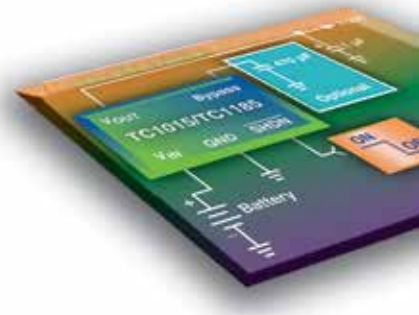
Analog & Interface Products

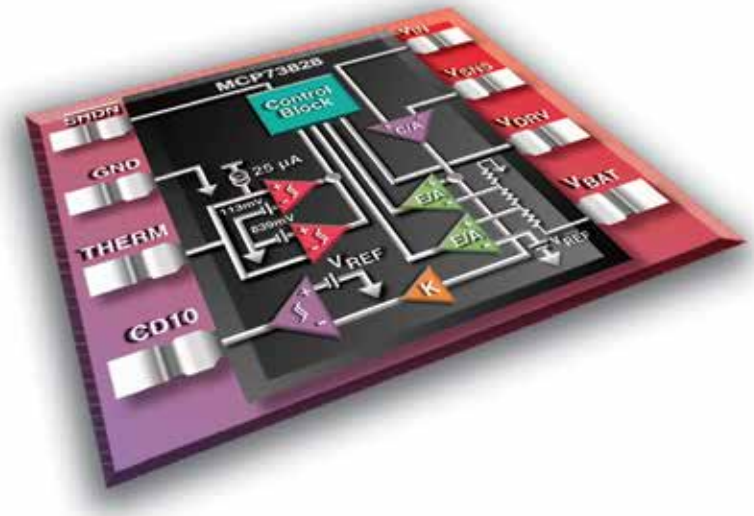
Fall 2012

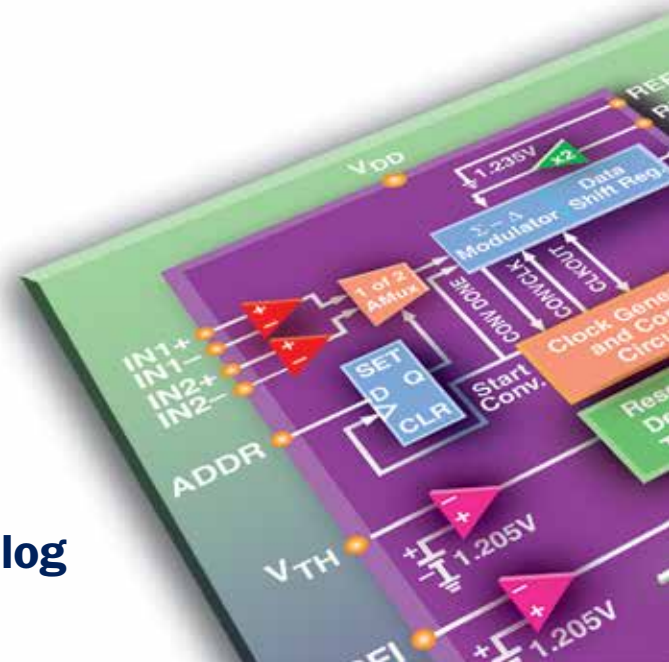
MICROCHIP

Analog & Interface Product Selector Guide

Thermal Management • Motor Driver • Interface Peripherals
Power Managment • Linear & Mixed Signal • Safety & Security







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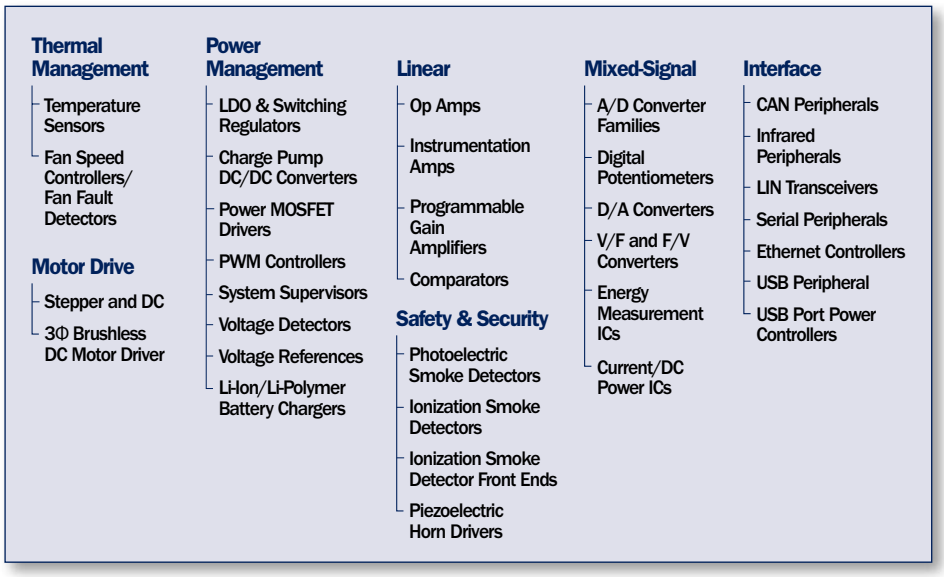
Are You Looking for Complete Analog & Interface Design Solutions?

Microchip's integrated analog technology, peripherals and features are engineered to meet today's demanding design requirements. Our broad spectrum of analog products addresses thermal management, power management, battery management, mixed-signal, linear, interface and safety & security solutions. Combined with "Intelligent Analog" microcontrollers, Microchip offers an extensive analog portfolio for thousands of high-performance design applications in the automotive, communications (wireless), consumer, computing and industrial control markets.

Our broad portfolio of stand-alone analog and interface devices offers highly integrated solutions that combine various analog functions in space-saving packages and support a variety of bus interfaces. Many of these devices support functionality that enhances the analog features currently available on PIC® microcontrollers.

Microchip Technology's Stand-Alone Analog & Interface Portfolio



Want a Business Partner, Not Just a Vendor?

Successful companies recognize the value of a strategic supplier relationship to help them deliver innovative products to their markets in a timely manner. They trust their suppliers to furnish quality components for current design opportunities as well as provide technology road maps and innovative solutions to stay ahead of tomorrow's design trends.

Microchip Technology provides low-risk product development, lower total system cost and faster time to market to more than 45,000 of these successful companies worldwide. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality.

Founded in 1989, Microchip's business model is based on a series of guiding values that aim to establish successful customer partnerships by exceeding expectations for products, services and attitude. Continuous improvement, technology innovation and the pursuit of the highest quality possible drive Microchip's company culture.

The result is a worldwide organization dedicated to delivering whole product solutions which include high performance silicon devices, easy-to-use development tools, outstanding technical support and sophisticated technical documentation.

Are Quality and Delivery a Concern?

Microchip's quality systems are certified according to the International Organization for Standards/Technical Specification (ISO/TS)-16949:2002 requirements. This demonstrates that the Company's quality systems meet the most stringent industry quality-management system standards, resulting in high-quality semiconductor products.

Direct control over manufacturing resources allows shortened design and production cycles. By owning the wafer fabrication facilities and the majority of the test and assembly operations, and by employing proprietary statistical process control techniques, Microchip has been able to achieve and maintain high production yields.

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Microchip is committed to supporting its customers by helping design engineers develop products faster and more efficiently. Customers can access three main service areas at www.microchip.com. The Support area provides a fast way to get questions answered. The Sample area offers evaluation samples of any Microchip device. microchipDIRECT provides 24-hour pricing, ordering, inventory and credit for convenient purchasing of all Microchip devices and development tools. This site also features online programming capabilities. Finally, the Training area offers opportunities to expand your knowledge with Microchip's online web seminars and hands-on courses at our worldwide Technical Training Centers. Our seminars and training classes are designed to fit your schedule and offer an overview of many product, development tool and application topics. Visit www.microchip.com/training for class content and schedules.

Have you ever encountered a technical dilemma at a critical point in your design development and your supplier was not available to answer your questions? Microchip's first ever 24/7 global technical support line brings technical support resources any time help is needed. Because some technical problems require hands-on assistance in order to be resolved quickly, Microchip has also developed a global team of field applications engineers and field sales engineers for local assistance.

THERMAL MANAGEMENT

THERMAL MANAGEMENT PRODUCTS: Temperature Sensors

Part #	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	Maximum Supply Current (µA)	Features	Packages
Logic Output Temperature Sensors							
TC6501	±0.5	±3	–55 to +125	+2.7 to +5.5	40	Cross to MAX6501, Open-drain	5-pin SOT-23A
TC6502	±0.5	±3	–55 to +125	+2.7 to +5.5	40	Cross to MAX6502, Push-pull	5-pin SOT-23A
TC6503	±0.5	±3	–55 to +125	+2.7 to +5.5	40	Cross to MAX6503, Open-drain	5-pin SOT-23A
TC6504	±0.5	±3	–55 to +125	+2.7 to +5.5	40	Cross to MAX6504, Push-pull	5-pin SOT-23A
TC620	±1	±3	–40 to +125	+4.5 to +18	400	Two resistor-programmable trip points	8-pin PDIP, 8-pin SOIC
TC621	Note 1	Note 1	–40 to +85	+4.5 to +18	400	Requires external thermistor, resistor-programmable trip points	8-pin PDIP, 8-pin SOIC
TC622	±1	±5	–40 to +125	+4.5 to +18	600	Dual output, TO-220 for heat sink mounting, resistor-programmable trip points	8-pin PDIP, 8-pin SOIC, 5-pin TO-220
TC623	±1	±3	–40 to +125	+2.7 to +4.5	250	Two resistor-programmable trip points	8-pin PDIP, 8-pin SOIC
TC624	±1	±5	–40 to +125	+2.7 to +4.5	300	Dual output, resistor-programmable trip points	8-pin PDIP, 8-pin SOIC
MCP9501	±1	±4	–40 to +125	+2.7 to +5.5	40	Active-High, Push-Pull Output, Rising Temperature Switch	5-pin SOT-23
MCP9502	±1	±4	–40 to +125	+2.7 to +5.5	40	Active-Low, Open Drain Output, Rising Temperature Switch	5-pin SOT-23
MCP9503	±1	±4	–40 to +125	+2.7 to +5.5	40	Active-High, Push-Pull Output, Falling Temperature Switch	5-pin SOT-23
MCP9504	±1	±4	–40 to +125	+2.7 to +5.5	40	Active-Low, Open Drain Output, Falling Temperature Switch	5-pin SOT-23
MCP9509	±0.5	NS	–40 to +125	+2.7 to +5.5	50	Resistor-programmable temperature switch	5-pin SOT-23
MCP9510	±0.5	NS	–40 to +125	+2.7 to +5.5	80	Resistor-programmable temperature switch	6-pin SOT-23
Voltage Output Temperature Sensors							
MCP9700	±1	±4	–40 to +125	+2.3 to +5.5	12	Linear Active Thermistor® IC, Temperature slope: 10 mV/°C	3-pin TO-92, 5-pin SC-70, 3-pin SOT-23
MCP9701	±1	±4	–40 to +125	+3.1 to +5.5	12	Linear Active Thermistor® IC, Temperature slope: 19.53 mV/°C, cross to MAX6612	3-pin TO-92, 5-pin SC-70, 3-pin SOT-23
MCP9700A	±1	±2	–40 to +125	+2.3 to +5.5	12	Linear Active Thermistor® IC, Temperature slope: 10 mV/°C	3-pin TO-92, 5-pin SC-70, 3-pin SOT-23
MCP9701A	±1	±2	–40 to +125	+3.1 to +5.5	12	Linear Active Thermistor® IC, Temperature slope: 19.53 mV/°C, cross to MAX6612	3-pin TO-92, 5-pin SC-70, 3-pin SOT-23
TC1046	±0.5	±2	–40 to +125	+2.7 to +4.4	60	High precision temperature-to-voltage converter, 6.25 mV/°C	3-pin SOT-23B
TC1047	±0.5	±2	–40 to +125	+2.7 to +4.4	60	High precision temperature-to-voltage converter, 10 mV/°C	3-pin SOT-23B
TC1047A	±0.5	±2	–40 to +125	+2.5 to +5.5	60	High precision temperature-to-voltage converter, 10 mV/°C	3-pin SOT-23B
Serial Output Temperature Sensors							
MCP9800	±0.5	±1	–55 to +125	+2.7 to +5.5	400	SMbus/I²C™ compatible interface, 0.0625°C to 0.5°C adj. resolution, Power-saving one-shot temperature measurement	5-pin SOT-23
MCP9801	±0.5	±1	–55 to +125	+2.7 to +5.5	400	SMbus/I²C compatible interface, 0.0625°C to 0.5°C adj. resolution, Power-saving one-shot temperature measurement, multi-drop capability	8-pin MSOP, 8-pin SOIC
MCP9802	±0.5	±1	–55 to +125	+2.7 to +5.5	400	SMbus/I²C compatible interface with time out, 0.0625°C to 0.5°C adj. resolution, Power-saving one-shot temperature measurement	5-pin SOT-23
MCP9803	±0.5	±1	–55 to +125	+2.7 to +5.5	400	SMbus/I²C compatible interface with time out, 0.0625°C to 0.5°C adj. resolution, Power-saving one-shot temperature measurement, Multi-drop capability	8-pin MSOP, 8-pin SOIC
MCP9804	±0.25	±1	–40 to +125	+2.7 to +5.5	400	User programmable temperature limits with alert output, 1°C temp. accuracy from –40°C to +125°C	8-pin MSOP, 8-pin 2 × 3 DFN
MCP9805	±0.5	±1(2)	–20 to +125	+3.0 to +3.6	400	JEDEC compatible register set, SMbus/I²C compatible interface, Programmable, Shut-down modes and EVENT output	8-pin TSSOP, 8-pin 2 × 3 DFN
MCP9808	±0.25	±0.5	–40 to +125	+2.7 to +5.5	400	0.5°C temperature accuracy from –10°C to +100°C	8-pin 2 × 3 DFN, 8-pin MSOP
MCP9843	±0.5	±1(2)	–20 to +125	+3.0 to +3.6	500	Compliant to JEDEC TS2002 specification	8-pin TSSOP, 8-pin 2 × 3 DFN, 8-pin 2 × 3 TDFN
MCP98242	±0.5	±1(2)	–20 to +125	+3.0 to +3.6	400	Same temperature sensor as MCP9805 plus integrated DDR2 Serial Presence Detect EEPROM	8-pin TSSOP, 8-pin 2 × 3 DFN
MCP98243	±1	±3	–40 to +125	+3.0 to +3.6	500	Serial output temperature sensor with integrated EEPROM	8-pin TSSOP, 8-pin 2 × 3 DFN, 8-pin 2 × 3 TDFN

Note 1: These devices use an external temperature sensor. Accuracy of the total solution is a function of the accuracy of the external sensor.
2: Maximum accuracy measured at 85°C.

Serial Output Temperature Sensors (Continued)							
Part #	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	Maximum Supply Current (µA)	Features	Packages
TC77	±0.5	±1	–55 to +125	+2.7 to +5.5	400	SPI compatible interface, 0.0625°C temperature resolution	5-pin SOT-23A, 8-pin SOIC
TC72	±0.5	±1	–55 to +125	+2.65 to +5.5	400	SPI compatible interface, Power-saving one-shot temperature measurement, 0.25°C temperature resolution	8-pin MSOP, 8-pin 3 × 3 DFN
TC74	±0.5	±2	–40 to +125	+2.7 to +5.5	350	SMbus/I²C compatible interface, 1°C temperature resolution	5-pin SOT-23A, 5-pin TO-220
TCN75A	±0.5	±2	–40 to +125	+2.7 to +5.5	500	SMbus/I²C compatible interface, power-saving one-shot temperature measurement, multi-drop capability, 0.0625°C to 0.5°C adjustable temperature resolution	8-pin MSOP, 8-pin SOIC
TCN75	±0.5	±2	–55 to +125	+2.7 to +5.5	1,000(3)	SMbus/I²C compatible interface, multi-drop capability, interrupt output, 0.5°C temperature resolution	8-pin MSOP, 8-pin SOIC
EMC1001	±0.5	±1.5	–25 to +125	3.0–3.6	50	1.5°C SMBux/I²C Ambient with 2 Alerts	6-pin SOT

Serial Output Temperature Sensors with Remote Diode Monitors											
Part #	# of Remote Temp. Sensors	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Ambient Temp. Sensor	Alert/ THERM	Hardware Shutdown	Vcc Range (V)	Typical Supply Current (µA)	Description and Additional Features	Packages
EMC1033	2	±1.0	±3	–40 to +125	1	2	–	3.0–3.6	50	Triple SMBus/I²C™ Sensor with Resistance Error Correction	8-pin MSOP
EMC1043	2	±0.5	±1.0	–40 to +125	1	–	–	3.0–3.6	105	Triple SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Hotter of Two Zones	8-pin MSOP
EMC1046	5	±0.25	±1.0	–40 to +125	1	–	–	3.0–3.6	395	Sextuple SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Hottest of Thermal Zones	10-pin MSOP
EMC1047	6	±0.25	±1.0	–40 to +125	1	–	–	3.0–3.6	395	Septuple SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Hottest of Thermal Zones	10-pin MSOP
EMC1053	2	±0.5	±1.0	–40 to +125	1	–	–	3.0–3.6	105	Triple SMBus/I²C Sensor with Resistance Error Correction and Hotter of Two Zones	8-pin MSOP
EMC1063	2	±0.5	±1.0	–40 to +125	1		–	3.0–3.6	105	Triple SMBus/I²C Sensor with Hotter of Two Zones	8-pin MSOP
EMC1072	1	±0.25	±1.0	–40 to +125	1	2	–	3.0–3.6	430	Dual SMBus/I²C Sensor with Selectable Address	8-pin MSOP
EMC1073	2	±0.25	±1.0	–40 to +125	1	2	–	3.0–3.6	430	Triple SMBus/I²C Sensor with Selectable Address	10-pin MSOP
EMC1074	3	±0.25	±1.0	–40 to +125	1	2	–	3.0–3.6	430	Quad SMBus/I²C Sensor with Selectable Address	10-pin MSOP
EMC1412	1	±0.25	±1.0	–40 to +125	1	2	–	3.0–3.6	430	Dual SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Selectable Address	8-pin TDFN, 8-pin MSOP
EMC1413	2	±0.25	±1.0	–40 to +125	1	2	–	3.0–3.6	430	Triple SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Selectable Address	10-pin DFN, 10-pin MSOP
EMC1414	3	±0.25	±1.0	–40 to +125	1	2	–	3.0–3.6	430	Quad SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Selectable Address	10-pin MSOP, 10-pin DFN
EMC1422	1	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	430	Dual SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Resistor Settable Hardware Thermal Shutdown	8-pin MSOP
EMC1423	2	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	430	Triple SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Resistor Settable Hardware Thermal Shutdown	10-pin MSOP
EMC1424	3	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	430	Quad SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Resistor Settable Hardware Thermal Shutdown	10-pin MSOP
EMC1428	7	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	450	Octal SMBus/I²C Sensor Resisitance Error Correction, Beta Compensation and Resistor Settable Hardware Thermal Shutdown & Hottest of Thermal Zones	16-pin QFN

Note 1: These devices use an external temperature sensor. Accuracy of the total solution is a function of the accuracy of the external sensor.
2: Maximum accuracy measured at 85°C.
3: TCN75 idle current is 250 mA. This device also has a Software Shutdown mode that reduces supply current to < 1 mA.

THERMAL MANAGEMENT PRODUCTS: Open Loop Fan Controllers and Fan Fault Detectors

Part #	Description	# of Temp. Monitors	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	Maximum Supply Current (µA)	Features	Packages
EMC2101	Single SMBus I²C™ Fan Manager	2	±0.5	±1	–40 to +125	+3.0 to +3.6	1,000	Fan Controller with high frequency PWM driver, programmable fan speed table and alert	8-pin MSOP, 8-pin SOIC
EMC2300	Triple SMBus I²C Fan Manager	3	±0.25	±3	–0 to +70	+3.0 to +3.6	3,000	Fan Controller with high frequency PWM driver, programmable fan speed table, voltage monitors, alert	16-pin SSOP
EMC6D103S	Triple SMBus I²C Fan Manager	3	±0.25	±3	–0 to +70	+3.0 to +3.6	3,000	Fan Controller with high frequency PWM driver, programmable fan speed table, voltage monitors, alert	24-pin SSOP1
TC642	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	1,000	FanSense™ Fan Monitor, Minimum fan speed control	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC642B	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	400	FanSense Fan Monitor, Minimum fan speed control, Fan auto-restart	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC646	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	1,000	FanSense Fan Monitor, Auto-shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC646B	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	400	FanSense Fan Monitor, Auto-shutdown, Fan auto-restart	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC647	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	1,000	FanSense Fan Monitor, Minimum fan speed control	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC647B	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	400	FanSense Fan Monitor, Minimum fan speed control, Fan auto-restart	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC648	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	1,000	Overtemperature alert, Auto-shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC648B	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	400	Overtemperature alert, Auto-shutdown, Fan auto-restart	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC649	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	1,000	FanSense Fan Monitor, Auto-shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC649B	Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	400	FanSense Fan Monitor, Auto-shutdown, Fan auto-restart	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC650	Fan Manager	1	±1	±3	–40 to +125	+2.8 to +5.5	90	Overtemperature alert	8-pin MSOP
TC651	Fan Manager	1	±1	±3	–40 to +125	+2.8 to +5.5	90	Overtemperature alert, Auto-shutdown	8-pin MSOP
TC652	Fan Manager	1	±1	±3	–40 to +125	+2.8 to +5.5	90	FanSense Fan Monitor, Overtemperature alert	8-pin MSOP
TC653	Fan Manager	1	±1	±3	–40 to +125	+2.8 to +5.5	90	FanSense Fan Monitor, Overtemperature alert, Auto-shutdown	8-pin MSOP
TC654	Dual SMbus Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	320	FanSense Fan Monitor, RPM data	10-pin MSOP
TC655	Dual SMbus Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	320	FanSense Fan Monitor, RPM data, Overtemperature alert	10-pin MSOP
TC664	Single SMbus Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	320	FanSense Fan Monitor, RPM data	10-pin MSOP
TC665	Single SMbus Fan Manager	1	Note 1	Note 1	–40 to +85	+3.0 to +5.5	320	FanSense Fan Monitor, RPM data, Overtemperature alert	10-pin MSOP
TC670	Predictive Fan Fault Detector	1	N/A	N/A	–40 to +85	+3.0 to +5.5	150	FanSense Fan Monitor, Programmable threshold	6-pin SOT-23

Note 1: These devices use an external temperature sensor. Accuracy of the total solution is a function of the accuracy of the external sensor.

THERMAL MANAGEMENT PRODUCTS: Closed Loop Fan Controllers with SMBus/I²C™ Interface

Part #	# of Fan Drivers	PWM/Linear Control	# of Remote Temp. Monitors	Ambient Temp. Sensor	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	SMBus Alert	System Shutdown	Voltage Monitors	Description	Packages
EMC2112	1	Linear	3	1	±0.25	±1.0	0 to +85	+3.3 and +5	Yes	Yes	No	RPM-Based Fan Controller with HW Thermal Shutdown	20-pin QFN
EMC2103-1	1	PWM	1	1	±0.5	±1.0	–40 to +125	+3.0 to +3.6	Yes	Yes	No	RPM-Based Fan Controller with Hardware Thermal Shutdown	12-pin QFN
EMC2103-2	1	PWM	3	1	±0.5	±1.0	–40 to +125	+3.0 to +3.6	Yes	Yes	No	RPM-Based Fan Controller with Hardware Thermal Shutdown	16-pin QFN
EMC2103-4	1	PWM	3	1	±0.5	±1.0	–40 to +125	+3.0 to +3.6	Yes	Yes	No	RPM-Based Fan Controller with Hardware Thermal Shutdown and EEPROM loadable	16-pin QFN
EMC2104	2	PWM	4	1	±0.25	±1.0	–40 to +85	+3.0 to +3.6	Yes	Yes	Yes	Dual RPM-Based PWM Fan Controller with Hardware Thermal Shutdown	20-pin QFN
EMC2105	1	Linear	4	1	±0.25	±1.0	–40 to +85	+3.3 and +5.0	Yes	Yes	Yes	RPM-Based High Side Fan Controller with Hardware Thermal Shutdown	20-pin QFN

THERMAL MANAGEMENT PRODUCTS: Closed Loop Fan Controllers with SMBus/I²C™ Interface (Continued)													
Part #	# of Fan Drivers	PWM/Linear Control	# of Remote Temp. Monitors	Ambient Temp. Sensor	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	SMBus Alert	System Shutdown	Voltage Monitors	Description	Packages
EMC2106	2	PWM and Linear	4	1	±0.25	±1.0	–40 to +85	+3.3 and +5.0	Yes	Yes	Yes	RPM-Based High Side Fan Controller with Hardware Thermal Shutdown	
EMC2113	1	PWM	3	1	±0.5	±1.0	–40 to +125	+3.0 to +3.6	Yes	Yes	No	Single RPM-Based Fan Controller with Multiple Temperature Zones & Hardware Thermal Shutdown	16-pin QFN
EMC2301	1	PWM	N/A	N/A	N/A	N/A	–40 to +125	+3.0 to +3.6	Yes	No	N/A	Single RPM-Based PWM Fan Speed Controller	8-pin MSOP
EMC2302	2	PWM	N/A	N/A	N/A	N/A	–40 to +125	+3.0 to +3.6	Yes	No	N/A	Dual RPM-Based PWM Fan Speed Controller	10-pin MSOP
EMC2303	3	PWM	N/A	N/A	N/A	N/A	–40 to +125	+3.0 to +3.6	Yes	No	N/A	Triple RPM-Based PWM Fan Speed Controller	12-pin QFN
EMC2305	5	PWM	N/A	N/A	N/A	N/A	–40 to +125	+3.0 to +3.6	Yes	No	N/A	Penta RPM-Based PWM Fan Speed Controller	16-pin QFN

MOTOR DRIVERS

MOTOR DRIVER PRODUCTS: Stepper Motors, DC Motors and 3-Phase BLDC Motors										
Part #	Motor Type	Input Voltage Range (V)	Internal/ External FETs	Output Current (mA)	Control Scheme	Motor Speed Output	Protections	Temperature Operating Range (°C)	Features	Packages
MTS62C19A	One Bipolar Stepper Motor or Two DC Motors	10.0 to 40.0	Internal	750	Direct PWM Input, Current Limit Control, Microstepping	No	Overtemperature, Under Voltage	–20 to +85	Dual Full Bridge Motor Driver for Stepper Motors, Pin compatible with Allegro 6219	24-pin SOIC
MTS2916A	One Bipolar Stepper Motor or Two DC Motors	10.0 to 40.0	Internal	750	Direct PWM Input, Current Limit Control, Microstepping	No	Overtemperature, Under Voltage	–20 to +85	Dual Full Bridge Motor Driver for Stepper Motors, Pin compatible with Allegro 2916	24-pin SOIC
MTD6501C	3-Phase Brushelss DC Motor	2.0 to 14.0	Internal	800	Sensorless Sinusoidal	Frequency Generator	Overtemperature, Motor Lock-up, Overcurrent, Overvoltage	–30 to +95	3-Phase BLDC 180° Sinusoidal Sensorless Fan Motor Driver, Overcurrent limitation, Output Switching Frequency at 20 kHz	Thermally Enhanced 8-pin SOP
MTD6501D	3-Phase Brushelss DC Motor	2.0 to 14.0	Internal	500	Sensorless Sinusoidal	Frequency Generator	Overtemperature, Motor Lock-up, Overcurrent, Overvoltage	–30 to +95	3-Phase BLDC 180° Sinusoidal Sensorless Fan Motor Driver, Overcurrent limitation, Output Switching Frequency at 20 kHz	10-pin MSOP
MTD6501G	3-Phase Brushelss DC Motor	2.0 to 14.0	Internal	500	Sensorless Sinusoidal	Frequency Generator	Overtemperature, Motor Lock-up, Overcurrent, Overvoltage	–30 to +95	3-Phase BLDC 180° Sinusoidal Sensorless Fan Motor Driver, Overcurrent limitation, Output Switching Frequency at 23 kHz	10-pin MSOP
MTD6502B	3-Phase Brushelss DC Motor	2.0 to 5.5	Internal	750	Sensorless Sinusoidal	Frequency Generator	Overtemperature, Motor Lock-up, Overcurrent, Overvoltage	–40 to +125	3-Phase BLDC Sinusoidal Sensorless Fan Motor Driver, Direction control, Overcurrent limitation, Output Switching Frequency at 30 kHz	10-pin 3 × 3 TDFN
MTD6505	3-Phase Brushelss DC Motor	2.0 to 5.5	Internal	750	Sensorless Sinusoidal	Frequency Generator	Overcurrent, Overvoltage, Overtemperature, Motor Lock-up	–40 to +125	180° Sinusoidal Sensorless Drive, Direction Control, Programmable BEMF Coefficient Range, Output Switching Frequency at 30 kHz	10-pin 3 × 3 UDFN

POWER MANAGEMENT

POWER MANAGEMENT: Voltage References							
Part #	Vcc Range (V)	Output Voltage (V)	Max. Load Current (mA)	Initial Accuracy (max.%)	Temperature Coefficient (ppm/°C)	Maximum Supply Current (µA @ 25°C)	Packages
MCP1525	2.7 to 5.5	2.5	±2	±1	50	100	3-pin TO-92, 3-pin SOT-23B
MCP1541	4.3 to 5.5	4.096	±2	±1	50	100	3-pin TO-92, 3-pin SOT-23B

POWER MANAGEMENT: Linear Regulators									
Part #	**Max. Input Voltage (V)**	**Output Voltage (V)**	**Output Current (mA)**	**Junction Temperature Range (°C)**	**Typical Active Current (µA)**	**Typical Dropout Voltage @ Max. Iout (mV)**	**Typical Output Voltage Accuracy (%)**	**Features**	**Packages**
50 mA to 250 mA Low-Dropout Linear Regulators									
TC2014	6.0	1.8, 2.7, 2.8, 3.0, 3.3	50	–40 to +125	55	45	±0.4	Ceramic output capacitor stable, Shutdown, Reference bypass input	5-pin SOT-23A
TC1014	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	50	–40 to +125	50	85	±0.5	Shutdown, Reference bypass input	5-pin SOT-23A
TC2054	6.0	1.8, 2.7, 2.8, 3.0, 3.3	50	–40 to +125	55	45	±0.4	Ceramic output capacitor stable, Shutdown, Error output	5-pin SOT-23A
TC1054	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	50	–40 to +125	50	85	±0.5	Shutdown, Error output	5-pin SOT-23A
TC1070	6.0	1.23 → VIN	50	–40 to +125	50	85	–	Shutdown, Adjustable	5-pin SOT-23A
TC1072	6.0	2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	50	–40 to +125	50	85	±0.5	Shutdown, Reference bypass input, Error output	6-pin SOT-23A
TC1223	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 3.6, 4.0, 5.0	50	–40 to +125	50	85	±0.5	Shutdown	5-pin SOT-23A
MCP1790	30	3.0, 3.3, 5.0	70	–40 to +125	70	500	±0.2	Ceramic output capacitor stable	3-pin SOT-223, 3-pin DDPAK
MCP1791	30	3.0, 3.3, 5.0	70	–40 to +125	70	500	±0.2	Ceramic output capacitor stable, Shutdown, Power good	5-pin SOT-223, 5-pin DDPAK
TC1016	6.0	1.8, 2.7, 2.8, 3.0	80	–40 to +125	50	150	±0.5	Ceramic output capacitor stable, Shutdown	5-pin SC-70, 5-pin SOT-23A
TC2015	6.0	1.8, 2.5, 2.6, 2.7, 2.8, 2.85, 3.0, 3.3, 5.0	100	–40 to +125	55	90	±0.4	Ceramic output capacitor stable, Shutdown, Reference bypass input	5-pin SOT-23A
TC1015	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	100	–40 to +125	50	180	±0.5	Shutdown, Reference bypass input	5-pin SOT-23A
TC2055	6.0	1.8, 2.7, 2.8, 3.0, 3.3	100	–40 to +125	55	90	±0.4	Ceramic output capacitor stable, Shutdown, Error output	5-pin SOT-23A
TC1055	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	100	–40 to +125	50	180	±0.5	Shutdown, Error output	5-pin SOT-23A
TC1071	6.0	1.23 → VIN	100	–40 to +125	50	180	–	Shutdown, Adjustable	5-pin SOT-23A
TC1073	6.0	2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	100	–40 to +125	50	180	±0.5	Shutdown, Reference bypass input, Error output	6-pin SOT-23A
TC1224	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 3.6, 4.0, 5.0	100	–40 to +125	50	180	±0.5	Shutdown	5-pin SOT-23A
TC1188	6.0	1.8, 2.8, 2.84, 3.15	120	–40 to +125	50	130	±0.5	Shutdown	5-pin SOT-23A
TC1189	6.0	1.8, 2.8, 2.84, 3.15	120	–40 to +125	50	130	±0.5	Shutdown	5-pin SOT-23A
TC2185	6.0	1.8, 2.7, 2.8, 3.0, 3.3	150	–40 to +125	55	140	±0.4	Ceramic output capacitor stable, Shutdown, Reference bypass input	5-pin SOT-23A
TC1185	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	150	–40 to +125	50	270	±0.5	Shutdown, Reference bypass input	5-pin SOT-23A
TC2186	6.0	1.8, 2.7, 2.8, 3.0, 3.3	150	–40 to +125	55	140	±0.4	Ceramic output capacitor stable, Shutdown, Error output	5-pin SOT-23A
TC1186	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	150	–40 to +125	50	270	±0.5	Shutdown, Error output	5-pin SOT-23A
TC1187	6.0	1.23 → VIN	150	–40 to +125	50	270	–	Shutdown, Adjustable	5-pin SOT-23A
TC1017	6.0	1.8, 2.6, 2.7, 2.8, 2.85, 2.9, 3.3, 3.4	150	–40 to +125	53	285	±0.5	Ceramic output capacitor stable, Shutdown	5-pin SOT-23A, 5-pin SC-70
MCP1754	16	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	150	–40 to +125	56	300	±2	70 dB PSRR	5-pin SOT-23, 5-pin SOT-89, 5-pin SOT-223, 8-pin 2 × 3 TDFN
MCP1754S	16	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	150	–40 to +125	56	300	±2	70 dB PSRR	3-pin SOT-23, 3-pin SOT-89, 3-pin SOT-223, 8-pin 2 × 3 TDFN
MCP1801	10	0.9, 1.2, 1.8, 2.5, 3.0, 3.3, 5.0, 6.0	150	–40 to +85	25	250	±0.4	Ceramic output capacitor stable, Shutdown, High PSRR	5-pin SOT-23A

POWER MANAGEMENT: Linear Regulators (Continued)									
Part #	**Max. Input Voltage (V)**	**Output Voltage (V)**	**Output Current (mA)**	**Junction Temperature Range (°C)**	**Typical Active Current (µA)**	**Typical Dropout Voltage @ Max. Iout (mV)**	**Typical Output Voltage Accuracy (%)**	**Features**	**Packages**
50 mA to 250 mA Low-Dropout Linear Regulators (Continued)									
MCP1801	10	0.9, 1.2, 1.8, 2.5, 3.0, 3.3, 5.0, 6.0	150	–40 to +85	25	250	±0.4	Ceramic output capacitor stable, Shutdown, High PSRR	5-pin SOT-23A
MCP1804	28	1.8 to 18	150	–40 to +85	50	1300	±2	Shutdown, High PSRR	5-pin SOT-23, 5-pin SOT-89, 3-pin SOT-89, 3-pin SOT-223
MCP1710	5.5	1.2, 1.8, 2.5, 3.3, 4.2	200	–40 to +85	0.02	200	–	20 nA active current	2 × 2 DFN
MCP1700	6.0	1.2, 1.8, 2.5, 3.0, 3.3, 5.0	250	–40 to +125	1.6	300	±0.4	1.0 µF ceramic cap stable, Short-circuit protection	3-pin TO-92, 3-pin SOT-23A, 3-pin SOT-89
MCP1701A	10	1.8, 2.5, 3.0, 3.3, 5.0	250	–40 to +85	1.6	380	±0.5	10V max. input voltage	3-pin TO-92, 3-pin SOT-23A, 3-pin SOT-89
MCP1702	13.2	1.2, 1.5, 1.8, 2.5, 2.8, 3.0, 3.3, 4.0, 5.0	250	–40 to +125	2	650	±0.4	Ceramic output capacitor stable, Ultra-low ground current, 13.2V V_{IN} max.	3-pin TO-92, 3-pin SOT-23A, 3-pin SOT-89
MCP1703	16	1.2, 1.5, 1.8, 2.5, 2.8, 3.0, 3.3, 4.0, 5.0	250	–40 to +125	2	650	±0.4	Ceramic output capacitor stable, Ultra-low ground current, 16V V_{IN} max.	3-pin SOT-23A, 3-pin SOT-89, 3-pin SOT-223
MCP1703A	16	1.2, 1.5, 1.8, 2.5, 2.8, 3.0, 3.3, 4.0, 5.0	250	–40 to +125	2	650	±0.4	Ceramic output capacitor stable, Ultra-low ground current	3-pin SOT–23A, 3-pin SOT-89, 3-pin SOT-223, 8-pin 2 × 3 DFN
300 mA Low-Dropout Linear Regulators									
TC1107	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 5.0	300	–40 to +125	50	240	±0.5	Shutdown, Reference bypass input	8-pin MSOP, 8-pin SOIC
TC1108	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 5.0	300	–40 to +125	50	240	±0.5		3-pin SOT-223
TC1173	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 5.0	300	–40 to +125	50	240	±0.5	Shutdown, Reference bypass input, Error output	8-pin MSOP, 8-pin SOIC
TC1174	6.0	1.23 → V_{IN}	300	–40 to +125	50	240	–	Shutdown, Reference bypass input, Adjustable	8-pin MSOP, 8-pin SOIC
TC1269	6.0	2.5, 2.8, 3.0, 3.3, 5.0	300	–40 to +125	50	240	±0.5	Shutdown, Reference bypass input	8-pin MSOP
MCP1802	10	0.9, 1.2, 1.8, 2.5, 3.0, 3.3, 5.0, 6.0	300	–40 to +85	25	250	±0.4	Ceramic output capacitor stable, Shutdown, High PSRR	5-pin SOT-23A
MCP1824	6.0	Fixed: 0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5.0 Adjustable: 0.8 to 5.0	300	–40 to +125	120	200	±0.5	Ceramic output capacitor stable, Shutdown, Power good	5-pin SOT-223, 5-pin SOT-23
MCP1824S	6.0	0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5.0	300	–40 to +125	120	200	±0.5	Ceramic output capacitor stable	3-pin SOT-223
500 mA to 800 mA Low-Dropout Linear Regulators									
TC1262	6.0	2.5, 2.8, 3.0, 3.3, 5.0	500	–40 to +125	80	350	±0.5	Overtemperature protection, Overcurrent protection	3-pin TO-220, 3-pin DDPAK, 3-pin SOT-223
TC1263	6.0	2.5, 2.8, 3.0, 3.3, 5.0	500	–40 to +125	80	350	±0.5	Shutdown, Reference bypass input, Error output	8-pin SOIC, 5-pin TO-220, 5-pin DDPAK
TC1268	6.0	2.5	500	–40 to +125	80	350	±0.5	Shutdown, Reference bypass input, Error output	8-pin SOIC
MCP1725	6.0	0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5.0	500	–40 to +125	120	210	±0.5	Ceramic output capacitor stable, Shutdown, C_{DELAY}, Power good	8-pin 2 × 3 DFN, 8-pin SOIC
MCP1825	6.0	Fixed: 0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5 Adjustable: 0.8 to 5.0	500	–40 to +125	120	210	±0.5	Ceramic output capacitor stable, Shutdown, Power good	5-pin TO-220, 5-pin DDPAK, 5-pin SOT-223
MCP1825S	6.0	0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5	500	–40 to +125	120	210	±0.5	Ceramic output capacitor stable	3-pin TO-220, 3-pin DDPAK, 3-pin SOT-223
TC1264	6.0	1.8, 2.5, 3.0, 3.3	800	–40 to +125	80	450	±0.5	Overtemperature protection, Overcurrent protection	3-pin TO-220, 3-pin DDPAK, 3-pin SOT-223
TC1265	6.0	1.8, 2.5, 3.0, 3.3	800	–40 to +125	80	450	±0.5	Shutdown, Reference bypass input, Error output	8-pin SOIC, 5-pin TO-220, 5-pin DDPAK
TC2117	6.0	1.8, 2.5, 3.0, 3.3	800	–40 to +125	80	600	±0.5	Overtemperature protection, Overcurrent protection	3-pin SOT-223, 3-pin DDPAK

POWER MANAGEMENT: Linear Regulators (Continued)									
Part #	Max. Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Junction Temperature Range (°C)	Typical Active Current (µA)	Typical Dropout Voltage @ Max. Iout (mV)	Typical Output Voltage Accuracy (%)	Features	Packages
1A and Above Low-Dropout Linear Regulators									
MCP1726	6.0	Fixed: 0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5 Adjustable: 0.8 to 5.0	1000	–40 to +125	140	300	±0.4	Ceramic output capacitor stable, Shutdown, CDELAY, Power good	8-pin 3 × 3 DFN, 8-pin SOIC
MCP1826	6.0	Fixed: 0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5 Adjustable: 0.8 to 5.0	1000	–40 to +125	140	300	±0.5	Ceramic output capacitor stable, Shutdown, Power good	5-pin TO-220, 5-pin DDPAK, 5-pin SOT-223
MCP1826S	6.0	0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5	1000	–40 to +125	140	300	±0.5	Ceramic output capacitor stable	3-pin TO-220, 3-pin DDPAK, 3-pin SOT-223
MCP1727	6.0	Fixed: 0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5 Adjustable: 0.8 to 5.0	1500	–40 to +125	140	330	±0.5	Ceramic output capacitor stable, Shutdown, CDELAY, Power good	8-pin 3 × 3 DFN, 8-pin SOIC
MCP1827	6.0	Fixed: 0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5 Adjustable: 0.8 to 5.0	1500	–40 to +125	140	330	±0.5	Ceramic output capacitor stable, Shutdown, Power good	5-pin DDPAK, 5-pin TO-220
MCP1827S	6.0	0.8, 1.2, 1.8, 2.5, 3.0, 3.3, 5	1500	–40 to +125	140	330	±0.5	Ceramic output capacitor stable	3-pin DDPAK, 3-pin TO-220
Application Specific Low-Dropout Linear Regulators									
TC1266	6.0	3.3	200	–5 to +70	230	200	±1.0	PCI compliant	8-pin SOIC, 8-pin MSOP
TC1267	6.0	3.3	400	–5 to +70	230	300	±1.0	PCI compliant	5-pin DDPAK
TC57	8	2.5, 3.0, 3.3	4,000(1)	–40 to +85	50	100(1)	±2.0	Shutdown, External transistor	5-pin SOT-23A
TC59	–10	–3.0, –5.0	100	–40 to +85	3	380	±0.5	Negative LDO	3-pin SOT-23A

Note 1: Depending on external transistor configuration.

POWER MANAGEMENT: Low-Dropout Regulator Combination Products									
TC1300(1)	6.0	2.5, 2.7, 2.8, 2.85, 3.0, 3.3	300	–40 to +125	80	210	±0.5	Shutdown, Reference bypass input, LDO plus Reset output	8-pin MSOP
TC1301A(1)	6.0	LDO1: 1.5–3.3 LDO2: 1.5–3.3	LDO1: 300 LDO2: 150	–40 to +125	103	LDO1: 104 LDO2: 150	±0.5	Dual LDO plus Reset output, Shutdown, Reference bypass, Voltage detect	8-pin MSOP, 8-pin 3 × 3 DFN
TC1301B(1)	6.0	LDO1: 1.5–3.3 LDO2: 1.5–3.3	LDO1: 300 LDO2: 150	–40 to +125	114	LDO1: 104 LDO2: 150	±0.5	Dual LDO plus Reset, per channel output shutdown, Reference bypass	8-pin MSOP, 8-pin 3 × 3 DFN
TC1302A(1)	6.0	LDO1: 1.5–3.3 LDO2: 1.5–3.3	LDO1: 300 LDO2: 150	–40 to +125	103	LDO1: 104 LDO2: 150	±0.5	Dual LDO, Output shutdown reference bypass, Voltage detect	8-pin MSOP, 8-pin 3 × 3 DFN
TC1302B(1)	6.0	LDO1: 1.5–3.3 LDO2: 1.5–3.3	LDO1: 300 LDO2: 150	–40 to +125	114	LDO1: 104 LDO2: 150	±0.5	Dual LDO, per channel output shutdown, Reference bypass	8-pin MSOP, 8-pin 3 × 3 DFN
TC1305	6.0	2.5, 2.8, 3.0	150(1)	–40 to +125	120	240	±0.5	Dual LDO plus Reset output, Reference bypass input, Shutdown, Select Mode™ selectable output voltages	10-pin MSOP
TC1306	6.0	1.8, 2.8, 3.0	150(1)	–40 to +125	120	240	±0.5	Dual LDO plus Reset output, Shutdown, Select Mode™ selectable output voltages	8-pin MSOP
TC1307(1)	6.0	1.8, 2.5, 2.8, 3.0	150(1)	–40 to +125	220	200	±0.5	Quad LDO plus Reset output, Shutdown, Select Mode™ selectable output voltages	16-pin QSOP

Note 1: LDOs with shutdown (except Power Management Combination Products as indicated) have typical shutdown currents of 0.05 mA.

POWER MANAGEMENT: Switching Regulators									
Part #	Description	Input Voltage Range (V)	Output Voltage (V)	Operating Temperature Range (°C)	Control Scheme	Switching Frequency (kHz)	Typical Active Current (µA)	Output Current (mA)	Features	Packages
MCP1601	Synchronous Buck Regulator	2.7 to 5.5	0.9V to VIN	–40 to +85	PFM/PWM/LDO	750	825 (PWM) 125 (PFM)	500	UVLO, Auto-switching, LDO	8-pin MSOP
MCP1602	Synchronous Buck Regulator	2.7 to 5.5	0.8 to 4.5	–40 to +85	PFM/PWM	2000	35	500	PFM, PWM auto-switching, UVLO, Soft start, Power good indicator	10-pin MSOP, 10-pin 3 × 3 DFN
MCP1603	Synchronous Buck Regulator	2.7 to 5.5	0.8 to 4.0	–40 to +85	PFM/PWM	2000	45	500	Overtemperature and Overcurrent protection	5-pin TSOT-23, 8-pin 2 × 3 DFN

POWER MANAGEMENT: Switching Regulators (Continued)

Part #	Description	Input Voltage Range (V)	Output Voltage (V)	Operating Temperature Range (°C)	Control Scheme	Switching Frequency (kHz)	Typical Active Current (µA)	Output Current (mA)	Features	Packages
MCP1612	Synchronous Buck Regulator	2.7 to 5.5	0.8 to 5.5	–40 to +85	Constant frequency, PWM	1400	5000	1000	Overall efficiency > 94%, Soft start, Overtemperature and Overcurrent protection	8-pin MSOP, 8-pin 3 × 3 DFN
MCP1623/4	Step-up DC/DC Regulator	0.65 to 6	2.0 to 5.5	–40 to +85	PWM or PWM/PFM	500	19	175	Integrated synchronous boost regulator, 0.65V start-up voltage, Soft start, True load disconnect	6-pin SOT-23, 8-pin 2 × 3 DFN
MCP1640/B/C/D	Step-up DC/DC Regulator	0.65 to 6	2.0 to 5.5	–40 to +85	PWM or PWM/PFM	500	19	350	Integrated synchronous boost regulator, 0.65V start-up voltage, Soft start, True load disconnect or input-to-output bypass option	6-pin SOT-23, 8-pin 2 × 3 DFN
MCP1650	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	–40 to +125	Constant frequency	750	120	560/440	2 duty cycles for min. and max. loads, Shutdown control, UVLO, Soft start	8-pin MSOP
MCP1651	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	–40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, Shutdown control, low battery detect, UVLO, Soft start	8-pin MSOP
MCP1652	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	–40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, Shutdown control, Power good indicator, UVLO, Soft start	8-pin MSOP
MCP1653	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	–40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, Shutdown control, Low battery detect, Power good indicator, UVLO, Soft start	10-pin MSOP
MCP16301	30V Input Buck Regulator	4.0 to 30	2.0 to 15	–40 to +85	PWM	500	2000	600	Integrated N-channel, UVLO, Soft start, Overtemperature protection	SOT23-6
MCP16321	Synchronous Buck Regulator	6 to 24	0.9 to 5	–40 to +125	PWM/PFM	1000	2300	1000	Integrated switches, Internal compensation, Peak current mode control, Soft-start, UVLO, Power good pin	16-pin 3 × 3 QFN
MCP16322	Synchronous Buck Regulator	6 to 24	0.9 to 5	–40 to +125	PWM/PFM	1000	2300	2000	Integrated switches, Internal compensation, Peak current mode control, Soft-start, UVLO, Power good pin	16-pin 3 × 3 QFN
MCP16323	Synchronous Buck Regulator	6 to 18	0.9 to 5	–40 to +125	PWM/PFM	1000	2300	3000	Integrated switches, Internal compensation, Peak current mode control, Soft-start, UVLO, Power good pin	16-pin 3 × 3 QFN
TC105	Step-down DC/DC Controller	2.2 to 10	3.0, 3.3, 5.0	–40 to +85	PFM/PWM	300	57	1,000	Low power shutdown mod	5-pin SOT-23A
TC115	Step-up DC/DC Regulator	0.9 to 10	3.0, 3.3, 5.0	–40 to +85	PFM/PWM	100	80	140	Feedback voltage sensing, Low power shutdown mode	5-pin SOT-89
TC110	Step-up DC/DC Controller	2.0 to 10	3.0, 3.3, 5.0	–40 to +85	PFM/PWM	100/300	50/120	300	Soft start, Low power shutdown mode	5-pin SOT-23A

POWER MANAGEMENT: Switching Regulators Combination Products

TC1303	Synchronous Buck Regulator, LDO w/ Power good	2.7 to 5.5	DC/DC: 0.8 to 4.5 LDO: 1.5 to 3.3	–40 to +85	PFM/PWM	2000	65/600	DC/DC: 500 mA LDO: 300 mA	PFM/PWM auto-switching, Power good output	10-pin MSOP, 10-pin 3 × 3 DFN
TC1304	Synchronous Buck Regulator, LDO	2.7 to 5.5	DC/DC: 0.8 to 4.5 LDO: 1.5 to 3.3	–40 to +85	PFM/PWM	2000	65/600	DC/DC: 500 mA LDO: 300 mA	PFM/PWM auto-switching, Power sequencing	10-pin MSOP, 10-pin 3 × 3 DFN
TC1313	Synchronous Buck Regulator, LDO	2.7 to 5.5	DC/DC: 0.8 to 4.5 LDO: 1.5 to 3.3	–40 to +85	PFM/PWM	2000	65/600	DC/DC: 500 mA LDO: 300 mA	PFM/PWM auto-switching	10-pin MSOP, 10-pin 3 × 3 DFN

POWER MANAGEMENT: PWM Controllers

Part #	Description	Input Voltage Range (V)	Operating Temp. Range (°C)	Switching Frequency (kHz)	Typical Active Current (mA)	Features	Packages
MCP1630	Current mode, high-speed PWM to use with PIC® MCUs	3.0 to 5.5	–40 to +125	1000	2.8	UVLO, Short circuit and Overtemperature protection, Integrated MOSFET driver	8-pin MSOP, 8-pin 2 × 3 DFN
MCP1630V	Voltage mode, high-speed PWM to use with PIC® MCUs	3.0 to 5.5	–40 to +125	1000	2.8	UVLO, Short circuit and Overtemperature protection, Integrated MOSFET driver	8-pin MSOP, 8-pin 2 × 3 DFN
MCP1631	Current mode, high-speed PWM to use with PIC® MCUs	3.0 to 5.5	–40 to +125	2000	3.7	UVLO, Integrated error, current and voltage sense amplifiers, Overvoltage comparator and MOSFET driver	20-pin SSOP, 20-pin TSSOP, 20-pin 4 × 4 QFN
MCP1631HV	Current mode, high-speed PWM to use with PIC® MCUs	3.5 to 16	–40 to +125	2000	3.7	Integrated 16V LDO, UVLO, Integrated error, Ccurrent and voltage sense amplifiers, Overvoltage comparator and MOSFET driver	20-pin SSOP, 20-pin TSSOP
MCP1631V	Voltage mode, high-speed PWM to use with PIC® MCUs	3.0 to 5.5	–40 to +125	2000	3.7	UVLO, Integrated error, Current and voltage sense amplifiers, Overvoltage comparator and MOSFET driver	20-pin SSOP, 20-pin TSSOP, 20-pin 4 × 4 QFN
MCP1631VHV	Voltage mode, high-speed PWM to use with PIC® MCUs	3.5 to 16	–40 to +125	2000	3.7	Integrated 16V LDO, UVLO, Integrated error, Current and voltage sense amplifiers, Overvoltage comparator and MOSFET driver	20-pin SSOP, 20-pin TSSOP

POWER MANAGEMENT: Charge Pump DC-to-DC Converters							
Part #	**Input Voltage Range (V)**	**Output Voltage (V)**	**Operating Temp. Range (°C)**	**Maximum Input Current(1) (µA)**	**Typical Active Output Current (mA)**	**Features**	**Packages**
Inverting or Doubling Charge Pumps							
TC1044S	1.5 to 12	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	160	20	85 kHz oscillator, Boost mode	8-pin PDIP, 8-pin SOIC
TC7660	1.5 to 10	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	180	20	10 kHz oscillator	8-pin PDIP, 8-pin SOIC
TC7660H	1.5 to 10	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	1,000	20	120 kHz oscillator	8-pin PDIP, 8-pin SOIC
TC7660S	1.5 to 12	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	160	20	45 kHz oscillator, Boost mode	8-pin PDIP, 8-pin SOIC
TC7662B	1.5 to 15	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	180	20	35 kHz oscillator, Boost mode	8-pin PDIP, 8-pin SOIC
TC1240	2.5 to 4.0	$V_{OUT} = 2\ V_{IN}$	–40 to +85	900	40	Shutdown, 160 kHz oscillator	6-pin SOT-23A
TC1240A	2.5 to 5.5	$V_{OUT} = 2\ V_{IN}$	–40 to +85	900	40	Shutdown, 160 kHz oscillator	6-pin SOT-23A
TC7662A	3.0 to 18	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	200	40	12 kHz oscillator	8-pin PDIP, 8-pin SOIC
TC962	3.0 to 18	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2\ V_{IN}$	–40 to +85	200	80	Selectable 12 kHz or 24 kHz oscillator	8-pin PDIP, 16-pin SOIC
Inverting and Doubling Charge Pumps							
TC682	2.4 to 5.5	$V_{OUT} = -2\ V_{IN}$	–40 to +85	400	10	12 kHz oscillator	8-pin PDIP, 8-pin SOIC
Regulated Charge Pumps							
MCP1252	2.1/2.7 to 5.5 2.0 to 5.5	Selectable 3.3V or 5.0V or Adjustable 1.5V to 5.5V	–40 to +85	120	120 mA for V_{IN} > 3.0V	Power good output, 650 kHz oscillator	8-pin MSOP
MCP1253	2.1/2.7 to 5.5 2.0 to 5.5	Selectable 3.3V or 5.0V or Adjustable 1.5V to 5.5V	–40 to +85	120	120 mA for V_{IN} > 3.0V	Power good output, 1 MHz oscillator	8-pin MSOP
MCP1256	1.8 to 3.6	3.3	–40 to +85	100	100	Power good, Sleep mode	10-pin MSOP, 10-pin 3 × 3 DFN
MCP1257	1.8 to 3.6	3.3	–40 to +85	100	100	Sleep mode, Low battery indication	10-pin MSOP, 10-pin 3 × 3 DFN
MCP1258	1.8 to 3.6	3.3	–40 to +85	100	100	Power good output, Input/output bypass	10-pin MSOP, 10-pin 3 × 3 DFN
MCP1259	1.8 to 3.6	3.3	–40 to +85	100	100	Low battery indication, Input/output bypass	10-pin MSOP, 10-pin 3 × 3 DFN

Note 1: Measured at V_{DD} = 5.0V at 25°C and no load.

POWER MANAGEMENT: CPU/System Supervisors										
Part #	**V_{CC} Range (V)**	**Operating Temp. Range (°C)**	**Nominal Reset Voltage (V)**	**Reset Type**	**Output**	**Typical Reset Pulse Width (ms)**	**Typical Supply Current (µA)**	**Additional Features**	**Packages**	**Bond Options**
MCP102	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.9	Active-Low	CMOS Push-Pull	120	1		3-pin SOT-23B, 3-pin SC-70, 3-pin TO-92	N/A
MCP103	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.9	Active-Low	CMOS Push-Pull	120	1	Max. 809 Pinout	3-pin SOT-23B, 3-pin SC-70, 3-pin TO-92	N/A
MCP121	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.9	Active-Low	Open-Drain	120	1		3-pin SOT-23B, 3-pin SC-70, 3-pin TO-92	N/A
MCP131	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.9	Active-Low	Open-Drain	120	1	100 kW Internal Pull-up Resistor	3-pin SOT-23B, 3-pin SC-70, 3-pin TO-92	N/A
MCP1316	1.0 to 5.5	–40 to +125	4.6, 2.9(1)	Active-Low	CMOS Push-Pull	200	5	Watchdog Input (WDI), Time-out = 1.6 sec., Manual Reset	5-pin SOT-23	N/A
MCP1317	1.0 to 5.5	–40 to +125	4.6, 2.9(1)	Active-High	CMOS Push-Pull	200	5	Watchdog Input (WDI), Time-out = 1.6 sec., Manual Reset	5-pin SOT-23	N/A
MCP1318	1.0 to 5.5	–40 to +125	4.6, 2.9(1)	Active-Low/ High	CMOS Push-Pull	200	5	Watchdog Input (WDI), Time-out = 1.6 sec.	5-pin SOT-23	N/A
MCP1319	1.0 to 5.5	–40 to +125	4.6, 2.9(1)	Active-Low/ High	CMOS Push-Pull	200	1	Manual Reset	5-pin SOT-23	N/A
MCP1320	1.0 to 5.5	–40 to +125	4.6, 2.9(1)	Active-Low	Open-Drain	200	5	Watchdog Input (WDI), Time-out = 1.6 sec., Manual Reset	5-pin SOT-23	N/A
MCP1321	1.0 to 5.5	–40 to +125	4.6, 2.9(1)	Active-Low	Open-Drain/ CMOS Push-Pull	200	5	Watchdog Input (WDI), Time-out = 1.6 sec., Manual Reset (Active-Low Open-Drain, Active-High Push-Pull)	5-pin SOT-23	N/A
TC1270A	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63	Active-Low	CMOS Push-Pull	280	7	Manual Reset	4-pin SOT-143, 5-pin SOT-23	N/A

POWER MANAGEMENT: CPU/System Supervisors (Continued)										
Part #	V_{CC} Range (V)	Operating Temp. Range (°C)	Nominal Reset Voltage (V)	Reset Type	Output	Typical Reset Pulse Width (ms)	Typical Supply Current (µA)	Additional Features	Packages	Bond Options
TC1271A	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63	Active-High	CMOS Push-Pull	280	7	Manual Reset	4-pin SOT-143, 5-pin SOT-23	N/A
TC1270AN	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63	Active-Low	Open-Drain	0	7	Manual Reset	4-pin SOT-143, 5-pin SOT-23	N/A
TCM809	1.2 to 5.5	–40 to +85	4.63, 4.38, 4.00, 3.08, 2.93, 2.63, 2.32	Active-Low	CMOS Push-Pull	240	12		3-pin SOT-23B, 3-pin SC-70	N/A
TCM810	1.2 to 5.5	–40 to +85	4.63, 4.38, 4.00, 3.08, 2.93, 2.63, 2.32	Active-High	CMOS Push-Pull	240	12		3-pin SOT-23B, 3-pin SC-70	N/A
MCP100	1.0 to 5.5	–40 to +85	4.72, 4.62, 4.47, 4.37, 3.075, 2.92, 2.62	Active-Low	CMOS Push-Pull	350	45		3-pin TO-92, 3-pin SOT-23B	D, H
MCP809	1.0 to 5.5	–40 to +85	4.72, 4.62, 4.47, 4.37, 3.075, 2.92, 2.62	Active-Low	CMOS Push-Pull	350	45		3-pin SOT-23B	N/A
MCP101	1.0 to 5.5	–40 to +85	4.72, 4.62, 4.47, 4.37, 3.075, 2.92, 2.62	Active-High	CMOS Push-Pull	350	45		3-pin TO-92, 3-pin SOT-23B	D, H
MCP810	1.0 to 5.5	–40 to +85	4.72, 4.62, 4.47, 4.37, 3.075, 2.92, 2.62	Active-High	CMOS Push-Pull	350	45		3-pin SOT-23B	N/A
MCP120	1.0 to 5.5	–40 to +85	4.72, 4.62, 4.47, 4.37, 3.075, 2.92, 2.62	Active-Low	Open-Drain	350	45		3-pin TO-92, 3-pin SOT-23, 8-pin SOIC	D, G, H
MCP130	1.0 to 5.5	–40 to +85	4.72, 4.62, 4.47, 4.37, 3.075, 2.92, 2.62	Active-Low	Open-Drain w/5 kOhm Pull-up	350	45		3-pin TO-92, 3-pin SOT-23, 8-pin SOIC	D, F, H
TC1232	4.5 to 5.5	–40 to +85	4.62, 4.37	Active-Low/High	Open-Drain	610	50	Watchdog Timer	8-pin PDIP, 8-pin SOIC, 16-pin SOIC	N/A
TC32M	4.5 to 5.5	–40 to +85	4.5	Active-Low	Open-Drain	700	50	Watchdog Timer	3-pin TO-92, 3-pin SOT-223	N/A

Note 1: Other reset voltage options available: 2.0V to 4.7V in 100 mV increments. Contact local Microchip sales office.

POWER MANAGEMENT: Voltage Detectors									
Part #	V_{CC} Range (V)	Operating Temp. Range (°C)	Nominal Reset Voltage (V)	Reset Type	Output	Minimum Reset Pulse Width (ms)	Typical Supply Current (µA)	Features	Packages
MCP111	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.90	Active-Low	Open-Drain	–	1		3-pin SOT-23B, 3-pin TO-92, 3-pin SC-70, 3-pin SOT-89
MCP112	1.0 to 5.5	–40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.90	Active-Low	CMOS Push-Pull	–	1		3-pin SOT-23B, 3-pin TO-92, 3-pin SC-70, 3-pin SOT-89
TC52	1.5 to 10	–40 to +85	4.5/2.7, 3.0/2.7	Active-Low	Open-Drain	–	2	Dual channel	5-pin SOT-23A
TC54	0.7 to 10	–40 to +85	4.3, 4.2, 3.0, 2.9, 2.7, 2.1, 1.4	Active-Low	CMOS Push-Pull or Open-Drain	–	1		3-pin SOT-23A, 3-pin SOT-89, 3-pin TO-92

POWER MANAGEMENT: Power MOSFET Drivers							
Part #	Configuration	Operating Temp. Range (°C)	Peak Output Current (A)	Output Resistance (R_H/R_L) (Max. W @ 25°C)	Maximum Supply Voltage (V)	Input/Output Delay (t_{D1}, t_{D2})(1) (ns)	Packages
Low-Side Drivers, 0.5A to 1.2A Peak Output Current							
MCP1401	Single, Inverting	–40 to +125	0.5	18/16	18	40/40	5-pin SOT-23
MCP1402	Single, Non-inverting	–40 to +125	0.5	18/16	18	40/40	5-pin SOT-23
TC1410	Single, Inverting	–40 to +85	0.5	22/22	16	30/30	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC1410N	Single, Non-inverting	–40 to +85	0.5	22/22	16	30/30	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC1411	Single, Inverting	–40 to +85	1.0	11/11	16	30/30	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC1411N	Single, Non-inverting	–40 to +85	1.0	11/11	16	30/30	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC1426	Dual, Inverting	0 to +70	1.2	18/18	16	75/75	8-pin PDIP, 8-pin SOIC

Note 1: t_{D1} = delay time from input low-to-high transition to output transition. t_{D2} = delay time from input high-to-low transition to output transition.

POWER MANAGEMENT: Power MOSFET Drivers (Continued)							
Part #	**Configuration**	**Operating Temp. Range (°C)**	**Peak Output Current (A)**	**Output Resistance (R_H/R_L) (Max. W @ 25°C)**	**Maximum Supply Voltage (V)**	**Input/Output Delay (t_{D1}, t_{D2})[1] (ns)**	**Packages**
Low-Side Drivers, 0.5A to 1.2A Peak Output Current (Continued)							
TC1427	Dual, Non-inverting	0 to +70	1.2	18/18	16	75/75	8-pin PDIP, 8-pin SOIC
TC1428	Dual, Inverting and Non-inverting	0 to +70	1.2	18/18	16	75/75	8-pin PDIP, 8-pin SOIC
TC4467	Quad, Inverting	–40 to +85	1.2	15/15	18	40/40	14-pin PDIP, 16-pin SOIC (W)
TC4468	Quad, Non-inverting	–40 to +85	1.2	15/15	18	40/40	14-pin PDIP, 16-pin SOIC (W)
TC4469	Quad, Non-inverting	–40 to +85	1.2	15/15	18	40/40	14-pin PDIP, 16-pin SOIC (W)
Low-Side Drivers, 1.5A Peak Output Current							
MCP1415	Single, Inverting	–40 to +125	1.5	7.5/5.5	18	50/55	5-pin SOT-23
MCP1416	Single, Non-inverting	–40 to +125	1.5	7.5/5.5	18	50/55	5-pin SOT-23
TC4403	Single, Non-inverting Floating Load Driver	–40 to +85	1.5	5/5	18	33/38	8-pin PDIP
TC4404	Dual, Inverting	–40 to +85	1.5	10/10	18	15/32	8-pin PDIP, 8-pin SOIC
TC4405	Dual, Non-inverting	–40 to +85	1.5	10/10	18	15/32	8-pin PDIP, 8-pin SOIC
TC4426A	Dual, Inverting	–40 to +125	1.5	9/9	18	30/30	8-pin PDIP, 8-pin SOIC, 8-pin DFN
TC4427A	Dual, Non-inverting	–40 to +125	1.5	9/9	18	30/30	8-pin PDIP, 8-pin SOIC, 8-pin DFN
TC4428A	Dual, Inverting and Non-inverting	–40 to +125	1.5	9/9	18	30/30	8-pin PDIP, 8-pin SOIC, 8-pin DFN
TC4426	Dual, Inverting	–40 to +125	1.5	10/10	18	20/40	8-pin PDIP, 8-pin SOIC, 8-pin DFN, 8-pin MSOP
TC4427	Dual, Non-inverting	–40 to +125	1.5	10/10	18	20/40	8-pin PDIP, 8-pin SOIC, 8-pin DFN, 8-pin MSOP
TC4428	Dual, Inverting and Non-inverting	–40 to +125	1.5	10/10	18	20/40	8-pin PDIP, 8-pin SOIC, 8-pin DFN, 8-pin MSOP
TC426	Dual, Inverting	–40 to +85	1.5	15/10	18	50/75	8-pin PDIP, 8-pin SOIC
TC427	Dual, Non-inverting	–40 to +85	1.5	15/10	18	50/75	8-pin PDIP, 8-pin SOIC
TC428	Dual, Inverting and Non-inverting	–40 to +85	1.5	15/10	18	50/75	8-pin PDIP, 8-pin SOIC
TC1412	Single, Inverting	–40 to +85	2	6/6	16	35/35	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC1412N	Single, Non-inverting	–40 to +85	2	6/6	16	35/35	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP14E6	Dual, Inverting	–40 to +125	2	2.2/2.8	18	45/45	8-pin PDIP, 8-pin SOIC, 8-pin DFN
MCP14E7	Dual, Non-inverting	–40 to +125	2	2.2/2.8	18	45/45	8-pin PDIP, 8-pin SOIC, 8-pin DFN
MCP14E8	Dual, Inverting and Non-inverting	–40 to +125	2	2.2/2.8	18	45/45	8-pin PDIP, 8-pin SOIC, 8-pin DFN
MCP14E9	Dual, Inverting	–40 to +125	3	2.2/2.8	18	75/75	8-pin PDIP, 8-pin SOIC, 8-pin DFN
MCP14E10	Dual, Non-inverting	–40 to +125	3	2.2/2.8	18	75/75	8-pin PDIP, 8-pin SOIC, 8-pin DFN
MCP14E11	Dual, Inverting and Non-inverting	–40 to +125	3	2.2/2.8	18	75/75	8-pin PDIP, 8-pin SOIC, 8-pin DFN
Low-Side Drivers, 2.0A to 12.0A Peak Output Current							
TC1413	Single, Inverting	–40 to +85	3	4/4	16	35/35	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC1413N	Single, Non-inverting	–40 to +85	3	4/4	16	35/35	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
TC4423A	Dual, Inverting	–40 to +125	3	3 (typ)/4 (typ)	18	40 (typ)/40 (typ)	8-pin PDIP, 8-pin SOIC, 8-pin DFN
TC4424A	Dual, Non-inverting	–40 to +125	3	3 (typ)/4 (typ)	18	40 (typ)/40 (typ)	8-pin PDIP, 8-pin SOIC, 8-pin DFN
TC4425A	Dual, Inverting and Non-inverting	–40 to +125	3	3 (typ)/4 (typ)	18	40 (typ)/40 (typ)	8-pin PDIP, 8-pin SOIC, 8-pin DFN
TC4423	Dual, Inverting	–40 to +125	3	5/5	18	33/38	8-pin PDIP, 16-pin SOIC (W), 8-pin DFN
TC4424	Dual, Non-inverting	–40 to +125	3	5/5	18	33/38	8-pin PDIP, 16-pin SOIC (W), 8-pin DFN
TC4425	Dual, Inverting and Non-inverting	–40 to +125	3	5/5	18	33/38	8-pin PDIP, 16-pin SOIC (W), 8-pin DFN
MCP14E3	Dual, Inverting	–40 to +125	4.0	3.5/3.0	18	55/55	8-pin PDIP, 8-pin SOIC, 8-pin 6 × 5 DFN
MCP14E4	Dual, Non-inverting	–40 to +125	4.0	3.5/3.0	18	55/55	8-pin PDIP, 8-pin SOIC, 8-pin 6 × 5 DFN
MCP14E5	Dual, Inverting and Non-inverting	–40 to +125	4.0	3.5/3.0	18	55/55	8-pin PDIP, 8-pin SOIC, 8-pin 6 × 5 DFN
MCP1403	Dual, Inverting	–40 to +125	4.5	3/3.5	18	48/48	8-pin PDIP, 8-pin SOIC, 8-pin 6 × 5 DFN, 16-pin SOIC

Note 1: t_{D1} = delay time from input low-to-high transition to output transition. t_{D2} = delay time from input high-to-low transition to output transition.

POWER MANAGEMENT: Power MOSFET Drivers (Continued)							
Part #	**Configuration**	**Operating Temperature Range (°C)**	**Peak Output Current (A)**	**Output Resistance (R_H/R_L) (Max. W @ 25°C)**	**Maximum Supply Voltage (V)**	**Input/Output Delay (t_{D1}, t_{D2})[1] (ns)**	**Packages**
Low-Side Drivers, 2.0A to 12.0A Peak Output Current (Contined)							
MCP1404	Dual, Non-inverting	–40 to +125	4.5	3/3.5	18	48/48	8-pin PDIP, 8-pin SOIC, 8-pin 6 × 5 DFN, 16-pin SOIC
MCP1405	Dual, Inverting and Non-inverting	–40 to +125	4.5	3/3.5	18	48/48	8-pin PDIP, 8-pin SOIC, 8-pin 6 × 5 DFN, 16-pin SOIC
MCP1406	Single, Inverting	–40 to +125	6	1.8 (typ)/2.0 (typ)	18	30/30	5-pin TO-220, 8-pin PDIP, 8-pin 6 × 5 DFN, 8-pin SOIC
MCP1407	Single, Non-inverting	–40 to +125	6	1.8 (typ)/2.0 (typ)	18	30/30	5-pin TO-220, 8-pin PDIP, 8-pin 6 × 5 DFN, 8-pin SOIC
TC429	Single, Inverting	–40 to +85	6	2.5/2.5	18	53/60	8-pin PDIP, 8-pin DFN, 8-pin SOIC
TC4420	Single, Non-inverting	–40 to +125	6	2.8/2.5	18	55/55	8-pin PDIP, 8-pin SOIC, 5-pin TO-220, 8-pin DFN
TC4429	Single, Inverting	–40 to +125	6	2.8/2.5	18	55/55	8-pin PDIP, 8-pin SOIC, 5-pin TO-220, 8-pin DFN
TC4421	Single, Inverting	–40 to +125	9	1.4 (typ)/1.7	18	30/33	8-pin PDIP, 5-pin TO-220, 8-pin DFN
TC4421A	Single, Inverting	–40 to +125	9	1.25 (typ)/1.5	18	38/42	8-pin PDIP, 8-pin SOIC, 5-pin TO-220, 8-pin 6 × 5 DFN
TC4422	Single, Non-inverting	–40 to +125	9	1.4 (typ)/1.7	18	30/33	8-pin PDIP, 5-pin TO-220, 8-pin DFN
TC4422A	Single, Non-inverting	–40 to +125	9	1.25 (typ)/1.5	18	38/42	8-pin PDIP, 8-pin SOIC, 5-pin TO-220, 8-pin 6 × 5 DFN
TC4451	Single, Inverting	–40 to +125	12	0.6 (typ)/1.5	18	15/15	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN, 5-pin TO-220, 5-pin DDPAK
TC4452	Single, Non-inverting	–40 to +125	12	0.6 (typ)/1.5	18	15/15	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN, 5-pin TO-220, 5-pin DDPAK
High-Side/Low-Side Drivers							
TC4626	Single, Inverting	–40 to +85	1.5	15/10	6	35/45	8-pin PDIP, 16-pin SOIC (W)
TC4627	Single, Non-inverting	–40 to +85	1.5	15/10	6	35/45	8-pin PDIP, 16-pin SOIC (W)
TC4431	Single, Inverting	–40 to +85	1.5	10/10	30	62/78	8-pin PDIP, 8-pin SOIC
TC4432	Single, Non-inverting	–40 to +85	1.5	10/10	30	62/78	8-pin PDIP, 8-pin SOIC
Synchronous Buck High-Side Drivers							
MCP14628	Dual, Non-inverting	–40 to +85	2	2.5/2.5	5 (V_{DD}), 36 (Boot Pin)	18/20	8-pin SOIC, 8-pin 3 × 3 DFN
MCP14700	Dual, Non-inverting	–40 to +125	2	2.5/2.5	5 (V_{DD}), 36 (Boot Pin)	25/25	8-pin SOIC, 8-pin 3 × 3 DFN

Note 1: t_{D1} = delay time from input low-to-high transition to output transition. t_{D2} = delay time from input high-to-low transition to output transition.

POWER MANAGEMENT: Battery Chargers									
Part #	**Mode**	**Cell Type**	**# of Cells**	**Vcc Range (V)**	**Cell Voltage (V)**	**Maximum Charging Current (mA)**	**Max. Voltage Regulation (%)**	**Int/Ext FET**	**Features**	**Packages**
MCP73113	Linear	Li-ion/Li-Polymer	1	4 to 16	4.1, 4.2, 4.35, 4.4	1100	±0.5	Int	6.5V Overvoltage Protection	10-pin 3 × 3 DFN
MCP73114	Linear	Li-ion/Li-Polymer	1	4 to 16	4.1, 4.2, 4.35, 4.4	1100	±0.5	Int	5.8V Overvoltage Protection	10-pin 3 × 3 DFN
MCP73123	Linear	LiFePO4	1	4 to 16	3.6	1100	±0.5	Int	6.5V Overvoltage Protection, LiFePO4 charging	10-pin 3 × 3 DFN
MCP73213	Linear	Li-ion/Li-Polymer	2	4 to 16	8.2, 8.4, 8.7, 8.8	1100	±0.6	Int	13V Overvoltage Protection	10-pin 3 × 3 DFN
MCP73223	Linear	LiFePO4	2	4 to 16	7.2	1100	±0.6	Int	13V Overvoltage Protection, LiFePO4 charging	10-pin 3 × 3 DFN
MCP73826	Linear	Li-Ion/Li-Polymer	1	4.5 to 5.5	4.1, 4.2	N/A	±1.0	Ext	Small size, charge current set by external FET	6-pin SOT-23
MCP73827	Linear	Li-Ion/Li-Polymer	1	4.5 to 5.5	4.1, 4.2	N/A	±1.0	Ext	Mode indicator, Charge current monitor, Charge current set by external FET	8-pin MSOP
MCP73828	Linear	Li-Ion/Li Polymer	1	4.5 to 5.5	4.1, 4.2	N/A	±1.0	Ext	Temperature monitor, Charge current set by external FET	8-pin MSOP
MCP73841	Linear	Li-Ion/Li-Polymer	1	4.5 to 12	4.1, 4.2	N/A	±0.5	Ext	Safety charge timers, Temperature monitor, Charge current set by external FET	10-pin MSOP

POWER MANAGEMENT: Battery Chargers (Continued)										
Part #	Mode	Cell Type	# of Cells	Vcc Range (V)	Cell Voltage (V)	Maximum Charging Current (mA)	Max. Voltage Regulation (%)	Int/Ext FET	Features	Packages
MCP73841	Linear	Li-Ion/Li-Polymer	1	4.5 to 12	4.1, 4.2	N/A	±0.5	Ext	Safety charge timers, Temperature monitor, Charge current set by external FET	10-pin MSOP
MCP73842	Linear	Li-Ion/Li-Polymer	2	8.7 to 12	8.2, 8.4	N/A	±0.5	Ext	Safety charge timers, Temperature monitor, Charge current set by external FET	10-pin MSOP
MCP73843	Linear	Li-Ion/Li-Polymer	1	4.5 to 12	4.1, 4.2	N/A	±0.5	Ext	Safety charge timers, Charge current set by external FET	8-pin MSOP
MCP73844	Linear	Li-Ion/Li-Polymer	2	8.7 to 12	8.2, 8.4	N/A	±0.5	Ext	Safety charge timers, Charge current set by external FET	8-pin MSOP
MCP73811	Linear	Li-Ion/Li-Polymer	1	3.7 to 6.0	4.2	500	±1.0	Int	Selectable charge current (100 mA, 500 mA), Charge enable input	5-pin SOT-23
MCP73812	Linear	Li-Ion/Li Polymer	1	3.7 to 6.0	4.2	500	±1.0	Int	Programmable charge current (100 mA, 500 mA), Charge enable input	5-pin SOT-23
MCP73830/L	Linear	Li-Ion/Li-Polymer	1	3.75 to 6.0	4.2	1000/200	±0.75	Int	Soft-start, Charge enable pin	6-pin 2 × 2 TDFN
MCP73831	Linear	Li-Ion/Li-Polymer	1	3.7 to 6.0	4.2, 4.35, 4.4, 4.5	500	±0.75	Int	UVLO, Thermal regulation, Programmable charge current, Tri-state STAT pin	5-pin SOT-23, 8-pin 2 × 3 DFN
MCP73832	Linear	Li-Ion/Li-Polymer	1	3.7 to 6.0	4.2, 4.35, 4.4, 4.5	500	±0.75	Int	UVLO, Thermal regulation, Programmable charge current, Open-drain STAT pin	5-pin SOT-23, 8-pin 2 × 3 DFN
MCP73853	Linear	Li-Ion/Li-Polymer	1	4.5 to 5.5	4.1, 4.2	500	±0.5	Int	USB control, Safety charge timers, Temperature monitor, Thermal regulation	16-pin 4 × 4 QFN
MCP73855	Linear	Li-Ion/Li-Polymer	1	4.5 to 5.5	4.1, 4.2	500	±0.5	Int	USB control, Safety charge timers, Thermal regulation	10-pin 3 × 3 DFN
MCP73833	Linear	Li-Ion/Li-Polymer	1	3.7 to 6.0	4.2, 4.35, 4.4, 4.5	1000	±0.75	Int	UVLO, Thermal regulation, Thermistor input, LDO Test mode, Multiple V_{REG} outputs, Safety timer, Power good output	10-pin 3 × 3 DFN, 10-pin MSOP
MCP73834	Linear	Li-Ion/Li-Polymer	1	3.7 to 6.0	4.2, 4.35, 4.4, 4.5	1000	±0.75	Int	UVLO, Thermal regulation, Thermistor input, LDO Test mode, Multiple Vreg outputs, Safety timer, Timer enable input	10-pin 3 × 3 DFN, 10-pin MSOP
MCP73837	Linear	Li-Ion/Li-Polymer	1	3.7 to 6.0	4.2, 4.35, 4.4, 4.5	1000	±0.75	Int	Dual input (USB, DC input from adapter) auto-switching, UVLO, Thermal regulation, Thermistor input, Power good output	10-pin 3 × 3 DFN, 10-pin MSOP
MCP73838	Linear	Li-Ion/Li Polymer	1	3.7 to 6.0	4.2, 4.35, 4.4, 4.5	1000	±0.75	Int	Dual input (USB, DC input from adapter) auto-switching, UVLO, Thermal regulation, Timer enable input	10-pin 3 × 3 DFN, 10-pin MSOP
MCP73871	Linear	Li-Ion/Li-Polymer	1	3.75 to 6.0	4.1, 4.2, 4.35, 4.4	1500 (A/C Adapter) 500 (USB)	±0.5	Int	Simultaneous charging of load and battery, Load-dependent charging, Multiple programmable charge currents	20-pin 4 × 4 QFN, 20-pin SSOP

POWER MANAGEMENT: Hot Swap Controllers									
Part #	Number of Outputs	V_{POS} to V_{NEG} Differential Voltage (V)	Junction Temperature Range (°C)	OVLO	UVLO	Power good	Int/Ext FET	Applications	Packages
MCP18480	1	–0.3 to +15.0	–40 to +85	Adjustable	Adjustable	Adjustable	Ext	–48V Telecom/Datacom, Bus/Backplane	20-pin SSOP

LINEAR

LINEAR: Op Amps										
Part #	# per Package	GBWP	I_Q Typical (µA)	V_{OS} Max (mV)	Typical Input Bias Current (pA)	Input Voltage Noise Density (nV/rtHz)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6441	1	9 kHz	0.45	4.5	1	190(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S), 5-pin SC-70(S)
MCP6442	2	9 kHz	0.45	4.5	1	190(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN
MCP6444	4	9 kHz	0.45	4.5	1	190(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6031	1	10 kHz	0.9	0.15	1	165(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN, 5-pin SOT-23
MCP6032	2	10 kHz	0.9	0.15	1	165(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP
MCP6033	1	10 kHz	0.9	0.15	1	165(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN

Legend: S = Standard Pinout; R = Reverse Pinout; U = Alternative Pinout
Note 1: Values are typical at 1 kHz
2: Values are typical at 10 kHz

LINEAR: Op Amps (Continued)

Part #	# per Package	GBWP	I_Q Typical (µA)	V_{OS} Max (mV)	Typical Input Bias Current (pA)	Input Voltage Noise Density (nV/rtHz)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6034	4	10 kHz	0.9	0.15	1	165(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6041	1	14 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 5-pin SOT-23(S)
MCP6042	2	14 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6043	1	14 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 6-pin SOT-23(S)
MCP6044	4	14 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6141	1	100 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, G >10 stable	5-pin SOT-23(S), 8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6142	2	100 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, G >10 stable	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6143	1	100 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, G >10 stable, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 6-pin SOT-23(S)
MCP6144	4	100 kHz	0.6	3	1	170(1)	1.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, G >10 stable	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP606	1	155 kHz	19	0.25	1	38(1)	2.5 to 6.0	–40 to +85	Rail-to-Rail Output	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP, 5-pin SOT23(S)
MCP607	2	155 kHz	19	0.25	1	38(1)	2.5 to 6.0	–40 to +85	Rail-to-Rail Output	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP
MCP608	1	155 kHz	19	0.25	1	38(1)	2.5 to 6.0	–40 to +85	Rail-to-Rail Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP
MCP609	4	155 kHz	19	0.25	1	38(1)	2.5 to 6.0	–40 to +85	Rail-to-Rail Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP616	1	190 kHz	19	0.15	15000	32(1)	2.3 to 5.5	–40 to +85	Rail-to-Rail Output, PNP input	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP617	2	190 kHz	19	0.15	15000	32(1)	2.3 to 5.5	–40 to +85	Rail-to-Rail Output, PNP input	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP618	1	190 kHz	19	0.15	15000	32(1)	2.3 to 5.5	–40 to +85	Rail-to-Rail Output, Chip select, PNP input	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP619	4	190 kHz	19	0.15	15000	32(1)	2.3 to 5.5	–40 to +85	Rail-to-Rail Output, PNP input	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6231	1	300 kHz	20	5	1	52(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN, 5-pin SC-70(U), 5-pin SOT-23(S, R, U)
MCP6232	2	300 kHz	20	5	1	52(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN
MCP6234	4	300 kHz	20	5	1	52(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6051	1	385 kHz	30	0.15	1	34(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 DFN, 5-pin SOT-23(S)
MCP6052	2	385 kHz	30	0.15	1	34(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 DFN
MCP6054	4	385 kHz	30	0.15	1	34(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6241	1	550 kHz	50	5	1	45(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN, 5-pin SC-70(U), 5-pin SOT-23(S ,R, U)
MCP6242	2	550 kHz	50	5	1	45(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6244	4	550 kHz	50	5	1	45(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6061	1	730 kHz	60	0.15	1	25(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 DFN, 5-pin SOT-23(S)
MCP6062	2	730 kHz	60	0.15	1	25(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 DFN
MCP6064	4	730 kHz	60	0.15	1	25(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6001	1	1 MHz	100	4.5	1	28(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(R)
MCP6002	2	1 MHz	100	4.5	1	28(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN
MCP6004	4	1 MHz	100	4.5	1	28(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6401	1	1 MHz	45	4.5	1	28(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(R)
MCP6402	2	1 MHz	45	4.5	1	28(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6404	4	1 MHz	45	4.5	1	28(1)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6L01	1	1 MHz	85	5	2	24(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(S)
MCP6L02	2	1 MHz	85	5	2	24(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP
MCP6L04	4	1 MHz	85	5	2	24(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6071	1	1.2 MHz	110	0.15	1	19(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 DFN, 5-pin SOT-23(S)

Legend: S = Standard Pinout; R = Reverse Pinout; U = Alternative Pinout
Note 1: Values are typical at 1 kHz
2: Values are typical at 10 kHz

LINEAR: Op Amps (Continued)

Part #	# per Package	GBWP	I_Q Typical (µA)	Vos Max (mV)	Typical Input Bias Current (pA)	Input Voltage Noise Density (nV/rtHz)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6072	2	1.2 MHz	110	0.15	1	19(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 DFN
MCP6074	4	1.2 MHz	110	0.15	1	19(2)	1.8 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6H01	1	1.2 MHz	135	3.5	10	35(1)	Single Supply: 3.5 to 16 Dual Supply: ±1.75 to ±8	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN, 5-pin SOT-23(S), 5-pin SC-70(S)
MCP6H02	2	1.2 MHz	135	3.5	10	35(1)	Single Supply: 3.5 to 16 Dual Supply: ±1.75 to ±8	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6H04	4	1.2 MHz	135	3.5	10	35(1)	Single Supply: 3.5 to 16 Dual Supply: ±1.75 to ±8	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin TSSOP
MCP6271	1	2 MHz	170	3	1	20(1)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 5-pin SOT-23(S, R)
MCP6272	2	2 MHz	170	3	1	20(1)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6273	1	2 MHz	170	3	1	20(1)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 6-pin SOT-23(S)
MCP6274	4	2 MHz	170	3	1	20(1)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6275	2	2 MHz	150	3	1	20(1)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Dual connected, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6471	1	2 MHz	100	1	1	27(1)	2.0 to 5.5	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S), 5-pin SC-70(S)
MCP6L71	1	2 MHz	150	4	1	19(2)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC(S), 8-pin MSOP(S), 5-pin SOT-23(S, R)
MCP6L72	2	2 MHz	150	4	1	19(2)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP
MCP6L74	4	2 MHz	150	4	1	19(2)	2.0 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP601	1	2.8 MHz	230	2	1	29(1)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP, 5-pin SOT-23(S, R)
MCP602	2	2.8 MHz	230	2	1	29(1)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP
MCP603	1	2.8 MHz	230	2	1	29(1)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP, 6-pin SOT-23(S)
MCP604	4	2.8 MHz	230	2	1	29(1)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6L1	1	2.8 MHz	200	3	1	21(2)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output	8-pin SOIC(S), 8-pin MSOP(S), 5-pin SOT-23(S, R)
MCP6L2	2	2.8 MHz	200	3	1	21(2)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin MSOP
MCP6L4	4	2.8 MHz	200	3	1	21(2)	2.7 to 6.0	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin TSSOP
MCP6286	1	3.5 MHz	540	1.5	1	5.4(2)	2.2 to 5.5	–40 to +125	Rail-to-Rail Output, Low noise	5-pin SOT-23(S, R)
MCP6481	1	4 MHz	240	1	1	23(1)	2.2 to 5.5	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S), 5-pin SC-70(S)
MCP6281	1	5 MHz	445	3	1	16(1)	2.2 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 5-pin SOT-23(S, R)
MCP6282	2	5 MHz	445	3	1	16(1)	2.2 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6283	1	5 MHz	445	3	1	16(1)	2.2 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 6-pin SOT-23(S, R)
MCP6284	4	5 MHz	445	3	1	16(1)	2.2 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6285	2	5 MHz	400	3	1	16(1)	2.2 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Dual connected, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6H81	1	5.5 MHz	700	4	10	23(1)	Single Supply: 3.5 to 12 Dual Supply: ±1.75 to ±6	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6H82	2	5.5 MHz	700	4	10	23(1)	Single Supply: 3.5 to 12 Dual Supply: ±1.75 to ±6	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6H84	4	5.5 MHz	700	4	10	23(1)	Single Supply: 3.5 to 12 Dual Supply: ±1.75 to ±6	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin 2 × 3 TDFN
MCP6491	1	7.5 MHz	530	1	1	19(1)	2.4 to 5.5	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S), 5-pin SC-70(S)
MCP6021	1	10 MHz	1000	0.5	1	8.7(2)	2.5 to 5.5	–40 to +125	Rail-to-Rail Input/Output, 1/2 V_{CC} V_{REF}	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP, 8-pin MSOP, 5-pin SOT-23(S, R)
MCP6022	2	10 MHz	1000	0.5	1	8.7(2)	2.5 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP
MCP6023	1	10 MHz	1000	0.5	1	8.7(2)	2.5 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Chip select, 1/2 V_{CC} V_{REF}	8-pin PDIP, 8-pin SOIC, 8-pin TSSOP
MCP6024	4	10 MHz	1000	0.5	1	8.7(2)	2.5 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6291	1	10 MHz	1000	3	1	8.7(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 5-pin SOT-23(S, R)
MCP6292	2	10 MHz	1000	3	1	8.7(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP

Legend: S = Standard Pinout; R = Reverse Pinout; U = Alternative Pinout
Note 1: Values are typical at 1 kHz
2: Values are typical at 10 kHz

LINEAR: Op Amps (Continued)										
Part #	# per Package	GBWP	I_Q Typical (µA)	V_{OS} Max (mV)	Typical Input Bias Current (pA)	Input Voltage Noise Density (nV/rtHz)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6293	1	10 MHz	1000	3	1	8.7(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 6-pin SOT-23(S)
MCP6294	4	10 MHz	1000	3	1	8.7(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6295	2	10 MHz	1100	3	1	8.7(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output, Dual connected, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6H91	1	10 MHz	2000	4	10	23(1)	Single Supply: 3.5 to 12 Dual Supply: ±1.75 to ±6	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6H92	2	10 MHz	2000	4	10	23(1)	Single Supply: 3.5 to 12 Dual Supply: ±1.75 to ±6	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6H94	4	10 MHz	2000	4	10	23(1)	Single Supply: 3.5 to 12 Dual Supply: ±1.75 to ±6	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin TSSOP
MCP6L91	1	10 MHz	850	4	1	9.4(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC(S), 8-pin MSOP(S), 5-pin SOT-23(S, R)
MCP6L92	2	10 MHz	850	4	1	9.4(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP
MCP6L94	4	10 MHz	850	4	1	9.4(2)	2.4 to 6.0	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP621	1	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip select, mCal Technology	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP621S	1	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, mCal Technology	5-pin SOT-23(S)
MCP622	2	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, mCal Technology	8-pin SOIC, 8-pin 3 × 3 DFN
MCP623	1	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip select, mCal Technology	6-pin SOT-23(S)
MCP624	4	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, mCal Technology	14-pin SOIC, 14-pin TSSOP
MCP625	2	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip selects, mCal Technology	10-pin MSOP, 10-pin 3 × 3 DFN
MCP629	4	20 MHz	2500	0.2	5	13(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output,Chip selects, mCal Technology	16-pin 4 × 4 QFN
MCP631	1	24 MHz	2500	8	4	10(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN, 5-pin SOT-23(S)
MCP632	2	24 MHz	2500	8	4	10(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 3 × 3 DFN
MCP633	1	24 MHz	2500	8	4	10(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip select	8-pin SOIC, 6-pin SOT-23
MCP634	4	24 MHz	2500	8	4	10(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin TSSOP
MCP635	2	24 MHz	2500	8	4	10(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip selects	10-pin MSOP, 10-pin 3 × 3 DFN
MCP639	4	24 MHz	2500	8	4	10(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip selects	16-pin 4 × 4 QFN
MCP651	1	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip select, mCal Technology	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP651S	1	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, mCal Technology	5-pin SOT-23(S)
MCP652	2	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, mCal Technology	8-pin SOIC, 8-pin 3 × 3 DFN
MCP653	1	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip select, mCal Technology	6-pin SOT-23(S)
MCP654	4	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, mCal Technology	14-pin SOIC, 14-pin TSSOP
MCP655	2	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip selects, mCal Technology	10-pin MSOP, 10-pin 3 × 3 DFN
MCP659	4	50 MHz	6000	0.2	6	7.5(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output,Chip selects, mCal Technology	16-pin 4 × 4 QFN
MCP660	3	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin TSSOP
MCP661	1	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 2 × 3 TDFN, 5-pin SOT-23(S)
MCP662	2	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	8-pin SOIC, 8-pin 3 × 3 DFN
MCP663	1	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip select	8-pin SOIC, 6-pin SOT-23
MCP664	4	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output	14-pin SOIC, 14-pin TSSOP
MCP665	2	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip selects	10-pin MSOP, 10-pin 3 × 3 DFN
MCP669	4	60 MHz	6000	8	6	6.8(3)	2.5 to 5.5	–40 to +125	Rail-to-Rail Output, Chip selects	16-pin 4 × 4 QFN

Legend: S = Standard Pinout; R = Reverse Pinout; U = Alternative Pinout

Note 1: Values are typical at 1 kHz

2: Values are typical at 10 kHz

3: Values are typical at 1 MHz

LINEAR: Zero-Drift Operational Amplifiers

Part #	# per Package	GBWP	I_Q Max (mA)	V_{OS} Max (µV)	V_{OS} Drift Max (µV/°C)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6V11	1	80 kHz	0.011	8	0.05	1.6 to 5.5	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S, U), 5-pin SOT-70(U)
MCP6V31	1	300 kHz	0.034	8	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	5-pin SOT-23(S, U), 5-pin SOT-70(U)
TC7652	1	0.4 MHz	3	5	0.05	5 to 16	0 to +70	Single and Split Supply, Low Noise	8-pin PDIP, 14-pin PDIP
MCP6V01	1	1.3 MHz	0.4	2	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6V02	2	1.3 MHz	0.4	2	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 4 × 4 DFN
MCP6V03	1	1.3 MHz	0.4	2	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6V06	1	1.3 MHz	0.4	3	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 2 × 3 TDFN
MCP6V07	2	1.3 MHz	0.4	3	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin 4 × 4 DFN
MCP6V08	1	1.3 MHz	0.4	3	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin SOIC, 8-pin 2 × 3 TDFN
TC913A/B	2	1.5 MHz	1.1	15	0.15/0.30	7 to 16	0 to +70	Single and Split Supply	8-pin PDIP, 8-pin SOIC
TC7650	1	2 MHz	3.5	5	0.05	4.5 to 16	0 to +70	Single and Split Supply	8-pin PDIP, 14-pin PDIP
MCP6V26	1	2 MHz	0.8	2	0.05	2.3 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN
MCP6V27	2	2 MHz	0.8	2	0.05	2.3 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 4 × 4 DFN
MCP6V28	1	2 MHz	0.8	2	0.05	2.3 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Chip select	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN

LINEAR: Programmable Gain Amplifiers (PGA)

Part #	Channels	–3dB BW (MHz)	I_Q Typ. (mA)	V_{OS} (µV)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6S21	1	2 to 12	1.1	275	2.5 to 5.5	–40 to +85	SPI, 8 Gain steps, Software shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6S22	2	2 to 12	1.1	275	2.5 to 5.5	–40 to +85	SPI, 8 Gain steps, Software shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6S26	6	2 to 12	1.1	275	2.5 to 5.5	–40 to +85	SPI, 8 Gain steps, Software shutdown	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6S28	8	2 to 12	1.1	275	2.5 to 5.5	–40 to +85	SPI, 8 Gain steps, Software shutdown	16-pin PDIP, 16-pin SOIC
MCP6S91	1	1 to 18	1.0	4000	2.5 to 5.5	–40 to +125	SPI, 8 Gain steps, Software shutdown, V_{REF}	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6S92	2	1 to 18	1.0	4000	2.5 to 5.5	–40 to +125	SPI, 8 Gain steps, Software shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6S93	2	1 to 18	1.0	4000	2.5 to 5.5	–40 to +125	SPI, 8 Gain steps, Software shutdown, V_{REF}, SO	10-pin MSOP

LINEAR: Selectable Gain Amplifiers (SGA)

Part #	Channels	–3dB BW (kHz)	I_Q (µA)	V_{OS} (mV)	Operating Voltage (V)	Temperature Range (°C)	Gain Steps (V/V)	Features	Packages
MCP6G01	1	900	110	4.5	1.8 to 5.5	–40 to +125	1, 10, 50	Tri-State control pin	8-pin SOIC, 8-pin MSOP, 5-pin SOT-23(S, R, U)
MCP6G02	2	900	110	4.5	1.8 to 5.5	–40 to +125	1, 10, 50	Tri-State control pin	8-pin SOIC, 8-pin MSOP
MCP6G03	1	900	110	4.5	1.8 to 5.5	–40 to +125	1, 10, 50	Tri-State control pin, Chip select	8-pin SOIC, 8-pin MSOP
MCP6G04	4	900	110	4.5	1.8 to 5.5	–40 to +125	1, 10, 50	Tri-State control pin	14-pin SOIC, 14-pin TSSOP

LINEAR: Instrumentation Amplifiers

Part #	# Per Package	GBWP	I_Q Max (mA)	Max V_{OS} (µV)	V_{OS} Drift Max (µV/°C)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6N11	1	500 kHz	1.1	350	2.7	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, mCal Technology	8-pin SOIC, 8-pin 2 × 3 TDFN

Legend: S = Standard Pinout; R = Reverse Pinout; U = Alternative Pinout

LINEAR: Comparators									
Part #	# per Package	V_{REF} (V)	Typical Propagation Delay (µs)	I_Q Typical (µA)	V_{OS} Max (mV)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6541	1	–	4	1	5	1.6 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(S, U), 8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6542	2	–	4	1	5	1.6 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6543	1	–	4	1	5	1.6 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6544	4	–	4	1	5	1.6 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP6546	1	–	4	1	5	1.6 to 5.5	–40 to +125	Open-drain, 9V, Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(S, U), 8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6547	2	–	4	1	5	1.6 to 5.5	–40 to +125	Open-drain, 9V, Rail-to-Rail Input/Output	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6548	1	–	4	1	5	1.6 to 5.5	–40 to +125	Open-drain, 9V, Rail-to-Rail Input/Output, Chip select	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP6549	4	–	4	1	5	1.6 to 5.5	–40 to +125	Open-drain, 9V, Rail-to-Rail Input/Output	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP65R41	1	1.21/2.4	4	2.5	10	1.8 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output, V_{REF}	6-pin SOT-23
MCP65R46	1	1.21/2.4	4	2.5	10	1.8 to 5.5	–40 to +125	Open Drain, Rail-to-Rail Input/Output, V_{REF}	6-pin SOT-23
MCP6561	1	–	0.047	100	10	1.8 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(S)
MCP6562	2	–	0.047	100	10	1.8 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP
MCP6564	4	–	0.047	100	10	1.8 to 5.5	–40 to +125	Push-Pull, Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
MCP6566	1	–	0.047	100	10	1.8 to 5.5	-40 to +125	Open-Drain, Rail-to-Rail Input/Output	5-pin SOT-23(S, R, U), 5-pin SC-70(S)
MCP6567	2	–	0.047	100	10	1.8 to 5.5	-40 to +125	Open-Drain, Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP
MCP6569	4	–	0.047	100	10	1.8 to 5.5	-40 to +125	Open-Drain, Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP

Legend: S = Standard Pinout; R = Reverse Pinout; U = Alternative Pinout

MIXED SIGNAL

MIXED SIGNAL: Successive Approximation Register (SAR) A/D Converters										
Part #	Resolution (bits)	Maximum Sampling Rate (ksamples/sec)	# of Input Channels	Input Type	Interface	Input Voltage Range (V)	Max. Supply Current (µA)	Max. INL	Temperature Range (°C)	Packages
MCP3021	10	22	1	Single-ended	I^2C™	2.7 to 5.5	250	±1 LSB	–40 to +125	5-pin SOT-23A
MCP3001	10	200	1	Single-ended	SPI	2.7 to 5.5	500	±1 LSB	–40 to +85	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin TSSOP
MCP3002	10	200	2	Single-ended	SPI	2.7 to 5.5	650	±1 LSB	–40 to +85	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin TSSOP
MCP3004	10	200	4	Single-ended	SPI	2.7 to 5.5	550	±1 LSB	–40 to +85	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP3008	10	200	8	Single-ended	SPI	2.7 to 5.5	550	±1 LSB	–40 to +85	16-pin PDIP, 16-pin SOIC
MCP3221	12	22	1	Single-ended	I^2C™	2.7 to 5.5	250	±2 LSB	–40 to +125	5-pin SOT-23A
MCP3201	12	100	1	Single-ended	SPI	2.7 to 5.5	400	±1 LSB	–40 to +85	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin TSSOP
MCP3202	12	100	2	Single-ended	SPI	2.7 to 5.5	550	±1 LSB	–40 to +85	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin TSSOP
MCP3204	12	100	4	Single-ended	SPI	2.7 to 5.5	400	±1 LSB	–40 to +85	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP3208	12	100	8	Single-ended	SPI	2.7 to 5.5	400	±1 LSB	–40 to +85	16-pin PDIP, 16-pin SOIC
MCP3301	13	100	1	Differential	SPI	2.7 to 5.5	450	±1 LSB	–40 to +85	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin TSSOP
MCP3302	13	100	2	Differential	SPI	2.7 to 5.5	450	±1 LSB	–40 to +85	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP3304	13	100	4	Differential	SPI	2.7 to 5.5	450	±1 LSB	–40 to +85	16-pin PDIP, 16-pin SOIC

MIXED SIGNAL: Delta-Sigma A/D Converters

Part #	Resolution (bits)	Maximum Sampling Rate (samples/sec)	# of Input Channels	Interface	Supply Voltage Range (V)	Typical Supply Current (µA)	Typical INL (ppm)	Temperature Range (°C)	Features	Packages
MCP3421	18 to 12	4 to 240	1 Diff	I²C™	2.7 to 5.5	155	10	–40 to +125	PGA, VREF	6-pin SOT-23A
MCP3422	18 to 12	4 to 240	2 Diff	I²C	2.7 to 5.5	145	10	–40 to +125	PGA, VREF	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN
MCP3423	18 to 12	4 to 240	2 Diff	I²C	2.7 to 5.5	145	10	–40 to +125	PGA, VREF, Selectable I²C™ addressing	10-pin MSOP, 10-pin 3 × 3 DFN
MCP3424	18 to 12	4 to 240	4 Diff	I²C	2.7 to 5.5	145	10	–40 to +125	PGA, VREF, Selectable I²C addressing	14-pin SOIC, 14-pin TSSOP
MCP3425	16 to 12	15 to 240	1 Diff	I²C	2.7 to 5.5	155	10	–40 to +125	PGA, VREF	6-pin SOT-23A
MCP3426	16 to 12	15 to 240	2 Diff	I²C	2.7 to 5.5	145	10	–40 to +125	PGA, VREF	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN
MCP3427	16 to 12	15 to 240	2 Diff	I²C	2.7 to 5.5	145	10	–40 to +125	PGA, VREF, Selectable I²C addressing	10-pin MSOP, 10-pin 3 × 3 DFN
MCP3428	16 to 12	15 to 240	4 Diff	I²C	2.7 to 5.5	145	10	–40 to +125	PGA, VREF, Selectable I²C addressing	14-pin SOIC, 14-pin TSSOP
MCP3550-50	22	13	1 Diff	SPI	2.7 to 5.5	120	2	–40 to +125	50 Hz rejection	8-pin SOIC, 8-pin MSOP
MCP3550-60	22	15	1 Diff	SPI	2.7 to 5.5	140	2	–40 to +125	60 Hz rejection	8-pin SOIC, 8-pin MSOP
MCP3551	22	14	1 Diff	SPI	2.7 to 5.5	120	2	–40 to +125	Simultaneous 50/60 Hz rejection	8-pin SOIC, 8-pin MSOP
MCP3553	20	60	1 Diff	SPI	2.7 to 5.5	140	2	–40 to +125		8-pin SOIC, 8-pin MSOP

MIXED SIGNAL: Energy Measurement ICs

Part #	Dynamic Range	Typical Accuracy	ADC Channels	Gain Selection	Output Type	Typical Voltage Reference Drift (ppm/°C)	Typical Supply Current (mA)	Analog Voltage Range (V)	Digital Voltage Range (V)	Temperature Range (°C)	Features	Packages
MCP3901	24-bit resolution	91 dB SINAD	2	up to 32	SPI	12	2.6	4.5 to 5.5	2.7 to 5.5	–40 to +125	Phase correction, Programmable data rate	20-pin SSOP, 20-pin 4 × 4 QFN
MCP3903	24-bit resolution	91 dB SINAD	6	up to 32	SPI	5	8.3	4.5 to 5.5	2.7 to 3.6	–40 to +125	Phase correction, Programmable data rate	28-pin SSOP
MCP3905A	500:1	0.1%	2	up to 16	Active power pulse	15	3.9	4.5 to 5.5	4.5 to 5.5	–40 to +125	Active power calculation	24-pin SSOP
MCP3905L	500:1	0.1%	2	up to 16	Active power pulse	15	3.9	4.5 to 5.5	4.5 to 5.5	–40 to +125	Active power calculation, Reduced pulse-width	24-pin SSOP
MCP3906A	1000:1	0.1%	2	up to 32	Active power pulse	15	3.9	4.5 to 5.5	4.5 to 5.5	–40 to +125	Active power calculation	24-pin SSOP
MCP3909	1000:1	0.1%	2	up to 16	Active power pulse/SPI	15	3.9	4.5 to 5.5	4.5 to 5.5	–40 to +125	Active power calculation	24-pin SSOP
MCP3911	24-bit resolution	94.5 dB SINAD	2	up to 32	SPI	7	1.7	2.7 to 3.6	2.7 to 3.6	–40 to +125	Phase correction, Programmable data rate	20-pin SSOP, 20-pin 4 × 4 QFN

MIXED SIGNAL: Current/DC Power Measurement ICs

Part #	# of Current Sensors	Description	Full Scale Range (mV)	Current Measurement Max. Accr (%)	Effective Sampling Interval Min. to Max. (msec)	Bus Voltage Range (V)	# of Temp. Monitors (Ambient, Remote)	Temp. Accuracy Typ./Max. (°C)	Alert/ THERM	Peak Detection	Address Select	Package
PAC1710	1	SMBus/I²C™ Current/ DC Power Sensor	10, 20, 40, 80	±1	2.5 to 2,600	0 to + 40	–	–	1	–	Yes	10-pin DFN
PAC1720	2	Dual SMBus/I²C Current/ DC Power Sensor	10, 20, 40, 80	±1	2.5 to 2,600	0 to + 40	–	–	1	–	Yes	10-pin DFN
EMC1701-1	1	SMBus/I²C Current/DC Power Sensor with Temperature Monitoring	10, 20, 40, 80	±1	2.5 to 2,600	+3 to +24	1, 0	±0.25/±1	2	Hardware	Yes	12-pin 4 × 4 QFN
EMC1701-2	1	SMBus/I²C Current/DC Power Sensor with Temperature Monitoring	10, 20, 40, 80	±1	2.5 to 2,600	+3 to +24	1, 0	±0.25/±1	2	Software	Yes	10-pin MSOP
EMC1702-1	1	SMBus/I²C Current/DC Power Sensor with Two Temperature Monitors	10, 20, 40, 80	±1	2.5 to 2,600	+3 to +24	1, 1	±0.25/±1	2	Hardware	Yes	12-pin 4 × 4 QFN
EMC1704-1	1	SMBus/I²C Current/DC Power Sensor with Four Temperature Monitors	10, 20, 40, 80	±1	2.5 to 2,600	+3 to +24	1, 3	±0.25/±1	2	Software	Yes	14-pin SOIC
EMC1704-2	1	SMBus/I²C Current/DC Power Sensor with Four Temperature Monitors	10, 20, 40, 80	±1	2.5 to 2,600	+3 to +24	1, 3	±0.25/±1	2	Hardware	Yes	16-pin 4 × 4 QFN

MIXED SIGNAL: Dual Slope A/D Converters

Part #	Supply Voltage (V)	Input Voltage Range	Resolution	Sampling Rate (Conv/s)	Input Channels	Data Interface	Temperature Range (°C)	Features	Packages
TC500	±4.5 to ±7.5	V_{SS} + 1.5V to V_{DD} – 1.5V	Up to 16 bits	4 to 10	1	3-Wire	0 to +70	Differential input range, Programmable resolution/ conversion time	16-pin PDIP, 16-pin SOIC
TC500A	±4.5 to ±7.5	V_{SS} + 1.5V to V_{DD} – 1.5V	Up to 17 bits	4 to 10	1	3-Wire	0 to +70	Differential input range, Programmable resolution/ conversion time	16-pin PDIP, 16-pin SOIC
TC510	+4.5 to +5.5	V_{SS} + 1.5V to V_{DD} – 1.5V	Up to 17 bits	4 to 10	1	3-Wire	0 to +70	Differential input range, Programmable resolution/ conversion time, Charge pump (–V) output pin	24-pin PDIP, 24-pin SOIC
TC514	+4.5 to +5.5	V_{SS} + 1.5V to V_{DD} – 1.5V	Up to 17 bits	4 to 10	4	3-Wire	0 to +70	Differential input range, Programmable resolution/ conversion time, Charge pump (–V) output pin	28-pin PDIP, 28-pin SOIC
TC520A	+4.5 to +5.5	–	–	–	–	Serial port	0 to +70	Optional serial interface adapter for TC500/500A/510/514	14-pin PDIP, 16-pin SOIC
TC7109	±4.5 to ±5.5	V_{SS} + 1.5V to V_{DD} – 1.0V	12 bits plus sign bit	2 to 10	1	Parallel or Serial port	–25 to +85	Differential input range	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7109A	±4.5 to ±5.5	V_{SS} + 1.5V to V_{DD} – 1.0V	12 bits plus sign bit	2 to 10	1	Parallel or Serial port	–25 to +85	Differential input range	40-pin PDIP, 44-pin PLCC, 44-pin MQFP

MIXED SIGNAL: Binary and BCD A/D Converters

Part #	Description	Supply Voltage (V)	Input Voltage Range	Resolution (Digits)	Resolution (Counts)	Max Power (mW)	Data Interface	Temperature Range (°C)	Features	Packages
TC850	Binary A/D	±5	V_{SS} + 1.5V to V_{DD} – 1.5V	15-bit	±32,768	35	8-bit parallel	–25 to +70	Highest conversion speed (40 conv/sec)	44-pin PLCC, 40-pin PDIP
TC14433	BCD A/D	±4.5 to ±8	±199.9 mV to 1.999V	3½	±2,000	20	MUXed BCD	–40 to +85	For DMM, DPM, Data loggers	24-pin SOIC, 24-pin PDIP, 28-pin PLCC
TC14433A	BCD A/D	±4.5 to ±8	±199.9 mV to 1.999V	3½	±2,000	20	MUXed BCD	–40 to +85	For DMM, DPM, Data loggers	24-pin PDIP, 28-pin PLCC

MIXED SIGNAL – DISPLAY A/D CONVERTERS

Part #	Display Type	Supply Voltage (V)	Resolution (Digits)	Resolution (Counts)	Power (mW)	Temperature Range (°C)	Features	Packages
TC7106	LCD	9	3½	±2,000	10	–25 to +85	For DMM, DPM, Data logger applications	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7106A	LCD	9	3½	±2,000	10	–25 to +85	For DMM, DPM, Data logger applications	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7107	LED	±5	3½	±2,000	10	–25 to +85	For DMM, DPM, Data logger applications	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7107A	LED	±5	3½	±2,000	10	–25 to +85	For DMM, DPM, Data logger applications	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7116	LCD	9	3½	±2,000	10	–25 to +85	Hold function	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7116A	LCD	9	3½	±2,000	10	–25 to +85	Hold function	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7117	LED	±5	3½	±2,000	10	–25 to +85	Hold function	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7117A	LED	±5	3½	±2,000	10	–25 to +85	Hold function	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7126	LCD	9	3½	±2,000	0.5	–25 to +85	Low-power TC7106	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7126A	LCD	9	3½	±2,000	0.5	–25 to +85	Low-power TC7106	40-pin PDIP, 44-pin PLCC, 44-pin MQFP
TC7129	LCD	9	4½	±20,000	4.5	0 to +70	Lowest noise ±3 mV sensitivity	40-pin PDIP, 44-pin PLCC, 44-pin MQFP

MIXED SIGNAL: Digital Potentiometers

Part #	Number of Taps	Memory	Number per Package	Interface	Resistance (kOhms)	INL (max)	DNL (max)	Temperature Range (°C)	Comments	Packages
MCP4011	64	Volatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Potentiometer mode	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN
MCP4012	64	Volatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Rheostat mode	6-pin SOT-23
MCP4013	64	Volatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Potentiometer to V_{SS}	6-pin SOT-23
MCP4014	64	Volatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Rheostat to V_{SS}	5-pin SOT-23
MCP4017	128	Volatile	1	I²C™	5, 10, 50, 100	0.5	0.25	–40 to +125	7-bit, Volatile, I²C digital potentiometer	6-pin SC-70
MCP4018	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	7-bit, Volatile, I²C digital potentiometer	6-pin SC-70
MCP4019	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	7-bit, Volatile, I²C digital potentiometer	5-pin SC-70

MIXED SIGNAL: Digital Potentiometers (Continued)										
Part #	# of Taps	Memory	# per Package	Interface	Resistance (kOhms)	INL (max)	DNL (max)	Temperature Range (°C)	Comments	Packages
MCP40D17	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	7-bit, Volatile, I²C digital potentiometer	6-pin SC-70
MCP40D18	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	7-bit, Volatile, I²C digital potentiometer	6-pin SC-70
MCP40D19	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	7-bit, Volatile, I²C digital potentiometer	5-pin SC-70
MCP4021	64	Nonvolatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Potentiometer mode, Shutdown, WiperLock™ Technology	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 DFN
MCP4022	64	Nonvolatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Rheostat mode, Shutdown, WiperLock™ Technology	6-pin SOT-23
MCP4023	64	Nonvolatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Potentiometer to Vss, WiperLock Technology	6-pin SOT-23
MCP4024	64	Nonvolatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Rheostat to Vss, Shutdown, WiperLock Technology	5-pin SOT-23
MCP4141	128	Nonvolatile	1	SPI	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4142	128	Nonvolatile	1	SPI	5, 10, 50, 100	0.8	0.25	–40 to +125	Rheostat mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4241	128	Nonvolatile	2	SPI	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, Shutdown, WiperLock Technology	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4242	128	Nonvolatile	2	SPI	5, 10, 50, 100	0.8	0.25	–40 to +125	Rheostat mode, Shutdown	10-pin MSOP, 10-pin 3 × 3 DFN
MCP4131	129	Volatile	1	SPI	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4132	129	Volatile	1	SPI	5, 10, 50, 100	0.8	0.25	–40 to +125	Rheostat mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4231	128	Volatile	2	SPI	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, Shutdown, WiperLock Technology	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4232	128	Volatile	2	SPI	5, 10, 50, 100	0.8	0.25	–40 to +125	Rheostat mode, Shutdown	10-pin MSOP, 10-pin 3 × 3 DFN
MCP41010	256	Volatile	1	SPI	10	1	1	–40 to +85	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC
MCP41050	256	Volatile	1	SPI	50	1	1	–40 to +85	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC
MCP41100	256	Volatile	1	SPI	100	1	1	–40 to +85	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC
MCP4151	256	Volatile	1	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4152	256	Volatile	1	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4161	256	Nonvolatile	1	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP4162	256	Nonvolatile	1	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode, Shutdown	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin 3 × 3 DFN
MCP42010	256	Volatile	2	SPI	10	1	1	–40 to +85	Potentiometer mode, Shutdown	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP42100	256	Volatile	2	SPI	100	1	1	–40 to +85	Potentiometer mode, Shutdown	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP4251	256	Volatile	2	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode, Shutdown, WiperLock Technology	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4252	256	Volatile	2	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode, Shutdown	10-pin MSOP, 10-pin 3 × 3 DFN
MCP4261	256	Nonvolatile	2	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode, Shutdown, WiperLock Technology	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4262	256	Nonvolatile	2	SPI	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode, Shutdown	10-pin MSOP, 10-pin 3 × 3 DFN
MCP4341	129	Nonvolatile	4	SPI	5, 10, 50, 100	0.8	0.375	–40 to +125	7-bit, Volatile potentiometer with an SPI interface	20-pin TSSOP, 20-pin 4 × 4 QFN
MCP4342	129	Nonvolatile	4	SPI	5, 10, 50, 100	0.8	0.375	–40 to +125	7-bit, Volatile rheostat with an SPI interface	14-pin TSSOP
MCP4361	257	Nonvolatile	4	SPI	5, 10, 50, 100	1	0.5	–40 to +125	8-bit, Non-volatile potentiometer with an SPI interface	20-pin TSSOP, 20-pin 4 × 4 QFN
MCP4362	257	Nonvolatile	4	SPI	5, 10, 50, 100	1	0.5	–40 to +125	8-bit, Non-volatile rheostat with an SPI interface	14-pin TSSOP
MCP4331	129	Volatile	4	SPI	5, 10, 50, 100	0.8	0.375	–40 to +125	7-bit, Volatile potentiometer with an SPI interface	20-pin TSSOP, 20-pin 4 × 4 QFN
MCP4332	129	Volatile	4	SPI	5, 10, 50, 100	0.8	0.375	–40 to +125	7-bit, Volatile rheostat with an SPI interface	14-pin TSSOP
MCP4351	257	Volatile	4	SPI	5, 10, 50, 100	1	0.5	–40 to +125	8-bit, Non-volatile potentiometer with an SPI interface	20-pin TSSOP, 20-pin 4 × 4 QFN
MCP4352	257	Volatile	4	SPI	5, 10, 50, 100	1	0.5	–40 to +125	8-bit, Non-volatile rheostat with an SPI interface	14-pin TSSOP
MCP4441	129	Nonvolatile	4	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, WiperLock Technology	20-pin TSSOP, 20-pin 4 × 4 QFN
MCP4442	129	Nonvolatile	4	I²C	5, 10, 50, 101	0.8	0.375	–40 to +125	Rheostat mode, WiperLock Technology	14-pin TSSOP
MCP4461	257	Nonvolatile	4	I²C	5, 10, 50, 102	1	0.5	–40 to +125	Potentiometer mode, WiperLock Technology	20-pin TSSOP, 20-pin 4 × 4 QFN
MCP4462	257	Nonvolatile	4	I²C	5, 10, 50, 103	1	0.5	–40 to +125	Rheostat mode, WiperLock™ Technology	14-pin TSSOP
MCP4531	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode	8-pin MSOP
MCP4631	128	Volatile	2	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode	14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4541	128	Nonvolatile	1	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, WiperLock Technology	8-pin MSOP
MCP4641	128	Nonvolatile	2	I²C	5, 10, 50, 100	0.5	0.25	–40 to +125	Potentiometer mode, WiperLock Technology	14-pin TSSOP, 16-pin 4x4 QFN

MIXED SIGNAL: Digital Potentiometers (Continued)

Part #	# of Taps	Memory	# per Package	Interface	Resistance (kOhms)	INL (max)	DNL (max)	Temperature Range (°C)	Comments	Packages
MCP4551	256	Volatile	1	I²C™	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode	8-pin MSOP
MCP4651	256	Volatile	2	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode	14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4561	256	Nonvolatile	1	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode, WiperLock Technology	8-pin MSOP
MCP4661	256	Nonvolatile	2	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Potentiometer mode, WiperLock Technology	14-pin TSSOP, 16-pin 4 × 4 QFN
MCP4532	128	Nonvolatile	1	I²C	5, 10, 50, 100	0.8	0.375	–40 to +125	Rheostat mode	8-pin MSOP, 8-pin 3 × 3 DFN
MCP4632	128	Volatile	2	I²C	5, 10, 50, 100	0.8	0.375	–40 to +125	Rheostat mode	10-pin MSOP, 10-pin 3 × 3 DFN
MCP4542	128	Nonvolatile	1	I²C	5, 10, 50, 100	0.8	0.375	–40 to +125	Rheostat mode, WiperLock Technology	8-pin MSOP, 8-pin 3 × 3 DFN
MCP4552	256	Volatile	1	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode	8-pin MSOP, 8-pin 3 × 3 DFN
MCP4652	256	Nonvolatile	2	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode	10-pin MSOP, 10-pin 3 × 3 DFN
MCP4562	256	Nonvolatile	1	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode, WiperLock Technology	8-pin MSOP, 8-pin 3 × 3 DFN
MCP4662	256	Nonvolatile	2	I²C	5, 10, 50, 100	1	0.5	–40 to +125	Rheostat mode, WiperLock Technology	10-pin MSOP, 10-pin 3 × 3 DFN

MIXED SIGNAL: Frequency-to-Voltage/Voltage-to-Frequency Converters

Part #	Frequency Range (kHz)	Full Scale (ppm FS/°C)	Non-linearity (%FS)	Temperature Range (°C)	Packages
TC9400	100	±40	±0.05	–40 to +85	14-pin PDIP, 14-pin SOIC
TC9401	100	±40	±0.02	–40 to +85	14-pin PDIP, 14-pin SOIC
TC9402	100	±100	±0.25	–40 to +85	14-pin PDIP, 14-pin SOIC

MIXED SIGNAL: D/A Converters

Part #	Resolution (Bits)	DACs per Package	Interface	V_{REF}	Output Settling Time (µs)	DNL (LSB)	Typical Standby Current (µA)	Typical Operating Current (µA)	Temperature Range (°C)	Packages
TC1320	8	1	SMbus	Ext	10	0.8	0.1	350	–40 to +85	8-pin MSOP, 8-pin SOIC
TC1321	10	1	SMbus	Ext	10	2	0.1	350	–40 to +85	8-pin MSOP, 8-pin SOIC
MCP47A1	6	1	I²C™/SMBus	Ext	15	0.5	90	130	–40 to +125	6-pin SC-70
MCP4706	8	1	I²C	Ext	6	0.05	0.06	210	–40 to +125	6-pin SOT-23
MCP4716	10	1	I²C	Ext	6	0.188	0.06	210	–40 to +125	6-pin SOT-23
MCP4725	12	1	I²C	V_{DD}	6	0.75	1	210	–40 to +125	6-pin SOT-23
MCP4726	12	1	I²C	Ext	6	0.75	0.06	210	–40 to +125	6-pin SOT-23
MCP4728	12	4	I²C	Int/V_{DD}	6	0.75	0.04	800	–40 to +125	10-pin MSOP
MCP4801	8	1	SPI	Int	4.5	0.5	0.3	330	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin DFN
MCP4802	8	2	SPI	Int	4.5	0.5	3.3	415	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP4811	10	1	SPI	Int	4.5	0.5	0.3	330	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin DFN
MCP4812	10	2	SPI	Int	4.5	0.5	3.3	415	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP4821	12	1	SPI	Int	4.5	1	0.3	330	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin DFN
MCP4822	12	2	SPI	Int	4.5	1	3.3	415	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP
MCP4901	8	1	SPI	Ext	4.5	0.5	3.3	175	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin DFN
MCP4902	8	2	SPI	Ext	4.5	0.5	0.3	350	–40 to +125	14-pin PDIP, 14-pin SOIC, 14-pinTSSOP
MCP4911	10	1	SPI	Ext	4.5	0.5	3.3	175	–40 to +125	8-pin DFN, 8-pin MSOP, 8-pin PDIP, 8-pin SOIC
MCP4912	10	2	SPI	Ext	4.5	0.5	0.3	350	–40 to +125	14-pin PDIP, 14-pin SOIC, 14-pinTSSOP
MCP4921	12	1	SPI	Ext	4.5	0.75	3.3	175	–40 to +125	8-pin PDIP, 8-pin SOIC, 8-pin MSOP, 8-pin DFN
MCP4922	12	2	SPI	Ext	4.5	0.75	0.3	350	–40 to +125	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP

Note: The analog output is voltage.

INTERFACE

INTERFACE: Controller Area Network (CAN) Products

Part #	Operating Voltage (V)	Temperature Range (°C)	Tx Buffers	Rx Buffers	Filters	Masks	Interrupt Output	Unique Features	Packages
MCP2510[1]	2.7 to 5.5	–40 to +125	3	2	6	2	Yes	CAN 2.0B Active controller with SPI interface to MCU, 3 transmit buffers, 2 receive buffers, HW and SW message triggers	18-pin PDIP, 18-pin SOIC, 20-pin TSSOP
MCP2515	2.7 to 5.5	–40 to +125	3	2	6	2	Yes	MCP2510 pin compatible upgrade with enhanced features including higher throughput and data byte filtering	18-pin PDIP, 18-pin SOIC, 20-pin TSSOP
MCP25020	2.7 to 5.5	–40 to +125	3	2	2	1	N/A	CAN 2.0B Active I/O Expander, Configurable I/O, 2 PWM outputs	14-pin PDIP, 14-pin SOIC
MCP25025	2.7 to 5.5	–40 to +85	3	2	2	1	N/A	CAN 2.0B Active I/O Expander, Configurable I/O, 2 PWM outputs, One-wire CAN option	14-pin PDIP, 14-pin SOIC
MCP25050	2.7 to 5.5	–40 to +125	3	2	2	1	N/A	Mixed-Signal CAN 2.0B Active I/O Expander, Configurable I/O, 4 10-bit ADCs, 2 PWM outputs	14-pin PDIP, 14-pin SOIC
MCP25055	2.7 to 5.5	–40 to +85	3	2	2	1	N/A	Mixed-Signal CAN 2.0B Active I/O Expander, Configurable I/O, 4 10-bit ADCs, 2 PWM outputs, One-wire CAN option	14-pin PDIP, 14-pin SOIC
MCP2551	4.5 to 5.5	–40 to +125	N/A	N/A	N/A	N/A	N/A	High-speed CAN Transceiver (1 Mbps max. CAN bus speed), ISO11898 compatible, Industry standard pinout	8-pin PDIP, 8-pin SOIC

Note 1: Not recommended for new designs.

INTERFACE: Infrared Products

Part #	Operating Voltage (V)	Operating Temp. Range (°C)	Max. Baud Rate (Kbaud)	Unique Features	Packages
MCP2120	2.5 to 5.5	–40 to +85	325	UART to IR encoder/decoder with both hardware and software baud rate selection	14-pin PDIP, 14-pin SOIC
MCP2122	1.8 to 5.5	–40 to +85	16× less than clock input	UART to IR encoder/decoder	8-pin PDIP, 8-pin SOIC
MCP2140A	2.0 to 5.5	–40 to +85	9.6	IrDA® Standard protocol handler plus bit encoder/decoder, Fixed baud rate, Low-cost	18-pin PDIP, 18-pin SOIC, 20-pin SSOP
MCP2150	3.0 to 5.5	–40 to +85	115.2	IrDA® Standard protocol handler plus bit encoder/decoder on one chip for DTE applications, Programmable ID	18-pin PDIP, 18-pin SOIC, 20-pin SSOP
MCP2155	3.0 to 5.5	–40 to +85	115.2	IrDA® Standard protocol handler plus bit encoder/decoder on one chip for DCE applications, Programmable ID	18-pin PDIP, 18-pin SOIC, 20-pin SSOP

IrDA® is a registered trademark of Infrared Data Association

INTERFACE: Ethernet Products

Part #	Operating Voltage (V)	Operating Temp. Range (°C)	MAC	PHY	TX/RX RAM	Interface	Features	Packages
ENC28J60	3.1 to 3.6	–40 to +85	Yes	10Base-T	8 KB	SPI	• 10Base-T Ethernet controller, IEEE 802.3™ compliant • Loopback test modes, Auto-polarity detection • Clock out pin with programmable frequencies	28-pin SOIC, 28-pin SSOP, 28-pin 6 × 6 QFN, 28-pin SPDIP
ENC424J600	3.0 to 3.6	–40 to +85	Yes	10/100Base-T	24 KB	• SPI • 8-bit multiplexed parallel interface	• 10/100 Ethernet controller, IEEE 802.3(TM) compliant • Cryptographic Security Engines: MD5, SHA-1, AES, RSA • Preprogrammed unique MAC address • Loopback test modes, Auto-polarity detection • Clock out pin with programmable frequencies	44-pin TQFP, 44-pin QFN
ENC624J600	3.0 to 3.6	–40 to +85	Yes	10/100Base-T	24 KB	• SPI • 8-bit or 16-bit multiplexed or demultiplexed parallel interface	• 10/100 Ethernet controller, IEEE 802.3(TM) compliant • Cryptographic Security Engines: MD5, SHA-1, AES, RSA • Preprogrammed unique MAC address • Loopback test modes, Auto-polarity detection • Clock out pin with programmable frequencies	64-pin TQFP

INTERFACE: Passive Access Products

Part #	Operating Voltage (V)	Operating Temp. Range (°C)	Bus Type	RF Carrier Frequency	Data Format	Features	Packages
MCP2030	1.8 to 3.6	–40 to +85	SPI	125 kHz	NRZ	Three axis signal conditioning devices for passive access applications, High-sensitivity, Configurable smart wake-up filter	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP

INTERFACE: LIN Transceiver Products

Part #	Description	V_{REG} Output Voltage (V)	Operating Temp. Range (°C)	V_{REG} Output Current (mA)	V_{CC} Range (V)	Max Baud Rate	LIN Specification Supported	Packages
MCP2003A	Stand-alone LIN Transceiver (industry standard pinout)	None	–40 to +125	None	6 to 27(1)	20 Kbaud	Revision 1.3, 2.0, 2.1, SAE J2602	8-pin PDIP, 8-pin SOIC, 8-pin 4 × 4 DFN
MCP2004A	Stand-alone LIN Transceiver with TXE/Fault I/O	None	–40 to +125	None	6 to 27(1)	20 Kbaud	Revision 1.3, 2.0, 2.1, SAE J2602	8-pin PDIP, 8-pin SOIC, 8-pin 4 × 4 DFN
MCP2021A	LIN Transceiver with integrated V_{REG}	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18(1)	20 Kbaud	Revision 1.3, 2.0, 2.1, SAE J2602	8-pin PDIP, 8-pin SOIC, 8-pin 4 × 4 DFN
MCP2022A	LIN Transceiver with integrated V_{REG}, RESET pin	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18(1)	20 Kbaud	Revision 1.3, 2.0, 2.1, SAE J2602	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP
MCP2025	LIN Transceiver with integrated V_{REG}	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18(1)	20 Kbaud	Revision 2.0	8-pin PDIP, 8-pin SOIC, 8-pin 4 × 4 DFN
MCP2050	LIN Transceiver with integrated V_{REG}, WWDT	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18(1)	20 Kbaud	Revision 1.3, 2.0, 2.1, SAE J2602	14-pin PDIP, 14-pin SOIC, 20-pin QFN

INTERFACE: Serial Peripherals

Part #	Description	Operating Voltage (V)	Operating Temp. Range (°C)	Bus Type	Max. Bus Frequency (kHz)	Features	Packages
MCP23008	8-bit I/O Port Expander	1.8 to 5.5	–40 to +85	I²C™	1700	3 HW address pins, HW interrupt, 25 mA source/sink capability per I/O	18-pin PDIP, 18-pin SOIC, 20-pin SSOP, 20-pin 4 × 4 QFN
MCP23S08	8-bit I/O Port Expander	1.8 to 5.5	–40 to +85	SPI	10000	2 HW address pins, HW interrupt, 25 mA source/sink capability per I/O	18-pin PDIP, 18-pin SOIC, 20-pin SSOP, 20-pin 4 × 4 QFN
MCP23009	8-bit I/O Port Expander	1.8 to 5.5	–40 to +125	I²C™	3400	1 HW address pin, HW interrupt, 25 mA source/sink per I/O, 100 kHz, 400 kHz and 3.4 MHz I²C™ supported	18-pin PDIP, 18-pin SOIC, 20-pin SSOP
MCP23S09	8-bit I/O Port Expander	1.8 to 5.5	–40 to +125	SPI	10000	HW interrupt, 25 mA source/sink per I/O	18-pin PDIP, 18-pin SOIC
MCP23016	16-bit I/O Port Expander	2.0 to 5.5	–40 to +85	I²C™	400	3 HW address inputs, HW interrupt, 25 mA source/sink capability per I/O	28-pin PDIP, 28-pin SOIC, 28-pin SSOP, 28-pin 6 × 6 QFN
MCP23017	16-bit I/O Expander	1.8 to 5.5	–40 to +125	I²C™	1700	3 HW address pins, 25 mA sink/source per I/O, 100 kHz, 400 kHz and 3-4 MHz I²C™ supported, Interrupt output	28-pin PDIP, 28-pin SOIC, 28-pin SSOP, 28-pin QFN
MCP23S17	16-bit I/O Expander	1.8 to 5.5	–40 to +125	SPI	10000	3 HW address pins, 25 mA sink/source per I/O, Interrupt output	28-pin PDIP, 28-pin SOIC, 28-pin SSOP, 28-pin QFN
MCP23018	16-bit I/O Port Expander	1.8 to 5.5	–40 to +125	I²C™	3400	1 HW address pin, 2 HW interrupts, 25 mA source/sink per I/O, 100 kHz, 400 kHz and 3.4 MHz I²C™ supported	24-pin SSOP, 28-pin SOIC, 28-pin SDIP
MCP23S18	16-bit I/O Port Expander	1.8 to 5.5	–40 to +125	SPI	10000	2 HW interrupts, 25 mA source/sink per I/O	28-pin SOIC, 28-pin SDIP

INTERFACE: IEEE 802.15.4 ZigBee® RF Transceiver Products

Part #	Frequency Range (GHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	TX Power Consumption (mA)	RX Power Consumption (mA)	Clock (MHz)	Sleep	MAC	MAC Features	Encryption	Interface	Pin Count	Packages
MRF24J40	2.405 to 2.48	–95	0	Yes	18	22	20	Yes	Yes	CSMA-CA	AES128	4-wire SPI	40	40-pin QFN
MRF24J40MA	2.405 to 2.48	–95	0	Yes	23	19	20	Yes	Yes	CSMA-CA	AES128	4-wire SPI	12	Module
MRF24J40MB	2.405 to 2.48	–102	20	Yes	120	25	20	Yes	Yes	CSMA-CA	AES128	4-wire SPI	12	Module
MRF49XA	433/868/915	–110	7	Yes	15	11	–	Yes	–	–	–	4-wire SPI	16	16-pin TSSOP

INTERFACE: Stand-alone RF Receiver Products

Part #	Modulation	Data Rate (kbps)	Frequency Range (MHz)	Sensitivity (dBm)	IF Frequency Range (MHz)	Operating Voltage (V)	RSSI	Selectable LNA Gain	Packages
rfRXD0420	ASK, FSK, FM	80	300 to 450	–111	0.455 to 21.4	2.5 to 5.5	Yes	Yes	32-pin LQFP
rfRXD0920	ASK, FSK, FM	80	800 to 930	–109	0.455 to 21.4	2.5 to 5.5	Yes	Yes	32-pin LQFP

INTERFACE: USB Products								
Part #	USB Speed	USB Compliant	PHY	MCU Interface	Tx/Rx Buffer Size (bytes)	Number of GPIO	Operating Voltage (V)	Packages
MCP2200	Full-Speed USB (12 Mb/s), Low-Speed USB (1.5 Mb/s)	Yes	Yes	UART	128/128	8	2.7 to 5.5	20-pin SOIC, 20-pin TSSOP, 20-pin QFN
MCP2210	Full-Speed USB (12 Mb/s), Low-Speed USB (1.5 Mb/s)	Yes	Yes	SPI	64	9	3.3 to 5.5	20-pin SOIC, 20-pin TSSOP, 20-pin QFN

INTERFACE: USB Port Power Controllers with Charger Emulation											
Part #	Description	USB Port Power Switch (55m)	Hi-Speed USB 2.0 Switch	Battery Charger Emulation Profiles	8 Resistor Set Current Limits	Charging Indicator Output	Attach Detection Output	Current Measurement	Power Allocation	Interface	Packages
UCS1001-1	USB Port Power Controller with Charger Emulation	1	1	9	up to 2.5A	Yes	–	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS1001-2	USB Port Power Controller with Charger Emulation	1	1	9	up to 2.5A	–	Yes	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS1002-1	Programmable USB Port Power Controller with Charger Emulation	1	1	9 + 1 programmable	up to 2.5A	Yes	–	Yes	Yes	I²C™/SMBus	20-pin 4 × 4 QFN

SAFETY & SECURITY

SAFETY & SECURITY: Photoelectric Smoke Detector ICs										
Part #	Horn Driver Alarm Pattern	Alarm Memory	Low Battery Detection	Chamber Test	Alarm Interconnect	Sensitivity Timer	Internal POR	Alternate Diagnostic Mode	Operating Temp. Range (°C)	Packages
RE46C140	NFPA Temporal	No	Yes	Yes	Yes	Yes	Yes	–	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C141	NFPA Temporal	No	Yes	Yes	Yes	–	Yes	–	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C143	Continuous Tone	No	Yes	Yes	Yes	–	Yes	–	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C144	Continuous Tone	No	Yes	Yes	Yes	Yes	Yes	–	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C145	NFPA Temporal	No	Yes	Yes	Yes	Yes	Yes	Yes	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C165	NFPA Temporal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C166	Continuous Tone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C167	NFPA Temporal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C168	Continuous Tone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–25 to +75	16-pin PDIP, 16-pin SOIC
RE46C190	NFPA Temporal or Continuous Tone	Yes	Yes	Yes	Yes	Yes	Yes	–	–10 to +60	16-pin SOIC

SAFETY & SECURITY: Ionization Smoke Detector ICs									
Part #	Horn Driver Alarm Pattern	Alarm Memory	Low Battery Detection	Reverse Battery Protection	Alarm Interconnect	Hush Timer	Power-up Low Battery Test	Operating Temp. Range (°C)	Packages
RE46C120	NFPA Temporal or Continuous Tone	No	Yes	Yes	–	–	–	–10 to +60	16-pin PDIP
RE46C121	NFPA Temporal	No	Yes	Yes	Yes	–	–	–10 to +60	16-pin PDIP
RE46C122	NFPA Temporal	No	Yes	Yes	Yes	Yes	Yes	–10 to +60	16-pin PDIP
RE46C126	Continuous Tone	No	Yes	Yes	Yes	–	–	–10 to +60	16-pin PDIP
RE46C127	Continuous Tone	No	Yes	Yes	Yes	Yes	Yes	–10 to +60	16-pin PDIP
RE46C128	NFPA Temporal	No	Yes	Yes	Yes	–	Yes	–10 to +60	16-pin PDIP
RE46C129	Continuous Tone	No	Yes	Yes	Yes	–	Yes	–10 to +60	16-pin PDIP
RE46C152	NFPA Temporal or Continuous Tone	No	Yes	Yes	Yes	Yes	Yes	–10 to +60	16-pin PDIP
RE46C162	NFPA Temporal or Continuous Tone	Yes	Yes	Yes	Yes	Yes	Yes	–10 to +60	16-pin PDIP
RE46C163	NFPA Temporal or Continuous Tone	Yes	Yes	Yes	Yes	Yes	Yes	–10 to +60	16-pin PDIP
RE46C180	NFPA Temporal or Continuous Tone	Yes	Yes	No	Yes	Yes	Yes	–10 to +60	16-pin PDIP, 16-pin SOIC

SAFETY & SECURITY: Ionization Smoke Detector Front Ends					
Part #	**Microprocessor Compatible Output**	**Output Options**	**Typical Application**	**Operating Temperature Range (°C)**	**Packages**
RE46C112	Yes	V_{OUT} 1/4 of V_{DD} or V_{OUT} 1/4 of Detect Input	3V or 3.3V Microprocessor	–10 to +60	8-pin PDIP
RE46C114	Yes	V_{OUT} 1/2 of V_{DD} or V_{OUT} 1/2 of Detect Input	5V Microprocessor	–10 to +60	8-pin PDIP

SAFETY & SECURITY: Piezoelectric Horn Drivers								
Part #	**Operating Voltage (V)**	**LED Driver**	**Voltage Regulator (V)**	**Low Battery Detection**	**Interconnect**	**Power good**	**Operating Temp. Range (°C)**	**Packages**
RE46C100	6 to 16	–	–	–	–	–	–40 to +85	8-pin PDIP, 8-pin SOIC
RE46C101	6 to 16	Yes	–	–	–	–	–40 to +85	8-pin PDIP, 8-pin SOIC
RE46C104	4 to 8	–	–	–	–	–	0 to +50	14-pin PDIP, 14-pin SOIC
RE46C105	6 to 12	Yes	3.3 or 5	Yes	–	–	–40 to +85	14-pin PDIP, 14-pin SOIC
RE46C107	2 to 5	Yes	3 or 3.3	Yes	–	–	0 to +50	16-pin PDIP, 16-pin SOIC
RE46C108	6 to 12	–	3.3 or 5	–	–	–	–40 to +85	8-pin PDIP, 8-pin SOIC
RE46C109	6 to 12	–	3	Yes	Yes	Yes	–40 to +85	16-pin PDIP, 16-pin SOIC
RE46C117	2 to 5	–	–	–	–	–	0 to +50	8-pin PDIP, 8-pin SOIC
RE46C119	6 to 12	–	3	Yes	Yes	Yes	–40 to +85	16-pin PDIP, 16-pin SOIC
RE46C317	2 to 5	Yes	–	–	–	–	–10 to +65	8-pin PDIP, 8-pin SOIC
RE46C318	2 to 5	Yes	–	–	–	–	–10 to +65	8-pin PDIP, 8-pin SOIC

Analog Design Development Tools

Evaluation, Demonstration and Development Kits		
Order #	**Description**	**Devices Supported**
Thermal Management Demonstration and Evaluation Tools		
ADM00345	MTD6505 3-Phase BLDC Sensorless Fan Controler Demonstration Board	MTD6505
MCP9700DM-PCTL	MCP9700 Temperature-to-Voltage Converter PICtail™ Demonstration Board	MCP9800
MCP9700DM-TH1	MCP9700 Thermistor Demonstration Board	MCP9700, MCP6S92
MCP9800DM-PCTL	MCP9800 Temperature Sensor PICtail Demonstration Board	MCP9800
MCP9800DM-TS1	MCP9800 Temperature Sensor Demonstration Board	MCP9800
MCP9800DM-DL	MCP9800 Temperature Data Logger Demonstration Board	MCP9800
MCP9800DM-DL2	MCP9800 Temperature Data Logger Demonstration Board 2	MCP9800, MCP101, PIC10F202, 24LC16B
TC1047ADM-PICTL	TC1047A Temperature-to-Voltage Converter PICtail™ Demonstration Board	TC1047A
TC642DEMO	TC64X/64XB Fan Speed Controller Demonstration Board	TC642, TC646, TC647, TC648, TC649
TC650DEMO	TC650 Fan Controller Demonstration Board	TC650
TC652DEMO	TC652 Fan Controller Demonstration Board	TC652
TC72DM-PICTL	TC72 Digital Temperature Sensor PICtail Demonstration Board	TC72
TC74DEMO	TC74 Serial Digital Thermal Sensor Demonstration Board	TC74
TC77DM-PICTL	TC77 Thermal Sensor PICtail Demonstration Board	TC77
TMPSNS-RTD1	PT100 RTD Evaluation Board	MCP6S26, MCP3301, MCP6024, MCP41010, PIC18F2550, TC1071, MCP6002
TMPSNSRD-RTD2	RTD Reference Design Board	MCP3551, MCP9804
TMPSNSRD-TCPL1	Thermocouple Reference Design	MCP9804, MCP3421
EVB-EMC1043	EMC1043 Evaluation Board	EMC1043
EVB-EMC1043C	EMC1043 Evaluation Board with External Diode Off-Board Cable	EMC1043
EVB-EMC1412	EMC1412 Evaluation Board	EMC1412
EVB-EMC14xx	EMC1412 Evaluation Board	EMC1412, EMC1413, EMC1414
EVB-EMC2101	EMC2101 Evaluation Board	EMC2101
EVB-EMC2103-1	EMC2103-1 Evaluation Board	EMC2103-1
Mixed Signal Demonstration and Evaluation Tools		
ADM00310	MCP3903 ADC Evaluation Board for 16-bit MCUs	MCP3903, MCP2200, PIC24, dsPIC33
ADM00317	MCP47X6 PICtail Plus Daughter Board	MCP4726, MCP4716, MCP4706
ADM00333	PIC18F87J72 Evaluation Board	PIC18F87J72
ADM00398	MCP3911 ADC Evaluation Board for 16-bit MCUs	MCP3911
ARD00280	PIC18F87J72 Single Phase Energy Meter Reference Design	N/A
ARD00330	PIC18F87J72 Energy Monitoring PICtail™ Plus Daughter Board	N/A
ARD00342	MCP3901 and PIC18F65J90 Shunt Meter Reference Design	MCP3901, PIC18F65J90
DV3201A	MCP3XXX Single/Dual ADC MXDEV® Daughter Board	MCP3001, MCP3002, MCP3201, MCP3202
DV3204A	MCP3204/08 MXDEV Daughter Board	MCP3004, MCP3008, MCP3204, MCP3208
DV42XXX	MCP42XXX Digital Potentiometer Evaluation Board	MCP42010, MCP42050, MCP42100
DVMCPA	MXDEV Analog Evaluation System	MCP3001/02, MCP3004/08, MCP3201/08, MCP3204/08

Analog Design Development Tools

Evaluation, Demonstration and Development Kits		
Order #	**Description**	**Devices Supported**
Mixed Signal Demonstration and Evaluation Tools (Continued)		
MCP2030DM-TPR	MCP2030 Bidirectional Communications Demonstration Kit	MCP2030, MCP3421, PIC16F636, TC4421, PIC18F4680
MCP3221DM-PCTL	MCP3221 PICtail Demonstration Board	MCP3221
MCP3421EV	MCP3421 SOT-23-6 Evaluation Board	MCP3421
MCP3421DM-BFG	MCP3421 Battery Fuel Gauge Demonstration Board	MCP3421, MCP73831, MCP1702, PIC18F4550
MCP3421DM-WS1	MCP3421 Weight Scale Demonstration Board	MCP3421, MCP6V07, PIC18F4550
MCP3422EV	MCP3422 Evaluation Board	MCP3422
MCP3423EV	MCP3423 Evaluation Board	MCP3423
MCP3424EV	MCP3424 Evaluation Board	MCP3424
MCP3425EV	MCP3425 SOT 23-6 Evaluation Board	MCP3425
MCP3551DM-PCTL	MCP3551 Delta-Sigma ADC Demonstration Board	MCP3551
MCP355XDV-MS1	MCP355X Sensor Application Developer's Board	MCP3551, MCP3553, MCP3550-50, MCP3550-60
MCP355XDM-TAS	MCP355X Tiny Application Sensor Demonstration Board	MCP3551, MCP3553, MCP3550-50, MCP3550-60
MCP3901EV-MCU16	MCP3901 ADC Evaluation Board for 16-bit MCUs	MCP3901, PIC24F, PIC24H, dsPIC33, PIC18F86J55
MCP3905EV	MCP3905 Energy Meter Evaluation Board	MCP3905
MCP3905RD-PM1	MCP3905 Energy Meter Reference Design	MCP3905
MCP3909EV-MCU16	MCP3909 ADC Evaluation Board for 16-bit MCUs	MCP3909
MCP3909RD-3PH1	MCP3909 3-Phase Energy Meter Reference Design	MCP3909, PIC18F2520, PIC18F4550
MCP3909RD-3PH3	MCP3909 and dsPIC33F 3-Phase Energy Meter Reference Design	MCP3909, dsPIC33FJ128GP706
MCP3909RD-1PH1	MCP3909 and PIC18F85J90 Single Phase Energy Meter Reference Design	MCP3909, PIC18F85J90
MCP401XEV	MCP401X Evaluation Board	MCP40D18, MCP4017, MCP4018, MCP4019, MCP40D17, MCP40D19
MCP4XXXDM-DB	MCP4XXX Digital Potentiometer Daughter Board	MCP4011, MCP4021, MCP42XXX
MCP402XEV	MCP402X Non-Volatile Digital Potentiometer Evaluation Board	MCP4021, MCP4022, MCP4023, MCP4024
MCP42XXDM-PTPLS	MCP42XX PICtail Plus Daughter Board	MCP4231, MCP4232, MCP4241, MCP4242, MCP4251, MCP4252, MCP4261, MCP4262
MCP42XXEV	MCP42XX Evaluation Board	MCP4231, MCP4241, MCP4251, MCP4261
MCP43XXEV	MCP43XX Evaluation Board	MCP4331, MCP4341, MCP4351, MCP4361
MCP46XXDM-PTPLS	MCP46XX PICtail Plus Daughter Board	MCP4631, MCP4641, MCP4651, MCP47652, MCP4661, MCP4662
MCP46XXEV	MCP46XX Evaluation Board	MCP4631, MCP4641, MCP4651, MCP4661
MCP4725EV	MCP4725 SOT 23-6 Evaluation Board	MCP4725
MCP4725DM-PTPLS	MCP4725 PICtail Plus Daughter Board	MCP4725
MCP4728EV	MCP4728 Quad DAC Evaluation Board	MCP4728
MXSIGDM	Mixed Signal PICtail Demonstration Board	TC132X, MCP330X, MCP320X, MCP482X, MCP492X, MCP3221, MCP3021, MCP1525
EVB-EMC1701	EMC1701 Evaluation Board	EMC1701-1, EMC1701-2
EVB-PAC1710	PAC1710 Evaluation Board	PAC1710
EVB-PAC1720	PAC1720 Evaluation Board	PAC1720

Analog Design Development Tools

Evaluation, Demonstration and Development Kits		
Order #	**Description**	**Devices Supported**
Power Management Demonstration and Evaluation Tools		
ADM00360	MCP16301 High Voltage Buck Converter 300 mA D2PAK Demo Board	MCP16301
ADM00414	MCP16321 Evaluation Board	MCP16321
ADM00423	MCP16322 Evaluation Board	MCP16321, MCP16322
ADM00427	MCP16323 Evaluation Board	MCP16321, MCP16322, MCP16323
ARD00386	MCP1640 12V/50 mA Two Cell Input Boost Converter Reference Design	MCP1640
MCP1252DM-BKLT	MCP1252 Charge Pump Backlight Demonstration Board	MCP1252
MCP1256/7/8/9EV	MCP1256/7/8/9 Charge Pump Evaluation Board	MCP1256, MCP1257, MCP1258, MCP1259
MCP1601EV	MCP1601 Buck Regulator Evaluation Board	MCP1601
MCP1602EV	MCP1602 Evaluation Board	MCP1602
MCP1603EV	MCP1603 Buck Converter Evaluation Board	MCP1603
MCP1603RD-TNY	MCP1603 Tiny Reference Design	MCP1603
MCP1612EV	MCP1612 Synchronous Buck Regulator Evaluation Board	MCP1612
MCP1630RD-DDBK1	MCP1630 +12V in Dual Output Buck Converter Reference Design	MCP1630
MCP1630RD-DDBK3	MCP1630 Bidirectional 4-Cell Li-Ion Charger Reference Design	MCP1630V, PIC16F88, MCP6022
MCP1630RD-NMC1	MCP1630 Low-Cost NiMH Battery Charger Reference Design	MCP1630, PIC12F683, MCP6292, MCP1702
MCP1630DM-DDBK1	MCP1630 1A Bias Supply Demonstration Board	MCP1630
MCP1630DM-DDBS1	MCP1630 Automotive Input Boost Converter Demonstration Board	MCP1630, PIC12F683
MCP1630DM-LED2	MCP1630 Boost Mode LED Driver Demonstration Board	MCP1630V, PIC12F683, MCP1702
MCP1630RD-LIC1	MCP1630 Li-Ion Multi Bay Battery Charger Reference Design	MCP1630
MCP1630RD-LIC2	MCP1630 Low Cost Li-Ion Battery Charger Reference Design	MCP1630
MCP1630RD-SALED	MCP1630 SEPIC Automotive LED Driver Reference Board	MCP16301
MCP1630DM-NMC1	MCP1630 NiMH Battery Charger Demonstration Board	MCP1630
MCP1630DM-DDBS2	MCP1630 Coupled Inductor Boost Demonstration Board	MCP1630, PIC12F683
MCP1630DM-DDBK4	MCP1630 Automotive Input, Triple Output Converter Demonstration Board	MCP1630, PIC12F683
MCP1631RD-DCPC1	MCP1631HV Digitally Controlled Programmable Current Source Reference Design	MCP1631HV, PIC16F616
MCP1631RD-MCC1	MCP1631HV Multi-Chemistry Battery Charger Reference Design	MCP1631HV, PIC16F883
MCP1631RD-MCC2	MCP1631HV Multi-Chemistry Battery Charger Reference Design	MCP1631HV, PIC16F883
MCP1640EV-SBC	MCP1640 Sync Boost Converter Evaluation Board	MCP1640
MCP1640RD-4ABC	MCP1640 Single Quad-A Battery Boost Converter Reference Design	MCP1640, PIC12F617
MCP1650DM-LED1	MCP1650 3W White LED Demonstration Board	MCP1650
MCP1650DM-LED2	MCP1650 Multiple White LED Demonstration Board	MCP1650
MCP1650EV	MCP1650 Boost Controller Evaluation Board	MCP1650
MCP1650DM-DDSC1	MCP1650 SEPIC Power Supply Demonstration Board	MCP1650
MCP1726EV	MCP1726 1A LDO Evaluation Board	MCP1726
MCP73113EV-1SOVP	MCP73113 OVP Single Cell Li-Ion Battery Charger Evaluation Board	MCP73113, MCP73114
MCP73213EV-2SOVP	MCP73213 OVP Dual Cell Li-Ion Battery Charger Evaluation Board	MCP73213
MCP73X23EV-LFP	MCP73X23 OVP Lithium Iron Phosphate Battery Charger Evaluation Board	MCP73123, MCP73223
MCP73871DM-VPCC	MCP73871 Demonstration Board with Voltage Proportional Current Control	MCP73871
MCP7381XEV	MCP7381X Low-Cost Li-Ion Battery Charger Evaluation Board	MCP73811, MCP73812
MCP7382XEV	MCP7382X Li-Ion Battery Charger Evaluation Board	MCP7382X
MCP73831EV	MCP73831 Evaluation Kit	MCP73831

Analog Design Development Tools

Evaluation, Demonstration and Development Kits		
Order #	**Description**	**Devices Supported**
Power Management Demonstration and Evaluation Tools (Continued)		
MCP73833EV	MCP73833 Li-Ion Battery Charger Evaluation Board	MCP73833, MCP73834
MCP7383XEV-DIBC	MCP73837/8 AC/USB Dual Input Battery Charger Evaluation Board	MCP73837, MCP73838
MCP7383XRD-PPM	MCP7383X Li-Ion System Power Path Management Reference Design	MCP73831, MCP73832, MCP73833, MCP73834
MCP7384XEV	MCP7384X Li-Ion Battery Charger Evaluation Board	MCP7384X
MCP73855EV	MCP73855 Li-Ion Battery Charger Evaluation Board	MCP73855
MCP7386XEV	MCP7386X Li-Ion Battery Charger Evaluation Board	MCP7386X
MCP73871EV	MCP73871 Evaluation Board	MCP73871
SOT23-3EV-VREG	SOT23-3 Voltage Regulator Evaluation Board	MCP1701A, MCP1702, MCP1703
SOT223-3EV-VREG	SOT223-3 Voltage Regulator Evaluation Board	MCP1791, MCP1824, MCP1825, MCP1826
SOT89-3EV-VREG	SOT89-3 Voltage Regulator Evaluation Board	MCP1700, MCP1701A, MCP1702, MCP1703
SOT23-5EV-VREG	SOT23-5 Voltage Regulator Evaluation Board	MCP1801, MCP1802, TC1014/1015/1185, and other SOT23-5 LDOs
SOT223-5EV-VREG	SOT223-5 Voltage Regulator Evaluation Board	MCP1790, MCP1824, MCP1825, MCP1826
TO263-3EV-VREG	TO220-3/TO263-3 Voltage Regulator Evaluation Board	MCP1790, MCP1825S, MCP1826S, MCP1827S
TO263-5EV-VREG	TO220-5/TO263-5 Voltage Regulator Evaluation Board	MCP1790, MCP1791, MCP1825, MCP1826, MCP1827
TC110DM	TC110 Boost Converter Demonstration Board	TC110, MCP73832
TC115EV	TC115 PFM/PWM Boost Converter Evaluation Board	TC115
TC1016/17EV	TC1016/17 LDO Linear Regulator Evaluation Board	TC1016/17
TC1303BDM-DDBK1	TC1303B Demonstration Board	TC1303B
TC1303DM-DDBK2	TC1303 DFN Adjustable Output Demonstration Board	TC1303C
EVB-UCS1001	UCS1001 Evaluation Board	UCS1001-1, UCS1001-2
EVB-UCS1002	UCS1002 Evaluation Board	UCS1002
Interface Products Demonstration and Evaluation Tools		
ADM00419	MCP2210 Breakout Module	MCP2210
ADM00421	MCP2210 Evaluation Kit	MCP2210
DV251001	MCP2510/2515 CAN Developer's Kit	MCP2515, MCP2510
DV250501	MCP250XX CAN I/O Expanders Developer's Kit	MCP25020, MCP25025, MCP25050, MCP25055
GPIODM-KPLCD	GPIO Expander Keypad and LCD Demonstration Board	MCP23008, MCP23S08, MCP23017, MCP23S17, PIC18F4550, MCP1702
MCP212XDM	MCP2120/22 Developer's Board	MCP2120, MCP2122
MCP212XEV-DB	MCP212X Developer's Daughter Board	MCP212X
MCP2140DM-TMPSNS	MCP2140 IrDA® Wireless Temp Demonstration Board	MCP2140
MCP215X/40EV-DB	MCP215X/40 Developer's Daughter Board	MCP2140, MCP2150/55
MCP215XDM	MCP215X Data Logger Demonstration Board	MCP2150/55
MCP2150DM	MCP2150 Developer's Board	MCP2150, MCP2155
MCP2200EV-VCP	MCP2200 USB to RS232 Demonstration Board	MCP2200
MCP23X08EV	MCP23X08 8-bit GPIO Expander Evaluation Board	MCP23008, MCP23S08
MCP23X17EV	MCP23X17 16-bit GPIO Expander Evaluation Board	MCP23017, MCP23S17
MCP2515DM-BM	MCP2515 CAN Bus Monitor Demonstration Board	MCP2515, MCP2551
MCP2515DM-PCTL	MCP2515 CAN Controller PICtail™ Demonstration Board	MCP2515
MCP2515DM-PTPLS	MCP2515 PICtail™ Plus Daughter Board	MCP2515, MCP2551
PKSERIAL-I2C1	PICkit™ Serial I²C™ Demonstration Board	24LC02B, MCP9801, MCP3221, TC1321, MCP23008
PKSERIAL-SPI1	PICkit™ Serial SPI Demonstration Board	25LC020A, TC77, MCP3201, MCP4822, MCP41010, MCP6S92, MCP23S08

Analog Design Development Tools

Evaluation, Demonstration and Development Kits		
Order #	**Description**	**Devices Supported**
Linear Demonstration and Evaluation Tools		
ADM00375	MCP6H04 Evaluation Board	MCP6H04
ARD00354	MCP6N11 and MCP6V2X Wheatstone Bridge Reference Design	MCP6N11, MCP6001, MCP6V26, MCP6V27, PIC18F2553
MCP6031DM-PTPLS	MCP6031 Photodiode PICtail™ Plus Demonstration Board	MCP6031
MCP651EV-VOS	MCP651 Input Offset Evaluation Board	MCP651
MCP661DM-LD	MCP661 Line Driver Demonstration Board	MCP661, MCP662, MCP665
MCP6S22DM-PICTL	MCP6S22 PGA PICtail™ Demonstration Board	MCP6S22
MCP6S2XEV	MCP6S2X PGA Evaluation Board	MCP6S2X
MCP6SX2DM-PCTLPD	MCP6SX2 PGA Photodiode PICtail™ Demonstration Board	MCP6S22/92
MCP6SX2DM-PCTLTH	MCP6SX2 PGA Thermistor PICtail™ Demonstration Board	MCP6S22/92
MCP6V01DM-VOS	MCP6V01 Input Offset Demonstration Board	MCP6V01, MCP6V03, MCP6V06, MCP6V08
MCP6V01RD-TCPL	MCP6V01 Thermocouple Auto-Zeroed Reference Design	MCP6V01
MCP6XXXEV-AMP1	MCP6XXX Amplifier Evaluation Board 1	MCP6021
MCP6XXXEV-AMP2	MCP6XXX Amplifier Evaluation Board 2	MCP6021
MCP6XXXEV-AMP3	MCP6XXX Amplifier Evaluation Board 3	MCP6021
MCP6XXXEV-AMP4	MCP6XXX Amplifier Evaluation Board 4	MCP6021
MCP6XXXDM-FLTR	Active Filter Demonstration Board Kit	MCP6271
PIC16F690DM-PCTLHS	Humidity Sensor PICtail™ Demonstration Board	MCP6291, PIC16F690
Analog Blank Evaluation Boards		
SC70EV	SC70-6 and SOT-23-6/8 to DIP-8 Evaluation Board	SC70-6/5/3, SOT-23-8/6/5/3, and DIP-8 Devices
SOIC8EV	SOIC/MSOP/TSSOP/DIP 8-pin Evaluation Board	8-pin SOIC, MSOP, TSSOP, DIP Devices
SOIC14EV	SOIC/TSSOP/DIP 14-pin Evaluation Board	14-pin SOIC, TSSOP, DIP Devices
TSSOP20EV	20-pin TSSOP and SSOP Evaluation Board	TSSOP-20/16/14/8 and SSOP-20
VSUPEV	SOT-23-3 Voltage Supervisor Evaluation Board	SOT-23-3 Devices
VSUPEV2	SOT-23-5/6 Voltage Supervisor Evaluation Board	SOT-23-5, SOT-23-6 Devices
Miscellaneous Analog Demonstration and Evaluation Tools		
ADM00308	MTS2916A Dual Full-Bridge Stepper Motor Driver Evaluation Board	MTS2916A
ADM00344	RE46C190 Demonstration Board	RE46C190
EFIELDEV	Electrical Field Evaluation Board	N/A
HFIELDEV	Magnetic Field Evaluation Board	N/A
INTRFCEV	PSRR and Digital Noise Evaluation Board	N/A

Featured Analog Development Tools

Thermal Management Products

MCP9700 Thermistor Demo Board (MCP9700DM-TH1)

The MCP9700 Thermistor Demo Board contains the analog circuitry to measure temperature. The board uses BC Components' 232264055103 NTC thermistor to convert temperature to resistance. The thermistor is placed in a voltage divider which converts resistance to voltage. This voltage is filtered and placed at the MCP6S22 Programmable Gain Amplifier's (PGA) CH0 input. The PGA gains and buffers the thermistor.

PT100 RTD Evaluation Board (TMPSNS-RTD1)

This board demonstrates how to bias a Resistive Temperature Detector (RTD) and accurately measure temperature. Up to two RTDs can be connected. The RTDs are biased using constant current source and the output voltage is scaled using a differential amplifier. The output is then connected to a 12-bit differential Analog-to-Digital Converter (ADC) MCP3301. The ADC outputs serial data to a PIC18F2550 device using a Serial Peripheral Interface (SPI). The data is transmitted to a PC using a USB interface. A Microsoft Excel® macro is used as a Graphical User Interface (GUI) to acquire the data. The acquired data is stored in an Excel worksheet and graphed as a real-time strip chart display.

MCP9800 Temperature Data Logger Demo Board (MCP9800DM-DL)

Allows users to store up to 128,000 temperature readings from the MCP9800 sensor to the 24LC1025, Microchip's 1024 Kbit EEPROM. A PIC16F684 MCU communicates with the sensor and EEPROM. In addition, the PIC MCU interfaces to a PC using the PICkit™ 1 Flash Starter Kit and transfers the temperature readings from the EEPROM to the PC. Microsoft Excel® can be used to view the data.

Mixed Signal Products

MCP3901 and PIC18F65J90 Shunt Meter Reference Design (ARD00342)

The MCP3901 and PIC18F65J90 Energy Meter Reference Design is a fully functional IEC Class 0.5 compliant single-phase meter. This low-cost design does not use any transformers and requires few external components. The PIC18F65J90 directly drives the LCD and includes both an isolated USB connection for meter calibration and access to the device power calculations. The system calculates active energy, active power, RMS current, RMS voltage, reactive energy, reactive power, apparent power, and other typical power quantities.

MCP3421 Battery Fuel Gauge Demonstration Board (MCP3421DM-BFG)

This board is used to demonstrate the MCP3421 18-bit delta-sigma ADC for battery fuel gauging applications. It includes two MCP3421 devices, MCP73831 (single cell Li-Ion/ Li-Polymer Charger) and PIC18F4550 MCU. The board measures: (1) the battery voltage and (2) the current coming out from the battery in the discharging mode and into the battery in the charging mode using the ADC device (if charging mode is enabled (optional)). It calculates the total fuel used and also fuel remaining.

MCP4725 PICtail Plus Daughter Board (MCP4725DM-PTPLS)

This daughter board demonstrates the MCP4725 (12 bit DAC with non-volatile memory) features using the Explorer 16 Development Board and the PICkit Serial Analyzer.

MCP42XX PICtail Plus Daughter Board (MCP42XXDM-PTPLS)

The MCP42XX PICtail Plus Daughter Board is used to demonstrate the operation of the MCP42XX Digital Potentiometers. The operation of the MCP41XX devices is similar to the MCP42XX devices. Therefore, this demo board can be used as a development platform for either device family. This board is designed to be used in conjunction with either the PIC24 Explorer 16 Demo Board or the PICkit Serial Analyzer.

Power Management Products

MCP1631HV Multi-Chemistry Battery Charger Reference Design (MCP1631RD-MCC1)

This reference design is a complete stand-alone constant current battery charger for NiMH, NiCd or constant current/constant voltage for Li-Ion battery packs. When charging NiMH or NiCd batteries, the reference design is capable of charging one, two, three or four batteries connected in series and one or two series batteries for Li-Ion. This board utilizes the MCP1631HV (high-speed PIC MCU PWM TSSOP-20) and PIC16F883 (28-pin SSOP).

MCP73871 Demo Board with Voltage Proportional Current Control (MCP73871DM-VPCC)

The MCP73871 Demo Board with Voltage Proportional Current Control is designed to demonstrate Microchip's stand-alone linear Li-Ion battery charger with system power path and load sharing management control solution. The MCP73871 integrates the required elements to meet design challenges when developing new Li-Ion/ Li-Polymer battery powered products.

Featured Analog Development Tools

MCP73X23 OVP Lithium Iron Phosphate Battery Charger Evaluation Board (MCP73X23EV-LFP)

The MCP73X23 Lithium Iron Phosphate Battery Charger Evaluation board demonstrates the features of Microchip's MCP73123 and MCP73223 Lithium Iron Phosphate (LiFePO4) Battery Charge Management Controller with Input Overvoltage Protection.

MCP7383X Li-Ion System Power Path Management Reference Design (MCP7383XRD-PPM)

This reference design is developed to assist product designers in reducing product design cycle and time by utilizing Microchip's stand-alone Li-Ion battery charge management controllers with system power path management. Due to the natural characteristics of Li-Ion/Li-Polymer batteries, they are the most popular power sources for mobile devices, however, extra care in design is always important. System Power Path Management allows end-users to charge their batteries without interruption.

MCP1640 Sync Boost Converter Evaluation Board (MCP1640EV-SBC)

The MCP1640 Synchronous Boost Converter Evaluation board demonstrates the MCP1640 in two boost-converter applications with multiple output voltages. It can be used to evaluate both package options (SOT-23-6 and 2 × 3-8 DFN). This board was developed to help engineers reduce the product design cycle time.

MCP1252 Charge Pump Backlight Demo Board (MCP1252DM-BKLT)

The MCP1252 board demonstrates the use of a charge pump device in an LED application and acts as a platform to evaluate the MCP1252 device in general. Light intensity is controlled uniformly through the use of ballast resistors. A PIC10F206 MCU provides an enable signal to the MCP1252 and accepts a push-button input that allows the white LEDs to be adjusted to five different light intensities.

Interface Products

MCP2515 CAN Bus Monitor Demo Board (MCP2515DM-BM)

The MCP2515 CAN Bus Monitor Demo board kit contains two identical boards which can be connected together to create a simple two node Controller Area Network (CAN) bus, which can be controlled and/or monitored via the included PC interface. The board(s) can also be connected to an existing CAN bus.

LIN Serial Analyzer (APGDT001)

The LIN Serial Analyzer development system enables a Personal Computer (PC) to communicate with a LIN (Local Interface Network) bus. The PC program uses a graphical user interface to enter and display message frames occurring on the target bus.

USB to UART Converter Evaluation Board (MCP2200EV-VCP)

The MCP2200EV-VCP is a USB-to-RS232 development and evaluation board for the MCP2200 USB-to-UART device. The board allows for easy demonstration and evaluation of the MCP2200. The accompanying software allows the special device features to be configured and controlled. The board is powered from USB and has a test point associated with each GPIO pin. In addition, two of these pins are connected to LEDs which can be used to indicate USB-to-UART traffic when the associated pins are configured as TxLED and RxLED pins respectively.

Linear Products

MCP6V01 Thermocouple Auto-Zeroed Ref Design Board (MCP6V01RD-TCPL)

The MCP6V01 design board demonstrates how to use a difference amplifier system to measure Electromotive Force (EMF) voltage at the cold junction of thermocouple in order to accurately measure temperature of the thermocouple bead. This can be done by using the MCP6V01 auto-zeroed op amp because of its ultra low offset Voltage (VOS) and high Common Mode Rejection Ratio (CMRR).

MCP6N11 and MCP6V2X Wheatstone Bridge Reference Design (ARD00354)

This board demonstrates the performance of Microchip's MCP6N11 instrumentation amplifier (INA) and a traditional three op amp INA using Microchip's MCP6V26 and MCP6V27 auto-zeroed op amps. The input signal comes from an RTD temperature sensor in a Wheatstone bridge. Real world interference is added to the bridge's output, to provide realistic performance comparisons. Data is gathered and displayed on a PC, for ease of use.

MCP6H04 Evaluation Board (ADM00375)

The MCP6H04 Evaluation Board is intended to support an instrumentation amplifier and show the capability of the MCP6H04 operational amplifier. It uses a quad op amp in a difference amplifier configuration with input buffers and voltage reference. The test points for the power supply, ground, input signals, output signals, and voltage reference allow lab equipment to be connected to the board.

Analog Product Part Numbers

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “TC” prefix
(formerly TelCom Semiconductor Products)

TC 7106 A-60 1 C P L 713

Taping Direction:
TR or 713: Standard Taping, blank: no tape and reel

Number of Package Pins (See specific data sheet)

Package Type

Operating Temperature Range:
C: Commercial Range (0°C to +70°C)
E: Extended Industrial Range (-40°C to +85°C)
I: Industrial Range (-25°C to +85°C)
M: Military Range (-55°C to +125°C)
V: See Data Sheet for Specific Temperature Range

(Extra Feature Code and/or Tolerance)* (See specific data sheet)

(Output Voltage or Detect Voltage)* (If applicable, see specific data sheet)

Electrical Performance Grade Option (Variation/Option)*
(If applicable, see specific data sheet)
A: Test Selection Criteria (See specific data sheet)
B:
R: Reversed Pin Layout

Product Part Number (2 to 6 characters, see specific data sheet)

Product Prefix

NOTE: ( )* Used for voltage regulators and detectors.

Package	Description	# of Pins
AB	TO-220	3
AK	TO-220	7
AT	TO-220	5
AV	TO-220 (Formed)	5
BB	TO-220B	3
CB	SOT-23A	3
CH	SOT-23A	6
CT	SOT-23A	5
DB	SOT-223	3
EB	DDPAK	3
EK	DDPAK	7
ET	DDPAK	5
HA	SOP	8
JA	CDIP (N)	8
JD	CDIP (N)	14
JE	CDIP (N)	16
JG	CDIP (W)	24
JI	CDIP (W)	28
JL	CDIP (W)	40
KU	MQFP	64
KW	MQFP	44
LB	SC-70	3
LI	PLCC	28
LS	PLCC	68
LT	SC-70	5
LW	PLCC	44

Package	Description	# of Pins
MB	SOT-89	3
MF	DFN (3 × 3)	8
MT	SOT-89	5
NB	SOT-23B	3
OA	SOIC (N)	8
OD	SOIC (N)	14
OE	SOIC (W)	16
OG	SOIC (W)	24
OI	SOIC (W)	28
OR	SOIC (N)	16
PA	PDIP (N)	8
PD	PDIP (N)	14
PE	PDIP (N)	16
PF	PDIP (N)	24
PG	PDIP (W)	24
PI	PDIP (W)	28
PJ	PDIP (W)	28
PL	PDIP (W)	40
QR	QSOP (N)	16
RC	SOT-143	4
SI	SSOP (W)	28
UA	MSOP	8
UN	MSOP	10
VB	DPAK	3
ZB	TO-92	3
ZM	TO-92	2

Analog Product Part Numbers

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “MCP” prefix

MCP xxxxx T - yyy z h / qq

Package Type (see table below)

Operating Temperature Range:
- blank: Commercial Range (0°C to +70°C)
I: Industrial (-40°C to +85°C)
E: Extended Industrial Range (-40°C to +125°C

Supervisor Bond Options:
D:
F:
H:
blank: Not Applicable

Reset Voltage Thresholds or Performance Grade Options:
(1-3 characters, see specific data sheets)
270: 2.7V reset threshold
300: 3.0V reset threshold
315: 3.15V reset threshold
450: 4.5V reset threshold
460: 4.6V reset threshold
475: 4.7V reset threshold
485: 4.85V reset threshold
or
B: Grade (see specific data sheet)
C: Grade (see specific data sheet)
or
blank: not applicable

Tape and Reel:
T: Tape and Reel
blank: No Tape and Reel

Product Part Number (3-6 characters, see specific data sheet)

Product Prefix

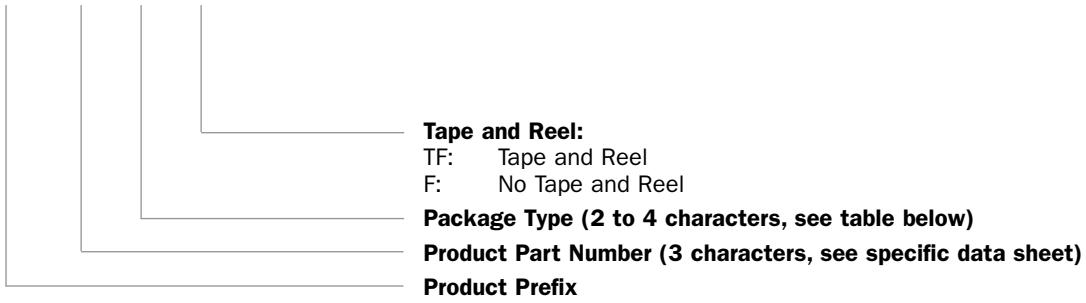
Package	Description	# of Pins	Tube/Bag Qty.	Reel Qty.
TO	TO-92	3	1000	N/A
TT	SOT-23	3	N/A	3000
OT	SOT-23	5	N/A	3000
P	PDIP	8	60	N/A
SN	SOIC	8	100	3300
ST	TSSOP	8	100	2500
MS	MSOP	8	100	2500
MF	DFN (2 × 3)	8	N/A	3300
MF	DFN (3 × 3)	8	50	3300
MF	DFN (3 × 3, 10-Pin)	10	120	3300
ST	TSSOP	14	96	2500
P	PDIP	14	30	N/A
SL	SOIC	14	57	2600
P	PDIP	18	25	N/A
SO	SOIC	18	42	1100
ST	TSSOP	20	74	2500
SS	SSOP	20	67	1600
ML	QFN (6 × 6)	28	50	1600
ML	QFN (4 × 4)	16	91	3300

Analog Product Part Numbers

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “RE46C” prefix

RE46C xxx yyyy zz



Tape and Reel:
TF: Tape and Reel
F: No Tape and Reel

Package Type (2 to 4 characters, see table below)

Product Part Number (3 characters, see specific data sheet)

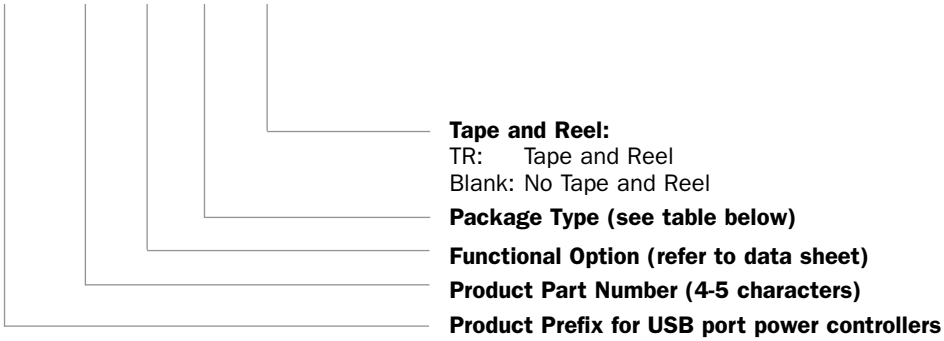
Product Prefix

Package	Description	# of Pins	Tube/Bag Qty.	Reel Qty.
E8	PDIP	8	60	N/A
S8	SOIC	8	100	3300
E14	PDIP	14	30	N/A
S14	SOIC	14	57	2600
E16	PDIP	16	30	N/A
S16	SOIC	16	50	2600
SW16	SOIC (300 mil)	16	47	1000

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “UCS” prefix

UCS xxxxx - y - ppp - tt



Tape and Reel:
TR: Tape and Reel
Blank: No Tape and Reel

Package Type (see table below)

Functional Option (refer to data sheet)

Product Part Number (4-5 characters)

Product Prefix for USB port power controllers

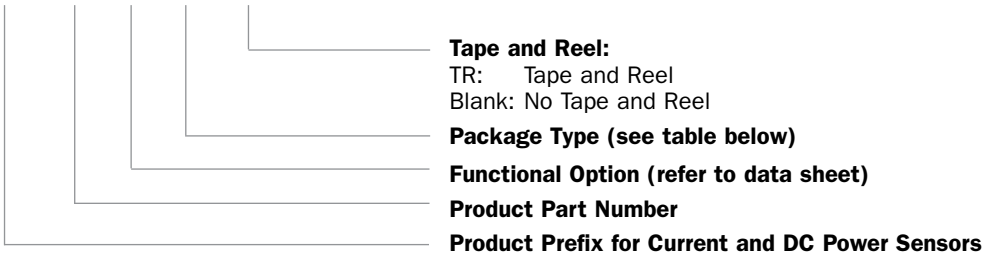
Package	Description	# of Pins	Reel Qty.
BP	QFN (4 × 4)	20	4000

Analog Product Part Numbers

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “PAC” prefix

PAC xxxx - y - ppp - tt



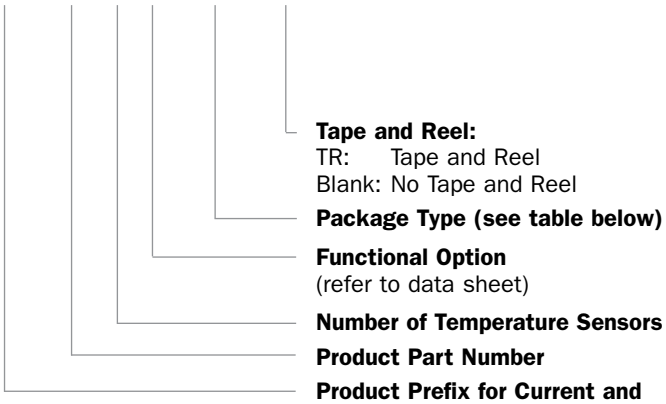
Package	Description	# of Pins	Reel Qty.
AIA	DFN (3 × 3)	10	4000
AIZL	MSOP	10	4000
KP	QFN (4 × 4)	12	4000
YZT	SOIC	14	4000
AP	QFN (4 × 4)	16	4000

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “EMC” prefix

Current/DC Power Sensors:

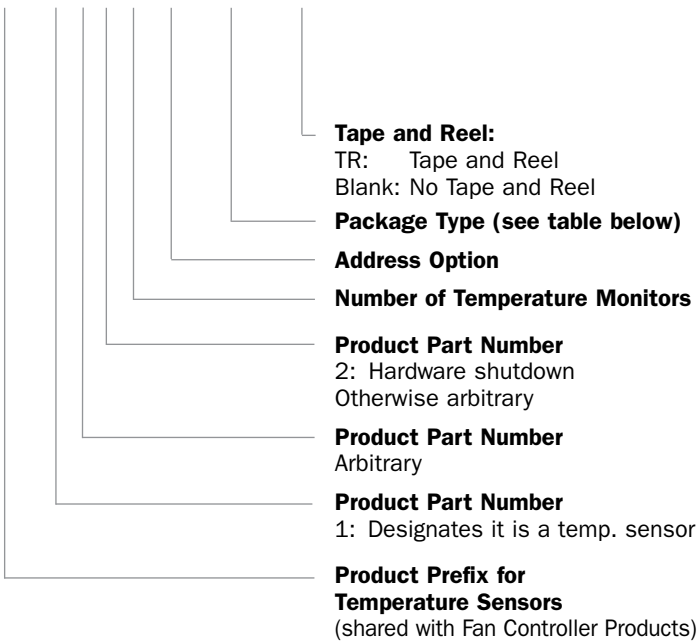
EMC 170 x - y - pppp - tt



Package	Description	# of Pins	Reel Qty.
AIA	DFN (3 × 3)	10	4000
AIZL	MSOP	10	4000
KP	QFN (4 × 4)	12	4000
YZT	SOIC	14	4000
AP	QFN (4 × 4)	16	4000

Temperature Sensors/Remote Diode Monitors:

EMC 1 b c d - y - pppp - tt



Package	Description	# of Pins	Reel Qty.
AIA	DFN (3 × 3)	10	4000
AC3	TDFN (2 × 3)	8	5000
ACZL	MSOP	8	4000
ACZT	SOIC	8	4000
AIZL	MSOP	10	4000
AP	QFN (4 × 4)	16	4000
YZT	SOIC	14	4000

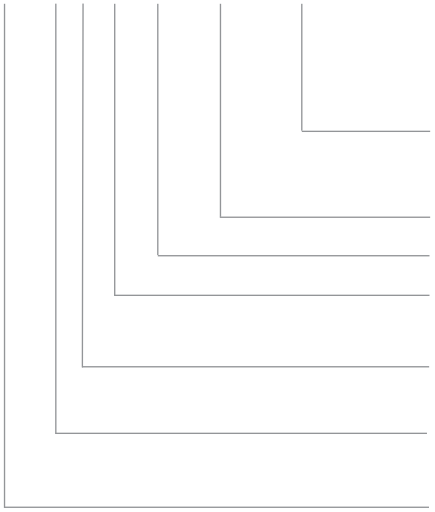
Analog Product Part Numbers

Part Number Suffix Designations

Ordering Information for all Microchip Analog Products beginning with “EMC” prefix

Fan Controllers:

EMC 2 a xx - y - pppp - tt



Tape and Reel:
TR: Tape and Reel
Blank: No Tape and Reel

Package Type (see table below)

Functional Option (refer to data sheet)

Product Part Number
arbitrary

Product Part Number
3: Designates fan speed controller (except EMC2300)

Product Part Number
2: Designates it is a fan controller

Product Prefix for Fan Controllers
Shared with Temperature Sensors

Package	Description	# of Pins	Tube Qty.	Reel Qty.
ACZT	SOIC	8	N/A	4000
ACZL	MSOP	8	N/A	4000
AP	QFN (4 × 4)	16	N/A	4000
BP	QFN (4 × 4)	20	N/A	4000
KP	QFN	12	N/A	4000
AZC	SSOP	16	97	2800
DZK	QFN	28	N/A	4000
CZC	SSOP	24	N/A	2500

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