

# L1 Silicon Optical 3-Axis Gyro

## Description

The L1 Silicon Optical 3-Axis Gyro is a miniaturized silicon photonic sensing product, primarily designed for accurate 3-axis angular velocity detection with a measurement range of  $\pm 800^\circ/\text{s}$ . It features a temperature zero bias stability of  $\leq 1^\circ/\text{h}$  across the full temperature range of  $-45^\circ\text{C}\sim+65^\circ\text{C}$ , with all scale factor-related indicators at  $\leq 50\text{ppm}$  and an angular random walk factor of  $\leq 0.1(^\circ)/\text{h}^{1/2}$ , and a bandwidth of  $\geq 400\text{Hz}$ . The product adopts a customizable RS-422 data output format with an adjustable 400Hz data update rate, powered by +5V with a steady-state power consumption of  $< 6\text{W}$ . It has a compact size of  $63\times 63\times 25\text{mm}$  and a weight of  $185\pm 15\text{g}$ , equipped with a standardized electrical interface. Boasting the advantages of small size, light weight and low cost, it can stably output high-precision angular velocity data.

## Feature

- Small Size
- Light Weight
- Low Cost
- Temperature Zero Bias Stability  $\leq 1^\circ/\text{h}$

## Application

- Unmanned Aerial Vehicle (UAV)
- Guided Missile, Pod
- Mobile Satellite Communication



## Specifications

<b>L1 Silicon Optical 3 Axis Gyro</b>			
<b>1.Performance parameter</b>			<b>unit</b>
<b>1.1 Gyroscope</b>			
1.1.1	Measurement Range	±800	°/s
1.1.2	Temperature Stability (10s, 1σ, -45°C-+65°C)	≤1	°/h
1.1.3	Zero Bias Repeatability (1σ)	≤1	°/h
1.1.4	Scale Factor Nonlinearity (1σ)	≤50	ppm
1.1.5	Scale Factor Asymmetry (1σ)	≤50	ppm
1.1.6	Scale Factor Repeatability (1σ)	≤50	ppm
1.1.7	Angular Random Walk Factor	≤0.1	(°) /h <sup>1/2</sup>
1.1.8	Bandwidth	≥400	Hz
1.1.9	Threshold	≤1	°/h
<b>1.2 Accelerometer</b>			
1.2.1	Working Temperature	-45 ~ +65	°C
1.2.2	Storage Temperature	-55 ~ +85	°C
<b>2.Electrical Parameter</b>			
2.1	Maximum Power Consumption Over Full Temperature Range	< 7	w
2.2	Transient Power Consumption	< 7	w
2.3	Steady State Power Consumption	< 6	w
2.4	Data Output Format	RS-422 (customizable)	/
2.5	Data Update Rate	400 (customizable:200,100,50)	Hz
2.6	Baud Rate	614.4 (customizable)	Kbps
2.7	Power Input	+5V	V
2.8	Power Ripple (Vpp)	≤50	mV
<b>3. Physical Parameters</b>			
3.1	Dimensions	63×63×25	mm
3.2	Weight	185±15	g
3.3	Electrical Interface	J63A-242-015-261-TH	/

### Mechanical Dimension

