## ER-MG-056 High Performance Single-Axis MEMS Gyro (Substitute of Gyro3300) Introduction

The ER-MG-056 is a single-axis MEMS angular rate sensor (gyroscope) capable of measuring angular velocity up to a maximum of  $\pm 400^{\circ}$ /s with digital output compliant to SPI slave mode 3 protocol. Angular rate data is presented as a 24-bit word.

The ER-MG-056 is intended for industrial, instrumentation, stabilization, and other high performance applications. An advanced, differential sensor design rejects the influence of linear acceleration, enabling the ER-MG-056 to operate in exceedingly harsh environments where shock and vibration are present.

The ER-MG-056 is available in a hermetically sealed ceramic LCC surface mount package, and is capable of operating at 5V supply and a wide temperature range ( $-50^{\circ}$ C to +85°C).

## Features

Proven and robust silicon MEMS gyro Up to ±400°/s measurement range 3°/hr bias instability 0.25°/ √ hr Angular Random Walk Digital output (SPI slave) 5V operation (4.75~5.25V supply) Low power consumption (35 mA) High shock and vibration resistance Hermetically sealed ceramic LCC surface mount package (11 x 11 x 2mm) Integrated temperature sensor RoHS compliant

## Application

Precision instrumentation, stabilization

Guidance, navigation, control

Avionics, unmanned vehicles

Precision autonomous machines, robotics

## Specification

Input Range	400	dps
Bandwidth	200	Hz
Data Output Rate	2К	Hz
Latency	2	ms
Scale factor	20000	LSB/°/s
Scale factor non-linearity	200	ppm
Scale factor temp drift (16)	500	ppm
Bias temp drift (16)	50	dph
Bias temp drift (16)		
(After Temp compensation)	20	dph
Bias instability	3	dph
Bias stability (16 10s)	5	dph
Bias stability (16 1s)	15	dph
Run to Run Repeatability	5	dph
RMS Noise (1-200Hz)	0.1	dps
Random walk (ARW)	0.25	°/√h
Start up time	0.8	S
G-sensitivity	5	dph/g
VRC	0.5	°/h/g²rms
Shock	12g	rms
Vibration	1000g 5ms 1/2 sine	/
Operation Temperature	-4085	0