



Single-Axis MEMS Gyro Evaluation Board

ISZ-650EVB

GENERAL DESCRIPTION

The ISZ-650EVB provides a simple means of evaluating the ISZ-650 Z-axis angular rate gyroscope. The gyro contains all required conditioning electronics in a single chip measuring 4 x 5 x 1.2mm. The ISZ-650 incorporates a Z-axis low-pass filter and an EEPROM for on-chip factory calibration of the sensor. Factory trimmed gyro scale factor eliminates the need for external active components and end-user calibration. A built-in Proportional-To-Absolute-Temperature (PTAT) sensor provides temperature compensation information. The product is lead-free and Green Compliant.

APPLICATIONS

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

PIN DEFINITIONS

Pin	Signal	Purpose
1	NC	No Connection
2	HPS	Auto Zero Input
3	OUTZ	Output of the Z-Axis Gyro
4	PTAT	Temperature Sensor Output
5	VREF	Voltage Reference Output
6	GND	Ground
7	GND	Ground
8	+VOUT	VDD for Gyro
9	GND	Ground
10	+VIN	Input Supply Pin for LDO

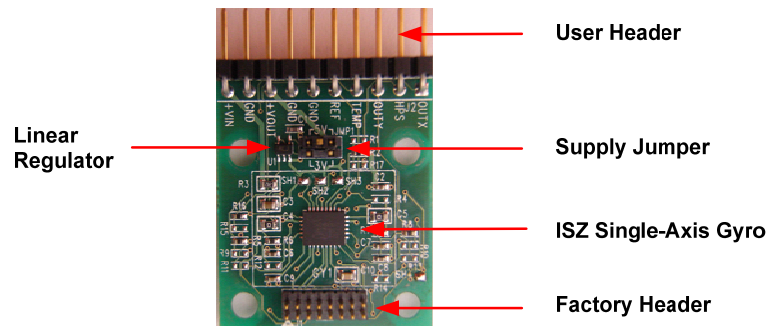
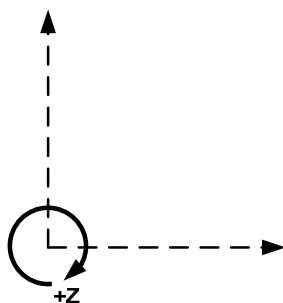
FEATURES

- Fully-tested board for easy evaluation of single-axis (Z) gyro
- Fully integrated Z-axis gyros on a single chip
- 2000°/s full scale range
- 0.5mV/°/s sensitivity
- Integrated amplifiers and low-pass filter
- Auto Zero function for bias calibration
- On-chip temperature sensor
- High vibration rejection over a wide frequency range
- High cross-axis isolation by proprietary MEMS design
- 3V single supply operation
- Hermetically sealed for temp and humidity resistance
- 10,000 g shock tolerant
- RoHS and Green Compliant

ELECTRICAL SPECIFICATIONS

Parameter	Specifications	Unit
Full-Scale Range	±2000	°/sec
Sensitivity	0.5	mV/°/sec
Cross Axis Sensitivity	± 1	%
Non-linearity	< 1	% of FSR
Gyro Supply Voltage	3.0 ±0.3	V
Gyro Supply Current	4.5	mA
Operating Temperature	-20 to +85	°C
On time	50	ms
Shock Tolerance	10,000	g

COMPONENT PLACEMENT AND BOARD ORIENTATION



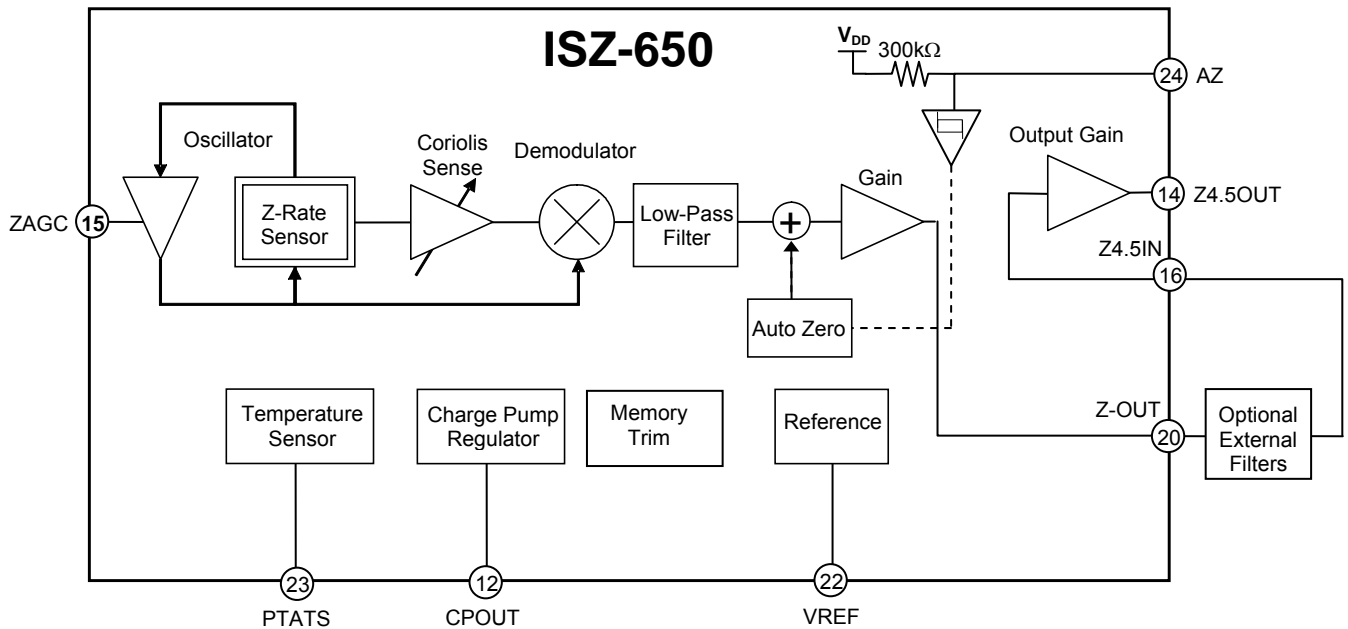
Purpose

This document provides the specification for the ISZ-650 Single-Axis Gyroscope Evaluation Board configured per the table below.

Evaluation Board Configuration

Sensitivity	Internal LPF	External LPF
0.5 mV/deg/sec	140Hz	2kHz

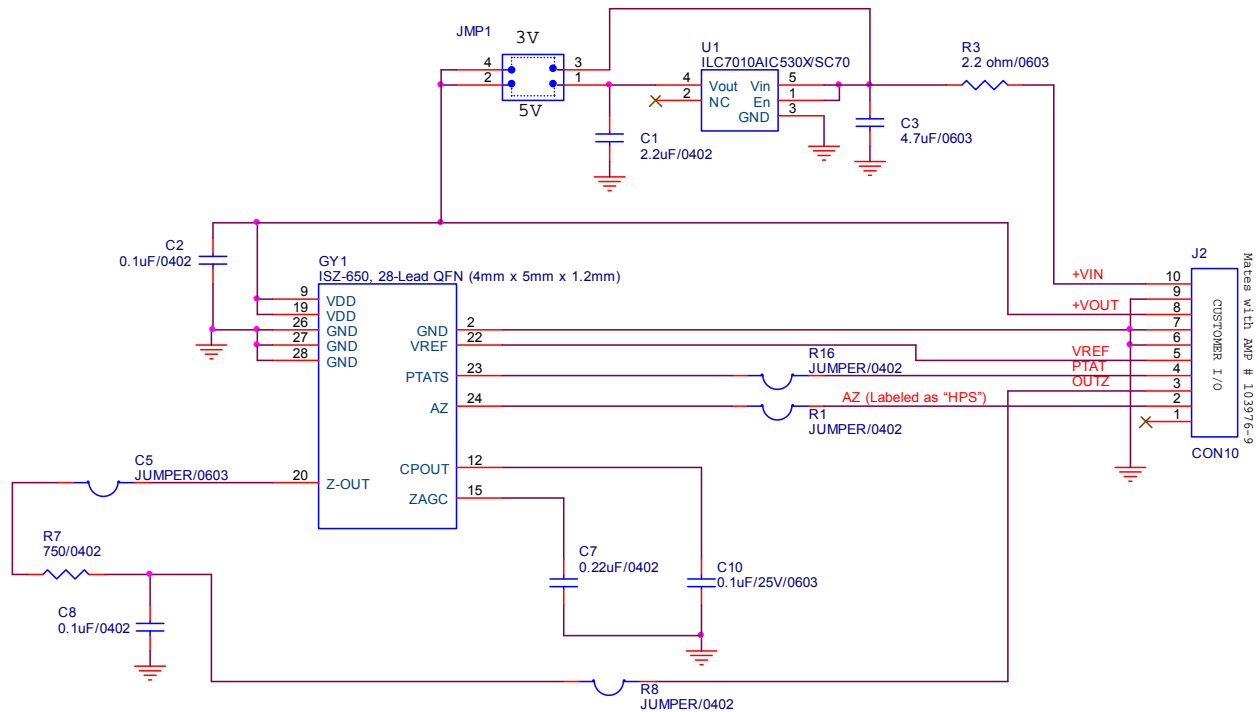
IC Functional Block Diagram



ISZ-650 Evaluation Board Configuration

Schematic

The schematic below specifies the components on the ISZ-650 Evaluation Board.



Bill of Materials

Reference	Part
C1	2.2µF/6.3V/Y5R/0402
C2, C8	0.1µF/10V/X5R/0402
C3	4.7µF/6.3V/X5R/0603
C5	JUMPER/0603
C7	0.22µF/6.3V/X5R/0402
C10	0.1µF/25V/X5R/0603
GY1	ISZ-650, 28-Lead QFN (4mm x 5mm x 1.2mm)
JMP1	CON4A/0.050" X 0.1"
J2	Header 1x10, 0.1", 90D (Mates with AMP # 103976-9)
R1, R8,R16	JUMPER/0402
R3	2.2Ω/5%/0603
R7	750Ω/1%/0402
U1	Voltage Regulator,3.0V, ILC7010AIC530X/SC70

Special Instructions

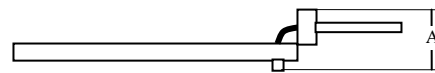
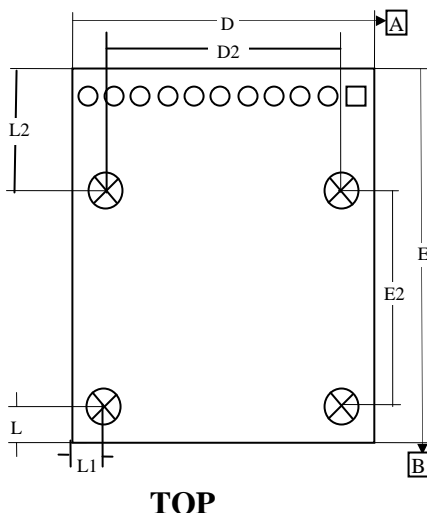
Electrostatic Discharge Sensitivity

The ISZ-650 gyro can be permanently damaged by an electrostatic discharge. ESD precautions for handling and storage are recommended.

Jumper Connector

The ISZ-650 evaluation board is equipped with a jumper connector to control the voltage supplied to the gyro. When the jumper is located in the “up” or standard position as shown in the picture above, the 5 Volts being supplied to the gyro is regulated to 3 Volts using an on-board regulator. When the jumper is located in the “down” position, the on-board regulator is bypassed and the gyro is being directly supplied with the voltage on Pins 9 and 19 of the IC.

Dimensional Drawing



SIDE

Dimensions (mm)		
A	5.0	±1.0
D	25.7	±0.1
E	31.8	±0.1
L	3.1	±0.1
L1	3.1	±0.1
L2	10.2	±0.1
D2	19.5	±0.1
E2	18.5	±0.1

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