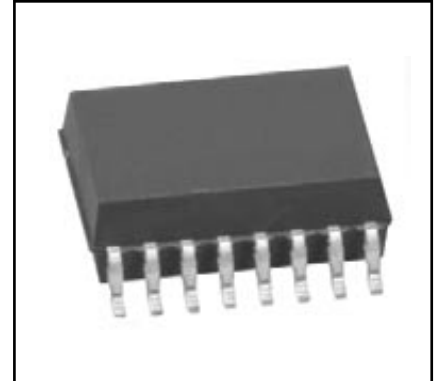
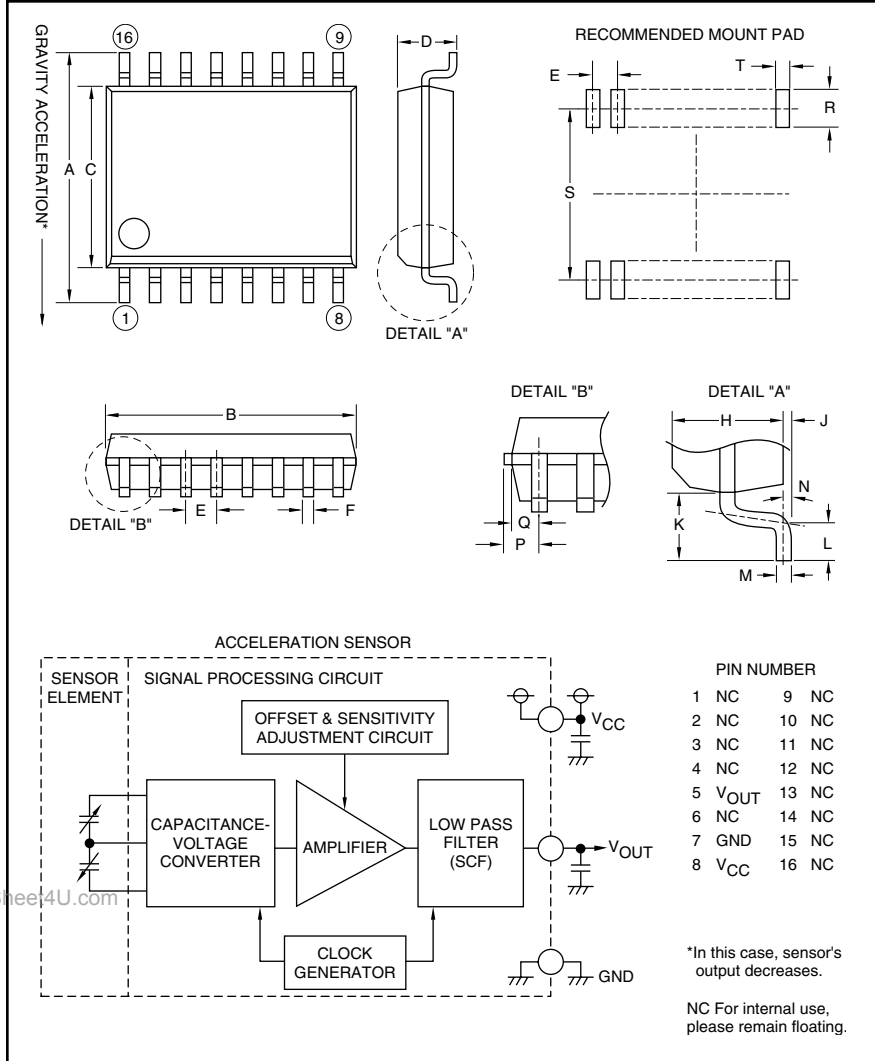


Intellimod™ Module ±2g Acceleration Sensor 4.75 – 5.25 Volts



Description:

The MAS1390P is a ±2g acceleration sensor designed so the sensor element and the signal processing circuit are integrated in one package that is small and can be mounted directly on a printed board. This design helps reduce the overall size of the systems.

Features:

- Capacitive Type Acceleration Sensor
- Output Proportional to Supply
- 16-pin Plastic SOP
- Wide Operation Temperature Range, Small Size and Lightweight

Applications:

- Inclination Meter
- Video Projector
- Car Navigation
- Virtual Reality Input Devices
- Vibration Measurement

Ordering Information:

MAS1390P is a ±2g Acceleration Sensor
4.75 – 5.25 Volts

Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	0.41±0.01	10.3±0.3
B	0.41±0.004	10.3±0.1
C	0.3±0.004	7.5±0.1
D	0.104 Max.	2.65 Max.
E	0.05	1.27
F	0.0165±0.0028	0.42±0.07
H	0.09	2.3
J	0.008±0.004	0.2±0.1
K	0.06	1.4

Dimensions	Inches	Millimeters
L	0.0315±0.008	0.8±0.2
M	0.1±0.002	0.25±0.05
N	8° Max.	8° Max.
P	0.034 Max.	0.855 Max.
Q	0.028	0.705
R	0.05 Min.	1.27 Min.
S	0.375	9.53
T	0.03	0.76

Powerex, Inc., 200 E. Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

MAS1390P
±2g Acceleration Sensor
 4.75 – 5.25 Volts

Absolute Maximum Ratings, $T_a = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	MAS1390P	Units
Maximum Operating Voltage	$V_{CC(max.)}$	-0.3 ~ 7	Volts
Storage Temperature	T_{stg}	-40 ~ 105	$^\circ\text{C}$
Maximum Operating Acceleration	$A_{CC(max.)}$	±9800 (±1000)	m/s^2 (g)
Operating Voltage ($T_a = -30 \sim 85$)	V_{CC}	4.75 ~ 5.25	Volts
Operating Temperature	T_{opr}	-30 ~ 85	$^\circ\text{C}$
Rated Acceleration ($T_a = -30 \sim 85$)	$A_{CC(opr)}$	Typ. = -19.6 ~ 19.6 (-2 ~ 2) Min. = -14.7 ~ 14.7 (-1.5 ~ 1.5)	m/s^2 (g)

Electrical and Mechanical Characteristics, $V_{CC} = 5\text{V}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Main Axis Sensitivity	S	$f = \text{DC}, T_a = 25^\circ\text{C}$	96.9 (970)	102.0 (1000)	107.1 (1030)	$\text{mV}/(\text{m/s}^2)$ (mV/g)
		$f = \text{DC}, T_a = -30 \sim 85^\circ\text{C}$	91.8 (950)	102.0 (1000)	112.2 (1050)	$\text{mV}/(\text{m/s}^2)$ (mV/g)
Offset Voltage	V_O	$A_{CC} = 0 \text{ m/s}^2$ (0g), $T_a = 25^\circ\text{C}$	2.300	2.500	2.700	Volts
		Δ from 25°C , $A_{CC} = 0 \text{ m/s}^2$ (0g), $T_a = -30 \sim 85^\circ\text{C}$	-1.5	0	1.5	$\text{mV}/^\circ\text{C}$
Upper Cut-off Frequency	f_{cH}	$T_a = -30 \sim 85^\circ\text{C}$	160	—	—	Hz
Output Linearity	L_O	$A_{CC} = -19.6 \sim 19.6 \text{ m/s}^2$ (-2 ~ 2g) $T_a = 25^\circ\text{C}$	-2	0	2	%F.S.
Sensitivity Ratio between	S_O/S	$T_a = 25^\circ\text{C}$	—	—	5	%
Main and Other Axis						
Output Drive Capability	I_{odc}	$A_{CC} = 0 \text{ m/s}^2$ (0g), $T_a = 25^\circ\text{C}$	-0.2	—	0.2	mA
Supply Current	I_{CC}	$A_{CC} = 0 \text{ m/s}^2$ (0g), $T_a = 25^\circ\text{C}$	—	3.5	5.0	mA
Output Noise	N_O	$A_{CC} = 0 \text{ m/s}^2$ (0g) with External Capacitors, $T_a = -30 \sim 85^\circ\text{C}$	—	8	15	mVp-p

