

LIS302DL

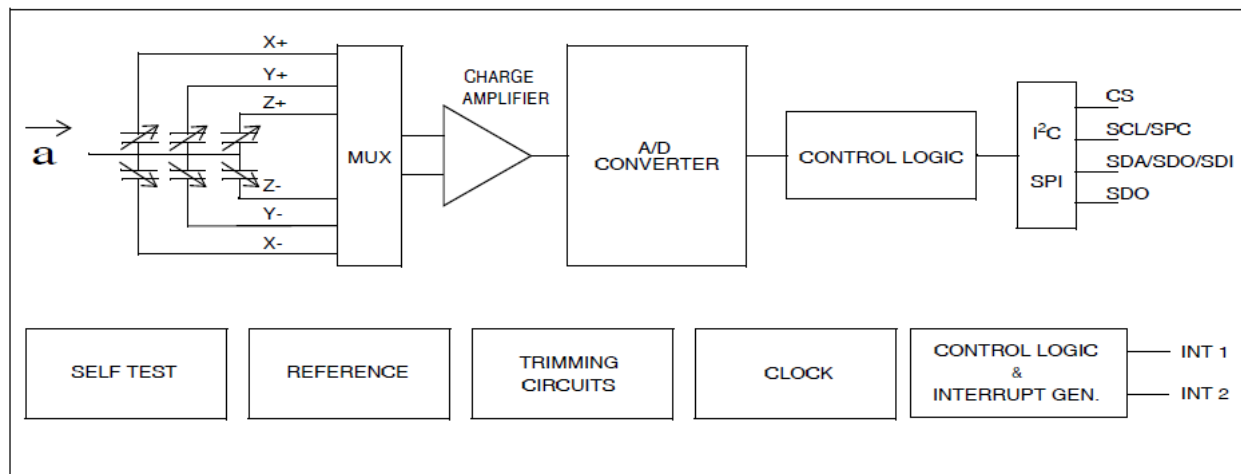
MEMS motion sensor

3.33

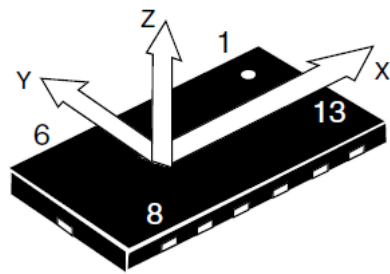
Description

- 2.16V to 3.6V supply voltage
- $\pm 2g/\pm 8g$ dynamically selectable full-scale
- I2C/SPI digital output interface
- Programmable multiple interrupt generator
- Click and double click recognition
- Embedded high pass filter
- 10000g high shock survivability
- Measuring rates of 100Hz to 400Hz
- Land Grid Array Package

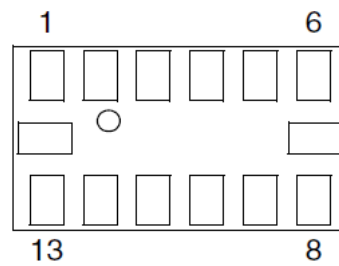
Block Diagram



Pin Connection



TOP VIEW



BOTTOM VIEW

Pin#	Name	Function
1	Vdd_IO	Power supply for I/O pins
2	GND	0V supply
3	Reserved	Connect to Vdd
4	GND	0V supply
5	GND	0V supply
6	Vdd	Power supply
7	CS	SPI enable I ² C/SPI mode selection (1: I ² C mode; 0: SPI enabled)
8	INT 1	Inertial interrupt 1
9	INT 2	Inertial interrupt 2
10	GND	0V supply
11	Reserved	Connect to Gnd
12	SDO	SPI Serial Data Output I ² C less significant bit of the device address
13	SDA SDI SDO	I ² C Serial Data (SDA) SPI Serial Data Input (SDI) 3-wire Interface Serial Data Output (SDO)
14	SCL SPC	I ² C Serial Clock (SCL) SPI Serial Port Clock (SPC)

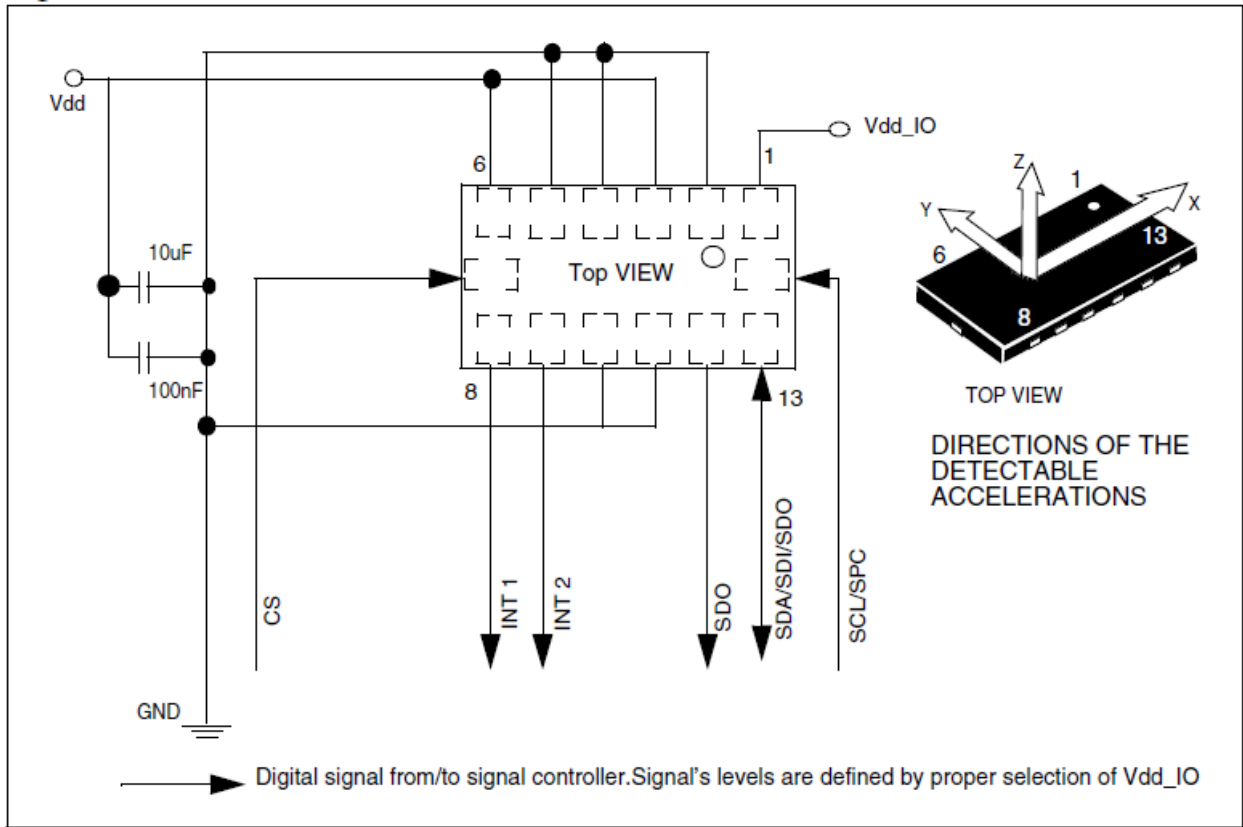
Mechanical Characteristics

Symbol	Parameter	Test conditions	Min.	Typ. ⁽²⁾	Max.	Unit
FS	Measurement range ⁽³⁾	FS bit set to 0	±2.0	±2.3		g
		FS bit set to 1	±8.0	±9.2		
So	Sensitivity	FS bit set to 0	16.2	18	19.8	mg/digit
		FS bit set to 1	64.8	72	79.2	
TCSO	Sensitivity change vs temperature	FS bit set to 0		±0.01		%/°C
TyOff	Typical zero-g level offset accuracy ^{(4),(5)}	FS bit set to 0		±40		mg
		FS bit set to 1		±60		mg
TCOff	Zero-g level change vs temperature	Max delta from 25°C		±0.5		mg/°C
Vst	Self test output change ^{(6),(7),(8),(9)}	FS bit set to 0 STP bit used X axis	-32		-3	LSb
		FS bit set to 0 STP bit used Y axis	3		32	LSb
		FS bit set to 0 STP bit used Z axis	3		32	LSb
BW	System bandwidth ⁽¹⁰⁾			ODR/2		Hz
Top	Operating temperature range		-40		+85	°C
Wh	Product weight			30		mgram

Electrical Characteristics

Symbol	Parameter	Test conditions	Min.	Typ. ⁽²⁾	Max.	Unit
Vdd	Supply voltage		2.16	2.5	3.6	V
Vdd_IO	I/O pins supply voltage ⁽³⁾		1.71		Vdd+0.1	V
Idd	Supply current	T = 25°C, ODR=100Hz		0.3	0.4	mA
IddPdn	Current consumption in power-down mode	T = 25°C		1	5	µA
VIH	Digital high level input voltage		0.8*Vdd_IO			V
VIL	Digital low level input voltage				0.2*Vdd_IO	V
VOH	High level output voltage		0.9*Vdd_IO			V
VOL	Low level output voltage				0.1*Vdd_IO	V
ODR	Output data rate	DR=0		100		Hz
		DR=1		400		
BW	System bandwidth ⁽⁴⁾			ODR/2		Hz
Ton	Turn-on time ⁽⁵⁾			3/ODR		s
Top	Operating temperature range		-40		+85	°C

Schematic



Interrupts

CLICK_THSY_X

Table 52. CLICK_THSY_X (3Bh) register

THSy3	THSy2	THSy1	THSy0	THSx3	THSx2	THSx1	THSx0
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Table 53. CLICK_THSY_X (3Bh) register description

THSy3-THSy0	Click threshold on Y axis. Default value: 0000
THSx3-THSx0	Click threshold on X axis. Default value: 0000

From 0.5g(0001) to 7.5g(1111) with step of 0.5g.

CLICK_THSY_Z

Table 54. CLICK_THSZ (3Ch) register

X	X	X	X	THSz3	THSz2	THSz1	THSz0
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Table 55. CLICK_THSZ (3Ch) register description

THSz3-THSz0	Click Threshold on Z axis. Default value: 0000
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From 0.5g(0001) to 7.5g(1111) with step of 0.5g.

CLICK_SRC

[illegible]