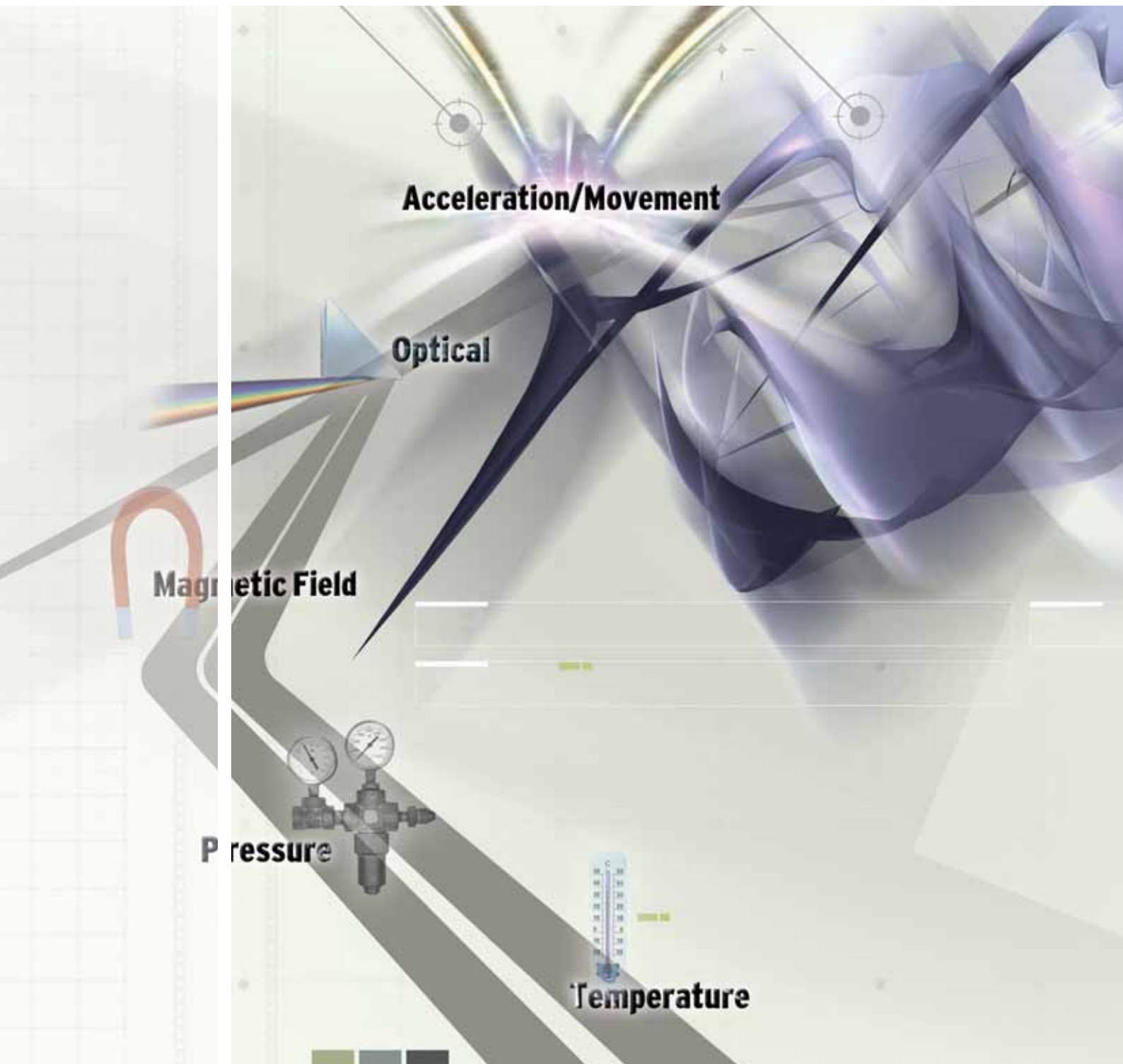


SELECTOR GUIDE

Sensors



INTRODUCTION

Sensing gets more and more important in the electronics industry. We measure brightness, temperature and pressure, just to name a few elements. This guide is designed to help you finding the right component for your application.

This guide is separated into five general areas: Of course such guides can't show the complete picture as more and more manufacturers offer integrated systems on a single chip, such as Cypress PSoC with CapSense to name one.

CONTENT:

• ACCELEROMETER & ANGULAR RATE SENSORS	3
• 1-axis, low g Accelerometer Sensors	3
• 2-axis, low g Accelerometer Sensors	3-4
• 2-axis, low g Accelerometer Sensors with special features	4
• 3-axis, low g Accelerometer Sensors	4
• 1-axis, medium & high g Accelerometer Sensors	5
• 2-axis, medium & high g Accelerometer Sensors	5
• Angular Rate Sensors	5
• MAGNETIC FIELD & E-FIELD SENSORS	6
• Magnetoresistive Angle Sensors	6
• Magnetoresistive Rotational Speed Sensors	6
• Magnetic Field Sensors	6
• Hall Effect Sensors	7
• E-Field Sensors (Proximity Sensors)	7
• OPTICAL SENSORS	8
• Ambient Light Sensors	8
• Distance Sensors	8
• CMOS Image Sensor Modules	8
• CMOS Image Sensors	9
• PRESSURE SENSORS	10
• Compensated Pressure Sensors	10-11
• Uncompensated Pressure Sensors	11
• Integrated Pressure Sensors	11-13
• TEMPERATURE SENSORS	14
• Temperature Sensor ICs with analogue output	14
• Temperature Sensor ICs with digital output	14-15
• Silicon Temperature Sensors	16

For further information fill out the fax inside the back of this brochure, visit our internet page on www.silica.com or contact your local Silica Sales Office (details on the back)

ACCELERATION / MOVEMENT

Silica offers a broad range of Accelerometer Sensors from Analog Devices, Freescale Semiconductors and STMicroelectronics. These sensors are based on MEMS/iMEMS Technology.

MEMS (Micro-Electro Mechanical Systems) Technology is inherent in micron-sized mechanical devices that can sense, process and/or control the surrounding environment. Sensing capabilities derive from mechanical features measured in microns. iMEMS (integrated MEMS) is a further development of Analog Devices with advanced signal conditioning circuitry on a single chip.

Accelerometer Sensors are grouped in low-g and medium to high-g devices. Low-g accelerometers, which typically range from $\pm 1g$ to $\pm 20g$, are used in a broad spectrum of consumer, industrial and automotive applications ranging from mobile phone handsets

to hard drive protection systems to safety-critical automotive electronic stability control systems.

Medium and high-g accelerometers, which typically range from $\pm 20g$ to $\pm 250g$ and higher are best known for the safety-critical sensing function they perform in automotive airbag safety systems. These robust sensors are increasingly being integrated into sports, industrial and medical applications to measure shock and vibration.

For Angular Rate Measurement (see table page 5) Silica offers two device-families from Analog Devices, based on iMEMS technology, as their Accelerometers. These sensors are commonly used in a variety of applications including automotive safety, navigation, image stabilization, inertial measurement units, and platform stabilization.

Accelerometer Sensors

1-axis low-g Accelerometers

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density ($\mu g/\sqrt{Hz}$)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
Freescale	MMA1260D	$\pm 1.5g$	1200mV/g	Analog	500	5	2.2	-40 to 105	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA2260D	$\pm 1.5g$	1200mV/g	Analog	350	5	2.2	-40 to 105	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Analog Devices	ADXL103	$\pm 1.7g$	1000mV/g	Analog	110	5 (3 to 6)	0.7	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1270D	$\pm 2.5g$	750mV/g	Analog	700	5	2.1	-40 to 105	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1250D	$\pm 5g$	400mV/g	Analog	700	5	2.1	-40 to 105	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1220D	$\pm 8g$	250mV/g	Analog		5	5	-40 to 105	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch

2-axis low-g Accelerometer Sensors

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density ($\mu g/\sqrt{Hz}$)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
Analog Devices	ADXL213	$\pm 1.2g$	30 %/g	PWM	160	5 (3 to 6)	0.7	-40 to 85	8 contact LLC 5 x 5 x 1.8; 1.27mm pitch
Freescale	MMA6270Q	$\pm 1.5g^{11}$	800mV/g	Analog	350	3.3	0.5	-20 to 85	16 contact QFN 6 x 6 x 1.45; 1.0mm pitch
Freescale	MMA6280Q	$\pm 1.5g^{11}$	800mV/g	Analog	350	3.3	0.5	-20 to 85	16 contact QFN 6 x 6 x 1.45; 1.0mm pitch
Freescale	MMA6260Q	$\pm 1.5g$	800mV/g	Analog	300	3.3	1.2	-20 to 85	16 contact QFN 6 x 6 x 1.98; 1.0mm pitch
Freescale	MMA6261Q	$\pm 1.5g$	800mV/g	Analog	300	3.3	1.2	-20 to 85	16 contact QFN 6 x 6 x 1.98; 1.0mm pitch
Freescale	MMA6262Q	$\pm 1.5g$	800mV/g	Analog	200	3.3	2.2	-20 to 85	16 contact QFN 6 x 6 x 1.98; 1.0mm pitch
Freescale	MMA6263Q	$\pm 1.5g$	800mV/g	Analog	200	3.3	2.2	-20 to 85	16 contact QFN 6 x 6 x 1.98; 1.0mm pitch
Analog Devices	ADXL203	$\pm 1.7g$	1000mV/g	Analog	110	5 (3 to 6)	0.7	-40 to 125	8 contact LLC 5 x 5 x 1.8; 1.27mm pitch
Analog Devices	ADXL204	$\pm 1.7g$	620mV/g	Analog	170	3.3 (3 to 6)	0.5	-40 to 125	8 contact LLC 5 x 5 x 1.8; 1.27mm pitch
Analog Devices	ADXL322	$\pm 2g$	420mV/g	Analog	220	2.4 to 6	0.5	-20 to 70	16-lead LFCSP [exposed pad] 4 x 4 x 1.5; 0.65mm pitch
STMicro	LIS2L02AL	$\pm 2g$	660mV/g	Analog	30	3.3	0.85	-40 to 85	8 contact LGA 5 x 5 x 1.52; 1.27mm pitch

¹¹ Pin selectable sensitivity (1.5g/2g/4g/6g)

ACCELERATION / MOVEMENT

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density (µg/√Hz)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
STMicro	LIS2L02AQ	±2g	660mV/g	Analog	50	3.3	0.85	-40 to 85	44 contact QFN 7 x 7 x 1.8; 0.5mm pitch
STMicro	LIS2L02AQ3	±2g ±6g	660mV/g	Analog	30	3.3	0.85	-40 to 85	44 contact QFN 7 x 7 x 1.8; 0.5mm pitch
STMicro	LIS2L02AS4	±2g ±6g	660mV/g	Analog	30	3.3	0.85	-40 to 85	24-lead SO 15.4 x 7.5 x 2.5; 1.27mm pitch
STMicro	LIS2L06AL	±2g ±6g	220mV/g	Analog	30	3.3	0.85	-40 to 85	8 contact LGA 5 x 5 x 1.52; 1.27mm pitch
Analog Devices	ADXL320	±5g	174mV/g	Analog	250	2.4 to 6	0.5	-20 to 70	16-lead LFCSP (exposed pad) 4 x 4 x 1.5; 0.65mm pitch
Freescale	MMA6271QT	±2.5g ¹	800mV/g	Analog	350	3.3	0.5	-20 to 85	16 contact QFN 6 x 6 x 1.45; 1.0mm pitch
Freescale	MMA6281QT	±2.5g ²	800mV/g	Analog	350	3.3	0.5	-20 to 85	16 contact QFN 6 x 6 x 1.45; 1.0mm pitch
Freescale	MMA6231Q	±10g	120mV/g	Analog	50	3.3	1.2	-20 to 85	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA6233Q	±10g	120mV/g	Analog	30	3.3	2.2	-20 to 85	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch

2-axis low-g Accelerometer Sensors with special features

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density (µg/√Hz)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
Analog Devices	ADXL321	±18g	57mV/g	Analog	320	2.4 to 6	0.5	-20 to 70	16-lead LFCSP (exposed pad) 4 x 4 x 1.5; 0.65mm pitch
Analog Devices	ADIS16003 ³	±1.7g	820LSB/g	SPI	110	3 to 5.25	1.4	-40 to 125	12 contact LGA 7 x 7 x 3.8; 1.79mm pitch
Analog Devices	ADIS16006 ³	±1.7g	256LSB/g	SPI		3 to 5.25	1.4	-40 to 125	12 contact LGA 7 x 7 x 3.8; 1.79mm pitch
Analog Devices	ADIS16201 ³	±1.7g	2 LSB/mg (10 LSB/°)	SPI	0.36 LSB/rHz	3 to 3.6	12 0.5 standby	-40 to 125	16 contact LGA 9 x 9 x 5.2; 1.67mm pitch

3-axis low-g Accelerometer Sensors

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density (µg/√Hz)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
Freescale	MMA7260Q	±1.5g ¹	800mV/g	Analog	350	2.2 to 3.6	0.5	-20 to 85	16 contact QFN 6 x 6 x 1.45; 1.0mm pitch
Freescale	MMA7261Q	±2.5g ²	800mV/g	Analog	350	3.3	0.5	-20 to 85	16 contact QFN 6 x 6 x 1.45; 1.0mm pitch
Analog Devices	ADXL330	±2g	300mV/g	Analog	170 (X,Y) 350 (Z)	2.0 to 3.6	0.2	-25 to 70	16-lead LFCSP (exposed pad) 4 x 4 x 1.5; 0.65mm pitch
STMicro	LIS3L02AL	±2g	660mV/g	Analog	50	3.3	0.85	-40 to 85	8 contact LGA 5 x 5 x 1.52; 1.27mm pitch
STMicro	LIS3L02AQ	±2g ±6g	660mV/g	Analog	50	3.3	0.85	-40 to 85	44 contact QFN 7 x 7 x 1.8; 0.5mm pitch
STMicro	LIS3L02AQ3	±2g ±6g	660mV/g	Analog	50	3.3	0.85	-40 to 85	44 contact QFN 7 x 7 x 1.8; 0.5mm pitch
STMicro	LIS3L02AQ5	±2g ±6g	1000mV/g	Analog	50	3.3	1	-40 to 85	44 contact QFN 7 x 7 x 1.8; 0.5mm pitch
STMicro	LIS3LV02DQ	±2g ±6g	1024LSb/g (2g) 340LSb/g (6g)	SPI I ² C		2.5 3.3	0.60 (2.5V) 0.65 (3.3V)	-40 to 85	28 contact QFN 7 x 7 x 1.8; 0.8mm pitch
STMicro	LIS3L02AS4	±2g ±6g	660mV/g	Analog	50	3.3	0.85	-40 to 85	24-lead SO 15.4 x 7.5 x 2.5; 1.27mm pitch
STMicro	LIS3L06AL	±2g ±6g	660mV/g	Analog	50	3.3	0.95	-40 to 85	8 contact LGA 5 x 5 x 1.52; 1.27mm pitch

¹Pin selectable sensitivity (1.5g/2g/4g/6g)

²Pin selectable sensitivity (2.5g/3.3g/6.7g/10g)

³ ADIS Accelerometers – iSensor ADIS Accelerometers enhance ADXL iMEMS accelerometers with additional performance and functionality, such as embedded signal processing and control. These inertial sensors address special requirements such as calibration/tuning, application specific interfaces, digital I/O, wireless links, embedded intelligence and programmability, power management, and analog signal conditioning. The ADIS portfolio of products will continue to grow to include further integration and performance improvements.

ACCELERATION / MOVEMENT

1-axis medium & high-g Accelerometer Sensors

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density (µg/√Hz)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
Analog Devices	ADXL78	±35g ±50g	55mV/g 38mV/g	Analog	1.100 1.400	4.75 to 5.25	1.3	-40 to 105	8 contact LLC 5 x 5 x 1.8; 1.27mm pitch
Freescale	MMA2201D	±70g 40g	27mV/g 50mV/g	Analog	1.800 110	5	5	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1213D	50g	40mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA2202D	50g	40mV/g	Analog	110	5	5	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1210D	100g	20mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA2204D	100g	20mV/g	Analog	110	5	5	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Analog Devices	ADXL193	±120g ±250g	18mV/g 8mV/g	Analog	3.000 5.000	4.75 to 5.25	1.5	-40 to 105	8 contact LLC 5 x 5 x 1.8; 1.27mm pitch
Freescale	MMA1211D	150g	13mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1212D	200g	10mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA2301D	200g	10mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA1200D	250g	8mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch
Freescale	MMA2300D	250g	8mV/g	Analog	110	5	3 to 6	-40 to 125	16-lead SOIC 10.3 x 7.5 x 3.4; 0.635mm pitch

2-axis medium & high-g Accelerometer Sensors

Manufacturer	Part#	Range ▲	Sensitivity	Output Type	Noise Density (µg/√Hz)	Voltage Supply (V)	Supply Current (mA)	Temp. Range °C	Packages
Analog Devices	ADXL278	±35g/±35g ±35g/±35g ±50g/±50g ±70g/±35g	55/55mV/g 38/38mV/g 27/55mV/g	Analog	1.100 1.400 1.800	4.75 to 5.25	2.2	-40 to 105	8 contact LLC 5 x 5 x 1.8; 1.27mm pitch
Freescale	MMA3201D	40g	50 mV/g	Analog	110	5	8	-40 to 125	20-lead SOIC 15.8 x 7.5 x 3.4; 1.27mm pitch
Freescale	MMA3202D	20g 100g	20 mV/g 100 mV/g	Analog	110	5	8	-40 to 125	20-lead SOIC 15.8 x 7.5 x 3.4; 1.27mm pitch

Angular Rate Sensor

Manufacturer	Part#	Type	Range ▲	Sensitivity (mV/°/s)	Bandwidth	Noise Density (°/s/rtHz)	Nonlinearity	Temp Sensor	Voltage Reference (V)	Voltage Supply (V)	Temp. Range (°C)	Output
Analog Devices	ADXRS401	analogue	±75	15.0mV /°/s ±15%	DC to 2kHz	0.05	0.1% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	
Analog Devices	ADXRS150	analogue	±150	12.5mV /°/s ±10%	DC to 2kHz	0.05	0.1% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	
Analog Devices	ADXRS300	analogue	±300	5.0mV /°/s ±8%	DC to 2kHz	0.10	0.1% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	
Analog Devices	ADIS16080	digital	±80	10.2 LSB/°/s	DC to 40 Hz	0.05	0.1% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	SPI
Analog Devices	ADIS16250	digital	±80 to ±320	54.6 LSB/°/s	DC to 50 Hz	0.05	0.1% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	SPI
Analog Devices	ADIS16100	digital	±300	4.1LSB /°/s	DC to 40 Hz	0.10	0.15% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	SPI
Analog Devices	ADIS16120	digital	±300	5mV/°/s	DC to 320 Hz	0.015	0.1% of FS	Yes	Yes	4.75V to 5.25V	-40 to +85	SPI

MAGNETIC FIELD / E-FIELD

Magnetoresistive sensors are characterized by high sensitivity in the detection of magnetic fields, a wide operating temperature range, a low and stable offset and low sensitivity to mechanical stress.

They therefore provide an excellent means of measuring both linear and angular displacement under extreme environmental conditions. Their very high sensitivity means that a fairly small movement of actuating components in, for example, cars or machinery (gear wheels, metal rods, cogs, cams, etc.) can create measurable changes in magnetic field. Other applications for magnetoresistive sensors include rotational speed measurement and current measurement.

The Hall effect phenomenon was discovered by E.H. Hall in 1879. If an electric current flows through a conductor (or a semiconductor) and a perpendicular magnetic field is applied to it, then the combination of electric current and magnetic field generates an output voltage perpendicular to both of them. V_H is a function of the current density, the magnetic field, and the carrier density and mobility of the conductor. The Hall effect is used to produce displacement sensors, especially for linear or rotary position applications.

E-Field Sensors are offered from Freescale. This type of sensor measures the variation of an electrode or between two electrodes. It's intended for cost-sensitive applications where contact-less sensing of objects is required.

Magnetoresistive Angle Sensors

Manufacturer	Part#	Output Type	Output value	Angle Range	Voltage Supply (V)	Packages	Temp Range (°C)	Comment
NXP	KMZ41	sine/cosine	80mV peak-peak	180°	5V to 9V	S0 8	-40 to +150	
NXP	KMZ43	sine/cosine	68mV peak-peak	180°	5V to 9V	S0 8	-40 to +150	
NXP	UZZ9000	analog linear	0.5V to 4.5V	180°	4.5V to 5.5V	S0 24	-40 to +150	signal conditioning unit
NXP	UZZ9001	digital (SPI)	0.5V to 4.5V	180°	4.5V to 5.5V	S0 24	-40 to +150	signal conditioning unit
NXP	KMA200	4 analog linear/2 digital	0.5V to 4.5V	180°	4.5V to 5.5V	SOT637	-40 to +160	sensor system

Magnetoresistive Rotational Speed Sensors

Manufacturer	Part#	typ. Sensing distance (mm) ▲	Target	Interface	Magnet Size	Temp. Range (°C)
NXP	KMI15/4	0.5 to 2.3	ferrous	current	5.5 x 5.5 x 3	-40 to +150
NXP	KMI18/4	0.5 to 2.3	ferrous	open collector	5.5 x 5.5 x 3	-40 to +150
NXP	KMI15/2	0.5 to 2.7	magnetized	current	3.8 x 2 x 0.8	-40 to +150
NXP	KMI18/2	0.5 to 2.7	magnetized	open collector	3.8 x 2 x 0.8	-40 to +150
NXP	KMI20/4	0.5 to 2.8 (+1 dynamic reserve)	ferrous	current	5.5 x 5.5 x 3	-40 to +150
NXP	KMI20/2	0.5 to 3.2 (+1 dynamic reserve)	magnetized	current	3.8 x 2 x 0.8	-40 to +150
NXP	KMI15/1	0.9 to 2.9	ferrous	current	8 x 8 x 4.5	-40 to +150
NXP	KMI18/1	0.9 to 2.9	ferrous	open collector	8 x 8 x 4.5	-40 to +150
NXP	KMI20/1	0.9 to 3.5 (+1 dynamic reserve)	ferrous	current	8 x 8 x 4.5	-40 to +150

Magnetic Field Sensors

Manufacturer	Part#	Supply voltage (Vs)	Sensitivity (mV/V) / (kA/m) ▲	Field Range	Bridge Resistance	TempRange (°C)	Packages
NXP	KMZ10C	5	1.5	-7.5 to 7.5kA/m	1.0 to 1.8kΩ	-40 to 150	SOT195
NXP	KMZ10B	5 to 12	4	-2.0 to 2.0kA/m	1.6 to 2.6kΩ		SOT195
NXP	KMZ51	5	12 to 16	-0.2 to 0.2kA/m	1.0 to 2.6kΩ	-40 to 125	S0 8
NXP	KMZ52	6 to 8	12 to 16	-0.2 to 0.2kA/m	1.0 to 2.6kΩ	-40 to 125	S0 16

MAGNETIC FIELD / E-FIELD

Hall Sensor ICs

Manufacturer	Part#	Vs (min) ▲	Vs (max) ▲	Is (max)	Temp. Range (°C)	Packages	Comment
Infineon	TLE4913	2.4V	5.5V	2.5mA	-40 to 85	P-SC59-3-1	Low Power
Infineon	TLE4917	2.4V	5.5V	2.5mA	-40 to 85	P-TSOP-6-2	Low Power
Infineon	TLE4906x	2.7V	18V	50mA	-40 to 150	SC59; PG-SSO-3-2	Chopped Hall Switch
Infineon	TLE4946x	2.7V	18V	50mA	-40 to 150	SC59; PG-SSO-3-2	Chopped Hall Switch
Infineon	TLE4966x	2.7V	18V	50mA	-40 to 150	TSOP6-6-3; PG-SSO-4-1	Chopped Hall Switch
Infineon	TLE4976x	3V	18V	50mA	-40 to 150	SC59; PG-SSO-3-2	Chopped Hall Switch
Infineon	TLE4925x	3V	18V	25mA	-40 to 155	PG-SSO-3-6; PG-SSO-3-9	Dynamic Differential Hall IC
Infineon	TLE4982C	3.3V	18V	7.5mA	-40 to 155	PG-SSO-3-9	Chopped Mono Cell Hall IC
Infineon	TLE4945L	3.8V	24V	8mA	-40 to 150	P-SSO-3-2	Bipolar Hall IC Switch
Infineon	TLE4945-2G	3.8V	24V	8mA	-40 to 150	P-SSO-3-2	Bipolar Hall IC Switch
Infineon	TLE4905G	4V	24V	5mA	-40 to 150	P-SOT89-4-2	Bipolar Hall IC Switch
Infineon	TLE4935G	4V	24V	5mA	-40 to 150	P-SOT89-4-2	Bipolar Hall IC Switch
Infineon	TLE4945-2L	4V	24 V	5mA	-40 to 150	P-SOT89-4-2	Bipolar Hall IC Switch
Infineon	TLE4921-5U	4.5V	24V	8.8mA	-40 to 170	P-SSO-4-1	Dynamic Differential Hall IC
Infineon	TLE4923	4.5V	18V	13.6mA	-40 to 190	P-SSO-3-6	Dynamic Differential Hall IC
Infineon	TLE4953C	4.5V	20 V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-2	Transmission Speed Sensor IC
Infineon	TLE4941	4.5V	20V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-1	Self calibrating Differential Hall ICs for Wheel Speed Sensing
Infineon	TLE4941C	4.5V	20V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-2	Self calibrating Differential Hall ICs for Wheel Speed Sensing
Infineon	TLE4941-1	4.5V	20V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-1	Self calibrating Differential Hall ICs for Wheel Speed Sensing
Infineon	TLE4941-1C	4.5V	20V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-2	Self calibrating Differential Hall ICs for Wheel Speed Sensing
Infineon	TLE4942-1	4.5V	20V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-1	Self calibrating Differential Hall ICs for Wheel Speed Sensing
Infineon	TLE4942-1C	4.5V	20V	8.4mA/16.8mA	-40 to 150	PG-SSO-2-2	Self calibrating Differential Hall ICs for Wheel Speed Sensing
Analog Devices	AD22151G	10V	90V	10mA	-40 to 150	8-pin SOIC	Uni/Bipolar linear Hall IC

E-Field Sensors (Proximity Sensors)

Manufacturer	Part#	# of Electrodes ▲	# of Ref Electrodes	Operating Voltage	Operating Temp. (°C)	Frequency	Packages
Freescale	MC34940	7	0	9V to 18V	0 to 90	120kHz	24-pin wide SOIC
Freescale	MC33794	9	2	9V to 18V	-40 to 85	120kHz	54-pin SOIC

OPTICAL SENSORS

The group of Optical Sensors within this guide lists Ambient Light Sensors, Distance Sensors and CMOS Image Sensors of Silica's portfolio.

Ambient Light Sensors are photo detectors which are designed to perceive brightness in the same way as human eyes do. They are used wherever the settings of a system have to be adjusted to the ambient light conditions as perceived by humans. Distance measurement sensors are using a light-emitting diode (infrared or laser) and a photo detector to absorb the reflected light and thus calculate the distance. Sharp offers with the GP2xxx series a family of infra-

red detectors named PSD (Position Sensitive Detector) which can measure distances up to 150cm, with all necessary circuitry for measurement included in a small box with digital output (8-bit series format) or voltage output.

There are two technologies in silicon image sensors CCD and CMOS. Both CCD and CMOS image sensors capture light on a grid of small pixels on their surfaces. Each of these pixels is captured by a single photosite on the image sensor. Controlling, or addressing a grid of individual pixels in this way is called bit mapping or bit-maps. Silica offers CMOS Image Sensors from Cypress, Micron and STMicroelectronics.

Ambient Light Sensor

Manufacturer	Part#	Spectral Range of Sensitivity $\lambda_{10\%}$ ▲	Wavelength of max. sensitivity	Half angle	Photocurrent	Radiant Sensitive Area	Size WxLxH (mm)	Packages
Osram	SFH 3710	350nm to 950nm	570.0nm	$\pm 60^\circ$	2.5 μ A to 12.5 μ A	0.29mm ²	2.0x1.3x0.8	Chiplid Package
Osram	SFH 3710-2/3	350nm to 950nm	570.0nm	$\pm 60^\circ$	2.5 μ A to 8.0 μ A	0.29mm ²	2.0x1.3x0.8	Chiplid Package
Osram	SFH 3710-3/4	350nm to 950nm	570.0nm	$\pm 60^\circ$	4.0 μ A to 12.5 μ A	0.29mm ²	2.0x1.3x0.8	Chiplid Package
Osram	SFH 3410-1/2	350nm to 970nm	570.0nm	$\pm 60^\circ$	3.2 μ A to 10.0 μ A	0.29mm ²	1.9x4.2x1.0	Smart DIL Package
Osram	SFH 3410	350nm to 970nm	570.0nm	$\pm 60^\circ$	3.2 μ A to 25.0 μ A	0.29mm ²	1.9x4.2x1.0	Smart DIL Package
Osram	SFH 3410-2/3	350nm to 970nm	570.0nm	$\pm 60^\circ$	5.0 μ A to 16.0 μ A	0.29mm ²	1.9x4.2x1.0	Smart DIL Package
Osram	SFH 3410-3/4	350nm to 970nm	570.0nm	$\pm 60^\circ$	8.0 μ A to 25.0 μ A	0.29mm ²	1.9x4.2x1.0	Smart DIL Package
STMicroelectronics	VM6101	350nm to 950nm	500.0nm	$\pm 60^\circ$	digital output: I ² C/PWM	0.01mm ²	3.0x3.0x0.7	8-lead QFN
Osram	SFH 2430	400nm to 900nm	570.0nm	$\pm 60^\circ$	5.8 μ A	7.02mm ²	3.8x4.4x1.1	SMT Package

Distance Sensors

Manufacturer	Part#	Vcc (min)	Vcc (max)	Temp. Range °C	Distance measuring range (cm) ▲	Operating Dissipation current (mA, max)	Standby Dissipation current (μ A, max)
Sharp	GP2D150AJ00F	-0.3	7	-10 to 60	3 to 30	50	-
Sharp	GP2D150MJ00F	-0.3	7	-10 to 60	3 to 30	50	-
Sharp	GP2Y0D413K* 4	-0.3	7	-10 to 60	3 to 30	-	-
Sharp	GP2D120J000F	-0.3	7	-10 to 60	4 to 30	50	-
Sharp	GP2Y0D340K0F	-0.3	7	-10 to 60	10 to 60	35	-
Sharp	GP2Y0D540K0F	-0.3	7	-10 to 60	10 to 60	35	-
Sharp	GP2D02J0000F	-0.3	10	-10 to 60	10 to 80	35	8
Sharp	GP2D12J0000F	-0.3	7	-10 to 60	10 to 80	50	-
Sharp	GP2Y0A21YK0F	-0.3	7	-10 to 60	10 to 80	40	-
Sharp	GP2D15J0000F	-0.3	7	-10 to 60	10 to 80	50	-
Sharp	GP2Y0D21YK0F	-0.3	7	-10 to 60	10 to 80	40	-
Sharp	GP2Y0A02YK0F	-0.3	7	-10 to 60	20 to 150	50	-

CMOS Image Sensor Modules

Manufacturer	Part#	Resolution (HxV) ▲	Pixel Size	Optical Format	Frame Rate	Master Clock	Supply Voltage	Output	Shutter	Packages
STMicroelectronics	VS6524Q06J	640 x 480	3.6 μ m x 3.6 μ m	1/6 inch	30fps	24MHz	2.4 - 3.0V	8 bit parallel ITU	no	SmOP 6*6
STMicroelectronics	VL6524Q0MH	640 x 480	3.6 μ m x 3.6 μ m	1/6 inch	30fps	24Mhz	2.4 - 3.0V	8 bit parallel ITU	no	LGA 10*10
STMicroelectronics	VS6624Q06J	1280 x 1024	3.0 μ m x 3.0 μ m	1/3 inch	15fps, 30fps	54MHz	2.4 - 3.0V	8 bit parallel ITU	no	SmoP 8*8
STMicroelectronics	VL6624Q0MH	1280 x 1024	3.0 μ m x 3.0 μ m	1/3 inch	15fps, 30fps	54MHz	2.4 - 3.0V	8 bit parallel ITU	no	LGA 10*10

OPTICAL SENSORS

CMOS Image Sensors

Manufacturer	Part#	Resolution (HxV) ▲	Pixel Size	Optical Format	Frame Rate	Master Clock	Supply Voltage	Output	Shutter	Packages
Cypress	CYIS15M0250AA	512 x 512	25 µm x 25 µm	1 inch	29 fps	10MHz	5V	10-bit parallel	Rolling	
Cypress	CYL15E0300AA-HDC	640 x 480	9.9µm x 9.9µm	1/2 inch	250 fps	80MHz	2.5V-3.3V	10-bit parallel	Triggered & Pipelined sync.	LCC
Micron	MT9V011D	640 x 480	5.6µm x 5.6µm	1/4 inch	30 fps	27MHz	2.8V	10-bit serial	Rolling	Die; PLCC
Micron	MT9V111D	640 x 480	5.6µm x 5.6µm	1/4 inch	30 fps	48MHz	2.8V	10-bit serial	Rolling	Die; IBGA; ICSP
Micron	MT9V125I	640 x 480	5.6µm x 5.6µm	1/4 inch	30 fps	27MHz	2.8V	10-bit parallel	Rolling	IBGA
Micron	MT9V112D	640 x 480	3.6µm x 3.6µm	1/6 inch	30 fps	27MHz	2.8V	10-bit serial	Rolling	Die; ICSP
Micron	MT9V403C	659 x 494	9.9µm x 9.9µm	1/2 inch	200 fps	66MHz	+3.3V	10-bit	TrueSNAP™	CLCC
Micron	MT9V022D	752 x 480	6µm x 6µm	1/3 inch	60 fps	27MHz	3.3V	10-bit serial	TrueSNAP™	Die; IBGA; ICSP
Cypress	CYIS15M1000AA	1024 x 1024	15µm x 15µm	1 inch	11 fps	12MHz	5V	10-bit parallel	Rolling	JLCC
Cypress	CYII45x1300AA	1280 x 1024	7µm x 7µm	2/3 inch	7 fps	10MHz	5V	10-bit parallel	Rolling	CLCC; JLCC
Cypress	CYII55x1300AA	1280 x 1024	6.7µm x 6.7µm	2/3 inch	27 fps	40MHz	3.3V-4.5V	10-bit parallel	Rolling/Sync.	LCC
Micron	MT9M001C	1280 x 1024	5.2µm x 5.2µm	1/2 inch	30 fps	48MHz	3.3V	10-bit serial	Rolling	CLCC
Micron	MT9M011D	1280 x 1024	3.6µm x 3.6µm	1/3 inch	15-30 fps	27MHz	2.5V-3.1V	10-bit serial	Rolling	Die; IBGA; PLCC
Micron	MT9M111D	1280 x 1024	3.6µm x 3.6µm	1/3 inch	15-30 fps	54MHz	2.8V	10-bit serial	Rolling	Die; ICSP
Micron	MT9M112D	1280 x 1024	2.8µm x 2.8µm	1/4 inch	15-30 fps	54MHz	1.8V-2.8V	10-bit	Rolling	Die
Micron	MT9M413C	1280 x 1024	12µm x 12µm	19.67mm	0-500+ fps	66MHz	3.3V	10-bit	TrueSNAP™	PGA
Cypress	CYL15x1300AA	1280 x 1024	14µm x 14µm	non standard	450 fps	20MHz	5V	16-ch. analogue	Pipelined sync.	PGA
Micron	MT9D011D	1600 x 1200	2.8µm x 2.8µm	1/3 inch	15-30 fps	36MHz	2.8V	10-bit serial	Rolling	Die
Micron	MT9D111D	1600 x 1200	2.8µm x 2.8µm	1/3 inch	15-30 fps	80MHz	2.8V	10-bit	Rolling	Die
Micron	MT9D012D	1600 x 1200	2.2µm x 2.2µm	1/4 inch	15-30 fps	27MHz	1.8V-2.8V	10-bit	Rolling	Die
Micron	MT9D112D	1600 x 1200	2.2µm x 2.2µm	1/4 inch	15-30 fps	27MHz	2.8V	10-bit	Rolling	Die
Micron	MT9T001D	2048 x 1536	3.2µm x 3.2µm	1/2 inch	12-93 fps	48MHz	+3.3V	10-bit parallel	Rolling	Die; PLCC
Micron	MT9T012D	2048 x 1536	2.2µm x 2.2µm	1/3.2 inch	15-30 fps	64MHz	1.8V-2.8V	10-bit	Rolling	Die
Cypress	CYL15M4000AA	2048 x 2048	12µm x 12µm	non standard	15 fps	33MHz	2.5V-3.3V	2x10-bit parallel	Pipelined sync.	PGA
Cypress	CYII4SM6600AB-HDC	2210 x 3002	3.5µm x 3.5µm	1 inch	5 fps	40MHz	2.5V	10-bit parallel	Rolling	LCC
Micron	MT9P001I	2592 x 1944	2.2µm x 2.2µm	1/2.5 inch	12-70 fps	96MHz	1.7V-3.1V	12-bit	Rolling	iLCC
Micron	MT9P011D	2592 x 1944	2.2µm x 2.2µm	1/2.5 inch	12-70 fps	96MHz	1.7V-3.1V	12-bit	Rolling	Die; iLCC
Cypress	CYII45x014KAA	3048 x 4560	8µm x 8µm	35mm	4 fps	15MHz	3.3V	4-ch. analogue	Rolling	PGA
Micron	MT9E001I	3264 x 2448	1.75µm x 1.75µm	1/2.5 inch	10-30 fps	96MHz	1.8V-2.8V	12-bit	Rolling	iLCC

PRESSURE SENSORS

Semiconductor Pressure Sensors are monolithic silicon piezoresistors, which generate a changing output voltage with variations in applied pressure. The resistive element, which constitutes a strain gage, is ion implanted on a thin silicon diaphragm. Pressure Sensors appear in three integration levels (compensated, uncompensated and integrated) and can measure pressure in three types: Absolute, Differential and Gauge.

Absolute pressure sensors: they measure an external pressure relative to a zero-pressure reference (vacuum) sealed inside the reference chamber of the die during manufacturing.

Differential pressure sensors: they measure the difference between pressures applied simultaneously to opposite sides of the diaphragm. A positive pressure applied to the “pressure” side generates the same (positive) output as an equal negative pressure applied to the “vacuum” side.

Gauge pressure sensors: readings are a special case of differential measurements in which the pressure applied to the pressure side is measured against the ambient atmospheric pressure applied to the vacuum side, through the vent hole in the chip, of the differential pressure sensor elements.

Compensated Pressure Sensors

Manufacturer	Part#	Pressure Range (min) kPa	Pressure Range (max) kPa ▲	Vs (typical)	Temp. Range °C	Typus	Packages
Freescale	MPXC2011D	0	10	3	15 to 40	Gauge	CHIP PAK
Freescale	MPXC2012D	0	10	3	15 to 40	Gauge	CHIP PAK
Freescale	MPX2010D	0	10	10	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPXV2010DP	0	10	10	- 40 to 125	Differential	8 PIN SENSOR WITH DUAL PORT
Freescale	MPXM2010D	0	10	10	- 40 to 125	Differential	SENSOR M-PAK 05
Freescale	MPX2010G	0	10	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT 4 PIN UNIBODY STOVPIPE PORT 4 PIN UNIBODY AXIAL PORT
Freescale	MPXV2010DG	0	10	10	- 40 to 125	Gauge	8 PIN SENSOR WITH GAUGE PORT
Freescale	MPXM2010G	0	10	10	- 40 to 125	Gauge	SENSOR M-PAK 05 PORTED
Freescale	MPX2300D	0	40	6	15 to 40	Gauge	CHIP PAK
Freescale	MPX2301D	0	40	6	15 to 40	Gauge	CHIP PAK
Freescale	MPX2050D	0	50	10	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPX2053D	0	50	10	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPXV2053DP	0	50	10	- 40 to 125	Differential	8 PIN SENSOR WITH DUAL PORT
Freescale	MPXM2053D	0	50	10	- 40 to 125	Differential	SENSOR M-PAK 05
Freescale	MPX2050G	0	50	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT 4 PIN UNIBODY AXIAL PORT
Freescale	MPX2053GP	0	50	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPXV2053GP	0	50	10	- 40 to 125	Gauge	8 PIN SENSOR WITH GAUGE PORT
Freescale	MPXM2051G	0	50	10	- 40 to 125	Gauge	SENSOR M-PAK 05 PORTED
Freescale	MPXM2053G	0	50	10	- 40 to 125	Gauge	SENSOR M-PAK 05 PORTED
Freescale	MPX2053GVP	0	50	10	- 40 to 125	Vacuum	4 PIN UNIBODY GAUGE PORT
Freescale	MPX2100A	0	100	10	- 40 to 125	Absolute	4 PIN UNIBODY 4 PIN UNIBODY GAUGE PORT 4 PIN UNIBODY AXIAL PORT
Freescale	MPX2102A	0	100	10	- 40 to 125	Absolute	4 PIN UNIBODY 4 PIN UNIBODY GAUGE PORT 4 PIN UNIBODY AXIAL PORT
Freescale	MPXM2102A	0	100	10	- 40 to 125	Absolute	SENSOR M-PAK 05 SENSOR M-PAK 05 PORTED
Freescale	MPX2100D	0	100	10	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPX2102D	0	100	10	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPXV2102DP	0	100	10	- 40 to 125	Differential	8 PIN SENSOR WITH DUAL PORT
Freescale	MPXM2102D	0	100	10	- 40 to 125	Differential	SENSOR M-PAK 05
Freescale	MPX2100GP	0	100	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPX2102GP	0	100	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPXV2102GP	0	100	10	- 40 to 125	Gauge	8 PIN SENSOR WITH GAUGE PORT
Freescale	MPXM2102G	0	100	10	- 40 to 125	Gauge	SENSOR M-PAK 05 PORTED

PRESSURE SENSORS

Manufacturer	Part#	Pressure Range (min) kPa	Pressure Range (max) kPa ▲	Vs (typical)	Temp. Range °C	Typus	Packages
Freescale	MPX2100GVP	0	100	10	- 40 to 125	Vacuum	4 PIN UNIBODY GAUGE PORT
Freescale	MPX2102GVP	0	100	10	- 40 to 125	Vacuum	4 PIN UNIBODY GAUGE PORT
Freescale	MPX2200A	0	200	10	- 40 to 125	Absolute	4 PIN UNIBODY 4 PIN UNIBODY GAUGE PORT
Freescale	MPX2202A	0	200	10	- 40 to 125	Absolute	4 PIN UNIBODY 4 PIN UNIBODY GAUGE PORT 4 PIN UNIBODY AXIAL PORT
Freescale	MPX2202D	0	200	10	- 40 to 125	Absolute	4 PIN UNIBODY
Freescale	MPXM2202A	0	200	10	- 40 to 125	Absolute	SENSOR M-PAK 05 SENSOR M-PAK 05 PORTED
Freescale	MPX2200D	0	200	10	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPX2202DP	0	200	10	- 40 to 125	Differential	4 PIN UNIBODY DUAL PORT
Freescale	MPXV2202DP	0	200	10	- 40 to 125	Differential	SENSOR 8 PIN DUAL PORT
Freescale	MPXM2202D	0	200	10	- 40 to 125	Differential	SENSOR M-PAK 05
Freescale	MPX2200GP	0	200	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPX2202GP	0	200	10	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPXV2202GC	0	200	10	- 40 to 125	Gauge	SMALL OUTLINE SMT WITH AXIAL PORT 8 PIN SENSOR WITH GAUGE PORT
Freescale	MPXM2202G	0	200	10	- 40 to 125	Gauge	SENSOR M-PAK 05 PORTED

Uncompensated Pressure Sensors

Manufacturer	Part#	Pressure Range (min) kPa	Pressure Range (max) kPa ▲	Vs (typical)	Temp. Range °C	Typus	Packages
Freescale	MPX10D	0	10	3	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPX12D	0	10	3	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPX10G	0	10	3	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT 4 PIN UNIBODY STOVPIPE PORT
Freescale	MPXV10G	0	10	3	- 40 to 125	Gauge	SMALL OUTLINE SMT WITH AXIAL PORT SMALL OUTLINE DIP WITH AXIAL PORT
Freescale	MPVZ12G	0	10	3	-40 to 125	Gauge	WATER LEVEL MEASUREMENT PORT MEDIA RESISTANT
Freescale	MPX12G	0	10	3	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPX53D	0	50	3	- 40 to 125	Differential	4 PIN UNIBODY 4 PIN UNIBODY DUAL PORT
Freescale	MPXM53GS	0	50	3	- 40 to 125	Differential	SENSOR M-PAK 05
Freescale	MPX53GP	0	50	3	- 40 to 125	Gauge	4 PIN UNIBODY GAUGE PORT
Freescale	MPXV53GC	0	50	3	- 40 to 125	Gauge	SMALL OUTLINE DIP WITH AXIAL PORT

Integrated Pressure Sensors

Manufacturer	Part#	Pressure Range (min) kPa ▲1	Pressure Range (max) kPa ▲2	Vs (typical)	Temp. Range °C	Typus	Packages
Freescale	MPXV4115V	-115	0	5	-40 to 125	Vacuum	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXV6115V	-115	0	5	-40 to 125	Vacuum	SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXV5050V	-50	0	5	-40 to 125	Absolute	SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXV7025D	-25	25	5	-40 to 125	Differential	8 PIN SENSOR DUAL PORT
Freescale	MPXV7025G	-25	25	5	-40 to 125	Gauge	8 PIN SENSOR GAUGE PORT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXV7007D	-7	7	5	-40 to 125	Differential	8 PIN SENSOR DUAL PORT
Freescale	MPXV7007G	-7	7	5	-40 to 125	Gauge	8 PIN SENSOR GAUGE PORT SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXV7002	-2	2	5	10 to 60	Differential	8 PIN SENSOR DUAL PORT

PRESSURE SENSORS

Manufacturer	Part#	Pressure Range (min) kPa ¹	Pressure Range (max) kPa ²	Vs (typical)	Temp. Range °C	Typus	Packages
Freescale	MPVZ5004	0	3.92	5	0 to 85	Gauge	SMALL OUTLINE SMT SMALL OUTLINE DIP 8 PIN SOP SIFEL W/M-PORT 8 PIN SOP W/M-PORT
Freescale	MPXV5004D	0	3,92	5	0 to 85	Differential	8 PIN SENSOR DUAL PORT
Freescale	MPXV5004G	0	3.92	5	0 to 85	Gauge	SMALL OUTLINE SMT SMALL OUTLINE DIP SMALL OUTLINE SMT WITH AXIAL PORT SMALL OUTLINE DIP WITH AXIAL PORT 8 PIN SENSOR GAUGE PORT
Freescale	MPXV5004GV	0	3.92	5	0 to 85	Vacuum	8 PIN SENSOR GAUGE VACUUM PORT
Freescale	MPVZ4006	0	6	5	10 to 60	Gauge	SMALL OUTLINE SMT SMALL OUTLINE DIP 8 PIN SOP SIFEL W/M-PORT 8 PIN SOP W/M-PORT
Freescale	MPXV4006D	0	6	5	-10 to 60	Differential	8 PIN SENSOR DUAL PORT
Freescale	MPXV4006G	0	6	5	-10 to 60	Gauge	8 PIN SENSOR GAUGE PORT SMALL OUTLINE DIP SMALL OUTLINE SMT SMALL OUTLINE DIP WITH AXIAL PORT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPVZ5010	0	10	5	-40 to 125	Gauge	SMALL OUTLINE SMT SMALL OUTLINE DIP 8 PIN SOP SIFEL W/M-PORT 8 PIN SOP W/M-PORT
Freescale	MPX5010D	0	10	5	-40 to 125	Differential	6 PIN UNIBODY 6 PIN UNIBODY DUAL PORT
Freescale	MPX5010G	0	10	5	-40 to 125	Gauge	6 PIN UNIBODY GAUGE PORT 6 PIN UNIBODY STOVPIPE PORT 6 PIN UNIBODY AXIAL PORT
Freescale	MPXV5010D	0	10	5	-40 to 125	Differential	8 PIN SENSOR WITH DUAL PORT
Freescale	MPXV5010G	0	10	5	-40 to 125	Gauge	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT 8 PIN SENSOR WITH GAUGE PORT
Freescale	MPX5050D	0	50	5	-40 to 125	Differential	6 PIN UNIBODY 6 PIN UNIBODY DUAL PORT
Freescale	MPX5050G	0	50	5	-40 to 125	Gauge	6 PIN UNIBODY GAUGE PORT
Freescale	MPXV5050D	0	50	5	-40 to 125	Differential	8 PIN SENSOR DUALPORT
Freescale	MPXV5050G	0	50	5	-40 to 125	Gauge	8 PIN SENSOR GAUGE PORT
Freescale	MPX4080D	0	80	5.1	0 to 85	Differential	6 PIN UNIBODY
Freescale	MPX5100D	0	100	5	-40 to 125	Differential	6 PIN UNIBODY 6 PIN UNIBODY DUAL PORT
Freescale	MPX5100G	0	100	5	-40 to 125	Differential	6 PIN UNIBODY AXIAL PORT 6 PIN UNI- BODY GAUGE PORT
Freescale	MPXV5100	0	100	5	-40 to 125	Absolute	SMOUTLN DIP WITH AXIAL PORT SMALL OUTLINE SMT WITH AXIAL PORT 8 PIN SENSOR DUAL PORT
Freescale	MPX4250D	0	250	5.1	-40 to 125	Differential	6 PIN UNIBODY 6 PIN UNIBODY DUAL PORT
Freescale	MPX5500D	0	500	5	-40 to 125	Differential	6 PIN UNIBODY 6 PIN UNIBODY DUAL PORT
Freescale	MPX5700D	0	700	5	-40 to 125	Differential	6 PIN UNIBODY 6 PIN UNIBODY DUAL PORT
Freescale	MPX5700G	0	700	5	-40 to 125	Gauge	6 PIN UNIBODY GAUGE PORT 6 PIN UNIBDY STOVPIPE PORT
Freescale	MPX5999D	0	1000	5	-40 to 125	Differential	6 PIN UNIBODY
Freescale	MPX4101A	15	102	5.1	-40 to 125	Absolute	6 PIN UNIBODY
Freescale	MPXA4101A	15	102	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXH4101A	15	102	5.1	-40 to 125	Absolute	8 PIN SENSOR SSOP W/O PORT 8 PIN SENSOR SSOP PORTED
Freescale	MPX4105	15	105	5.1	-40 to 125	Absolute	6 PIN UNIBODY

PRESSURE SENSORS

Manufacturer	Part#	Pressure Range (min) kPa ¹	Pressure Range (max) kPa ²	Vs (typical)	Temp. Range °C	Typus	Packages
Freescale	MP3H6115A	15	115	3	-40 to 125	Absolute	8 PIN SENSOR SSOP W/O PORT 8 PIN SENSOR SSOP PORTED
Freescale	MPX4115A	15	115	5.1	-40 to 125	Absolute	6 PIN UNIBODY 6 PIN UNIBODY GAUGE PORT 6 PIN UNIBODY STOVPIPE PORT
Freescale	MPXA4115A	15	115	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT 8 PIN SENSOR WITH GAUGE PORT
Freescale	MPX5100A	15	115	5	-40 to 125	Absolute	6 PIN UNIBODY 6 PIN UNIBODY GAUGE PORT
Freescale	MPXA6115A	15	115	5	-40 to 125	Absolute	SMALL OUTLINE SMT SMALL OUTLINE DIP WITH AXIAL PORT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXAZ4115A	15	115	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXAZ6115A	15	115	5	-40 to 125	Absolute	8 PIN SENSOR GAUGE PORT SMALL OUTLINE DIP SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXH6115A	15	115	5	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED 8 PIN SENSOR SSOP WITHOUT PORT
Freescale	MPXHZ6115A	15	115	5.1	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED 8 PIN SENSOR SSOP WITHOUT PORT
Freescale	MPXHZ6130A	15	130	5	-40 to 125	Absolute	SSOP MEDIA RESISTANT
Freescale	MPX5700A	15	700	5	-40 to 125	Absolute	6 PIN UNIBODY 6 PIN UNIBODY AXIAL PORT 6 PIN UNIBODY GAUGE PORT 6 PIN UNIBDY STOVPIPE PORT
Freescale	MPX4100A	20	105	5.1	-40 to 125	Absolute	6 PIN UNIBODY 6 PIN UNIBODY GAUGE PORT 6 PIN UNIBODY STOVPIPE PORT
Freescale	MPXA4100A	20	105	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXAZ4100A	20	105	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPX4200A	20	200	5.1	-40 to 125	Absolute	6 PIN UNIBODY 6 PIN UNIBODY GAUGE PORT
Freescale	MPX4250G	20	250	5.1	-40 to 125	Gauge	6 PIN UNIBODY GAUGE PORT
Freescale	MPXA4250A	20	250	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXAZ4250A	20	250	5.1	-40 to 125	Absolute	SMALL OUTLINE SMT WITH AXIAL PORT
Freescale	MPXH6250A	20	250	5.1	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED 8 PIN SENSOR SSOP WITHOUT PORT
Freescale	MPXHZ6250A	20	250	5	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED
Freescale	MPXH6300A	20	304	5.1	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED 8 PIN SENSOR SSOP WITHOUT PORT
Freescale	MPXH6400A	20	400	5	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED 8 PIN SENSOR SSOP WITHOUT PORT
Freescale	MPXHZ6400A	20	400	5	-40 to 125	Absolute	8 PIN SENSOR SSOP PORTED
Infineon	KP123	40	115	5	-40 to 125	Absolute	PG-DSOF-8-12
Infineon	KP124	40	115	5	-40 to 125	Absolute	PG-DSOF-8-12
Infineon	KP126C1	40	115	5	-40 to 125	Absolute	PG-DSOF-8-12
Infineon	KP126N2	40	115	5	-40 to 125	Absolute	PG-DSOF-8-12
Infineon	KP125	40	150	5	-40 to 125	Absolute	P-DSOF-8-12
Freescale	MPXY8020A	50	637.5	3	-40 to 150	Absolute	8 PIN TPMP GULL WING
Freescale	MPXY8021A	50	637.5	3	-40 to 150	Absolute	8 PIN TPMP GULL WING
Infineon	KP106	61	130	4.5 - 14	-40 to 90	Differential	P-DSOF-8-12
Freescale	MPXY8040A	500	900	3	-40 to 150	Absolute	8 PIN TPMP GULL WING

TEMPERATURE SENSORS

Temperature sensors are a wide field of sensors. There are two main groups offered by Silica's suppliers: Temperature Sensor ICs, with analogue output (current or voltage) or with digital output

(I²C, MICROWIRE, ...) and Silicon Temperature Sensors with resistive effect. Temperature Sensor ICs are offered from Analog Devices and Texas Instruments, Silicon Temperature Sensors from Infineon and NXP.

Temperature Sensor ICs with analogue output

Manufacturer	Part#	Output Type	Sensor Output ▲	Supply Voltage Range	Packages	Temp. Range °C
Analog Devices	AC2626	Analog	+1µA/°C	+4V to +30V	Stainless Steel Probe	-55 to +150
Analog Devices	AD590	Analog	+1µA/°C	+4V to +30V	FP-2; SOIC-8; TO-52	-55 to +150
Analog Devices	AD592	Analog	+1µA/°C	+4V to +30V	TO-92	-25 to +105
Analog Devices	TMP17	Analog	+1µA/°C	+4V to +30V	SOIC-8	-40 to +105
Analog Devices	TMP01	Analog	+5mV/°C	+4.5V to +13.2V	PDIP-8; SOIC-8; TO-99	-55 to +125
Analog Devices	AD594	Analog	+10mV/°C	+4.5V to +5.5V	Cerdip-14; DIP-14; SBDIP-14	-55 to +125
Analog Devices	AD595	Analog	+10mV/°C	+4.5V to +5.5V	Cerdip-14 SBDIP-14	-55 to +125
Analog Devices	AD596	Analog	+10mV/°C	+Vs to -Vs = 30Vmax	10 lead TO-100	-55 to +125
Analog Devices	AD597	Analog	+10mV/°C	+Vs to -Vs = 30Vmax	10 lead TO-100 SOIC-8	-55 to +125
Analog Devices	TMP35	Analog	+10mV/°C	+2.7V to +5.5V	SOIC-8; SOT23-5, TO-92	+10 to +125
Analog Devices	TMP36	Analog	+10mV/°C	+2.7V to +5.5V	SOIC-8; SOT23-5, TO-92	-40 to +125
STMicroelectronics	STLM20	Analog	11.77mV/°C	+2.4V to 5.5V	SOT323-5; 4-lead UDFN	-55 to +130 -40 to +85
Analog Devices	TMP37	Analog	+20mV/°C	+2.7V to +5.5V	SOIC-8; SOT23-5, TO-92	+5 to +100
Analog Devices	AD22100	Analog	+22.5mV/°C	+4V to +6.5V	SOIC-8; TO-92	0 to +100
Analog Devices	AD22103	Analog	+28mV/°C	+2.7V to +3.6V	SOIC-8; TO-92	0 to +100

Temperature Sensor ICs with digital output



Manufacturer	Part#	Output Type	Sensor Output	Temp Res (°C/LSB) ▲	Supply Voltage Range	Packages	Temp. Range °C
Analog Devices	TMP05	Digital	PWM	0.025	+2.7V to +5.5V	SC70-5 SOT23-5	-40 to +150
Analog Devices	TMP06	Digital	PWM	0.025	+2.7V to +5.5V	SC70-5 SOT23-5	-40 to +150
Analog Devices	ADT7301	Digital	DSP Serial, MICROWIRE™, QSPI™, SPI™	0.03125	+2.7V to +5.5V	MSOP-8 SOT23-6	-55 to +150
Analog Devices	ADT7302	Digital	DSP Serial, MICROWIRE™, QSPI™, SPI™	0.03125	+2.7V to +5.5V	MSOP-8 SOT23-6	-40 to +125
Texas Instruments	TMP105	Digital	I ² C® SMBus	0.0625	+2.6V to +3.3V	6-ball DieSize BGA	-40 to +125
Texas Instruments	TMP100	Digital	I ² C® SMBus	0.0625	+2.7V to +5.5V	6-pin SO	-55 to +125
Texas Instruments	TMP101	Digital	I ² C® SMBus	0.0625	+2.7V to +5.5V	6-pin SO	-55 to +125
Texas Instruments	TMP106	Digital	I ² C® SMBus	0.0625	+2.7V to +5.5V	6-ball DieSize BGA	-40 to +125
Texas Instruments	TMP121	Digital	SPI™	0.0625	+2.7V to +5.5V	6-pin SO	-40 to +125
Texas Instruments	TMP122	Digital	SPI™	0.0625	+2.7V to +5.5V	6-pin SO	-40 to +125
Texas Instruments	TMP123	Digital	SPI™	0.0625	+2.7V to +5.5V	6-pin SO	-55 to +125

TEMPERATURE SENSORS

Temperature Sensor ICs with digital output

Manufacturer	Part#	Output Type	Sensor Output ▲	Temp Res (°C/LSB) ▲	Supply Voltage Range	Packages	Temp. Range °C
Texas Instruments	TMP124	Digital	SPI™	0.0625	+2.7V to +5.5V	8-pin SOIC	-40 to +125
STMicroelectronics	STDS75M2F	Digital	I ² C SMBus	0.0625	+2.7V to 5.5V	8-pin SO 8-pin TSSOP	-55 to +125
Texas Instruments	TMP175	Digital	I ² C® SMBus	0.0625	+2.7V to +5.5V	8-pin MSOP 8-pin SOIC	-40 to +125
Texas Instruments	TMP275	Digital	SMBus	0.0625	+2.7V to +5.5V	8-pin MSOP	-40 to +125
Texas Instruments	TMP75	Digital	I ² C® SMBus	0.0625	+2.7V to +5.5V	8-pin MSOP 8-pin SOIC	-40 to +125
Analog Devices	ADT7408	Digital	I ² C® SMBus Thermostatic Switch	0.0625	+3V to +3.6V	LFCSP-8	-20 to +125
Analog Devices	ADT75	Digital	I ² C® SMBus Thermostatic Switch	0.0625	+3V to +5.5V	MSOP-8 SOIC-8	-55 to +125
Analog Devices	AD7314	Digital	DSP Serial, MICROWIRE™, QSPI™, SPI™	0.25	+2.65V to +5.5V	µSOIC-8	-35 to +85
Analog Devices	AD7414	Digital	I ² C®, SMBus	0.25	+2.7V to +5.5V	MSOP-8 SOT23-6	-40 to +125
Analog Devices	AD7415	Digital	I ² C®, SMBus	0.25	+2.7V to +5.5V	SOT23-5	-40 to +125
Analog Devices	AD7417	Digital	I ² C®	0.25	+2.7V to +5.5V	SOIC-16 TSSOP-16	-40 to +125
Analog Devices	AD7418	Digital	I ² C®	0.25	+2.7V to +5.5V	MSOP-8 SOIC-8, TSSOP-16	-40 to +125
Analog Devices	AD7814	Digital	DSP Serial, MICROWIRE™, QSPI™, SPI™	0.25	+2.7V to +5.5V	MSOP-8, SOT23-6	-55 to +125
Analog Devices	AD7816	Digital	MICROWIRE™, QSPI™, SPI™	0.25	+2.7V to +5.5V	MSOP-8, SOIC-8	-40 to +85
Analog Devices	ADT7519	Digital	DSP Serial, I ² C®, SPI™	0.25	+2.7V to +5.5V	QSOP-16	-40 to +120
Analog Devices	AD7416	Digital	I ² C® Thermostatic Switch	0.25	+2.7V to +5.5V	MSOP-8 SOIC-8	-40 to +125
Analog Devices	AD7817	Digital	MICROWIRE™ QSPI™ SPI™ Thermostatic Switch	0.25	+2.7V to +5.5V	SOIC-16 TSSOP-16	-40 to +85
Analog Devices	AD7818	Digital	MICROWIRE™ QSPI™ SPI™ Thermostatic Switch	0.25	+2.7V to +5.5V	MSOP-8 SOIC-16 SOIC-8	-40 to +85
Analog Devices	ADT7483A	Digital	SMBus Thermostatic Switch	0.25	+3V to +3.6V	QSOP-16	-40 to +125
Analog Devices	TMP03	Digital	PWM	0.3	+4.5V to +7V	SOIC-8 TO-92, TSSOP-8	-40 to +100
Analog Devices	TMP04	Digital	PWM	0.3	+4.5V to +7V	SOIC-8 TO-92, TSSOP-8	-40 to +100
Analog Devices	AD22105	Digital	Thermostatic Switch	n/a	+2.7V to 7V	SOIC-8, TO-92	-40 to +125
Texas Instruments	TMP125	Digital	SPI™	n/a	+2.7V to +5.5V	6-pin SO	-40 to +125
Texas Instruments	TMP141	Digital	One-wire	n/a	+2.7V to +5.5V	6-pin SO 8-pin MSOP	-40 to +125
Analog Devices	TMP12	Digital	Thermostatic Switch	n/a	+4.5V to +5.5V	SOIC-8	-40 to +125
STMicroelectronics	STLM75M2F	Digital	I ² C SMBus	configurable (0.0625-0.5)	+2.7V to 5.5V	8-pin SO 8-pin TSSOP	-55 to +125

TEMPERATURE SENSORS

Manufacturer	Part#	Tolerance % 	R25 (Ω) 	R100 (Ω)	Packages	Temp. Range °C
Infineon	KTY 23-5	± 1%	985		P-SOT23-3-3	-50 to +150
Infineon	KTY 21-5	± 1%	985		P-T092-2-5	-50 to +150
NXP	KTY83/151	-5 to 0	1000		SOD68	-55 to +175
NXP	KTY82/151	-5 to 0	1000		SOT23	-55 to +150
NXP	KTY83/150	±5	1000		SOD68	-55 to +175
NXP	KTY82/150	±5	1000		SOT23	-55 to +150
NXP	KTY81/150	±5	1000		SOD70	-55 to +150
Infineon	KT 210	± 3%	1000		P-T092-2-5	-50 to +150
Infineon	KT 23	± 3%	1000		P-SOT23-3-3	-50 to +150
NXP	KTY83/121	-2 to 0	1000		SOD68	-55 to +175
NXP	KTY82/121	-2 to 0	1000		SOT23	-55 to +150
NXP	KTY81/121	-2 to 0	1000		SOD70	-55 to +150
NXP	KTY81/120	±2	1000		SOD70	-55 to +150
NXP	KTY82/120	±2	1000		SOT23	-55 to +150
NXP	KTY83/120	±2	1000		SOD68	-55 to +175
NXP	KTY81/110	±1	1000		SOD70	-55 to +150
NXP	KTY82/110	±1	1000		SOT23	-55 to +150
NXP	KTY83/110	±1	1000		SOD68	-55 to +175
Infineon	KTY 21-6	± 1%	1000		P-T092-2-5	-50 to +150
Infineon	KTY 23-6	± 1%	1000		P-SOT23-3-3	-50 to +150
NXP	KTY81/122	0 to 2	1000		SOD70	-55 to +150
NXP	KTY82/122	0 to 2	1000		SOT23	-55 to +150
NXP	KTY83/122	0 to 2	1000		SOD68	-55 to +175
Infineon	KTY 21-7	± 1%	1015		P-T092-2-5	-50 to +150
Infineon	KTY 23-7	± 1%	1015		P-SOT23-3-3	-50 to +150
Infineon	KTY 11-5	± 1%	1970		P-T092-2-5	-50 to +150
Infineon	KTY 13-5	± 1%	1970		P-SOT23-3-3	-50 to +150
NXP	KTY82/251	-5-0	2000		SOT23	-55 to +150
NXP	KTY81/250	±5	2000		SOD70	-55 to +150
NXP	KTY82/250	±5	2000		SOT23	-55 to +150
Infineon	KT 110	± 3%	2000		P-T092-2-5	-50 to +150
Infineon	KT 130	± 3%	2000		P-SOT23-3-3	-50 to +150
NXP	KTY82/221	-2 to 0	2000		SOT23	-55 to +150
NXP	KTY81/221	-2 to 0	2000		SOD70	-55 to +150
NXP	KTY82/220	±2	2000		SOT23	-55 to +150
NXP	KTY81/220	±2	2000		SOD70	-55 to +150
Infineon	KTY 11-6	± 1%	2000		P-T092-2-5	-50 to +150
Infineon	KTY 13-6	± 1%	2000		P-SOT23-3-3	-50 to +150
Infineon	KTY 16-6	± 1%	2000		Ni-plated Brass Tube	-50 to +150
Infineon	KTY 19-6M	± 1%	2000		Stainless Steel	-50 to +150
NXP	KTY82/210	±1	2000		SOT23	-55 to +150
NXP	KTY81/210	±1	2000		SOD70	-55 to +150
NXP	KTY81/222	0 to 2	2000		SOD70	-55 to +150
NXP	KTY82/222	0 to 2	2000		SOT23	-55 to +150
NXP	KTY82/252	0 to 5	2000		SOT23	-55 to +150
Infineon	KTY 11-7	± 1%	2030		P-T092-2-5	-50 to +150
Infineon	KTY 13-7	± 1%	2030		P-SOT23-3-3	-50 to +150
NXP	KTY84/151	-5 to 0		1000	SOD68	-40 to +300
NXP	KTY84/150	±5		1000	SOD68	-40 to +300
NXP	KTY84/130	±3		1000	SOD68	-40 to +300

Sensor Guide

FAX BACK to + 49 81 21 777-544

Silica Account Manager/FAE*:

Name (to be completed by Silica)

I'm interested in	
Accelerometers	
Magneto-resistive Angle Sensors	
Magneto-resistive Rotational Speed Sensors	
Magnetic Field Sensors	
Hall Effect Sensors	
E-Field Sensors	
Ambient Light Sensors	
Distance Sensors	
CMOS Image Sensors	
Pressure Sensors	
Temperature Sensors	

Manufacturer	
Analog Devices	
Cypress	
Freescale	
Infineon	
Micron	
NXP Semiconductor	
Osram Opto Semiconductors	
Sharp Microelectronics	
STMicroelectronics	
Texas Instruments	
ALL	

* Field Applications Engineer

Comments: _____

Company: _____

Name: _____

Job Title: _____

Address: _____

Post Code: _____ Town: _____

Country: _____

Phone: _____ Fax: _____

e-Mail: _____

Your Market Segment

- Automotive
- Wired Comms
- Wireless Comms
- Computer & Related Products
- Consumer Products
- Industrial Equipment
 - Motor Control/-Drive
 - Welding
 - Lighting
 - Test/Measurement
 - Medical Equipment
 - Power Management
 - Power Supply
 - Other Industrial
- Military
- Security
- Transportation
- Contract Manufacturer/Subcontractor
- Design House, University, Consultant etc.

Your Product Interests

- Analogue
- ASIC
- Communications
- Discrete
- Displays
- DSP
- Logic
- MCU
- Memory
- Military Product
- MPU
- Opto
- PLD
- Power
- Sensors
- Space Products
- Telecom

Your Function

- Purchasing
- Research/Development
- Management
- Logistics
- Production
- Marketing/Sales
- Quality

I allow Silica to use my data for email updates
(Silica respects your privacy and will not provide your data to any third party)

© 2006, Avnet, Inc. All rights reserved. AVNET and the AV logo are registered trademarks of Avnet Inc. SILICA is a trademark of Avnet, Inc. All other brands and names are the property of their respective owners. In accordance with Data Protection Laws, you have the right to check and amend information held in our database concerning you. Unless you request otherwise, this information may be used to offer you other services via external agencies.

Sensor Guide

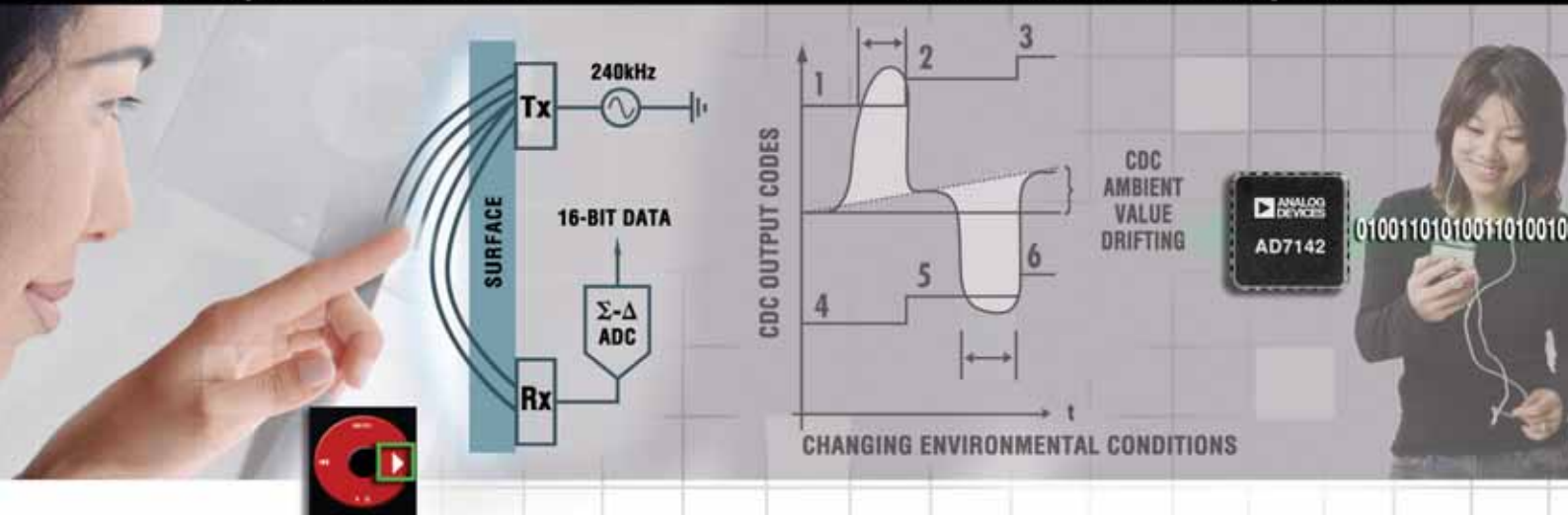


FAX BACK to + 49 81 21 777-544

16-bit touch controller for the best user experience. In data conversion, **analog is everywhere.**

16-bit capacitance conversion

Σ - Δ environmental compensation

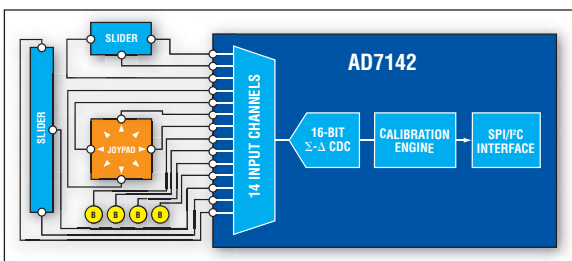


16-bit Σ - Δ CDC ...

- <1 femtofarad resolution
- Full power mode: <1 mA
- Low power mode: 50 μ A
- Shutdown current: <2 μ A
- Supply voltage: 2.6 V to 3.6 V
- Automatic environmental calibration
- Automatic adaptive sensitivity
- SPI® or I²C® interface
- 32-lead 5 mm × 5 mm LFCSP
- Price: \$1.65 (1k quantities)

... enabling multiple applications

- Consumer electronics
- Medical instrumentation
- Automotive applications
- Industrial equipment
- PC peripherals



With 14 inputs, the AD7142 can be programmed for a variety of navigation functions including buttons, sliders, scroll wheels, and joypads.

Improved sensitivity and environmental calibration—made possible by Σ - Δ conversion

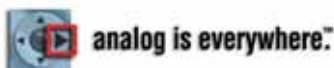
For products with increasing feature convergence, finger-driven navigation enhances the user experience—for designers as well as consumers. The AD7142 capacitance-to-digital converter (CDC) with on-chip environmental compensation delivers unmatched touch control performance. It offers:

- Reliable performance over supply and temperature
- Programmable functionality and touch sensitivity
- 50% lower power than competitive solutions
- Development tools, such as reference designs and host software, that reduce time to market

ADI also offers CDC solutions for measuring proximity, position, level, pressure, and humidity.

New online seminar:

View the "Innovative Human Interface Design Techniques Using CDCs" seminar at www.analog.com/onlineseminar-CDC.



www.analog.com/touchcontrol

Tel: +44 (0)1932 358 530 Fax: +32 (0)11 300 635



© 2006 Analog Devices, Inc. Product and company names listed are trademarks or trade names of their respective owners.

SILICA OFFICES

AUSTRIA

Avnet EMG Elektronische Bauelemente GmbH
Diefenbachgasse 35/2 • A-1150 Wien
Phone: +43 1 86642-0 • Fax: +43 1 86642-350
silica.wien@avnet.com

BELGIUM

Avnet Europe NV/SA
Eagle Building • Kouterveldstraat 20B
B-1831 Diegem
Phone: +32 2 709 90 00 • Fax: +32 2 709 98 10
silica.belgium@avnet.com

CZECH REPUBLIC (SLOVAKIA)

Avnet s.r.o.
Argentinská 38/286 • CZ-170 00 Praha 7
Phone: +420 2 34091031 • Fax: +420 2 34091030
silica.praha@avnet.com

DENMARK

Avnet Nortec A/S
Banemarksvej 50 • DK-2605 Brøndby
Phone: +45 43 22 80 10 • Fax: +45 43 22 80 11
silica.denmark@avnet.com

FINLAND

Avnet Nortec OY
Niitykatu 8 • FIN-02200 Espoo
Phone: +358 207 499221 • Fax: +358 207 499280
silica.helsinki@avnet.com

FRANCE

Avnet EMG France S.A.
6/8, rue Ambroise Croizat • ZAE Les Glaises
F-91127 Palaiseau Cedex
Phone: +33 1 64 47 29 29 • Fax: +33 1 64 47 00 84
silica.paris@avnet.com

Avnet EMG France S.A.
Parc Club du Moulin à Vent • Bât 40
33, rue du Dr. G. Lévy • F-69693 Vénissieux Cedex
Phone: +33 4 78 77 13 60 • Fax: +33 4 78 77 13 99
silica.lyon@avnet.com

Avnet EMG France S.A.
Technoparc • Bât E • 4, avenue des Peupliers
F-35510 Cesson Sévigné
Phone: +33 2 99 83 84 85 • Fax: +33 2 99 83 80 83
silica.rennes@avnet.com

Avnet EMG France S.A.
Parc de la Plaine 35 • avenue Marcel Dassault –
BP 5867 • F-31506 Toulouse Cedex 5
Phone: +33 5 62 47 47 60 • Fax: +33 5 62 47 47 61
silica.toulouse@avnet.com

GERMANY

Avnet EMG GmbH
Gruber Str. 60 C • D-85586 Poing
Phone: +49 8121 777 02 • Fax: +49 8121 777 531
silica.munchen@avnet.com

Avnet EMG GmbH
Keithstr. 9-11 • D-10787 Berlin
Phone: +49 30 214882-0 • Fax: +49 30 214882-33
silica.berlin@avnet.com

Avnet EMG GmbH
Langenbochumer Str. 201 • D-45701 Herten
Phone: +49 2366 9580-0 • Fax: +49 2366 54337
silica.herten@avnet.com

Avnet EMG GmbH
Wolfenbütteler Str. 22 • D-38102 Braunschweig
Phone: +49 531 22073-0 • Fax: +49 531 2207335
silica.braunschweig@avnet.com

Avnet EMG GmbH
Hessbruehlstr. 21c • D-70565 Stuttgart-Vaihingen
Phone: +49 711 78260-01 • Fax: +49 711 78260-200
silica.stuttgart@avnet.com

Avnet EMG GmbH
Carl-Zeiss-Str. 14 - 18 • D-65520 Bad Camberg
Phone: +49 6434 90 46 30 • Fax: +49 6434 90 46 33
silica.badcamberg@avnet.com

GREECE

Avnet
1, Anaxagora Street • GR-17778 Tavros (Athens)
Phone: +30 210 342 51 28 • Fax: +30 210 347 57 25
silica.greece@avnet.com

HUNGARY (ROMANIA)

Avnet EMG
Montevideo u. 2/B • H-1037 Budapest
Phone: +36 1 43 67215 • Fax: +36 1 43 67213
silica.budapest@avnet.com

IRELAND

Silica
Arena House, Arena Road,
Sandyford Industrial Estate, Sandyford,
IRL-Dublin 18
Phone: +353 1 890 1000 • Fax: +44 1438 788262
silica.dublin@avnet.com

ITALY

AVNET EMG ITALY SPA
Via Manzoni 44, I-20095 Cusano Milanino MI
Phone: +39 02 660 921 • Fax: +39 02 66092 333
silica.milano@avnet.com

AVNET EMG ITALY SPA
Via Longhin, 83 • I-35129 Padova (PD)
Phone: +39 049 8073689 • Fax: +39 049 773464
silica.padova@avnet.com

AVNET EMG ITALY SPA
Via Panciatichi, 40 • I-50127 Firenze (FI)
Phone: +39 055 4360392 • Fax: +39 055 431035
silica.firenze@avnet.com

AVNET EMG ITALY SPA
Via Scaglia Est, 144 • I-41100 Modena (MO)
Phone: +39 059 351300 • Fax: +39 059 344993
silica.modena@avnet.com

AVNET EMG ITALY SPA
Via Zoe Fontana, 220 • I-00131 Roma Tecnocittà
Phone: +39 06 4131151 • Fax: +39 06 4131161
silica.roma@avnet.com

NETHERLANDS

Avnet B.V.
Takkebijsters 2 • NL-4817 BL Breda
Phone: +31 (0)76 57 22 700 • Fax: +31 (0)76 57 22 707
silica.breda@avnet.com

NORWAY

Avnet Nortec AS
Hagalokkveien 7 • Postboks 63 • N-1371 Asker
Phone: +47 6677 3600 • Fax: +47 6677 3677
silica.norway@avnet.com

POLAND (ESTONIA/LATVIA/LITHUANIA)

Avnet Em Sp. z oo.
ul. Woloska 18 • PL-02-675 Warszawa
Phone: +48 22640 2351 • Fax: +48 22640 2354
silica.warszawa@avnet.com

PORTUGAL

Avnet Iberia S.A.U.
Rua Corujeira de Baixo, 452 • P- 4300 -150 Porto
Phone: +351 22 589 8070 • Fax: +351 22 589 8071
silica.porto@avnet.com

RUSSIA (BELARUS)

Korovinskoye Chaussee 10 • Building 2
Office 25 • RUS-127486 Moscow
Phone: +7 495 9371268 • Fax: +7 495 9372166
silica.russia@avnet.com

SLOVENIA (BULGARIA, CROATIA, BOSNIA, MACEDONIA, SERBIA/MONTENEGRO)

Dunajska c. 159 • SLO-1000 Ljubljana
Phone: +386 (0)1 560 9750 • Fax: +386 (0)1 560 9878
silica.slovenia@avnet.com

SPAIN

Avnet Iberia S.A.U.
C/Chile, 10 • plta. 2ª, ofic 229 • Edificio Madrid 92
E-28290 Las Matas (Madrid)
Phone: +34 91 372 71 00 • Fax: +34 91 636 97 88
silica.madrid@avnet.com

Avnet Iberia S.A.U.
C/Mallorca, 1 al 23 • 2ª plta.1A • E-08014 Barcelona
Phone: +34 93 327 85 30 • Fax: +34 93 425 05 44
silica.barcelona@avnet.com

Avnet Iberia S.A.U.
Plaza Zabalgame, 12 • Bajo Izqda.
E-48960 Galdácano (Vizcaya)
Phone: +34 944 57 27 77 • Fax: +34 944 56 88 55
silica.bilbao@avnet.com

SWEDEN

Avnet Nortec AB
Esplanaden 3D • BOX 1830 • S-171 27 Solna
Phone: +46 8 587 461 00 • Fax: +46 8 587 461 01
silica.stockholm@avnet.com

SWITZERLAND

Avnet EMG AG
Bernstrasse 392 • CH-8953 Dietikon
Phone: +41 43 322 49 49 • Fax: +41 43 322 49 50
silica.schweiz@avnet.com

TURKEY

Avnet
Bayar Cad. Gülbahar Sok. Nr. 17/132
TR- 34742 Kozytagi/Istanbul
Phone: +90 216 361 89 58 • Fax: +90 216 361 89 27
silica.turkey@avnet.com

UKRAINE

Avnet
14, Vasilkivska str. • 03040 Kiev, Ukraine
Phone: +380 44 4962226 • Fax: +380 44 4962227
silica.ukraine@avnet.com

UNITED KINGDOM

Avnet EMG Ltd.
Avnet House • Rutherford Close
Meadway Stevenage, Herts • SG1 2EF
Phone: +44 (0)1438 788310 • Fax: +44 (0)1438 788262
silica.stevenage@avnet.com