3.6       | V         |
| Operating temperature         |   | -40 ... +85   | °C        |
| Current consumption           | Measurement mode                                  | 5             | mA        |
|                               | Low Power measurement mode                        | 2.5           | mA        |
|                               | Power down  | 10            | nA        |
| Measurement range             | FS=2000 °/s                                       | $\pm 2000$    | °/s       |
|                               | FS=1000 °/s                                       | $\pm 1000$    |           |
|                               | FS=500 °/s  | $\pm 500$     |           |
|                               | FS=250 °/s  | $\pm 250$     |           |
| Offset calibration error      |   | $\pm 100$     | °/s       |
| Offset temperature error      | -40 ... +85 °C                                    | 0.5           | °/s/°C    |
| Sensitivity                   | FS=2000 °/s                                       | 10.7          | Count/°/s |
|                               | FS=1000 °/s                                       | 21.3          |           |
|                               | FS=500 °/s  | 42.7          |           |
|                               | FS=250 °/s  | 85.3          |           |
| Sensitivity calibration error |   | $\pm 5$       | %         |
| Sensitivity temperature error | -40 ... +85 °C                                    | 0.02          | %/°C      |
| Non-linearity                 | -1000 <math>\Omega</math> <math>< 1000</math> °/s | 1             | % FS      |
| Output data rate, ODR         |   | 375           | Hz        |
|                               |   | 188           |           |
|                               |   | 94            |           |
| Bandwidth                     | User selectable                                   | 8..160        | Hz        |
| I <sup>2</sup> C clock rate   |   | max 400       | kHz       |
| SPI clock rate                |   | max 500       | kHz       |

For more detailed information, please check CMR3100 datasheet available at [www.vtitechnologies.com](http://www.vtitechnologies.com)