





# SPECIFICATIONS<sup>1</sup>

At  $T_A = -40^\circ\text{C}$  to  $+105^\circ\text{C}$ , 5.0 V dc  $\pm 5\%$ , acceleration = 0 g, unless otherwise noted.

Table 1.

Parameter	Conditions	Model No. AD22284			Model No. AD22285			Model No. AD22286				Unit
		Min	Typ	Max	Min	Typ	Max	Axis	Min	Typ	Max	
SENSOR												
Output Full-Scale Range	$I_{\text{OUT}} \leq \pm 100 \mu\text{A}$	37			55			X	70			g
								Y	37			g
Nonlinearity			0.2	2		0.2	2			0.2	2	%
Package Alignment Error			1			1				1		Degree
Sensor-to-Sensor Alignment Error			0.1			0.1				0.1		Degree
Cross-Axis Sensitivity		-5		+5	-5		+5		5		+5	%
Resonant Frequency			24			24			24			kHz
Sensitivity, Ratiometric (Over Temperature)	$V_{\text{DD}} = 5 \text{ V}$ , 100 Hz	52.25	55	57.75	36.1	38	39.9	X	25.25	27	28.35	mV/g
								Y	52.25	55	57.75	mV/g
OFFSET												
Zero-g Output Voltage (Over Temperature) <sup>2</sup>	$V_{\text{OUT}} - V_{\text{DD}}/2$ , $V_{\text{DD}} = 5 \text{ V}$	-150		+150	-150		+150	X	-100		+100	mV
								Y	-150		+150	mV
NOISE												
Noise Density	10 Hz – 400Hz, 5V		1.1	3		3		X		1.8	3.5	mg/ $\sqrt{\text{Hz}}$
								Y		1.1	3	mg/ $\sqrt{\text{Hz}}$
Clock Noise			5			5				5		mV p-p
FREQUENCY RESPONSE												
-3 dB Frequency	2-pole Bessel	360	400	440	360	400	440		360	400	440	Hz
-3 dB Frequency Drift	25°C to $T_{\text{MIN}}$ or $T_{\text{MAX}}$		2			2				2		Hz
SELF-TEST												
Output Change (Cube vs. $V_{\text{DD}}$ ) <sup>3</sup>	$V_{\text{DD}} = 5 \text{ V}$	304	380	456	304	380	456	X	216	270	324	mV
	$V_{\text{DD}} = 5 \text{ V}$							Y	440	550	660	mV
Logic Input High	$V_{\text{DD}}/5$	3.5			3.5				3.5			V
Logic Input Low	$V_{\text{DD}}/5$			1			1				1	V
Input Resistance	pull-down resistor to GND	30	50		30	50			30	50		k $\Omega$
OUTPUT AMPLIFIER												
Output Voltage Swing	$I_{\text{OUT}} = \pm 400 \mu\text{A}$	0.25		$V_{\text{DD}} - 0.25$	0.25		$V_{\text{DD}} - 0.25$		0.25		$V_{\text{DD}} - 0.25$	V
Capacitive Load Drive		1000			1000				1000			pF
PREFILTER HEADROOM												
CFSR @ 400 kHz			280			400				560		g
			6			4.5				3		V/V
										6		V/V
POWER SUPPLY ( $V_{\text{DD}}$ )												
Functional Range		4.75	5.25		4.75	5.25			4.75	5.25		V
Quiescent Supply Current	$V_{\text{DD}} = 5 \text{ V}$	3.5	6		3.5	6			3.5	6		V
			2.2	2.9		2.2	2.9			2.2	2.9	mA
TEMPERATURE RANGE												
		-40		+105	-40		+105		-40		+105	°C

<sup>1</sup> All minimum and maximum specifications are guaranteed. Typical specifications are not guaranteed.

<sup>2</sup> Zero g output is ratiometric.

<sup>3</sup> Self-test output at  $V_{\text{DD}} = (\text{Self-Test Output at } 5 \text{ V}) \times (V_{\text{DD}}/5 \text{ V})^3$ .



















