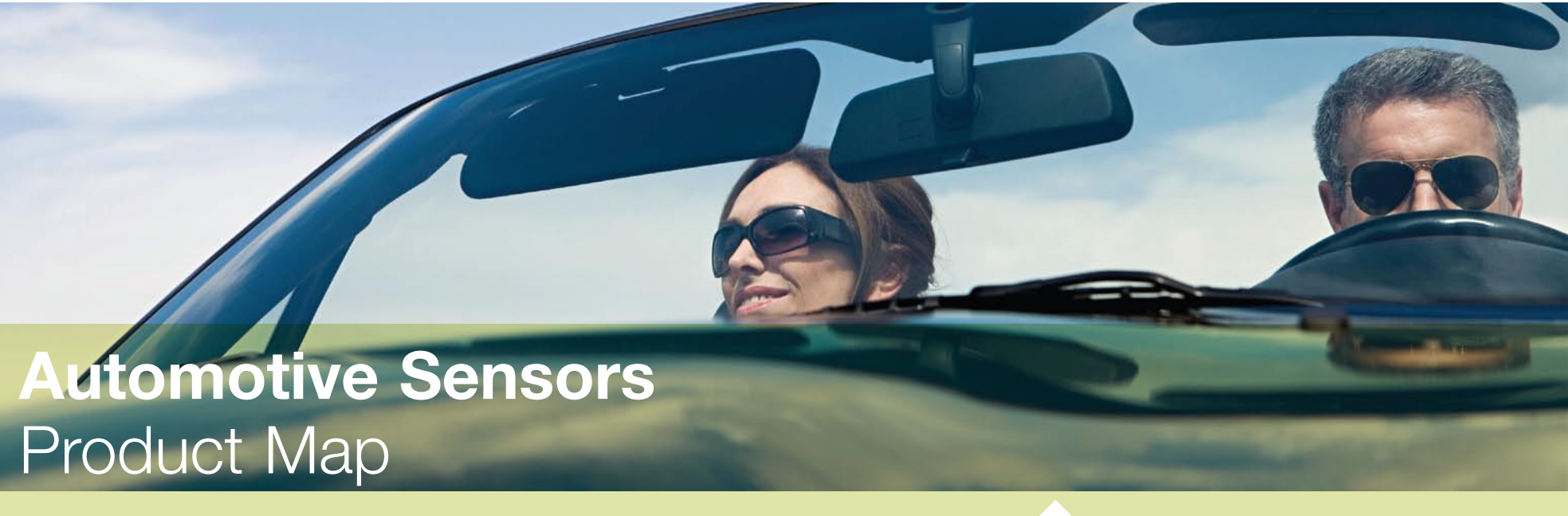
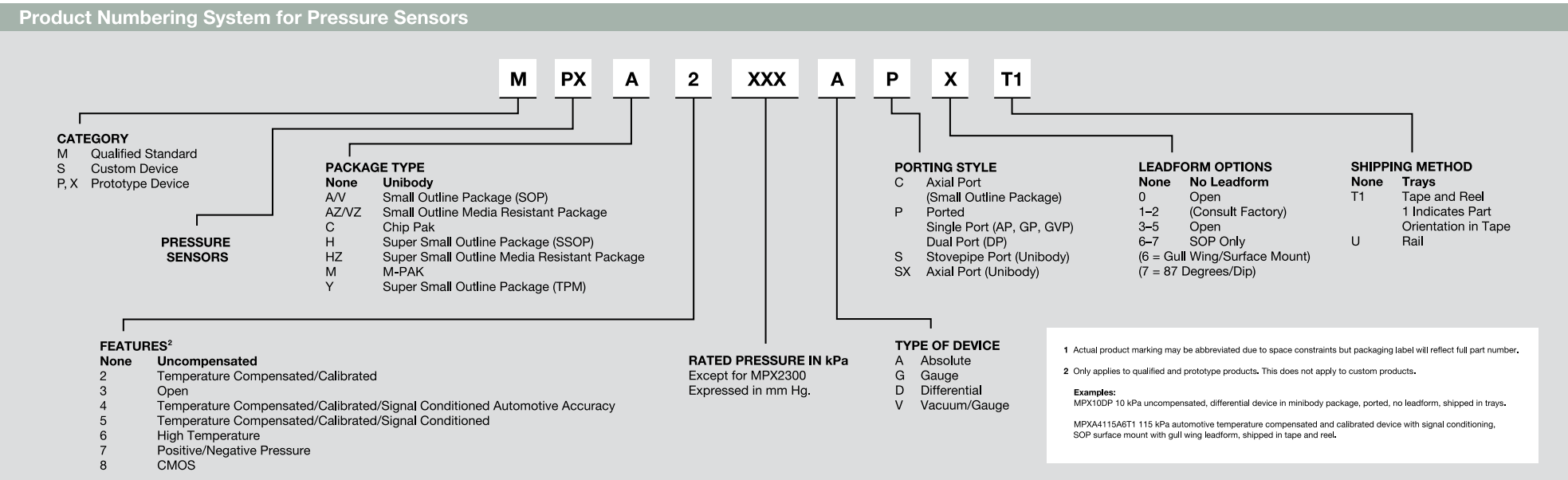
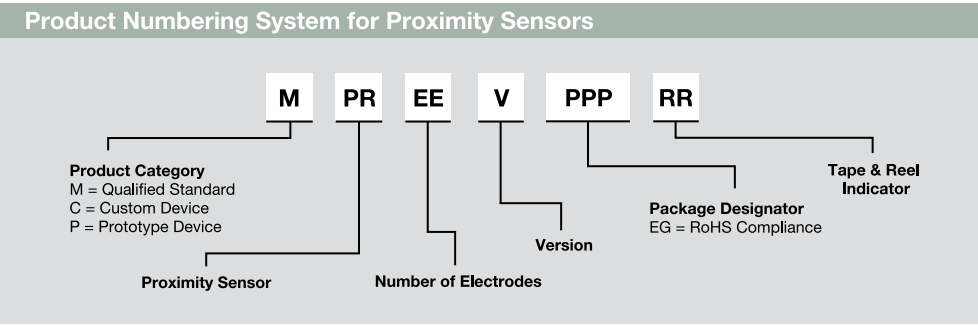
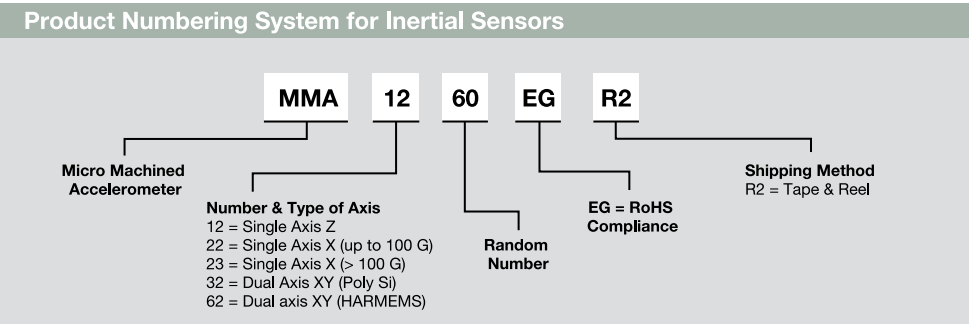


Tire Pressure Monitoring System (TPMS) and RF Products

TPMS Parts													
Product	RF Type	Flash	RAM	RF Frequency	Protocols Supported	Clock Type	Timer	Pressure Range	Pressure Sensor Accuracy	Package	Temperature Range	Status	Market Focus
MPXY8300A	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–800 kPa	±10 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Automotive Pressure Range (with XZ-Axis Accelerometer)
MPXY8300B	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–800 kPa	±10 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Automotive Pressure Range (with Z-Axis Accelerometer)
MPXY8300C	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–800 kPa	±10 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Automotive Pressure Range (without an Accelerometer)
MPXY8310A	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–450 kPa	±7 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Automotive Pressure Range (with XZ-Axis Accelerometer)
MPXY8310B	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–450 kPa	±7 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Automotive Pressure Range (with Z-Axis Accelerometer)
MPXY8310C	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–450 kPa	±7 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Automotive Pressure Range (without an Accelerometer)
MPXY8320A	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–1500 kPa	±20 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Truck Tire Pressure Range (with XZ-Axis Accelerometer)
MPXY8320B	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–1500 kPa	±20 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Truck Tire Pressure Range (with Z-Axis Accelerometer)
MPXY8320C	Transmitter	16 KB	512B	315 MHz/434 MHz RF Transmitter	ASK and FSK Modulation	OSC	2-channel, 16-bit Timer/Pulse-Width Modulator	100–1500 kPa	±20 kPa	SOIC-20 WB	-40°C to +125°C	Sampling	Truck Tire Pressure Range (without an Accelerometer)

Stand-Alone RF Products											
Product	RF Type	RF Frequency	Protocols Supported	Clock Type	Bandwidth	Sensitivity	Temperature	Package	Additional Features	In Production	Market Focus
MC33596	Receiver	315 MHz–915 MHz	OOK and FSK Demodulation	Programmable PLL and Strobe OSC	380 kHz	-103 dBm to -81 dBm typ in 4 steps	-40°C to +85°C	32 LQFP, 32 QFN	RSSI (75 dB digital and 55 dB analog), Strobe OSC and Data Manager with clock recovery for Manchester coded signals, context switching	✓	UHF RF Receiver, RF, Remote and Secure Entry
MC33696	Transceiver	315 MHz–915 MHz	OOK and FSK Demodulation	Programmable PLL and Strobe OSC	380 kHz	7 dBm output power -103 dBm to -81 dBm typ in 4 steps	-40°C to +85°C	32 LQFP, 32 QFN	RSSI (75 dB digital and 55 dB analog), Strobe OSC and Data Manager with clock recovery for Manchester coded signals, context switching	✓	UHF RF Transceiver, Remote/Secure Entry (2-way RF)





# Automotive Sensors

## Driving advanced safety applications and fuel efficiency

Freescale inertial, pressure and proximity sensors are designed to provide smarter, safer and greener automobiles with applications such as smart airbags, barometric absolute pressure, manifold absolute pressure, mass airflow, tire pressure monitoring systems, vehicle dynamic control and active suspension. Sensors offer significant benefits to automotive designers:

- Sensor function integration with detection and communication protocols
- Air to fuel ratio is critical for fuel efficiency and compliance with emission regulations
- Freescale's single-package TPMS solution integrates four silicon devices (2-axis accelerometer, capacitive pressure sensor, RF transmitter and an 8-bit MCU) to simplify the developer's design task
- More sensor integration is required as vehicles increase awareness of the driving environment (passive versus active safety systems)

Inertial Sensors										
Product	Sensing Direction	Acceleration (+/- g)	Sensitivity (mV/V/g) (Typ)	Equivalent Self-Test Output	Temperature Range	Roll Off Frequency (Hz)	Output	Packaging	Status Pin	Status
MMA1260EG	Z	1.5	240	2g	-40°C to +105°C	50	Analog	16-pin SOIC	Yes	Available
MMA2260EG	X	1.5	240	2g	-40°C to +105°C	50	Analog	16-pin SOIC	Yes	Available
MMA1270EG	Z	2.5	150	1.7g	-40°C to +105°C	50	Analog	16-pin SOIC	Yes	Available
MMA1250EG	Z	5	80	3g	-40°C to +105°C	50	Analog	16-pin SOIC	Yes	Available
MMA1220EG	Z	8	50	5g	-40°C to +105°C	250	Analog	16-pin SOIC	Yes	Available
MMA2201EG	X	40	10	12g	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA3221EG	XY	50/20	8/20	12g	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA3201EG	XY	40	10	12g	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA1213EG	Z	50	8	50g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA2202EG	X	50	8	12g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA2204EG	X	100	4	12g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA3202EG	XY	100/50	4/8	12g	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA3204EG	XY	100/30	4/13	12g	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA2301EG	X	200	2	30g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA1211EG	Z	150	2.6	75g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA1200EG	Z	250	1.6	75g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA1212EG	Z	200	2	40g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA2300EG	X	250	1.6	30g	-40°C to +125°C	400	Analog	16-pin SOIC	Yes	Available
MMA6222EG	XY	20/20	24 counts/g	10% of full scale (min)	-40°C to +125°C	400	Digital	20-pin SOIC	Yes	Available
MMA6222AEG	XY	20/20	23.4/23.4	10% of full scale (min)	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA6255EG	XY	50/50	9.76 counts/g	10% of full scale (min)	-40°C to +125°C	400	Digital	20-pin SOIC	Yes	Available
MMA6255AEG	XY	50/50	9.37/9.37	10% of full scale (min)	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available
MMA621010EG	XY	100/100	4.88 counts/g	10% of full scale (min)	-40°C to +125°C	400	Digital	20-pin SOIC	Yes	Available
MMA621010AEG	XY	100/100	4.68/4.68	10% of full scale (min)	-40°C to +125°C	400	Analog	20-pin SOIC	Yes	Available

Pressure Sensors						
Product	Maximum Pressure Rating (kPa)	Full Scale Span (Typical) (Vdc)	Sensitivity (mV/kPa)	Accuracy 0°C–85°C (% of VFSS)	Packaging	Status
MPX4100A	105	4.6	54	±1.8	Small outline package (SOP)	Available
MPXAZ4100A	105	4.6	54	±1.8	SOP media resistant package	Available
MPXV5004	4	3.9	1000	±2.5	SOP	Available
MPXV4010G	10	4.5	450	±5	SOP	Available
MPX5100	100	4.5	45	±2.5	6-pin unibody package	Available
MPX5700	700	4.5	6.4	±2.5	6-pin unibody package	Available
MPX5999	1000	4.5	4.5	±2.5	6-pin unibody package	Available
MPXH6101	102	4.6	54	±1.8	Super-small outline package (SSOP)	Available
MP3H6115A	115	2.7	27	±1.5	SSOP	Available
MPXA6115A	115	4.6	45.9	±1.5	SOP	Available
MPXAZ6115A	115	4.5	45.9	±1.5	SOP	Available
MPXH6115A	115	4.5	45.9	±1.5	SSOP	Available
MPXV6115V	115	4.6	45.9	±1.5	SOP	Available
MPXHZ6115	115	4.5	45.9	±1.5	SSOP	Available
MPXH6250	250	4.7	20	±1.5	SOP	Available
MPXHZ6250	250	4.7	20	±1.5	SOP	Available
MPXH6300	300	4.7	16	±1.8	SSOP	Available
MPXH6400	400	4.7	12	±1.5	SSOP	Available
MPXHZ6400	400	4.7	12	±1.5	SSOP	Available
MPXV7007	7	4.0	286	±5.0	SOP	Available
MPXV7025	25	4.5	90	±5.0	SOP	Available

Proximity Sensors									
Product	Description	Main Characteristics	No. of Channels	5V Reg. Current Limit (mA)	Max Voltage (V)	Operating Temperature Range (°C)	Communications	Packaging	Status
MC33794EKR2	Electric Field Imaging Device	120 kHz generator, shield driver, 9 electrodes + 2 VREF outputs, 5V regulator, MCU support	9	75	40	-40° to +85°	ISO-9141	54-pin SOICW	EVB Available
MC33941EGR2	Electric Field Imaging Device	Selectable from 60 kHz to 240 kHz generator, shield driver, 7 electrodes, 5V regulator	7	75	40	0° to +110°	N/A	24-pin SOICW	EVB Available

**Learn More:** For 8-, 16- and 32-bit MCU product maps, as well as more information on Freescale products, visit [www.freescale.com/automotive](http://www.freescale.com/automotive).

