

# STMICROELECTRONICS Analog ICs



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## STMICROELECTRONICS ACCELEROMETERS

ST offers a portfolio of MEMS-based linear accelerometers able to sense acceleration or vibration in one, two and even three axes.

The MEMS sensor of a linear accelerometer is based on a silicon, inter-digitated, comb-like structure composed of fixed and movable fingers. To sense the acceleration in different directions, these structures are packaged in orthogonal groups. The acceleration in each direction is sensed by measuring the displacements of the movable elements correlated to that axis. The motion measured by the sensor is then translated into an analog or digital signal.

STMicroelectronics controls the complete manufacturing chain of linear accelerometers. This guarantees the customer high-volume production, long-term security, high precision and reliability, since all the devices are tested by standard and proprietary test systems. ST low-g linear accelerometers are grouped in subfamilies according to the number of axes (2-axis and 3-axis), the package type (SO24, QFN or LGA) and the IC output (analog or digital).



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For quantities of 500 and up, call for quote.

MOUSER STOCK NO.	STM Part No.	Package Type	Full Scale Span		Supply Voltage (V)	Supply Current Typ / Max (mA)	Price Each		
			Min. (G)	Max. (G)			1	10	100
<b>2-Axis</b>									
511-LIS202DL	LIS202DL	LGA 3x5x1 mm	-2	+8	2.16 to 3.6	0.30 / 0.40	7.36	7.26	6.33
511-LIS244ALH	LIS244ALH	LGA 4x4x1.5 mm	-6	+6	2.4 to 3.6	0.68 / ----	4.72	4.14	3.95
511-LIS244AL	LIS244AL	LLGA 4x4x1.5 mm	-2	+2	2.4 to 3.6	0.65 / ----	4.52	4.21	3.27
<b>3-Axis</b>									
511-LIS3LV02DL	LIS3LV02DL	LGA 4.4 x 7.5x1 mm	-6	+6	2.16 to 3.6	0.60 / 0.75	10.92	10.07	8.01
511-LIS3LV02DQ	LIS3LV02DQ	QFPN 7x7x1.8 mm	-6	+6	2.16 to 3.6	0.60 / 0.75	16.19	13.71	12.75
511-LIS302DL	LIS302DL	LGA 3x5x1 mm	-8	+8	2.16 to 3.6	0.30 / 0.40	7.10	6.32	5.87
511-LIS302DLH	LIS302DLH	LGA 3x5x0.8 mm	-2	+8	2.16 to 3.6	0.25 / 0.01	5.49	5.02	4.38
511-LIS302SG	LIS302SG	LGA 3x5x1 mm	-2	+2	3.0 to 3.6	0.65 / ----	6.67	5.84	4.86
511-LIS331AL	LIS331AL	LGA 3x3x1 mm	-2	+2	3.0 to 3.6	0.65 / ----	6.98	6.08	6.00
511-LIS331DL	LIS331DL	LGA 3x3x1 mm	-8	+8	2.16 to 3.6	0.30 / 0.40	9.65	7.92	6.89
511-LIS331DLF	LIS331DLF	LGA 3x3x1 mm	-8	+8	2.16 to 3.6	0.30 / 0.40	5.20	4.68	4.16
511-LIS331DLH	LIS331DLH	LGA 3x3x1 mm	-8	+8	2.16 to 3.6	0.30 / 0.40	6.60	5.94	5.28
511-LIS331DLM	LIS331DLM	LGA 3x3x1 mm	-2	+8	2.16 to 3.6	0.30 / 0.40	6.00	5.40	4.80
511-LIS331HH	LIS331HH	LLGA 3x3x1 mm	-6	+24	2.16 to 3.6	0.25 / 0.01	7.65	7.12	5.54
511-LIS33DE	LIS33DE	LGA 3x3x1 mm	-2	+9.2	2.16 to 3.6	0.30 / 0.40	5.05	4.35	3.65
511-LIS344AL	LIS344AL	LGA 3x3x1 mm	-3.5	+3.5	2.7 to 3.3	0.69 / ----	4.95	4.17	3.45
511-LIS344ALH	LIS344ALH	LGA 4x4x1.5 mm	-6	+6	2.4 to 3.6	0.001 / 0.005	5.88	5.79	5.05
511-LIS352AX	LIS352AX	LGA 3x5x1 mm	-8	+2	2.16 to 3.6	0.30 / 0.40	6.29	5.57	4.32
511-LIS35DE	LIS35DE	LGA 3x5x1 mm	-2	+8	2.16 to 3.6	0.30 / 0.40	5.05	4.35	3.65
511-LSM303DLH	LSM303DLH	LGA-28 5x5x1 mm	-2	+8	2.5 to 3.3	0.83 / ----	14.00	12.00	11.20

## STMICROELECTRONICS TOUCHKEY CONTROLLERS

The STMP16M31 and STMP24M31 capacitive touchkey controllers offer highly versatile and flexible capacitive sensing capabilities in one single chip. The devices integrate up to 24 capacitive sensing channels which are highly sensitive and noise tolerant. Two units of hardware ratiometric engines enable the implementation of a slider/wheel without external computations. Eight independent PWM controllers allow to control up to 16 LEDs with brightness control, ramping and blinking capabilities. The I2C interface supports up to 400 kHz communication with the system host. A very wide dynamic range allows most applications to work without hardware tuning.

For quantities of 500 and up, call for quote.

MOUSER STOCK NO.	STM Part No.	Package Type	No. of Touchkeys	Wheel/Slider	Capacitive Sensor Sensitivity		Supply Voltage		Active Current (max)(uA)		Price Each		
					(Min.)(fF)	(Max.)(fF)	(Min.)(V)	(Max.)(V)	Slider	Key Only	1	10	100
511-STMP16M31QTR	STMP16M31QTR	QFN-32 4x4 mm	16	Yes	12	20	1.65	1.95	900	600	5.25	4.50	4.20
511-STMP24M31QTR	STMP24M31QTR	QFN-40 5x5 mm	24	Yes	12	20	1.65	1.95	900	600	7.05	6.12	5.62

## STMICROELECTRONICS FUNCTIONAL SENSORS

ST MEMS functional sensors act as standalone components, automatically detecting events such as screen rotation (portrait/landscape) and providing digital output signals through dedicated interrupt lines to significantly reduce computational effort on external MCUs.

### Features:

- 3D orientation sensor: 3 orthogonal directions (6 positions)
- Embedded click/double-click functionality
- Power down mode
- High shock survivability
- Testable after assembly without movement
- Halogen-free regulated



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ST functional sensors provide many advantages over traditional devices. Negligible friction and wear assure higher reliability over device lifetime, while the integration of 3-dimensional structures in ever-smaller packages makes ST MEMS products extremely attractive for markets and applications where the size is a key factor.

With very low current consumption under normal operation, as well as an external power-down control, ST functional sensors can be used in demanding systems such as battery-operated devices.

For quantities of 500 and up, call for quote.

MOUSER STOCK NO.	STM Part No.	Package Type	Supply Voltage (Vcc) Min (V)	Supply Voltage (Vcc) Max (V)	Supply Current	Operating Temperature	Price Each		
							1	10	100
511-FC30	FC30	LGA 3x5x1 mm	2.16	3.6	0.4	- 40 to +85	4.80	4.40	4.23

## STMICROELECTRONICS SMART SENSORS

The STPMS1, also called a "smart sensor" device, is an ASSP designed for effective measurement in power line systems utilizing the Rogowski coil, current transformer or shunt principle. It is used in combination with the STPMC1 programmable poly-phase energy calculator IC, as a building block for single-phase or multi-phase energy meters. The STPMS1 is a mixed signal IC consisting of an analog and a digital section. The analog section consists of one preamplifier and two first-order  $\Sigma\Delta$  modulator blocks, band-gap voltage reference, a low-drop voltage regulator and DC buffers, while the digital section consists of a clock generator and output multiplexer.

For quantities of 500 and up, call for quote.

MOUSER STOCK NO.	STM Part No.	Package Type	Description	Supply Voltage (V)	Precision Volt. Reference		Price Each		
					(V)	(ppm/°C)	1	10	100
511-STPMS1BPQR	STPMS1BPQR	QFN-16 3x3 mm	Dual-channel Smart sensor w/2 first order sigma-delta modulators	3.2 - 5.5	1.23	30	7.18	6.15	5.74

## STMICROELECTRONICS TEMPERATURE SENSORS

STMicroelectronics temperature sensors include both precision analog temp sensor ICs and precision digital temp sensor ICs. Both types are suitable for use in a wide range of applications in market segments such as industrial, consumer, medical and computer.

The analog temp sensors feature low power consumption and good linearity and can operate over a temperature range as wide as -55 °C to +130 °C. The digital temp sensors feature low power consumption, up to 12-bit resolution and can operate over a temperature range as wide as -55 °C to +125 °C.

For quantities of 250 and up, call for quote.

MOUSER STOCK NO.	STM Part No.	Package Type	Description	Supply Voltage (V)	Set Curr. Max. (mA)	Set Curr. Error Max. (%)	Operating Temperature Range( C)	Effective Shunt Cap. Typ. (pF)	Price Each		
									1	10	100
<b>Surface Mount</b>											
511-LM234D	LM234D	SO-8	3-terminal adjustable current	1.0 to 40	10.0	12	-25 to +100	15	1.30	1.10	.912
511-LM334D	LM334D	SO-8	3-terminal adjustable current	1.0 to 40	10.0	12	0 to +70	15	1.16	1.01	.889
511-LM335D	LM335D	SO-8	Precision linear output	2.92 to 3.04	15.0	----	-40 to +100	-----	1.20	.926	.893
<b>Thru-Hole</b>											
511-LM335AZ	LM335AZ	TO-92	Precision linear output	2.92 to 3.04	15.0	----	-40 to +100	-----	1.43	1.23	.95
511-LM235Z	LM235Z	TO-92	Precision linear output	2.92 to 3.04	15.0	----	-40 to +125	-----	2.05	1.74	1.47
511-LM335Z	LM335Z	TO-92	Precision linear output	2.92 to 3.04	15.0	----	-40 to +100	-----	1.20	1.04	.80