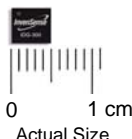


# IDG-600

## Integrated Dual-Axis Gyroscope



### APPLICATIONS

---

- High Performance Motion Sensing Game Controllers
- Pointing Devices, Multimedia Remotes, & Computer Mice

### FEATURES

---

- Integrated X- and Y-axis gyro on a single chip
- Factory set full-scale range: 500 to 2000°/sec
- Low bias drift over temperature
- Integrated amplifiers & low-pass filters
- Highest cross-axis isolation by design
- Superior vibration rejection over a wide frequency range
- 10,000 g shock tolerance
- 3V single supply operation
- RoHS Compliant (Completely Lead Free)

### BENEFITS

---

- World's smallest dual-axis gyro sensor
- Highest dynamic range to measure fast action motion
- Integrated electronics for complete signal conditioning
- Lowest cross-axis sensitivity for best signal accuracy
- Hermeticity for high temperature & humidity resistance
- Most robust design for high impact consumer electronics
- Compatible with standard SMT assembly processes

### GENERAL DESCRIPTION

The IDG-600 gyroscope is the world's first integrated dual-axis angular rate sensor designed for high performance game controllers and remote controls requiring large dynamic motion sensing, high impact shock resistance, small size and low cost. It uses InvenSense's proprietary and patented MEMS technology with vertically driven, vibrating masses to make a functionally complete, low-cost, dual-axis angular rate sensor. All required electronics are integrated onto a single chip with the sensor.

The IDG-600 gyro uses two sensor elements with novel vibrating dual-mass bulk silicon configurations that sense the rate of rotation about the X- and Y-axis (in-plane sensing). This results in a unique, integrated dual-axis gyro with guaranteed-by-design vibration rejection and high cross-axis isolation. The IDG-600 gyro includes integrated electronics necessary for application-ready functionality. Factory trimmed scale factors eliminate the need for external active components and end-user calibration. This product is lead-free and Green Compliant.



# IDG-600 Series

## Integrated Dual-Axis Gyroscopes

### SPECIFICATIONS

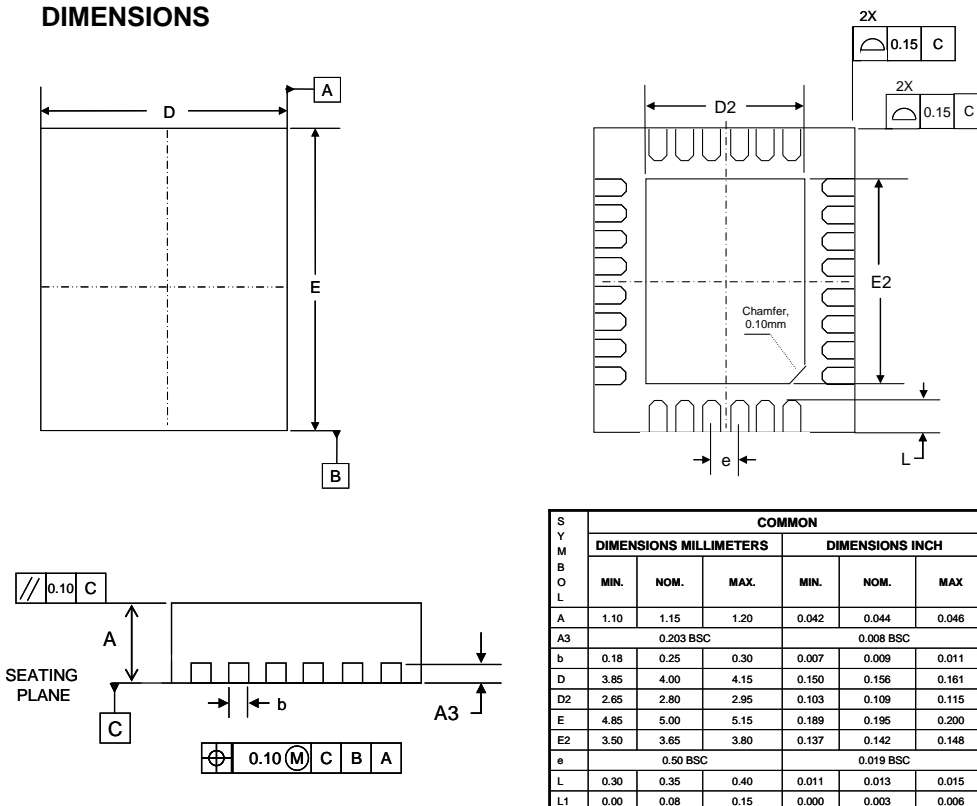
All parameters specified are @ VDD+3V and T=25°C unless otherwise noted. All specifications apply to both axes.

Parameters	Typical Specifications	Symbols
Full Scale Range	±500 to 2000	°/sec
Zero Rate Output	1.5	V
Nonlinearity	<0.1	% FS
Cross Axis Sensitivity	<1	%
Frequency Response (factory set)	140	Hz
Power Supply	3.0 ±0.3	V
Weight	0.14	g
Parameters	Absolute Maximum Ratings	Symbols
Power Supply Voltage	-0.3 to +6.0V	V
Shock (any axis, unpowered)	>10,000	g for 0.3ms
Specified Temp Range	-5 to +75	°C
Operating Temp Range	-20 to +85	°C
Storage Temp Range	-40 to +125	°C

### ORDERING INFORMATION

For more information on the IDG-600 gyro or evaluation boards, please contact your InvenSense representative.

### DIMENSIONS



SYMBOL	COMMON					
	DIMENSIONS MILLIMETERS			DIMENSIONS INCH		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	1.10	1.15	1.20	0.042	0.044	0.046
A3	0.203 BSC			0.008 BSC		
b	0.18	0.25	0.30	0.007	0.009	0.011
D	3.85	4.00	4.15	0.150	0.156	0.161
D2	2.65	2.80	2.95	0.103	0.109	0.115
E	4.85	5.00	5.15	0.189	0.195	0.200
E2	3.50	3.65	3.80	0.137	0.142	0.148
e	0.50 BSC			0.019 BSC		
L	0.30	0.35	0.40	0.011	0.013	0.015
L1	0.00	0.08	0.15	0.000	0.003	0.006

**InvenSense, Inc.**  
 1197 Borregas Avenue  
 Sunnyvale, California 94089

t: +1 408.988.7339  
 f: +1 408.988.8104  
 e: [marketing@invensense.com](mailto:marketing@invensense.com)  
 w: [www.invensense.com](http://www.invensense.com)

© Copyright 2008 InvenSense, Inc.  
 All rights reserved 06/05

The information in this document is preliminary and subject to change without notice. InvenSense assumes no liability for infringement of any patent, intellectual property or use of any information