

SENSORS

PIEZOELECTRIC VIBRATING GYROSCOPE

ENV-05D SERIES



Murata Electronics' new rotational angular velocity sensor combines Murata's equilateral triangle prism vibrating unit with a revolutionary mounting technology for the piezoelectric ceramic element that produces 100 times the precision of other vibration gyroscopes.

APPLICATIONS

- Navigation systems
- Platform positioning and stabilizing
- Car electronics: accident history recorder, dead reckoning, theft

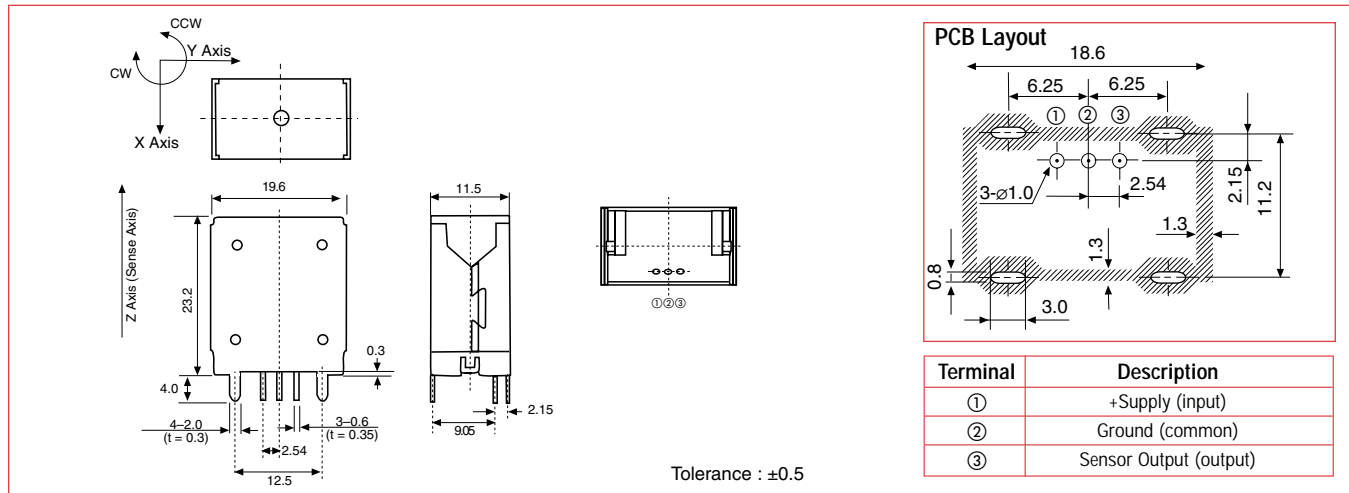
- retrieval, unmanned vehicles
- Satellite antenna positioning
- Office automation
- Factory automation
- Mayday system
- Construction equipment

Note: This product is not approved for military and avionics.

BENEFITS

- Low price
- Low drift
- Low noise
- Compact
- Fast response
- Precision detection

DIMENSIONS: mm



SPECIFICATIONS

| Characteristics | Symbol | Condition | Min. | Std. | Max. | Unit |
|------------------------------|--------|---------------------------------------|--------------------------------|-------|-------|---------------|
| Supply voltage | Vcc | | +4.5 | +5.0 | +5.5 | VDC |
| Current consumption | Icc | at Vcc = 5.0VDC | — | — | 15 | mA |
| Maximum angular velocity | Omax. | | -60 | — | +60 | deg/s |
| Output | Vo | Angular velocity = 0 at -30 ~ 80°C | 2.100 | 2.500 | 2.900 | VDC |
| Scale factor | Sv | at -10 ~ 60°C | 23.0 | 25.0 | 27.0 | mV/deg/s |
| | | at -30 ~ 80°C | 21.7 | 25.0 | 28.3 | |
| Asymmetry CW & CCW | | | — | — | 3 | deg/s |
| Temperature coefficient | | -10 ~ 60°C | — | — | ±5 | %FS |
| Scale factor | | -30 ~ 80°C | — | — | ±10 | |
| Drift | | -30 ~ 80°C | — | — | 9 | deg/s |
| Start up | | Measure Vo after 5 seconds | — | — | ±1 | deg/s/10 min. |
| Noise level | | 12kHz noise | — | — | 10 | mVp-p |
| Linearity | | in the maximum angular velocity range | — | — | 0.5 | %FS |
| Response | | Phase delay: 90deg | — | 10 | — | Hz |
| Dependence on Supply Voltage | | | 0.8 | — | 1.2 | |
| Output | | | 0.8 | — | 1.2 | |
| Scale factor | | | | | | |
| Operating Temperature Range | Topr | | -30 | — | 80 | °C |
| Storage Temperature Range | Tstg | | -40 | — | 85 | °C |
| Weight | | | — | — | 20 | g |
| Dimension | | | 11.5(D) x 19.6(W) x 23.2(H) mm | | | |

Unless otherwise specified, ambient temperature TA = 25 ± 5°C, Vcc = 5.0VDC. Use a sensor output load resistance of 100k ohm or more.

OLD PART NUMBERING SYSTEM

| | | | | | |
|------------------------|-------------|--------|---------------|-------------------|-------|
| ENV-05 Model Name | F | XX | 643 | MURATA | JAPAN |
| FB: with wires pigtail | SUFFIX | LOT | MANUFACTURING | COUNTRY | |
| F: PCB mount | 52=Standard | NUMBER | NUMBER | COMPANY OF ORIGIN | |

NEW PART NUMBERING SYSTEM

| | | | |
|------------|--------|-------------------------------|-----------|
| EN | C-03JA | -02 | |
| PRODUCT ID | TYPE | INDIVIDUAL SPECIFICATION CODE | PACKAGING |

* Global Part Number shows only an example which might be different from actual part number.
 * Any other definitions than "Product ID" might have different digit number from actual Global Part Number.

For more detailed information regarding this product line in North America, contact us. To receive additional information on Murata Products call 1-800-831-9172.