IDG-2030U

Miniature Dual-Axis OIS Optimized MEMS Gyroscope

GENERAL DESCRIPTION

The IDG-2030U (roll & pitch) dual-axis MEMS angular rate sensor is designed for optical image stabilization (OIS) applications in camera modules found in smart phones and other mobile devices.

The OIS gyro includes a narrow programmable full-scale range of ±46.5, ±93, ±187, and ±374 degrees/sec, fast sampling of the gyro output at up to 32KHz, low phase delay including a fast 20MHz read-out through SPI interface, very low rate noise at 5mdps/√Hz and extremely low power consumption at 2.7 mA. Factory-calibrated initial sensitivity reduces production-line calibration requirements.

The space saving 2.3 x 2.3 x 0.65mm LGA surface mount package is reflow solder compatible and RoHS compliant. The IDG-2030U is pin and function compatible to IDG-2030.

ORDERING INFORMATION

PART	AXES	TEMP RANGE	PACKAGE
IDG-2030U+	X,Y	-40°C to +85°C	12-Pin LGA

†Denotes RoHS and Green-Compliant Package

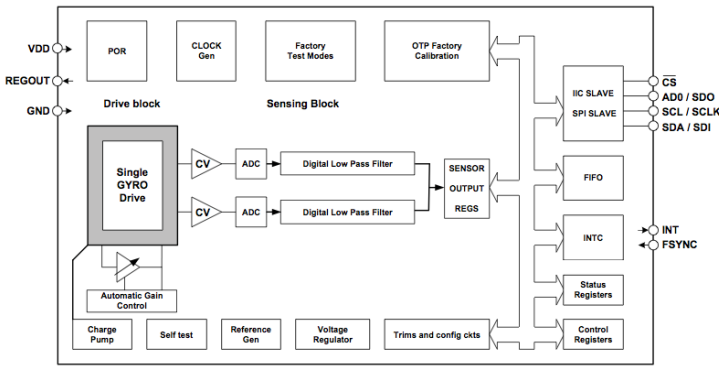
APPLICATIONS

- Smart Phone Camera OIS Modules
- OIS for Digital Still Camera and Video Cameras
- Electronic Image Stabilization (Video Jitter)
- Virtual Reality Mobile Devices

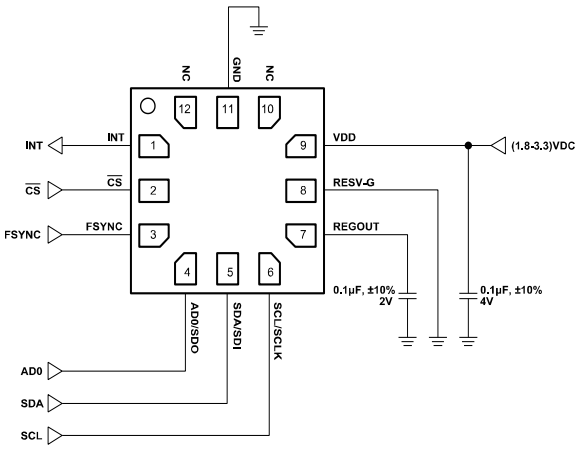
FEATURES

- Resistant to 36kHz to 40kHz ultrasonic wash frequencies
- Small 2.3 x 2.3mm^2 & Low Profile 0.65mm LGA Package
- Low 5mdps/√Hz Noise
- Minimum Phase Delay of 0.9° at 20Hz
- Narrow FSR Range from ±46.5 dps to ±374 dps
- High Resolution at up to 700 LSB/(º/s)
- Embedded 512-byte FIFO Enables Burst Read
- SPI and I2C High-Speed Interfaces
- FSYNC Pin Supports Image Synchronization
- 400kHz Fast Mode I2C Serial Interface
- 1 MHz R/W SPI Interface, 20MHz Read to Gyro
- Wide 16-Bit Rate Value Data Output
- User-Programmable Integrated Low-Pass Filters
- Wide 1.71V to 3.6V Supply Voltage Range
- Low 5mW Power Consumption
- 6µA Sleep Mode
- High 10,000g Shock Survivability

BLOCK DIAGRAM



TYPICAL OPERATING CIRCUIT (TOP VIEW)



Preliminary Information

This document contains information on a pre-production product. InvenSense Inc. reserves the right to changespecifications and information herein without notice.

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