

3.2 ACCELEROMETER SPECIFICATIONS

Typical Operating Circuit of section 4.2, VDD = 1.8V, VDDIO = 1.8V, T_A=25°C, unless otherwise noted.

All specifications apply to Low-Power and Low-Noise Mode, unless otherwise noted.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	NOTES
ACCELEROMETER SENSITIVITY						
Full-Scale Range	ACCEL_FS=0		±2		<i>g</i>	1
	ACCEL_FS=1		±4		<i>g</i>	1
	ACCEL_FS=2		±8		<i>g</i>	1
	ACCEL_FS=3		±16		<i>g</i>	1
ADC Word Length	Output in two's complement format		16		bits	1
Sensitivity Scale Factor	ACCEL_FS=0		16,384		LSB/ <i>g</i>	1
	ACCEL_FS=1		8,192		LSB/ <i>g</i>	1
	ACCEL_FS=2		4,096		LSB/ <i>g</i>	1
	ACCEL_FS=3		2,048		LSB/ <i>g</i>	1
Initial Tolerance	Component-level		±0.5		%	2
Sensitivity Change vs. Temperature	-40°C to +85°C ACCEL_FS=0		±0.026		%/°C	2
Nonlinearity	Best Fit Straight Line		±0.5		%	2, 3
Cross-Axis Sensitivity			±2		%	2, 3
ZERO-G OUTPUT						
Initial Tolerance	Component-level, all axes		±25		<i>mg</i>	2
	Board-level, all axes		±50		<i>mg</i>	2
Zero-G Level Change vs. Temperature	0°C to +85°C		±0.80		<i>mg</i> /°C	2
NOISE PERFORMANCE						
Noise Spectral Density	Based on Noise Bandwidth = 10Hz		230		μ <i>g</i> /√Hz	2
Low Pass Filter Response	Programmable Range	5.7		246	Hz	1, 3
Intelligence Function Increment			32		<i>mg</i> /LSB	1
Accelerometer Startup Time	From Sleep mode			20	ms	2, 3
	From Cold Start, 1ms V _{DD} ramp			30	ms	2, 3
Output Data Rate	Low-Power Mode	0.27		562.5	Hz	1
	Low-Noise Mode ACCEL_FCHOICE=1; ACCEL_DLPFCFG=x	4.5		1.125k	Hz	
	Low-Noise Mode ACCEL_FCHOICE=0; ACCEL_DLPFCFG=x			4.5k	Hz	

Table 2. Accelerometer Specifications

- Notes:
- Guaranteed by design
 - Derived from validation or characterization of parts, not guaranteed in production
 - Low-noise mode specification