Analog and Interface Products

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Analog and Interface Product Selector Guide

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

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Are You Looking for Complete Analog and 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 and security solutions. Combined with Microchip's Intelligent Analog microcontrollers, our extensive analog portfolio can be used in thousands of high-performance design applications in the automotive, communications (wireless), consumer, computing and industrial control markets.

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Microchip Technology's Stand-Alone Analog and Interface Portfolio

Thermal Management
- Temperature Sensors
- Fan Speed Controllers/ Fan Fault Detectors

Motor Drive
- Stepper and DC
- 3Φ Brushless DC Motor Driver

Power Management
- Voltage Regulators
- Charge Pump DC/DC Converters
- Power MOSFET Drivers
- Digitally Enhanced and PWM Controllers
- System Supervisors
- Voltage Detectors
- Voltage References
- Li-Ion/Li-Polymer Battery Chargers
- MOSFETs
- High-Voltage Drivers
- USB Port Power Controllers

Linear
- Op Amps
- Instrumentation Amps
- Programmable Gain Amplifiers
- Comparators

Safety and Security
- Photoelectric Smoke Detectors
- Ionization Smoke Detectors
- Ionization Smoke Detector Front Ends
- Piezoelectric Horn Drivers

Mixed-Signal
- A/D Converter Families
- Digital Potentiometers
- D/A Converters
- V/F and F/V Converters
- Energy Measurement ICs
- Current/DC Power ICs

Interface
- CAN Transceivers/ Controllers
- LIN Transceivers
- Wireless Products
- Serial Peripherals
- Ethernet ICs
- USB ICs
- Real-Time Clock/Calendars

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.

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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.

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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 24/7 global technical support line offers you 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 who provide 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
MCP98244	±0.5	±3	–40 to +125	+1.7 to +3.6	500	Serial output temperature sensor with integrated EEPROM (TES2004)	8-pin TSSOP, 8-pin 2 × 3 DFN, 8-pin 2 × 3 TDFN
MCP9844	±0.5	±3	–40 to +125	+1.7 to +1.9	500	Serial output temperature sensor with integrated EEPROM (TES2004)	8-pin TSSOP, 8-pin 2 × 3 DFN, 8-pin 2 × 3 TDFN
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

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
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 SMBus/I²C ambient with two 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
MCP9902	**1**	**±0.25**	**±1.0**	**–40 to +125**	**1**	**1**	**–**	**3.0–3.6**	**200**	**Dual Channel Low-Temperature SMBus/I2C™ Temperature Sensor with Resistance Error Correction, Beta Compensation**	**8-pin WDFN**
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
EMC1182	1	±0.25	±1.0	–40 to +125	1	2	-	3.0–3.6	200	Dual Channel 1.8V SMBus/I²C Temperature Sensor with Resistance Error Correction, Beta Compensation	8-pin TDFN, 8-pin DFN
EMC1183	2	±0.25	±1.0	–40 to +125	1	2	-	3.0–3.6	200	Triple Channel 1.8V SMBus/I²C Temperature Sensor with Resistance Error Correction, Beta Compensation	10-pin DFN
EMC1184	3	±0.25	±1.0	–40 to +125	1	2	-	3.0–3.6	200	Quad Channel 1.8V SMBus/I²C Temperature Sensor with Resistance Error Correction, Beta Compensation	10-pin DFN
EMC1186	1	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	200	Dual Channel 1.8V SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Resistor-Settable Hardware Thermal Shutdown	8-pin TDFN
EMC1187	2	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	200	Triple Channel 1.8V SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Resistor-Settable Hardware Thermal Shutdown	10-pin DFN
EMC1188	3	±0.25	±1.0	–40 to +125	1	1	1	3.0–3.6	200	Quad Channel 1.8V SMBus/I²C Sensor with Resisitance Error Correction, Beta Compensation and Resistor-Settable Hardware Thermal Shutdown	10-pin DFN
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 and 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 Hardware 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	28-pin QFN
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 and 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
MCP8024	3-Phase Brushless Motors	6.0 to 28.0	External	500	Direct PWM	N/A	UVLO, OVLO, 48V Load Dump, Thermal Shutdown, Overcurrent Output	–40 to +150	Three Op Amps, Adj. Buck Regulator, 5V LDO, 12V LDO, Thermal Warning, Dead Time, Blanking Time, Level Translator, Motor Enable	40-pin 5 × 5 QFN, 48-pin 7 × 7 TQFP
MCP8025	3-Phase Brushless Motor	6.0 to 19.0	External	500	Direct PWM	No	Overcurrent, Overvoltage, Undervoltage, Overtemperature, 48V Load Dump Protection, Short Circuit, Shoot Through	–40 to +150	Sleep Mode, LIN Transceiver, AZ Output, Adj. Buck Regulator, LOD, Op Amp, Overcurrent Comparator, Fault Output, Thermal Warning, Selectable Dead Time and Blanking Time	40-pin 5 × 5 QFN, 48-pin 7 × 7 TQFP
MCP8026	3-Phase Brushless Motor	6.0 to 28.0	External	500	Direct PWM	No	Overcurrent, Overvoltage, Undervoltage, Overtemperature, 48V Load Dump Protection, Short Circuit, Shoot Through	–40 to +150	Sleep Mode, LIN Transceiver, AZ Output, Adj. Buck Regulator, LOD, Op Amp, Overcurrent Comparator, Fault Output, Thermal Warning, Selectable Dead Time and Blanking Time	40-pin 5 × 5 QFN, 48-pin 7 × 7 TQFP
MCP8063	3-Phase Brushless Motor	2.0 to 14.0	Internal	750	Sensorless Sinusoidal	Frequency Generator	Overtemperature, Motor Lock-up, Overcurrent, Overvoltage	–40 to +125	3-Phase BLDC 180° Sinusoidal Sensorless Fan Motor Driver, Overcurrent limitation, Output Switching Frequency at 23 kHz	Thermall Enhanced 8-pin 4 × 4 DFN
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	–40 to +105	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	–40 to +105	Dual Full-Bridge Motor Driver for Stepper Motors, Pin compatible with Allegro 2916	24-pin SOIC
MTD6501C	3-Phase Brushless 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 Brushless 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, Boost Mode, Overcurrent limitation, Output Switching Frequency at 20 kHz	10-pin MSOP
MTD6501G	3-Phase Brushless 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 23 kHz	Thermally Enhanced 8-pin SOP
MTD6502B	3-Phase Brushless 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 Brushless 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 #	Output Current (mA)	Max. Input Voltage (V)	Output Voltage Range (V)	Typical Quiescent Current (µA)	Typical Dropout Voltage (at max I_{OUT}, mV)	PSRR (typical dB)	Typical Output Voltage Accuracy (%)	Features	Packages
Low-Dropout Linear Regulators									
TC1072	50	6.0	1.8 to 5.0	50	85	64	0.5	Low noise, fast transient response, shutdown, error output	6-pin SOT-23
TC1014	50	6.0	1.8 to 5.0	50	85	64	0.5	Reference bypass	5-pin SOT-23
TC1054	50	6.5	1.8 to 5.0	50	85	64	0.5	Error output	5-pin SOT-23
TC1070	50	6.0	1.2 to 5.5	50	85	64	0.5	Adjustable output	5-pin SOT-23
TC2014	50	6.0	1.8 to 5.0	55	45	55	0.4	Low noise, fast transient response, shutdown, bypass pin	5-pin SOT-23A
TC2054	50	6.0	1.8 to 5.0	55	45	50	0.4	Low noise, fast transient response, shutdown, error output	5-pin SOT-23A
TC1223	50	6.0	2.5 to 5.0	50	85	64	0.5	Shutdown	5-pin SOT-23A
MCP1790	70	30.0	3.0, 3.3, 5.0	70	700	90	0.2	Load dump protected, fast transient response	3-pin SOT-223
MCP1791	70	30.0	3.0, 3.3, 5.0	70	700	90	0.2	Load dump protected, fast transient response, shutdown, powergood	5-pin SOT-223
TC1016	80	6.0	1.8 to 4.0	53	150	58	0.5	Fast transient response	5-pin SOT-23, 5 pin-SC-70
TC1073	100	6.0	1.8 to 5.0	50	180	64	0.5	Low noise, fast transient response, shutdown, error output	6-pin SOT-23
TC1015	100	6.0	1.8 to 5.0	50	180	64	0.5	Reference bypass	5-pin SOT-23
TC1055	100	6.5	1.8 to 5.0	50	180	64	0.5	Error output	5-pin SOT-23
TC1071	100	6.0	1.2 to 5.5	50	180	64	0.5	Adjustable output	5-pin SOT-23
TC2015	100	6.0	1.8 to 5.0	55	90	55	0.4	Low noise, fast transient response, shutdown, bypass pin	5-pin SOT-23A
TC2055	100	6.0	1.8 to 5.0	55	90	50	0.4	Low noise, fast transient response, shutdown, error output	5-pin SOT-23A
TC1224	100	6.0	2.5 to 5.0	50	180	64	0.5	Shutdown	5-pin SOT-23A
TC1188	120	6.0	1.8 to 3.15	50	120	80	–	Shutdown	5-pin SOT-23A
TC1189	120	6.0	1.8 to 3.15	50	120	80	–	Shutdown, output capacitor discharge	5-pin SOT-23A
TC1186	150	6.5	1.8 to 5.0	50	270	64	0.5	Error output	5-pin SOT-23
TC1017	150	6.0	1.8 to 4.0	53	285	58	0.5	Shutdown	5-pin SOT-23 and 5-pin SC-70
TC1185	150	6.0	1.8 to 5.0	50	270	64	0.5	Reference bypass	5-pin SOT-23
TC1187	150	6.0	1.2 to 5.5	50	270	64	0.5	Adjustable output	5-pin SOT-23
MCP1754	150	16.0	1.8 to 5.5	56	300	72	0.2	Powergood, shutdown	5-pin SOT-23, 5-pin SOT-223, 8-pin 2 × 3 DFN
MCP1754S	150	16.0	1.8 to 5.5	56	300	72	0.2	–	3-pin SOT-23, 3-pin SOT89, 3-pin SOT-223, 8-pin 2 × 3 DFN
MCP1804	150	28.0	1.8 to 18	50	260 at 20 mA	50	2	Shutdown version	5-pin SOT-23, 5 pin SOT-89, 3-pin SOT-89, 3-pin SOT-223
TC2185	150	6.0	1.8 to 5.0	55	140	55	0.4	Low noise, fast transient response, shutdown, bypass pin	5-pin SOT-23A
TC2186	150	6.0	1.8 to 5.0	55	140	50	0.4	Low noise, fast transient response, shutdown, error output	5-pin SOT-23A
MCP1710	200	5.5	1.2 to 4.2	0.02	450	22	–	Extremely low I_Q, small outline package, shutdown	8-pin 2 × 2 VDFN
MCP1700	250	6.0	1.2 to 5.0	1.6	178	44	0.4	Very low I_Q, small outline package options	3-pin SOT-23, 3-pin SOT-89, 3-pin TO-92, 6-pin 2 × 2 DFN
MCP1702	250	13.2	1.2 to 5.5	2.0	625	44	0.4	Very low I_Q	3-pin SOT-23A, 3-pin SOT-89, 3-pin TO-92
MCP1703A	250	16.0	1.2 to 5.5	2.0	625	35	0.4	Very low I_Q, low ground pin current in dropout	3-pin SOT-23A, 3-pin SOT-89, 3-pin SOT-223, 8-pin 2 × 3 DFN
MCP1755	300	16.0	1.8 to 5.5	68	300	80	0.85	Powergood, shutdown	5-pin SOT-23, 5-pin SOT-223, 8-pin 2 × 3 DFN
MCP1755S	300	16.0	1.8 to 5.5	68	300	80	0.85	–	3-pin SOT-223, 8-pin 2 × 3 DFN
MCP1824	300	6.0	0.8 to 5.0	120	200	55	0.4	Fast transient response, shutdown, powergood	5-pin SOT-23, 5-pin SOT-223
MCP1824S	300	6.0	0.8 to 5.0	120	200	55	0.4	Fast transient response	3-pin SOT-223
TC1107	300	6.0	2.5 to 5.0	50	240	60	0.5	Low noise, fast transient response, shutdown, bypass pin	8-pin SOIC, 8-pin MSOP
TC1108	300	6.0	2.5 to 5.0	50	240	60	0.5	Low noise, fast transient response	3-pin SOT-223
TC1173	300	6.0	2.5 to 5.0	50	240	60	0.5	Low noise, fast transient response, shutdown, bypass pin, error output	8-pin SOIC, 8-pin MSOP
TC1174	300	6.0	–	50	270	60	–	Adjustable output	8-pin SOIC, 8-pin MSOP

POWER MANAGEMENT: Linear Regulators (Continued)

Part #	Output Current (mA)	Max. Input Voltage (V)	Output Voltage Range (V)	Typical Quiescent Current (µA)	Typical Dropout Voltage (at max I_{OUT}, mV)	PSRR (typical dB)	Typical Output Voltage Accuracy (%)	Features	Packages
Low-Dropout Linear Regulators (Continued)									
TC1269	300	6.0	2.5 to 5.0	50	240	50	0.5	Low noise, fast transient response, shutdown, bypass pin	8-pin MSOP
TC1262	500	6.0	1.8 to 5.0	80	350	64	0.5	Low noise, fast transient response	3-pin SOT-223
MCP1725	500	6.0	0.8 to 5.0	120	210	60	0.5/0.4/0.5	Fast transient response, shutdown, adjustable delay powergood, adjustable output version	8-pin SOIC-8, 8-pin 2 × 3 DFN
MCP1825	500	6.0	0.8 to 5.0	120	210	60	0.5	Fast transient response, shutdown, powergood	5-pin SOT-223
MCP1825S	500	6.0	0.8 to 5.0	120	210	60	0.5	Fast transient response	3-pin SOT-223
TC1263	500	6.0	2.5 to 5.0	80	350	64	0.5	Low noise, fast transient response, shutdown, bypass pin	8-pin SOIC
TC1264	800	6.0	1.8 to 5.0	80	450	64	0.5	Low noise, fast transient response	3-pin SOT-223
TC1265	800	6.0	1.8 to 3.3	80	450	64	0.5	Low noise, fast transient response, shutdown, bypass pin	8-pin SOIC
TC2117	800	6.0	1.8 to 3.3	80	1200	55	0.5	Low noise, fast transient response	3-pin SOT-223
MCP1726	1000	6.0	0.8 to 5.0	140	220	54	0.5/0.4/0.5	Fast transient response, shutdown, adjustable delay powergood, adjustable output version	8-pin SOIC-8, 8-pin 3 × 3 DFN
MCP1826	1000	6.0	0.8 to 5.0	120	250	60	0.5	Fast transient response, shutdown, powergood	5-pin SOT-223
MCP1826S	1000	6.0	0.8 to 5.0	120	250	60	0.5	Fast transient response	3-pin SOT-223
MCP1727	1500	6.0	0.8 to 5.0	120	330	60	0.5/0.4/0.5	Fast transient response, shutdown, adjustable delay powergood, adjustable output version	8-pin SOIC-8, 8-pin 3 × 3 DFN
MCP1827	1500	6.0	0.8 to 5.0	120	330	60	0.5	Fast transient response, shutdown, powergood	5-pin DDPAK, 5-pin TO-220
MCP1827S	1500	6.0	0.8 to 5.0	120	330	60	0.5	Fast transient response	3-pin DDPAK, 3-pin TO-220
Negative Voltage Linear Regulators									
TC59	100	-10	-3.0 to -5.0	3	380	50	2	Negative LDO	3-pin SOT23A
Combination and Multiple Output Linear Regulators									
TC1300	300	6.0	2.5 to 3.0	80	210	60	0.5	Shutdown, bypass, undervoltage detection and reset signal generation	8-pin MSOP
TC1301A	300 150	6.0	1.5 to 3.3	103	104/150	58	0.5	Dual output LDO, reset, bypass pin and shutdown pin for second output	8-pin MSOP, 8-pin 3 × 3 DFN
TC1301B	300/150	6.0	1.5 to 3.3	114	104/150	58	0.5	Dual output LDO, reset, bypass pin and shutdown pins for both outputs	8-pin MSOP, 8-pin 3 × 3 DFN
TC1302A	300/150	6.0	1.5 to 3.3	103	104/150	58	0.5	Dual output LDO, bypass pin and shutdown pin for second output	8-pin MSOP, 8-pin 3 × 3 DFN
TC1302B	300/150	6.0	1.5 to 3.3	114	104/150	58	0.5	Dual output LDO, bypass pin and shutdown pins for both outputs	8-pin MSOP, 8-pin 3 × 3 DFN
TC1307	150	6.0	1.8 to 3.0	220	100	60	0.5	Four-channel LDO, independent shutdown pins, selectable output voltages	16-pin QSOP

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 V_{IN}	–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
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	Synchronous Boost Regulator	0.65 to 6.0	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
MCP16311	30V Input, 1A, Synchronous Buck Switching Regulator	4.4 to 30.0	2.0 to 24.0	–40 to +125	PFM/PFM	500	44	1000	PFM/PWM operation, enable function	8-pin MSOP, 8-pin 2 × 3 TDFN
MCP16312	30V Input, 1A, Synchronous Buck Switching Regulator	4.4 to 30.0	2.0 to 24.0	–40 to +125	PWM	500	3800	1000	PWM operation, enable function	8-pin MSOP, 8-pin 2 × 3 TDFN
MCP1642B/D	**1.8A Input Switch Current, Low Vin Boost Regulator**	**0.65 to 6.0**	**1.8 to 5.5**	**–40 to +85**	**PWM**	**1000**	**400**	**>800**	**Integrated synchronous boost regulator, 0.65V start-up voltage, soft start, enable, power good output, true load disconnect or input-to-output bypass option**	**8-pin MSOP, 8-pin 2 × 3 DFN**
MCP16251	Low Quiescent Current Synchronous Boost Regulator	0.82 to 5.5	1.8 to 5.5	–40 to +85	PFM/PWM	500	4	250	True load disconnect shutdown	6-pin SOT-23, 8-pin 2 × 3 DFN
MCP16252	Low Quiescent Current Synchronous Boost Regulator	0.82 to 5.5	1.8 to 5.5	–40 to +85	PFM/PWM	500	4	250	Input to output bypass shutdown	6-pin SOT-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
MCP1640/B/C/D	Synchronous Boost 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
MCP1643	Synchronous Boost LED Driver	0.5	0.6 to 5.0	–40 to +85	PWM	1000	–	550	True Load Disconnect, Shutdown	8-pin 2 × 3 DFN, 8-pin MSOP
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	Two 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	Two 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	Two 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	Two duty cycles for min. and max. loads, Shutdown control, Low battery detect, Power good indicator, UVLO, Soft start	10-pin MSOP
MCP1661	**32 Vout, 1.3A Input Switch Current Non-Synchronous Boost Switching Regulator**	**2.4 to 5.5**	**5.5 to 32**	**–40 to +85**	**PWM**	**500**	**250**	**>200**	**Non-synchronous boost regulator, Soft start, Enable**	**6-pin SOT23, 8-pin 3 × 3 TDFN**
MCP1662	**32 Vout, 1.3A Input Switch Current Non-Synchronous LED Boost Regulator**	**2.4 to 5.5**	**5.5 to 32**	**–40 to +85**	**PWM**	**500**	**–**	**>200**	**Non-synchronous boost regulator, Soft start, Enable, 300 mV feedback for LED driving**	**6-pin SOT23, 8-pin 3 × 3 TDFN**
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 mode	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

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
TC1303	Synchronous Buck Regulator, LDO with 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, Current 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
MCP1632	Standalone, Current or Voltage mode high-speed PWM controller with Integrated MOSTFET Driver	3.0 to 5.5	–40 to +125	300/600	5	Adjustable V_{REF} and Soft Start, Internal slope compensation, UVLO, Short circuit and overtemperature protection, Integrated low-side MOSFET driver	8-pin MSOP, 8-pin 2 × 3 DFN
MCP19035	Synchronous Buck PWM Controller with Integrated MOSFET Driver Family	4.5 to 30	–40 to +125	300/600	6	Multiple dead-time options for low-FOM MOSFET compatibility, Integrated current sense capability for short circuit protection, Integrated synchronous MOSFET driver and linear voltage regulator	10-pin 3 × 3 DFN

POWER MANAGEMENT: PWM Controllers (Continued)

Part #	Description	Input Voltage Range (V)	Operating Temp. Range (°C)	Switching Frequency (kHz)	Typical Active Current (mA)	Features	Packages
HV9110	High-Voltage Single Switch Current-Mode PWM	10 to 120	–55 to +125	3000	0.55	UVLO, Internal Start-Up Circuit, 50% Max. Duty Cycle	14-pin SOIC
HV9112	High-Voltage Single Switch Current-Mode PWM	9 to 80	–55 to +125	3000	0.55	UVLO, Internal Start-Up Circuit, 50% Max. Duty Cycle	14-pin SOIC
HV9113	High-Voltage Single Switch Current-Mode PWM	10 to 120	–55 to +125	3000	0.55	UVLO, Internal Start-Up Circuit, 50% Max. Duty Cycle	14-pin SOIC
HV9120	450V Single Switch Current-Mode PWM	10 to 450	–55 to +125	3000	0.55	UVLO, Internal Start-Up Circuit, 50% Max. Duty Cycle	14-pin SOIC, 16-pin DIP
HV9123	450V Single Switch Current-Mode PWM	10 to 450	–55 to +125	3000	0.55	UVLO, Internal Start-Up Circuit, 50% Max. Duty Cycle	14-pin SOIC, 16-pin DIP
HV9150	High-Voltage Output Hysteretic Step-up DC/DC	2.7 to 12	–25 to +85	400	2.5	Built-In Charge Pump and LDO, Programmable Switching Frequency from 40 kHz to 400 kHz, Four Programmable Duty Cycles from 50% to 87.5%	16-pin QFN

POWER MANAGEMENT: Hybrid PWM Controllers – Digitally-Enhanced Power Analog

Part #	Input Voltage Range (V)	Output Voltage (V)	Operating Temp. Range (°C)	Topologies Supported	Integrated MCU	Program Memory Size (kWords)	RAM (bytes)	Features	Packages
MCP19110	4.5 to 32	0.5 to 90% * Vin	–40 to +125	Buck	✓	4	256	Synchronous Buck Analog Controller with integrated MCU, LDO and Synchronous MOSFET Drivers. User-Configurable/Programmable including MOSFET Dead Time, Switching Frequency, Analog Loop Compensation and Protection Thresholds	24-pin 4 × 4 QFN
MCP19111	4.5 to 32	0.5 to 90% * Vin	–40 to +125	Buck	✓	4	256	Synchronous Buck Analog Controller with integrated MCU, LDO and Synchronous MOSFET Drivers. User-Configurable/Programmable including MOSFET Dead Time, Switching Frequency, Analog Loop Compensation and Protection Thresholds	28-pin 5 × 5 QFN
MCP19114	4.5 to 42	0.5 to Vin*n (dependent on topology)	–40 to +125	Boost, Flyback, SEPIC, Ćuk	✓	4	256	High-Speed Analog-based PWM Controller with integrated MCU, LDO and Synchronous MOSFET Drivers. User-Configurable/Programmable including MOSFET Dead Time, Switching Frequency, Analog Loop Compensation and Protection Thresholds. An I^2C communication interface is also integrated.	24-pin 4 × 4 QFN
MCP19115	4.25 to 42	0.5 to Vin*n (dependent on topology)	–40 to +125	Boost, Flyback, SEPIC, Ćuk	✓	4	256	High-Speed Analog-based PWM Controller with integrated MCU, LDO and Synchronous MOSFET Drivers. User-Configurable/Programmable including MOSFET Dead Time, Switching Frequency, Analog Loop Compensation and Protection Thresholds. An I^2C communication interface is also integrated.	28-pin 5 × 5 QFN
MCP19118	4.5 to 40	0.5 to 90% * Vin	–40 to +125	Buck	✓	4	256	40V DC operation, 48V transient capability, Synchronous Buck Analog Controller with integrated MCU, LDO and Synchronous MOSFET Drivers. User-Configurable/Programmable including MOSFET Dead Time, Switching Frequency, Analog Loop Compensation and Protection Thresholds	24-pin 4 × 4 QFN
MCP19119	4.5 to 40	0.5 to 90% * Vin	–40 to +125	Buck	✓	4	256	40V DC operation, 48V transient capability, Synchronous Buck Analog Controller with integrated MCU, LDO and Synchronous MOSFET Drivers. User-Configurable/Programmable including MOSFET Dead Time, Switching Frequency, Analog Loop Compensation and Protection Thresholds	28-pin 5 × 5 QFN

POWER MANAGEMENT: Charge Pump DC-to-DC Converters

Part #	Configuration	Input Voltage Range (V)	Output Voltage (V)	Typical Output Current (mA)	Switching Frequency (kHz)	Supply Current (Is, floating output µA, 25°C)	Output Resistance (Ω, at typical output current, 25°C)	Power Conversion Efficiency (%)	Features	Packages
Inverting or Doubling Charge Pumps										
TC682	Inverted doubling	2.4 to 5.5	–2*V_{IN}	10	12	185	140	92% at 2.5 mA	–	8-pin SOIC and 8-pin PDIP
TC1240A	Doubling	2.5 to 5	2*V_{IN}	20	80	550	12	94% at 5 mA	Shutdown	6-pin SOT-23
TC7660S	Inverting or doubling	1.5 to 12	–V_{IN} or 2* V_{IN}	20	10 or 45	80	60	98% at 1 mA	Boost pin increases switching frequency	8-pin SOIC and 8-pin PDIP
TC7660H	Inverting or doubling	1.5 to 10	–V_{IN} or 2* V_{IN}	20	120	1000	55	85% at 10 mA	High-voltage oscillator	8-pin SOIC and 8-pin PDIP
TC7662B	Inverting or doubling	1.5 to 15	–V_{IN} or 2* V_{IN}	20	10 or 35	80	65	96% at 1 mA	Boost pin increases switching frequency	8-pin SOIC and 8-pin PDIP
TC7662A	Inverting or doubling	3 to 18	–V_{IN} or 2* V_{IN}	40	12	190	50	97% at 7.5 mA	No low-voltage terminal required	8-pin PDIP
TC962	Inverting or doubling	3 to 18	–V_{IN} or 2* V_{IN}	80	12 or 24	190	35	97% at 7.5 mA	Boost pin increases switching frequency	16-pin SOIC, 8-pin PDIP
Regulated Charge Pumps										
MCP1256	Regulated	1.8 to 3.6	3.3	100	650	2300	N/A	85% at 50 mA	Soft start, shutdown, power good signal and sleep mode	10-pin MSOP and 10-pin 3 × 3 DFN
MCP1257	Regulated	1.8 to 3.6	3.3	100	650	2300	N/A	85% at 50 mA	Soft start, shutdown, low battery warning signal, and sleep mode	10-pin MSOP and 10-pin 3 × 3 DFN
MCP1258	Regulated	1.8 to 3.6	3.3	100	650	2300	N/A	85% at 50 mA	Soft start, shutdown, power good signal and bypass mode	10-pin MSOP and 10-pin 3 × 3 DFN
MCP1259	Regulated	1.8 to 3.6	3.3	100	650	2300	N/A	85% at 50 mA	Soft start, shutdown, low battery warning signal, and bypass mode	10-pin MSOP and 10-pin 3 × 3 DFN
MCP1252	Regulated	2.0 to 5.5	3.3, 5.0, or adjustable	150	650	60	N/A	81% at 10 mA	Shutdown, power good, regulated output, adjustable version	8-pin MSOP
MCP1253	Regulated	2.0 to 5.5	3.3, 5.0, or adjustable	150	1000	60	N/A	81% at 10 mA	Shutdown, power good, regulated output, adjustable version	8-pin MSOP

POWER MANAGEMENT: CPU/System Supervisors

Part #	Vcc 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	Max809 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 kΩ 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), Timeout = 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), Timeout = 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), Timeout = 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), Timeout = 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), Timeout = 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
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 #	Vcc 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

POWER MANAGEMENT: Power MOSFET Drivers

Part #	Drivers	Configuration	Peak Output Current (source/sink, A)	Maximum Supply Voltage (V)	Output Resistance (source/sink, Ω)	Propagation Delay (T_{d1}/T_{d2}, ns)	Rise/Fall Time (T_r/T_f, ns)	Capacitive Load Drive	Features	Packages
Low-Side Power MOSFET Drivers										
MCP1401	Low-Side Single	Inverting	0.5/0.5	18	12/10	35/35	19/15	470 pF in 19 ns	Small footprint	5-pin SOT-23
MCP14A0051	**Low-Side Single**	**Inverting**	**0.5/0.5**	**18**	**6.5/4.5**	**40/31**	**51/39**	**1000 pF in 40 ns**	**Enable pin, small footprint**	**6-pin SOT-23, 6-pin 2 × 2 DFN**
MCP14A0052	**Low-Side Single**	**Non-inverting**	**0.5/0.5**	**18**	**6.5/4.5**	**40/31**	**51/39**	**1000 pF in 40 ns**	**Enable pin, small footprint**	**6-pin SOT-23, 6-pin 2 × 2 DFN**
MCP1402	Low-Side Single	Non-inverting	0.5/0.5	18	12/10	35/35	19/15	470 pF in 19 ns	Small footprint	5-pin SOT-23
TC1410	Low-Side Single	Inverting	0.5/0.5	16	16/16	30/30	25/25	500 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC1410N	Low-Side Single	Non-inverting	0.5/0.5	16	16/16	30/30	25/25	500 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC1411	Low-Side Single	Inverting	1.0/1.0	16	8/8	30/30	25/25	1000 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC1411N	Low-Side Single	Non-inverting	1.0/1.0	16	8/8	30/30	25/25	1000 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC1426	Low-Side Dual	Inverting	1.2/1.2	16	12/8	75/75	25/35	1000 pF in 38 ns		8-pin SOIC, 8-pin PDIP
TC1427	Low-Side Dual	Non-inverting	1.2/1.2	16	12/8	75/75	25/35	1000 pF in 38 ns		8-pin SOIC, 8-pin PDIP
TC1428	Low-Side Dual	Complimentary	1.2/1.2	16	12/8	75/75	25/35	1000 pF in 38 ns		8-pin SOIC, 8-pin PDIP
TC4467	Low-Side Quad	Inverting	1.2/1.2	18	10/10	40/40	15/15	470 pF in 15 ns		16-pin SOIC, 14-pin PDIP
TC4468	Low-Side Quad	Non-inverting	1.2/1.2	18	10/10	40/40	15/15	470 pF in 15 ns		16-pin SOIC, 14-pin PDIP
TC4469	Low-Side Quad	Complimentary	1.2/1.2	18	10/10	40/40	15/15	470 pF in 15 ns		16-pin SOIC, 14-pin PDIP
MCP14A0151	**Low-Side Single**	**Inverting**	**1.5/1.5**	**18**	**17/10**	**41/32**	**18.5/17**	**1000 pF in 11.5 ns**	**Enable pin, small footprint**	**6-pin SOT-23, 6-pin 2 × 2 DFN**
MCP14A0152	**Low-Side Single**	**Non-inverting**	**1.5/1.5**	**18**	**17/10**	**41/32**	**18.5/17**	**1000 pF in 11.5 ns**	**Enable pin, small footprint**	**6-pin SOT-23, 6-pin 2 × 2 DFN**
MCP1415	Low-Side Single	Inverting	1.5/1.5	18	6/4	41/48	20/20	470 pF in 13 ns	Small footprint	5-pin SOT-23
MCP1416	Low-Side Single	Non-inverting	1.5/1.5	18	6/4	41/48	20/20	470 pF in 13 ns	Small footprint	5-pin SOT-23
TC4426A	Low-Side Dual	Inverting	1.5/1.5	18	7/7	30/30	25/25	1000 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP, 8-pin 6 × 5 DFN-S
TC4427A	Low-Side Dual	Non-inverting	1.5/1.5	18	7/7	30/30	25/25	1000 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP, 8-pin 6 × 5 DFN-S
TC4428A	Low-Side Dual	Complimentary	1.5/1.5	18	7/7	30/30	25/25	1000 pF in 25 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP, 8-pin 6 × 5 DFN-S
TC4404	Low-Side Single	Inverting	1.5/1.5	18	7/7	40/60	40/40	1000 pF in 30 ns		8-pin SOIC, 8-pin PDIP
TC4405	Low-Side Single	Non-inverting	1.5/1.5	18	7/7	40/60	40/40	1000 pF in 30 ns		8-pin SOIC, 8-pin PDIP
TC4626	Low-Side Single	Inverting	1.5/1.5	6	10/8	35/45	33/27	1000 pF in 40 ns	Boosted drive voltage	16-pin SOIC, 8-pin PDIP
TC4627	Low-Side Single	Non-inverting	1.5/1.5	6	10/8	35/45	33/27	1000 pF in 40 ns	Boosted drive voltage	16-pin SOIC, 8-pin PDIP
MCP14E6	Low-Side Dual	Inverting	2.0/2.0	18	5/5	45/45	12/15	1000 pF in 15 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E7	Low-Side Dual	Non-inverting	2.0/2.0	18	5/5	45/45	12/15	1000 pF in 15 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E8	Low-Side Dual	Complimentary	2.0/2.0	18	5/5	45/45	12/15	1000 pF in 15 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC1412	Low-Side Single	Inverting	2.0/2.0	16	4/4	35/35	18/18	1000 pF in 18 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC1412N	Low-Side Single	Non-inverting	2.0/2.0	16	4/4	35/35	18/18	1000 pF in 18 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC4423A	Low-Side Dual	Inverting	3.0/3.0	18	2.2/2.8	40/41	12/12	1800 pF in 12 ns		8-pin SOIC, 16-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC4424A	Low-Side Dual	Non-inverting	3.0/3.0	18	2.2/2.8	40/41	12/12	1800 pF in 12 ns		8-pin SOIC, 16-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC4425A	Low-Side Dual	Complimentary	3.0/3.0	18	2.2/2.8	40/41	12/12	1800 pF in 12 ns		8-pin SOIC, 16-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E9	Low-Side Dual	Inverting	3.0/3.0	18	4/4	45/45	14/17	1800 pF in 17 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E10	Low-Side Dual	Non-inverting	3.0/3.0	18	4/4	45/45	14/17	1800 pF in 17 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E11	Low-Side Dual	Complimentary	3.0/3.0	18	4/4	45/45	14/17	1800 pF in 17 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC1413	Low-Side Single	Inverting	3.0/3.0	16	2.7/2.7	35/35	20/20	1800 pF in 20 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
TC1413N	Low-Side Single	Non-inverting	3.0/3.0	16	2.7/2.7	35/35	20/20	1800 pF in 20 ns		8-pin SOIC, 8-pin MSOP, 8-pin PDIP
MCP14E3	Low-Side Dual	Inverting	4.0/4.0	18	2.5/2.5	46/50	15/18	2200 pF in 15 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E4	Low-Side Dual	Non-inverting	4.0/4.0	18	2.5/2.5	46/50	15/18	2200 pF in 15 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP14E5	Low-Side Dual	Complimentary	4.0/4.0	18	2.5/2.5	46/50	15/18	2200 pF in 15 ns	Enable pin	8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP1403	Low-Side Dual	Inverting	4.5/4.5	18	2.2/2.8	40/40	15/18	2200 pF in 15 ns		8-pin SOIC, 16-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP1404	Low-Side Dual	Non-inverting	4.5/4.5	18	2.2/2.8	40/40	15/18	2200 pF in 15 ns		8-pin SOIC, 16-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN

POWER MANAGEMENT: Power MOSFET Drivers (Continued)

Part #	Drivers	Configuration	Peak Output Current (source/sink, A)	Maximum Supply Voltage (V)	Output Resistance (source/sink, Ω)	Propagation Delay (T_{d1}/T_{d2}, ns)	Rise/Fall Time (T_r/T_f, ns)	Capacitive Load Drive	Features	Packages
Low-Side Power MOSFET Drivers (Continued)										
MCP1405	Low-Side Dual	Complimentary	4.5/4.5	18	2.2/2.8	40/40	15/18	2200 pF in 15 ns		8-pin SOIC, 16-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP1406	Low-Side Single	Inverting	6.0/6.0	18	2.1/1.5	40/40	20/20	2500 pF in 20 ns		8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
MCP1407	Low-Side Single	Non-inverting	6.0/6.0	18	2.1/1.5	40/40	20/20	2500 pF in 20 ns		8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC4421A	Low-Side Single	Inverting	9.0/9.0	18	1.25/0.8	38/42	28/26	4700 pF in 15 ns		8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC4422A	Low-Side Single	Non-inverting	9.0 / 9.0	18	1.25 / 0.8	38 / 42	28 / 26	4700 pF in 15 ns		8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC4451	Low-Side Single	Inverting	12.0/12.0	18	1.0/0.9	44/44	30/32	10,000 pF in 21 ns		8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
TC4452	Low Side Single	Non-inverting	12.0/12.0	18	1.0/0.9	44/44	30/32	10,000 pF in 21 ns		8-pin SOIC, 8-pin PDIP, 8-pin 6 × 5 DFN
High-Side and Synchronous Drivers										
TC4431	High-Side Single	Inverting	3.0/1.5	30	7/7	62/78	25/33	1000 pF in 15 ns	30V, high-side driver	8-pin SOIC, 8-pin PDIP
TC4432	High-Side Single	Non-inverting	3.0/1.5	30	7/7	62/78	25/33	1000 pF in 15 ns	30V, high-side driver	8-pin SOIC, 8-pin PDIP
TC4403	Floating Load Driver	Non-inverting	1.5/1.5	18	2.8/3.5	33/38	23/25	1800 pF in 25 ns	Floating load driver	8-pin PDIP
MCP14628	Sync. Buck Dual	Synchronous Buck (high/low)	2.0/2/0 (3.5 low side)	5.5 (36V boot pin)	1/1 (0.5 on low side)	15–22	10/10	3300 pF in 10 ns	Continuous or discontinuous operation	8-pin SOIC, 8-pin 3 × 3 DFN
MCP14700	Sync. Buck Dual	Synchronous Buck (high/low)	2.0/2/0 (3.5 low side)	5.5 (36V boot pin)	1/1 (0.5 on low side)	15–22	10/10	3300 pF in 10 ns	Allows external dead time control	8-pin SOIC, 8-pin 3 × 3 DFN

POWER MANAGEMENT: Power MOSFETs

Part #	Vds (V)	Configuration	Polarity	Rds (on) @ 4.5V (mΩ, Max.)	Rds (on) @ 10V (mΩ, Max.)	Qg @ 4.5V (nC, Max.)	Id (A, Max. @ 25°C, Tcase)	Vgs (th) (V, Min.)	Qgd (nC, Typ.)	Rg (Ω, Typ.)	Packages
MCP87018	25	Single	N	2.2	1.9	37	100	1	13	1.5	8-pin 5 × 6 PDFN
MCP87022	25	Single	N	2.6	2.3	29	100	1	9	1.3	8-pin 5 × 6 PDFN
MCP87030	25	Single	N	4	3.5	22	100	1	6.7	1.2	8-pin 5 × 6 PDFN
MCP87050	25	Single	N	6	5	15	100	1	4.7	1.1	8-pin 5 × 6 PDFN
MCP87055	25	Single	N	7	6	14	60	1	4.5	2.1	8-pin 3.3 × 3.3 PDFN
MCP87090	25	Single	N	12	10.5	10	64	1.1	2.8	1.8	8-pin 5 × 6 PDFN, 8-pin 3.3 × 3.3 PDFN
MCP87130	25	Single	N	16.5	13.5	8	54	1.1	2.6	1.7	8-pin 5 × 6 PDFN, 8-pin 3.3 × 3.3 PDFN

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
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

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
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 V_{REG} 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

POWER MANAGEMENT: Electroluminescent Backlight Drivers							
Part #	Input Voltage Low (V)	Input Voltage High (V)	Nominal Output Voltage (V)	Switch Resistance (Max Ω)	Output Regulation	Lamp Size Per Device (Max in^2)	Packages
Single Lamp Drivers							
HV816 [3]	2.7	5.5	±180	-	Yes	42	QFN-16
HV823	2.0	9.5	±90	6.0	Yes	23	SOIC-8
HV825	1.0	1.6	±56	15	No	3.0	SOIC-8, MSOP-8
HV830	2.0	9.5	±100	4.0	Yes	25	SOIC-8
HV833	1.8	6.5	±90	4.0	Yes	12	MSOP-8
HV857L	1.8	5.0	±95	6.0	Yes	5.0	DFN-8, MSOP-8
HV857	1.8	5.0	±95	6.0	Yes	5.0	DFN-8, MSOP-8
HV859	1.8	5.0	±105	6.0	Yes	5.0	DFN-8, MSOP-8
HV860	2.5	4.5	±110	6.0	Yes	5.0	QFN-12
Dual Lamp Drivers							
HV839[1]	2.0	5.8	±90	6.0	Yes	3.5	DFN-10, MSOP-10
HV841[1]	2.0	5.8	±100	6.0	Yes	3.5	DFN-10, MSOP-10
HV843[1]	2.0	5.8	±90	10.0	Yes	3.5	DFN-10
HV845	2.0	5.8	±90	10.0	Yes	3.5	QFN-12
HV861	2.5	4.5	±90	7.0	Yes	5.0	QFN-16

Note 1: For new cell phone designs use HV801.
Note 2: Up to 3.0 in^2 in any combination.
Note 3: The boost converter switching FET is external to the device, so its resistance will vary depending upon the application circuit.

POWER MANAGEMENT: Electroluminescent Backlight Drivers (Continued)							
Part #	Input Voltage Low (V)	Input Voltage High (V)	Nominal Output Voltage (V)	Switch Resistance (Max Ω)	Output Regulation	Lamp Size Per Device (Max in²)	Packages
Tri-Lamp Drivers							
HV856[2]	1.8	6.5	±105	6.0	Yes	3.0	DFN-10
HV858[2]	1.8	6.5	±95	6.0	Yes	3.0	DFN-10, MSOP-10
16-Segment Drivers							
HV509	2.0	5.5	±200	N/A	N/A	6.5	QFN-32
HV528	1.7	5.5	±200	N/A	N/A	6.5	QFN-32
HV881[3]	1.8	5.5	±170	N/A	Yes	4.6	QFN-32
Single Inductorless Lamp Drivers							
HV850	3.0	4.2	±70	–	Yes	1.5	MSOP-8
HV852	2.4	5.0	±80	–	Yes	1.5	MSOP-8, DFN-10
HV853	3.2	5.0	±80	–	Yes	1.5	MSOP-8, DFN-10
Offline Driver							
HV809	50	200	±200	–	N/A	100	SOIC-8, SOIC-8 with heat slug, TO-220-7

Note 1: For new cell phone designs use HV801.
Note 2: Up to 3.0 in² in any combination.
Note 3: The boost converter switching FET is external to the device, so its resistance will vary depending upon the application circuit.

POWER MANAGEMENT: High-Voltage Driver/Interface ICs						
Part #	Output Channels	Direction	Logic Configuration	Output Operating Voltage (V)	Output Current Per Channel (mA)	Packages
Sink-Only Outputs: Open Drain N-Channel						
HV5122	32	CCW	Serial to parallel converter with output enable and strobe	225	100	44-Lead PQFP, 44-Lead PLCC
HV5222	32	CW	Serial to parallel converter with output enable and strobe	225	100	44-Lead PQFP, 44-Lead PLCC
HV5522	32	CCW	Serial to parallel converter with latches, polarity, and blanking	220	100	44-Lead PQFP, 44-Lead PLCC
HV5523	32	CCW	Serial to parallel converter with latches, polarity, and blanking	220	100	44-Lead QFN
HV5530	32	CCW	Serial to parallel converter with latches, polarity, and blanking	300	100	44-Lead PQFP, 44-Lead PLCC
HV5622	32	CW	Serial to parallel converter with latches, polarity, and blanking	220	100	44-Lead PQFP, 44-Lead PLCC
HV5623	32	CW	Serial to parallel converter with latches, polarity, and blanking	220	100	44-Lead QFN
HV5630	32	CW	Serial to parallel converter with latches, polarity, and blanking	300	100	44-Lead PLCC
Source-Only Outputs: Open Drain P-Channel						
HV4522	32	CCW	Serial to parallel converter with latches, polarity, and blanking	–220	–60	44-Lead PLCC
HV4622	32	CW	Serial to parallel converter with latches, polarity, and blanking	–220	–60	44-Lead PLCC
HV57009	64	B	Current controlled driver with latches and blanking, two 32-bit shift registers	–85	Controllable to –2	80-Lead PQFP

POWER MANAGEMENT: High-Voltage Driver/Interface ICs (Continued)										
Part #	Output Channels	Direction	Logic Configuration	Output Operating Voltage (V)	Output Current Per Channel (mA)	Output Structure	Clock Rate (Max MHz)	Bits	Outputs On	Packages
Source-Sink Outputs: Push-Pull										
HV3418	64	Both	Serial to parallel converter with latches, polarity, and blanking	+180	±5.0	Push-Pull	6	1	All	80-Lead PQFP
HV507	64	Both	Serial to parallel converter with latches, polarity, and blanking	+300	±1.0	Push-Pull	8	1	All	80-Lead PQFP
HV508	2	–	H-Bridge output with two output voltage level selections and polarity	+45	+225 –270	Push-Pull, H-Bridge	–	–	–	8-Lead SOIC
HV513	8	CW	Serial to parallel converter with latches, polarity, and blanking HI-Z and short circuit detect	+250	±20	Push-Pull	8	1	All	24-Lead SOW, 32-Lead QFN

POWER MANAGEMENT: High-Voltage Driver/Interface ICs (Continued)										
Part #	Output Channels	Direction	Logic Configuration	Output Operating Voltage (V)	Output Current Per Channel (mA)	Output Structure	Clock Rate (Max MHz)	Bits	Outputs On	Packages
Source-Sink Outputs: Push-Pull (Continued)										
HV514	8	CW	Serial to parallel converter with data latches, channel polarity select and blanking	+250	±20	Push-Pull	8	1	All	24-Lead SOW
HV518	32	CW	Serial to parallel converter with latches, enable and strobe	+80	+1.0 –25	Push-Pull	6	1	All	40-Lead DIP, 44-Lead PLCC
HV5308B	32	CW	Serial to parallel converter with latches and output enable	+80	±20	Push-Pull	8	1	All	44-Lead PQFP, 44-Lead PLCC
HV5408B	32	CCW	Serial to parallel converter with latches and output enable	+80	±20	Push-Pull	8	1	All	44-Lead PQFP. 44-Lead PLCC
HV574	80	Both	Serial to parallel converter with latches, polarity and blanking	+80	+15 –30	Push-Pull	25	4	All	100-Lead PQFP
HV57708	64	Both	EL driver with latches, polarity, and blanking with four 16-bit shift registers	+80	+12 –15	Push-Pull	6	4	All	80-Lead PQFP
HV57908	64	Both	EL or plasma driver w/latches, blanking, polarity and single shift register	+80	+12 –15	Push-Pull	8	1	All	80-Lead PQFP
HV5812	20	CW	Serial to parallel converter with latches, blanking and strobe	+80	+1.0 –25	Push-Pull	5	1	All	28-Lead DIP, 28-Lead PLCC, 28-Lead SOW
HV583	128	Both	Serial to parallel converter with latches, enable and blanking	+80	±20	Push-Pull	40	1	All	Die only
HV632	32	Both	Serial to parallel converter with latches, polarity and blanking	+80	±4.0	Gray Shade PWM	10	8	All	64-Lead PQFP
HV633	32	Both	Amplitude-modulated gray-shade column driver with 128 output levels	+80	±7.0	Gray Shade Level	12	7	All	64-Lead PQFP
HV66	32	CW	Serial to parallel converter with latches, polarity, and blanking HI-Z and short circuit detect	+60	±5.0	Push-Pull	5	1	All	44-Lead PQFP, 44-Lead PLCC
HV6810	10	Both	Serial to parallel converter with data latches, channel polarity select and blanking	+80	+25	Push-Pull	5	1	All	20-Lead PLCC, 20-Lead SOW
HV7022C	34	Both	Serial to parallel converter with latches, enable and strobe	+230	±70 (min)	Push-Pull	4	1	One	44-Lead PLCC
HV7224	40	CW	Serial to parallel converter with latches and output enable	+240	±70 (min)	Push-Pull	3	1	One	64-Lead PQFP
HV7620	32	Both	Serial to parallel converter with latches and output enable	+200	±50 (min)	Push-Pull	10	4	All	64-Lead PQFP
HV9308	32	CW	EL or plasma panel driver with latches and output enable	+80	+5.0 –20	Push-Pull	8	1	All	44-Lead PLCC
HV9408	32	CCW	EL or plasma panel driver with latches and output enable	+80	+5.0 –20	Push-Pull	8	1	All	44-Lead PLCC
HV9708	32	CW	EL or plasma panel driver with latches, polarity and blanking	+80	+5.0 –20	Push-Pull	8	1	All	44-Lead PLCC
HV9808	32	CCW	EL or plasma panel driver with latches, polarity and blanking	+80	+5.0 –20	Push-Pull	8	1	All	44-Lead PLCC

POWER MANAGEMENT: LED Drivers						
Part #	Application	Topology	Input Voltage (V)	Ouput Current	Dimming	Packages
Automotive (AEC-Q100 Certified) LED Drivers						
AT9917	Auto	Boost, Sepic	5.3–40	External FET	PWM/Linear	TSSOP-24
AT9919	Auto	Buck	4.5–40	External FET	PWM	DFN-8
AT9932	Auto	Boost-Buck (Ćuk)	5.3–40	External FET	PWM/Linear	TSSOP-24
AT9933	Auto	Boost-Buck (Ćuk)	9.0–75	External FET	PWM	SOIC-8
General Purpose LED Drivers						
HV9801A	AC/DC	Buck	15–450	External FET	4-Level Switch	SOIC-8, SOIC-16
HV9805	**AC/DC**	**Two-stage**	**110 ±15%, 220 ±15%**	**External FET**	**No**	**MSOP-10**
HV9861A	AC/DC, DC/DC	Buck	12–450	External FET	PWM/Linear	SOIC-8, SOIC-16
HV9910B	AC/DC, DC/DC	Buck	8.0–450	External FET	PWM/Linear	SOIC-8, SOIC-16
HV9910C	AC/DC, DC/DC	Buck	15–450	External FET	PWM/Linear	SOIC-8, SOIC-16, SOIC-8 with Heat Slug
HV9918	DC/DC	Buck	4.5–40	Integrated FET	PWM	DFN-8

POWER MANAGEMENT: LED Drivers (Continued)						
Part #	**Application**	**Topology**	**Input Voltage (V)**	**Ouput Current**	**Dimming**	**Packages**
General Purpose LED Drivers (Continued)						
HV9919B	DC/DC	Buck	4.5–40	External FET	PWM	DFN-8
HV9921	AC/DC	Buck	20–400	20 mA	No	TO-92-3, SOT-89-3
HV9922	AC/DC	Buck	20–400	50 mA	No	TO-92-3, SOT-89-3
HV9923	AC/DC	Buck	20–400	30 mA	No	TO-92-3, SOT-89-3
HV9925	AC/DC	Buck	20–400	20–50 mA	PWM	SOIC-8 with Heat Slug
HV9930	DC/DC	Hysteric	8.0–200	External FET	PWM	SOIC-8
HV9931	AC/DC	Single-switch PFC	8.0–450	External FET	PWM	SOIC-8
HV9961	AC/DC, DC/DC	Buck	8.0–450	External FET	PWM/Linear	SOIC-8, SOIC-16
HV9967B	DC/DC	Buck	8.0–60	Integrated FET	PWM/Linear	DFN-8, MSOP-8
Backlight LED Drivers						
HV9803	DC/DC	Buck	7.0–13.2	External FET	PWM/Linear	SOIC-8
HV9803B	DC/DC	Buck	7.0–16.0	External FET	PWM/Linear	SOIC-8
HV9861A	DC/DC	Buck	15–450	External FET	PWM/Linear	SOIC-8, SOIC-16
HV9911	DC/DC	Boost, Sepic, Buck-Boost	9.0–250	External FET	PWM	SOIC-16
HV9912	DC/DC	Boost, Sepic, Buck-Boost	9.0–100	External FET	PWM	SOIC-16
HV9961	DC/DC	Buck	8.0–450	External FET	PWM/Linear	SOIC-8, SOIC-16
HV9963	DC/DC	Boost, Sepic, Buck-Boost	8.0–40	External FET	PWM/Linear	SOIC-16
HV9967B	DC/DC	Buck	8.0–60	Integrated FET	PWM/Linear	DFN-8, MSOP-8
HV9980	DC/DC	Buck	100–160	70 mA	PWM/Linear	SOW-24
HV9982	DC/DC	Boost, SEPIC	10–40	External FET	PWM/Linear	QFN-40
HV9989	DC/DC	Boost, SEPIC	10–40	External FET	PWM/Linear	QFN-40

POWER MANAGEMENT: LED Drivers (Continued)							
Part #	**V_{IN} (V)**	**V_{OUT} (V)**	**Ouput Current (mA)**	**Dimming**	**Parallelable**	**Packages**	**Features**
Linear Regulators							
CL2	5.0–90	5.0–90	20	External FET	Yes	TO-252-3, TO-92-3, SOT-89-3	–
CL25	5.0–90	5.0–90	25	External FET	Yes	TO-92-3, SOT-89-3	–
CL220	5.0–220	5.0–220	20	External FET	Yes	TO-252-3, TO-220-3	–
CL320	6.5–90	4.0–90	20	PWM	Yes	SOIC-8 with Heat Slug	OTP, separate ENABLE pin
CL325	6.5–90	4.0–90	25	PWM	Yes	SOIC-8 with Heat Slug	OTP, separate ENABLE pin
CL330	6.5–90	4.0–90	30	PWM	Yes	SOIC-8 with Heat Slug	OTP, separate ENABLE pin
CL520	4.75–90	1.0–90	20	–	Yes	TO-252-3, TO-92-3	–
CL525	4.75–90	1.0–90	25	–	Yes	TO-252-3, TO-92-3	–
CL6	6.5–90	4.0–90	100	No	Yes	TO-252-3, TO-220-3	Reverse polarity protection, OTP
CL7	6.5–90	4.0–90	100	PWM	Yes	SOIC-8 with Heat Slug	Reverse polarity protection, OTP

POWER MANAGEMENT: LED Drivers (Continued)

Part #	V_{IN} (VAC)	V_{OUT} (V)	Ouput Current (Peak mA)	Dimming	Parallelable	Packages	Features
Sequential Linear LED Drivers							
CL8800	90–275	70–350	115	External Dimmer	Yes	QFN-33	6-Stage
CL8801	90–275	70–350	200	External Dimmer	Yes	QFN-33	4-Stage

POWER MANAGEMENT: MOSFETs

Part #	BV_{DSX} min (V)	$R_{DS(ON)}$ max (Ω)	$V_{GS(OFF)}$ min (V)	$V_{GS(OFF)}$ max (V)	I_{DSS} @ V_{GS} = 0V		Packages
					min (mA)	max (mA)	
Depletion Mode MOSFETs							
DN1509	90	6.0	–1.8	–3.5	300	–	SOT-23, SOT-89
DN2450	500	10	–1.5	–3.5	700	–	TO-252, SOT-89
DN2470	700	42	–1.5	–3.5	500 (typ)	–	TO-252
DN2530	300	12	–1.0	–3.5	200	–	TO-92, SOT-89
DN2535	350	25	–1.5	–3.5	150	–	TO-92, TO-220
DN2540	400	25	–1.5	–3.5	150	–	TO-92, TO-220, SOT-89
DN2625	250	3.5	–1.5	–2.1	3300	–	TO-252, SOIC-8
DN3135	350	35	–1.5	–3.5	180	–	SOT-23, SOT-89
DN3145	450	60	–1.5	–3.5	120	–	SOT-89
DN3525	250	6.0	–1.5	–3.5	300	–	SOT-89
DN3535	350	10	–1.5	–3.5	200	–	SOT-89
DN3545	450	20	–1.5	–3.5	200	–	TO-92, SOT-89
DN3765	650	8.0	–1.5	–3.5	200	–	TO-252
LND01	9.0	1.4	–0.8	–3.0	300	–	SOT-23
LND150	500	1000	–1.0	–3.0	1.0	3.0	SOT-23, TO-92, SOT-89

POWER MANAGEMENT: MOSFETs (Continued)

Part #	BV_{DSS} min (V)	$R_{DS(ON)}$ max (Ω)	$I_{D(ON)}$ min (A)	C_{ISS} max (pF)	$V_{GS(TH)}$ max (V)	Packages
N-Channel Enhancement Mode MOSFETs						
2N6660	60	3.0	1.5	50	2.0	TO-39
2N6661	90	4.0	1.5	50	2.0	TO-39
2N7000	60	5.0	0.075	60	3.0	TO-92
2N7002	60	7.5	0.5	50	2.5	SOT-23
2N7008	60	7.5	0.5	50	2.5	TO-92
LN100	1200	3000	0.003	50	1.6	LFGA-6
TN0104	40	1.8, 2.0	2.0	70	1.6	TO-92, SOT-89
TN0106	60	3.0	2.0	60	2.0	TO-92
TN0110	100	3.0	2.0	60	2.0	TO-92
TN0604	40	0.75	4.0	190	1.6	TO-92, SOW-20
TN0606	60	1.5	3.0	150	2.0	TO-92
TN0610	100	1.5	3.0	150	2.0	TO-92
TN0620	200	6.0	1.0	150	1.6	TO-92
TN0702	20	1.3	0.5	200	1.0	TO-92
TN2106	60	2.5	0.6	50	2.0	SOT-23, TO-92
TN2124	240	15	0.14	50	2.0	SOT-23

POWER MANAGEMENT: MOSFETs (Continued)						
Part #	BV_{DSS} min (V)	$R_{DS(ON)}$ max (Ω)	$I_{D(ON)}$ min (A)	C_{ISS} max (pF)	$V_{GS(TH)}$ max (V)	Packages
N-Channel Enhancement Mode MOSFETs (Continued)						
TN2130	300	25	0.25	50	2.4	SOT-23
TN2425	250	3.5	1.5	200	2.0	SOT-89
TN2435	350	6.0	1.0	200	0.8 (min)	SOT-89
TN2501	18	2.5	0.25	110	1.0	SOT-89
TN2504	40	1.0	4.0	125	1.6	SOT-89
TN2510	100	1.5	3.0	125	2.0	SOT-89
TN2524	240	6.0	1.0	125	2.0	SOT-89
TN2529	290	6.0	1.0	125	2.0	QFN-14
TN2535	350	10	1.0	125	2.0	SOT-89
TN2540	400	12	1.0	125	2.0	TO-92, SOT-89
TN2640	400	5.0	2.0	225	2.0	TO-252 D-PAK, SOIC-8, TO-92
TN5325	250	7.0	1.2	110	2.0	SOT-23, TO-92, SOT-89
TN5335	350	15	0.75	110	2.0	SOT-23, SOT-89
VN0104	40	3.0	2.0	65	2.4	TO-92
VN0106	60	3.0	2.0	65	2.4	TO-92
VN0109	90	3.0	2.0	65	2.4	TO-92
VN0300	30	1.2	1.0	190	2.5	TO-92
VN0550	500	60	0.15	55	4.0	TO-92
VN0606	60	3.0	1.5	50	2.0	TO-92
VN0808	80	4.0	1.5	50	2.0	TO-92
VN10K	60	5.0	0.75	60	2.5	TO-92
VN1206	120	6.0	1.0	125	2.0	TO-92
VN2106	60	4.0	0.6	50	2.4	TO-92
VN2110	100	4.0	0.6	50	2.4	SOT-23
VN2210	100	0.35	8.0	500	2.4	TO-39, TO-92
VN2222LL	60	7.5	0.75	60	2.5	TO-92
VN2224	240	1.25	5.0	350	3.0	TO-92
VN2406	240	6.0	1.0	125	2.0	TO-92
VN2410	240	10	1.0	125	2.0	TO-92
VN2450	500	13	0.5	150	4.0	TO-92, SOT-89
VN2460	600	20	0.25	150	4.0	TO-92, SOT-89
VN3205	50	0.3	3.0	300	2.4	TO-92, SOT-89, DIP-14
VN3515	350	15	0.15	110	1.8	TO-92
VN4012	400	12	0.15	110	1.8	TO-92

POWER MANAGEMENT: MOSFETs (Continued)						
Part #	BV_{DSS} (V)	$R_{DS(ON)}$ max (Ω)	$I_{D(ON)}$ min (A)	C_{ISS} max (pF)	$V_{GS(TH)}$ max (V)	Packages
P-Channel Enhancement Mode MOSFETs						
LP0701	–16.5	1.5	–1.25	250	–1.0	TO-92
LP1030D	–300	180 (typ.)	–0.05	10.8 (typ.)	–2.4	SOT-23
TP0604	–40	2.0	–2.0	150	–2.4	TO-92
TP0606	–60	3.5	–1.5	150	–2.4	TO-92
TP0610T	–60	10	–0.05	60	–2.4	SOT-23
TP0620	–200	12	–0.75	150	–2.4	TO-92
TP2104	–40	6.0	–0.6	60	–2.0	SOT-23, TO-92
TP2424	–240	8.0	–0.8	200	–2.4	SOT-89
TP2435	–350	15	–0.8	200	–2.4	SOT-89
TP2502	–20	2.0	–2.0	125	–2.4	SOT-89
TP2510	–100	3.5	–1.5	125	–2.4	SOT-89
TP2520	–200	12	–0.75	125	–2.0	SOT-89
TP2522	–220	12	–0.75	125	–2.4	SOT-89
TP2535	–350	25	–0.4	125	–2.4	TO-92
TP2540	–400	25	–0.4	125	–2.4	TO-92, SOT-89
TP2635	–350	15	–0.7	300	–2.0	TO-92
TP2640	–400	15	–0.7	300	–2.0	TO-92, SOIC-8
TP5322	–220	12	–0.7	110	–2.4	SOT-23, SOT-89
TP5335	–350	30	–0.4	110	–2.4	SOT-23
VP0104	–40	8.0	–0.5	60	–3.5	TO-92
VP0106	–60	8.0	–0.5	60	–3.5	TO-92
VP0109	–90	8.0	–0.5	60	–3.5	TO-92
VP0550	–500	125	–0.1	70	–4.5	TO-92
VP0808	–80	5.0	–1.1	150	–4.5	TO-92
VP2106	–60	12	–0.5	60	–3.5	TO-92
VP2110	–100	12	–0.5	60	–3.5	SOT-23
VP2206	–60	0.9	–4.0	450	–3.5	TO-92, TO-39
VP2450	–500	30	–0.2	190	–3.5	TO-92, SOT-89
VP3203	–30	0.6	–4.0	300	–3.5	TO-92, SOT-89

POWER MANAGEMENT: MOSFETs (Continued)						
Part #	Channels	BV_{DSS} min (V)	$R_{DS(ON)}$ max (Ω)	C_{ISS} typical (pF)	$V_{GS(TH)}$ max (V)	Packages
Enhancement Mode MOSFET Arrays: N-Channel						
TD9944	2	240	6.0	65	2.0	SOIC-8

POWER MANAGEMENT: MOSFETs (Continued)				
Part #	Channels	BV_{DSS} min (V)	$R_{DS(ON)}$ max (Ω)	Packages
Enhancement Mode MOSFET Arrays: P-Channel				
TP0604	4	–40	2.0	SOIC-20

POWER MANAGEMENT: MOSFETs (Continued)						
Part #	BV_{DSS}/BV_{DGS} N-Channel (V)	BV_{DSS}/BV_{DGS} P-Channel (V)	$R_{DS(ON)}$ N-Channel max (Ω)	$R_{DS(ON)}$ P-Channel max (Ω)	$V_{GS(TH)}$ max (V)	Packages
Enhancement Mode MOSFET Arrays: Complementary MOSFET Arrays						
TC1550[1]	500	–500	60	125	4.0	SOIC-8
TC2320[1]	200	–200	7.0	12	2.0	SOIC-8
TC6215[1]	150	–150	4.0	7.0	2.0	SOIC-8
TC6320[1]	200	–200	7.0	8.0	2.0	QFN-8, SOIC-8
TC7320[2]	200	–200	20	20	0.4 (typ)	LQFP-32

Note 1: N & P-channel pair
Note 2: Six N & P-channel pairs

POWER MANAGEMENT: MOSFETs (Continued)				
Part #	$BV_{(CONTINUOUS)}$ (V)	$I_{C(CONTINUOUS)}$ (A)	$I_{C(PULSED)}$ (A)	Packages
Insulated Gate Bipolar Transistors (IGBT)				
GN2470	700	1.0	3.5	TO-252

POWER MANAGEMENT: Inductorless Off-Line/Linear Regulator ICs						
Part #	V_{IN} (VAC)	Adjustable V_{OUT} (V)	Fixed V_{OUT} (V)	I_{OUT} max (mA)	Load Regulation (%/mA)	Packages
Inductorless Off-Line Regulator ICs						
SR086	80–285	9.0–50	3.3	100	0.025	8-Lead SOIC with Heat Slug
SR087	80–285	9.0–50	5.0	100	0.017	8-Lead SOIC with Heat Slug
SR10	80–285	6.0–28	6.0, 12, 24	60	–	8-Lead SOIC

POWER MANAGEMENT: Inductorless Off-Line/Linear Regulator ICs (Continued)							
Part #	$+V_{IN}$ min (V)	$+V_{IN}$ max (V)	Output Voltage (V)	Max Output Current (mA)	Typical Line Regulation (%/V)	Typical Load Regulation (%/mA)	Packages
Linear Regulator ICs							
LR8	12	450	1.2–440	10	0.003	0.15	3-Lead TO-252, 3-Lead TO-92, 3-Lead SOT-89
LR12	12	100	1.2–88	50	0.003	0.06	3-Lead TO-252, 8-Lead SOIC, 3-Lead TO-92
LR645	15	450	10	3.0	0.0001	0.5	8-Lead SOIC, 3-Lead TO-92, 3-Lead TO-220, 3-Lead SOT-89
LR745	25	450	20	2.0	0.0001	0.5	3Lead TO-92 , 3Lead SOT-89

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
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]

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
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
MCP6421	1	90 kHz	4.4	1	1	95(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Enhanced EMI Rejection	5-pin SOT-23(S), 5-pin SC-70(S)
MCP6422	2	90 kHz	4.4	1	1	95(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Enhanced EMI Rejection	8-pin SOIC, 8-pin MSOP
MCP6424	4	90 kHz	4.4	1	1	95(1)	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Enhanced EMI Rejection	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)
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

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
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	1.5	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)
MCP6472	2	2 MHz	100	1.5	1	27(1)	2.0 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN
MCP6474	4	2 MHz	100	1.5	1	27(1)	2.0 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
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
MCP6H71	1	2.7 MHz	480	4	10	28(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
MCP6H72	2	2.7 MHz	480	4	10	28(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
MCP6H74	4	2.7 MHz	480	4	10	28(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
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	1.5	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)
MCP6482	2	4 MHz	240	1.5	1	23(1)	2.2 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN
MCP6484	4	4 MHz	240	1.5	1	23(1)	2.2 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
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	1.5	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)
MCP6492	2	7.5 MHz	530	1.5	1	19(1)	2.4 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin SOIC, 8-pin MSOP, 8-pin 2 × 3 TDFN
MCP6494	4	7.5 MHz	530	1.5	1	19(1)	2.4 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin SOIC, 14-pin TSSOP
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 SC-70(U)
MCP6V12	2	80 kHz	0.011	8	0.05	1.6 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin 2 × 3 TDFN, 8-pin MSOP
MCP6V14	4	80 kHz	0.011	8	0.05	1.6 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin TSSOP
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 SC-70(U)
MCP6V32	2	300 kHz	0.034	8	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	8-pin 2 × 3 TDFN, 8-pin MSOP
MCP6V34	4	300 kHz	0.034	8	0.05	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output	14-pin TSSOP
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
MCP6V61	1	1 MHz	0.13	8	0.015	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Enhanced EMI Rejection	5-pin SOT-23(S, U), 5-pin SC-70(U)
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
MCP6V71	**1**	**2 MHz**	**0.26**	**8**	**0.015**	**1.8 to 5.5**	**–40 to +125**	**Rail-to-Rail Input/Output, Enhanced EMI Rejection**	**5-pin SOT-23 (S, U), 5-pin SC-70**

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, Eight 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, Eight 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, Eight 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, Eight 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, Eight 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, Eight 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, Eight 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	Bandwidth (kHz)	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	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
MCP6N16	1	500	1.6	17	0.06	1.8 to 5.5	–40 to +125	Rail-to-Rail Input/Output, Enable Pin, Enhanced EMI Rejection	8-pin MSOP, 8-pin 3 × 3 DFN

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

LINEAR: Comparators									
Part #	# Per Package	VREF (V)	Typical Propagation Delay (µs)	IQ Typical (µA)	VOS 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, VREF	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, VREF	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	I²C™	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	I²C	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

MIXED SIGNAL: Delta-Sigma A/D Converters (Continued)

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
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: Pipelined A/D Coverters

Part #	Resolution	Max Sample Rate (Msamples/sec)	# of Input Channels	Input Type	Interface	Supply Voltage (V)	Power Dissipation (mW)	Input Channel BW (MHz)	SNR (dB)	SFDR (dB)	Input Range (Vp-p)	Feature	Temperature Range (°C)	Packages
MCP37D31-200	16	200	1, 2, 4, 8	Differential	Serial DDR LVDS or Parallel CMOS	1.2, 1.8	490	500	74.7	90	2.98	Decimation filters, digital down-converter	–40 to +85	124-pin VTLA
MCP37231-200	16	200	1, 2, 4, 8	Differential	Serial DDR LVDS or Parallel CMOS	1.2, 1.8	490	500	74.7	90	2.98	Decimation filters	–40 to +85	124-pin VTLA
MCP37D20-200	**14**	**200**	**1**	**Differential**	**Parallel CMOS/Serial DDR LVDS**	**1.2, 1.8**	**348**	**650**	**67.8**	**96**	**1.8**	**Decimation filters, digital down-converter**	**–40 to +85**	**124-pin VTLA**
MCP37220-200	**14**	**200**	**1**	**Differential**	**Parallel CMOS/Serial DDR LVDS**	**1.2, 1.8**	**348**	**650**	**67.8**	**96**	**1.8**	**Decimation filters**	**–40 to +85**	**124-pin VTLA**
MCP37D21-200	14	200	1, 2, 4, 8	Differential	Serial DDR LVDS or Parallel CMOS	1.2, 1.8	490	500	74.2	90	2.98	Decimation filters, digital down-converter	–40 to +85	124-pin VTLA
MCP37221-200	14	200	1, 2, 4, 8	Differential	Serial DDR LVDS or Parallel CMOS	1.2, 1.8	490	500	74.2	90	2.98	Decimation filters	–40 to +85	124-pin VTLA
MCP37D10-200	**12**	**200**	**1**	**Differential**	**Parallel CMOS/Serial DDR LVDS**	**1.2, 1.8**	**338**	**650**	**67**	**96**	**1.8**	**Decimation filters, digital down-converter, noise-shaping requantizer**	**–40 to +85**	**124-pin VTLA**
MCP37210-200	**12**	**200**	**1**	**Differential**	**Parallel CMOS/Serial DDR LVDS**	**1.2, 1.8**	**338**	**650**	**67**	**96**	**1.8**	**Decimation filters, noise-shaping requantizer**	**–40 to +85**	**124-pin VTLA**
MCP37D11-200	12	200	1, 2, 4, 8	Differential	Serial DDR LVDS or Parallel CMOS	1.2, 1.8	468	500	71.3	90	2.98	Decimation filters, digital down-converter	–40 to +85	124-pin VTLA
MCP37211-200	12	200	1, 2, 4, 8	Differential	Serial DDR LVDS or Parallel CMOS	1.2, 1.8	468	500	71.3	90	2.98	Decimation filters, noise shaping requantizer	–40 to +85	124-pin VTLA

MIXED SIGNAL: Energy Measurement ICs

Part #	ADC Channels	ADC SINAD	Dynamic Range	Gain Selection	Output Type	Typical Voltage Reference Drift (ppm/°C)	Analog Voltage Range (V)	Digital Voltage Range (V)	Typical Accuracy	Temperature Range (°C)	Features	Packages
MCP3918	1	93.5 dB	10000:1	up to 32	SPI/2-wire serial	9	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate, 16-bit CRC, Register map lock, 2-wire interface	20-pin SSOP, 20-pin 4 × 4 QFN
MCP3910	2	–	10000:1	up to 32	SPI/2-wire serial	9	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	Phase correction, Programmable data rate, 16-bit CRC, Register map lock, 2-wire interface	20-pin SSOP, 20-pin 4 × 4 QFN
MCP3911	2	94.5 dB	10000:1(1)	up to 32	SPI	7	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate	20-pin SSOP, 20-pin 4 × 4 QFN
MCP3901	2	91 dB	–(1)	up to 32	SPI	12	4.5 to 5.5	2.7 to 5.5	0.1%	–40 to +125	AFE with phase correction, Programmable data rate	20-pin SSOP, 20-pin 4 × 4 QFN
MCP3913	6	94.5 dB	10000:1	up to 32	SPI	9	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate, 16-bit CRC, Register map lock	28-pin SSOP, 40-pin 5 × 5 µQFN
MCP3903	6	91 dB	–(1)	up to 32	SPI	5	4.5 to 5.5	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate	28-pin SSOP
MCP3914	8	94.5 dB	10000:1	up to 32	SPI	9	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate, 16-bit CRC, Register map lock	40-pin 5 × 5 µQFN
MCP3912	4	93.5 dB	10000:1	up to 32	SPI	9	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate, 16-bit CRC, Register map lock	28-pin SSOP, 28-pin 5 × 5 QFN
MCP3919	3	93.5 dB	10000:1	up to 32	SPI/2-wire serial	9	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	AFE with phase correction, Programmable data rate, 16-bit CRC, Register map lock, 2-wire interface	28-pin SSOP, 28-pin 5 × 5 QFN
MCP3905A	2	–	500:1	up to 16	Active power pulse	15	4.5 to 5.5	4.5 to 5.5	0.1%	–40 to +125	Active power calculation	24-pin SSOP
MCP3909	2	–	1000:1	up to 16	Active power pulse/SPI	15	4.5 to 5.5	4.5 to 5.5	0.1%	–40 to +125	Active power calculation	24-pin SSOP
MCP39F501	3	–	4000:1	up to 32	UART	10	2.7 to 3.6	2.7 to 3.6	0.1%	–40 to +125	Power monitoring IC with active, reactive and apparent power, PF, RMS current/voltage, Frequency, event notifications, EEPROM	28-pin 5 × 5 QFN
MCP39F511	**3**	**–**	**4000:1**	**up to 32**	**UART**	**10**	**2.7 to 3.6**	**2.7 to 3.6**	**0.1%**	**–40 to +125**	**Power monitoring IC with active, reactive and apparent power, active and reactive energy, PF, RMS current/voltage, frequency, event notifications, EEPROM, zero crossing detection, PWM output**	**28-pin 5 × 5 QFN**

Note 1: Not tested for this device

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 #	# of Taps	Memory	# 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 Vss	6-pin SOT-23
MCP4014	64	Volatile	1	Up/Down	2.1, 5, 10, 50	0.5	0.5	–40 to +125	Rheostat to Vss	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
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
MCP41HV31	128	Volatile	1	SPI	5, 10, 50, 100	0.5	0.125	–40 to +125	7-bit Volatile digital potentiometer with specified operation from 10V to 36V and SPI interface	14-pin TSSOP, 5 × 5 QFN
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
MCP41HV51	256	Volatile	1	SPI	5, 10, 50, 100	1	0.25	–40 to +125	8-bit Volatile digital potentiomer with specified operation from 10V to 36V and SPI interface.	14-pin TSSOP, 5 × 5 QFN
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

MIXED SIGNAL: Digital Potentiometers (Continued)

Part #	# of Taps	Memory	# Per Package	Interface	Resistance (kOhms)	INL (Max)	DNL (Max)	Temperature Range (°C)	Comments	Packages
MCP45HV31	128	Volatile	1	I²C	5, 10, 50, 100	0.5	0.125	–40 to +125	7-bit Volatile digital potentiometer with specified operation from 10V to 36V and I²C interface	14-pin TSSOP, 5 × 5 DFN
MCP45HV51	256	Volatile	1	I²C	5, 10, 50, 100	1	0.25	–40 to +125	8-bit Volatile digital potentiometer with specified operation from 10V to 36V and I²C interface	14-pin TSSOP, 5 × 5 DFN
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
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
MCP47FEB01	**8**	**1**	**I2C**	**Int/Vdd/Ext**	**6**	**0.25**	**0.65**	**130**	**–40 to +125**	**8-pin TSSOP**
MCP47FEB02	**8**	**2**	**I2C**	**Int/Vdd/Ext**	**6**	**0.25**	**0.65**	**260**	**–40 to +125**	**8-pin TSSOP**
MCP47FEB11	**10**	**1**	**I2C**	**Int/Vdd/Ext**	**6**	**0.5**	**0.65**	**130**	**–40 to +125**	**8-pin TSSOP**
MCP47FEB12	**10**	**2**	**I2C**	**Int/Vdd/Ext**	**6**	**0.5**	**0.65**	**260**	**–40 to +125**	**8-pin TSSOP**
MCP47FEB21	**12**	**1**	**I2C**	**Int/Vdd/Ext**	**6**	**1**	**0.65**	**130**	**–40 to +125**	**8-pin TSSOP**
MCP47FEB22	**12**	**2**	**I2C**	**Int/Vdd/Ext**	**6**	**1**	**0.65**	**260**	**–40 to +125**	**8-pin TSSOP**
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, three transmit buffers, two 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, two 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, two 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, four 10-bit ADCs, two 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, four 10-bit ADCs, two 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
MCP2561	4.5 to 5.5	–40 to +150	N/A	N/A	N/A	N/A	N/A	HS CAN Transceiver; 1 Mbps, ISO11898-5, meets automotive EMC and CAN conformance requirements, MCP2561 = SPLIT Option for common mode stabilization	8-pin PDIP, 8-pin SOIC, 8-pin 3 × 3 DFN
MCP2562	4.5 to 5.5	–40 to +150	N/A	N/A	N/A	N/A	N/A	HS CAN Transceiver; 1 Mbps, ISO11898-5, meets automotive EMC and CAN conformance requirements, MCP2562 = VIO Option for digital I/O level shifting from 1.8V to 5.5V	8-pin PDIP, 8-pin SOIC, 8-pin 3 × 3 DFN
MCP25625	2.7 to 5.5	–40 to +125	3	2	6	2	1	Integrated High-Speed CAN Transceiver and CAN 2.0B Controller	28-pin SSOP, 28-pin 6 × 6 QFN
MCP2561FD	4.5 to 5.5	–40 to +150	N/A	N/A	N/A	N/A	N/A	CAN Flexible Data Rate Transceiver	8-pin PDIP, 8-pin SOIC, 8-pin 3 × 3 DFN
MCP2562FD	4.5 to 5.5	–40 to +150	N/A	N/A	N/A	N/A	N/A	CAN Flexible Data Rate Transceiver	8-pin PDIP, 8-pin SOIC, 8-pin 3 × 3 DFN

Note 1: Not recommended for new designs.

INTERFACE: LIN Transceiver Products

Part #	Description	VREG Output Voltage (V)	Operating Temp. Range (°C)	VREG Output Current (mA)	VCC 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	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	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 VREG	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18	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 VREG, RESET pin	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18	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 VREG	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18	20 Kbaud	Revision 2.0	8-pin PDIP, 8-pin SOIC, 8-pin 4 × 4 DFN
MCP2050	LIN Transceiver with integrated VREG, WWDT	5.0 ± 3%, 3.3 ± 3%	–40 to +125	70	6 to 18	20 Kbaud	Revision 1.3, 2.0, 2.1, SAE J2602	14-pin PDIP, 14-pin SOIC, 20-pin QFN

INTERFACE: Ethernet Products

Part #	Description	Interface (Upstream)	Wake-On-LAN	EEE	Industrial Version	Packages
Ethernet Controllers						
ENC28J60	10Base-T Ethernet Controller	SPI	–	–	✓	28-pin SPDIP, SSOP, SOIC, QFN
ENC624J600	10Base-T/100Base-TX Ethernet Controller with Security	SPI/Parallel	–	–	✓	24-pin TQFN, QFN, 64-pin TQFN
LAN9217	10Base-T/100Base-TX Ethernet Controller with 16-bit/MII interface	16-bit Host Bus/MII	–	–	–	100-pin TQFP
LAN9218	10Base-T/100Base-TX Ethernet Controller with 32-bit interface	32-bit Host Bus	–	–	✓	100-pin TQFP
LAN9220	10Base-T/100Base-TX Ethernet Controller with 16-bit interface	16-bit Host Bus	–	–	–	56-pin QFN
LAN9221	10Base-T/100Base-TX Ethernet Controller with 16-bit interface	16-bit Host Bus	–	–	✓	56-pin QFN
LAN9420	10Base-T/100Base-TX Ethernet Controller with 32-bit PCI interface	32-bit PCI 3.0	–	–	✓	128-pin VTQFP
LAN89218	TrueAuto, 10Base-T/100Base-TX Ethernet Controller with 32-bit interface	32-bit Host Bus	–	–	Automotive	100-pin TQFP

*Note: All products above are supported with 3.3V operating voltage

INTERFACE: Ethernet Products

Part #	Description	Interface (Upstream)	Wake-On-LAN	EEE	Industrial Version	Packages
Ethernet Switches						
LAN9303	10/100 3-port Managed Ethernet Switches	MII/RMII/Turbo MII	–	–	✓	56-pin QFN
LAN9303M	10/100 3-port Managed Ethernet Switches	MII/RMII/Turbo MII	–	–	✓	72-pin QFN
LAN9311	10/100 2-port Managed Ethernet Switches with Local Bus interface	16-bit Host Bus	–	–	✓	128-pin VTQFP, XVTQFP
LAN9312	10/100 2-port Managed Ethernet Switches with Local Bus interface	32-bit Host Bus	–	–	–	128-pin VTQFP, XVTQFP
LAN9313	10/100 3-port Managed Ethernet Switches	MII/RMII/Turbo MII	–	–	✓	128-pin VTQFP, XVTQFP
LAN89303	TrueAuto, 10/100 3-port Managed Ethernet Switches	MII/RMII/Turbo MII	–	–	Automotive	56-pin QFN
USB to Ethernet						
LAN9500A	USB 2.0 to 10/100 Ethernet Controllers	USB 2.0	–	–	✓	56-pin QFN
LAN9730	USB HSIC 2.0 to 10/100 Ethernet Controllers	USB 2.0 (HSIC), MII	–	–	✓	56-pin QFN
LAN7500	USB 2.0 to 10/100/1000 Ethernet Controllers	USB2.0	–	–	✓	56-pin QFN
LAN9512	USB 2.0 to 10/100 Ethernet Controllers with 2-port USB 2.0 Hub	USB2.0	–	–	✓	64-pin QFN
LAN9513	USB 2.0 to 10/100 Ethernet Controllers with 3-port USB 2.0 Hub	USB2.0	–	–	✓	64-pin QFN
LAN9514	USB 2.0 to 10/100 Ethernet Controllers with 4-port USB 2.0 Hub	USB2.0	–	–	✓	64-pin QFN
LAN89530	TrueAuto, USB 2.0 to 10/100 Ethernet Controllers	USB2.0	–	–	Automotive	56-pin QFN
Ethernet Transceivers						
LAN8710A	Small-Footprint, Low Power Consumption, Full-Featured 10/100 Ethernet Transceivers	MII/RMII	–	–	✓	32-pin QFN
LAN8720A	Small-Footprint, Low Power Consumption, Full-Featured 10/100 Ethernet Transceivers	RMII	–	–	✓	24-pin QFN
LAN8740A	Small-Footprint, 10/100 PHY Family Featuring Energy Efficient Ethernet and Wake-On-LAN	MII/RMII	✓	✓	✓	32-pin QFN
LAN8741A	Small-Footprint, 10/100 PHY Family Featuring Energy Efficient Ethernet	MII/RMII	–	✓	✓	32-pin QFN
LAN8742A	Small-Footprint, 10/100 PHY Family Featuring Wake-On-LAN	RMII	✓	–	✓	24-pin QFN
LAN8810	GMII 10/100/1000 Ethernet Transceiver with HP Auto-MDIX Support	GMII	–	–	✓	72-pin QFN
LAN8820	RGMII 10/100/1000 Ethernet Transciever with HP Auto-MDIX Support	RGMII	–	–	✓	56-pin QFN
LAN88730	TrueAuto, Small Footprint, Low Power Consumption, Full-Featured 10/100 Ethernet Transceivers	MII/RMII	–	–	Automotive	32-pin QFN

*Note: All products above are supported with 3.3V operating voltage

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: 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: 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	Three 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	Two 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	One 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	Three 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	Three 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	Three 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	One 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	Two HW interrupts, 25 mA source/sink per I/O	28-pin SOIC, 28-pin SDIP

INTERFACE: IEEE 802.11™ Modules

Part #	Pin Count	Antenna	Frequency Range (GHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	Tx Power Consumption (mA)	Rx Power Consumption (mA)	Clock (MHz)	Sleep	MAC	MAC Features	Protocols	Encryption	Interface	Packages
MRF24WB0MA	36	PCB	2.412–2.484	–91	+10	Yes	154	85	25	0.1 µA(1)	Yes	802.11b, long range, low power	Wi-Fi® Connection Manager, Announce, DNS, DDNS, DHCP, FTP, HTTP, NBNS, SNMP, SNTP, SSL, TCP, UDP, ZeroConf(2)	WPA2-PSK, WPA-PSK, WEP	4-wire SPI	36/Module
MRF24WB0MB	36	U.FL	2.412–2.484	–91	+10	Yes	154	85	25	0.1 µA(1)	Yes	802.11b, long range, low power	Wi-Fi Connection Manager, Announce, DNS, DDNS, DHCP, FTP, HTTP, NBNS, SNMP, SNTP, SSL, TCP, UDP, ZeroConf(2)	WPA2-PSK, WPA-PSK, WEP	4-wire SPI	36/Module
MRF24WG0MA	36	PCB	2.412–2.484	–95	+18	Yes	240	156	25	0.1 mA(1)	Yes	802.11b/g, Wi-Fi Direct, SoftAP, WPS	Wi-Fi Connection Manager, Announce, DNS, DDNS, DHCP, FTP, HTTP, NBNS, SNMP, SNTP, SSL, TCP, UDP, ZeroConf(2)	WPA2-PSK, WPA-PSK, WEP, WPA2-Enterprise	4-wire SPI	36/Module
MRF24WG0MB	36	U.FL	2.412–2.484	–95	+18	Yes	240	156	25	0.1 mA(1)	Yes	802.11b/g, Wi-Fi Direct, SoftAP, WPS	Wi-Fi Connection Manager, Announce, DNS, DDNS, DHCP, FTP, HTTP, NBNS, SNMP, SNTP, SSL, TCP, UDP, ZeroConf(2)	WPA2-PSK, WPA-PSK, WEP, WPA2-Enterprise	4-wire SPI	36/Module
RN171	49	RF PAD	2.412–2.484	–83	0 to +12	Yes	190 (+12 dBm)	38	44	4 µA	Yes	802.11b/g, SoftAP, WPS, Webscan	DHCP, DNS, ARP, ICMP, FTP client, HTTP client, TCP, UDP	WEP, WPA, WPA2, EAP	UART	49/Module
RN131	44	Chip, U.FL	2.412–2.484	–85	+18	Yes	210 (+18 dBm)	40	44	4 µA	Yes	802.11b/g, SoftAP, WPS, Webscan	DHCP, DNS, ARP, ICMP, FTP client, HTTP client, TCP, UDP	WEP, WPA, WPA2, EAP	UART	44/Module
RN171XV	49	Wire, U.FL, SMA	2.412–2.484	–83	0 to +12	Yes	190 (+12 dBm)	38	44	4 µA	Yes	802.11b/g, SoftAP, WPS, Webscan	DHCP, DNS, ARP, ICMP, FTP client, HTTP client, TCP, UDP	WEP, WPA, WPA2, EAP	UART	2 × 10 (2 mm) Through hole module

Note 1: Indicates “off” current
Note 2: Supported in the provided stack

INTERFACE: Bluetooth® Modules

Part #	Module Type	Pin Count	Frequency Range (GHz)	Sensitivity (dBm)	Power Output (dBm)	Power Consumption	Sleep	MAC	Profiles	Interface	Packages
RN4020	Bluetooth Low Energy Module	24	2.412–2.484	–92.5	+7 (avg)	Idle < 1.5 mA, Tx/Rx active 16 mA at 0 dBm	Dormant < 700 nA, Deep Sleep < 5.0 µA	Yes	GAP, GATT, SM, L2CAP, Integrated Public Profiles	UART, PIO, AIO, SPI	24/Module
RN41	Data	35	2.412–2.484	–80	15	Standby/Idle 25 mA, Connected (normal mode) 30 mA, Connected (low power Sniff) 8 mA	Standby/Idle (Deep sleep enabled) 250 µA	Yes	SPP, DUN, HID, iAP, HCI, RFCOMM, L2CAP, SDP	UART, USB, Bluetooth	35/Module
RN42	Data	35	2.412–2.484	–80	4	Standby/Idle 25 mA, Connected (normal mode) 3 mA, Connected (low power Sniff) 8 mA	Standby/Idle (Deep sleep enabled) 26 µA	Yes	SPP, DUN, HID, iAP, HCI, RFCOMM, L2CAP, SDP	UART, USB, Bluetooth	35/Module
RN52	Audio	50	2.412–2.484	–85	4	Idle 12 mA, Connected A2DP 26 mA, HFP/HSP 23.5 mA	N/A	Yes	A2DP, AVRCP, HFP, HSP, SPP, iAP	UART, USB, Bluetooth, GPIO	50/Module
RN41XV	Data	35	2.412–2.484	–80	15	Standby/Idle 25 mA, Connected (normal mode) 30 mA, Connected (low power Sniff) 8 mA	Standby/Idle (Deep sleep enabled) 250 µA	Yes	SPP, DUN, HID, iAP, HCI, RFCOMM, L2CAP, SDP	UART, USB, Bluetooth	2 × 10 (2 mm) Through hole module
RN42XV	Data	35	2.412–2.484	–80	4	Standby/Idle 25 mA, Connected (normal mode) 3 mA, Connected (low power Sniff) 8 mA	Standby/Idle (Deep sleep enabled) 26 µA	Yes	SPP, DUN, HID, iAP, HCI, RFCOMM, L2CAP, SDP	UART, USB, Bluetooth	2 × 10 (2 mm) Through hole module
BM77	Dual-Mode	33	2.401–2.480	–80 (Classic) –92 (LE)	2	Idle 1.2 mA, Deep power down 0.35 mA, Connected (transfer data) 18.6 mA (BTLE), Idle 2.5 mA, Connected (transfer data) 23 mA (Classic)	N/A	Yes	GAP, SDP, SPP, GATT	UART	33/Module

INTERFACE: IEEE 802.15.4 ZigBee® RF Transceiver Products

Part #	Pin Count	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	Packages
MRF24J40	40	2.405 to 2.48	–95	0	Yes	23	19	20	2 µA	Yes	CSMA-CA	AES128	4-wire SPI	40-pin QFN
MRF24J40MA	12	2.405 to 2.48	–94	0	Yes	23	19	20	2 µA	Yes	CSMA-CA	AES128	4-wire SPI	12/Module
MRF24J40MC	12	2.405 to 2.48	–108	+19	Yes	120	25	20	12 µA	Yes	CSMA-CA	AES128	4-wire SPI	12/Module
MRF24J40MD	12	2.405 to 2.48	–102	+20	Yes	130	25	20	5 µA	Yes	CSMA-CA	AES128	4-wire SPI	12/Module
MRF24XA	32	2.405 to 2.48	–103	0	Yes	25	13.5	16	0.04 µA	Yes	CSMA-CA	AES128	4-wire SPI	32-pin QFN

INTERFACE: Sub-GHz Transceivers

Part #	Pin Count	Frequency Range (MHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	Tx Power Consumption (mA)	Rx Power Consumption (mA)	Clock (MHz)	Sleep	Interface	Packages
MRF49XA	16	433/868/915	–110	+7	Yes	15 mA @ 0 dBm	11	10 MHz	0.3 µA	4-wire SPI	16-pin TSSOP
MRF89XA	32	868/915/950	–113	+12.5	Yes	25 mA @ +10 dBm	3	12.8 MHz	0.1 µA	4-wire SPI	32-pin TQFN
MRF89XAM8A	12	868	–113	+12.5	Yes	25 mA @ +10 dBm	3	12.8 MHz	0.1 µA	4-wire SPI	12/Module
MRF89XAM9A	12	915	–113	+12.5	Yes	25 mA @ +10 dBm	3	12.8 MHz	0.1 µA	4-wire SPI	12/Module

INTERFACE: Sub-GHz Receivers

Part #	Pin Count	Frequency Range (MHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	Tx Power Consumption (mA)	Rx Power Consumption (mA)	Clock (MHz)	Sleep	Interface	Packages
MRF39RA	**24**	**433/868/915**	**–120**	**+6**	**Yes**	**N/A**	**16**	**N/A**	**100**	**4-wire SPI**	**24-pin QFN**

INTERFACE: Sub-GHz Transmitters

Part #	Pin Count	Frequency Range (MHz)	Program Memory (Bytes)	EEPROM (bytes)	RAM (bytes)	Digital Timer	Watch Dog Timer	Max Speed (MHz)	ICSP	Modulation	Data Rate (kbps)	Output Power (dBm)	Operating Voltage (V)	Packages
PIC12F529T39A	6	310–928	2.3K	64	201	1	1	8	Yes	OOK/FSK	100	10	2.0–3.7	14-pin TSSOP
PIC12LF1840T39A	6	310–928	7.1K	256	256	2	1	32	Yes	OOK/FSK	100	10	1.8–3.6	14-pin TSSOP
PIC16LF1824T39A	20	310–928	4K	256	256	1	1	32	Yes	OOK/FSK	100	10	1.8–3.6	20-pin TSSOP
rfPIC12F675F	6	380–450	1.7K	128	64	1	1	20	Yes	ASK/FSK	40	10	2.0–5.5	20-pin SSOP
rfPIC12F675H	6	850–930	1.7K	128	64	1	1	20	Yes	ASK/FSK	40	10	2.0–5.5	20-pin SSOP
rfPIC12F675K	6	290–350	1.7K	128	64	1	1	20	Yes	ASK/FSK	40	10	2.0–5.5	20-pin SSOP

INTERFACE: USB Bridge Devices

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
MCP2221	Full-Speed USB (12 Mb/s), Low-Speed USB (1.5 Mb/s)	Yes	Yes	I²C™	64	4	3.0 to 5.5	14-pin PDIP, 14-pin SOIC, 14-pin TSSOP, 16-pin QFN

INTERFACE: USB Products

Part #	Description	Processor Interface	# of Downstream Ports	Card Formats	Industrial Version	Packages
USB Hub Controllers						
USB2412	2-Port USB 2.0 Hi-Speed Hub	USB 2.0	2	–	–	28-pin QFN
USB2422	Small-footprint, 2-Port value hub, commercial and industrial temperature with USB battery charging 1.1	USB 2.0	2	–	✓	24-pin QFN
USB251XB	USB 2.0 Hi-Speed Hub with Battery Charger Detection	USB 2.0	2, 3, 4, 7 port options	–	Automotive	36 or 64-pin QFN
USB2524	4-Port USB 2.0 Hi-Speed Multi-Switch Hub	USB 2.0 × 2	4	–	–	56-pin QFN
USB3503A	3-Port USB 2.0 Hi-Speed HSIC Hub for Mobile Applications	HSIC	3	–	✓	25-ball WLCSP
USB3803B	3-Port USB 2.0 Hi-Speed Hub for Mobile Applications	USB 2.0	3	–	✓	25-ball WLCSP
USB553XB	USB 3.0 SuperSpeed Hub with Battery Charger Detection	USB 3.0	4, 7 port options	–	✓	64 or 72-pin QFN
USB3X13	3-Port USB 2.0 Hi-Speed Controller Hub for Mobile Applications	USB 2.0 or HSIC	3 (USB 2.0 ×2/ HSIC ×1)	–	✓	30-ball WLCSP
USB253X	USB 2.0 Hi-Speed Controller Hub with Battery Charger Detection	USB 2.0	2, 3, 4 port options	–	✓	36-pin QFN
USB46X4	USB 2.0 Hi-Speed Controller Hub with USB and HSIC Interfaces	USB 2.0 or HSIC	4 (USB 2.0 ×4 or USB 2.0 ×2/HSIC ×2)	–	✓	48-pin QFN

INTERFACE: USB Products

Part #	Description	Processor Interface	# of Downstream Ports	Card Formats	Industrial Version	Packages
USB Transceivers/Switches						
USB333X	Mobile Hi-Speed USB 2.0 Transceiver with Multi-Frequency Support	ULPI	–	–	✓	25-ball WLCSP
USB3340	Hi-Speed USB 2.0 Transceiver with Multi-Frequency Support	ULPI	–	–	Automotive	24 or 32-pin QFN
USB3320	Hi-Speed USB 2.0 Transceiver with Multi-Frequency Support	ULPI	–	–	Automotive	32-pin QFN
USB3300	Hi-Speed USB 2.0 Transceiver (24 Mhz reference clock support)	ULPI	–	–	✓	32-pin QFN
USB3740B	Hi-Speed USB 2.0 Switch with Extremely Low Power	USB 2.0	–	–	✓	10-pin QFN
USB375XA-X	Hi-Speed USB 2.0 Port Protection with Switch and Charger Detection	USB 2.0	–	–	✓	16-pin QFN
USB Flash Media Controllers						
USB224X	Hi-Speed USB 2.0 Multi-Format Flash Media Controller	USB 2.0	–	SD™/MMC/eMMC™/MS/xD	✓	36-pin QFN
USB225X	Hi-Speed USB 2.0 Multi-Format Flash Media Controller	USB 2.0	–	SD/MMC/eMMC/MS/xD/CF	✓	128-pin VTQFP
USB264X	Hi-Speed USB 2.0 Multi-Format Flash Media Hub Controller	USB 2.0	2	SD/MMC/eMMC/MS/xD	Automotive	48-pin QFN
USB2660	Hi-Speed USB 2.0 Multi-Format Flash Media Hub Controller	USB 2.0	2	SD/MMC/eMMC/MS/xD (×2)	✓	64-pin QFN
USB4640	Hi-Speed USB 2.0 Multi-Format Flash Media HSIC Hub Controller	HSIC	2	SD/MMC/eMMC/MS/xD	✓	48-pin QFN
USB Security						
SEC1110	Smart Card Controller	USB 2.0	–	–	✓	16-pin QFN
SEC1210	Smart Card Controller with Multi-Interface Support	USB 2.0	–	–	✓	24 or 48-pin QFN

INTERFACE: USB Products

Part #	Description	USB Port Power Switch (55 mW)	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
USB Power and Charging											
UCS1001-1	USB Port Power Controller with Charger Emulation	1	1	9	Up to 2.4A	✓	–	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS1001-2	USB Port Power Controller with Charger Emulation	1	1	9	Up to 2.4A	–	✓	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS1001-3	USB Port Power Controller with Charger Emulation	1	1	9	Up to 2.4A	✓	–	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS1001-4	USB Port Power Controller with Charger Emulation	1	1	9	Up to 2.4A	–	✓	–	–	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 2.4A	✓	–	✓	✓	I²C™/SMBus	20-pin 4 × 4 QFN
UCS1002-2	Programmable USB Port Power Controller with Charger Emulation	1	1	9 + 1 programmable	Up to 2.4A	✓	–	✓	✓	I²C/SMBus	20-pin 4 × 4 QFN
UCS1003-1	Programmable USB Port Power Controller with Charger Emulation	1	1	9 + 1 programmable	Up to 3A	–	✓	✓	✓	I²C/SMBus	20-pin 4 × 4 QFN
UCS1003-2	Programmable USB Port Power Controller with Charger Emulation	1	1	9	Up to 3A	✓	–	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS1003-3	Programmable USB Port Power Controller with Charger Emulation	1	1	9	Up to 3A	–	✓	–	–	Discrete I/O	20-pin 4 × 4 QFN
UCS81003	Programmable USB Port Power Controller Automotive	1	1	9 + 1 programmable	Up to 3A	✓	✓	✓	✓	I²C/SMBus	28-pin 5 × 5 QFN

INTERFACE: Real-Time Clock/Calendar (RTCC)

Bus	Product	Pins	Timing Features				Memory[1]			Power		Unique Features[2]	5 ku Pricing†	Packages
			Digital Trimming (Adj./Range)	Alarm Settings	WDT	Outputs	SRAM (Bytes)	EERPOM (Kbits)	Protected EEPROM (bits)	Min V_{CC}	Min I_{BAT}			
I²C™	**MCP7940M**	**8**	**±127 ppm**	**1 sec.**	**–**	**$\overline{IRQ}$/CLK**	**64**	**0**	**0**	**1.8**	**–**	**–**	**$0.46**	**SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY), PDIP (P)**
	MCP7940N	**8**	**±127 ppm**	**1 sec.**	**–**	**$\overline{IRQ}$/CLK**	**64**	**0**	**0**	**1.8**	**1.3**	**Power Fail Timestamp**	**$0.59**	**SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY), PDIP (P)**
	MCP7940X	**8**	**±127 ppm**	**1 sec.**	**–**	**$\overline{IRQ}$/CLK**	**64**	**0**	**64**	**1.8**	**1.3**	**Power Fail Timestamp**	**$0.66**	**SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY)**
	MCP7941X	**8**	**±127 ppm**	**1 sec.**	**–**	**$\overline{IRQ}$/CLK**	**64**	**1**	**64**	**1.8**	**1.3**	**Power Fail Timestamp**	**$0.72**	**SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY)**
SPI	**MCP7951X**	**10**	**±255 ppm**	**0.01 sec.**	**–**	**$\overline{IRQ}$/CLK**	**64**	**1**	**128**	**1.8**	**1.3**	**Power Fail Timestamp**	**$0.90**	**SOIC (SL), TSSOP (ST)**
	MCP7952X	**10**	**±255 ppm**	**0.01 sec.**	**–**	**$\overline{IRQ}$/CLK**	**64**	**2**	**128**	**1.8**	**1.3**	**Power Fail Timestamp**	**$0.96**	**MSOP (MS), TDFN (MN)**
	MCP795W1X	**14**	**±255 ppm**	**0.01 sec.**	**ü**	**1. CLK 2. $\overline{IRQ}$ 3. WDT RST**	**64**	**1**	**128**	**1.8**	**1.3**	**Power Fail Timestamp, Event Detects (× 2)**	**$1.22**	**SOIC (SL), TSSOP (ST)**
	MCP795W2X	**14**	**±255 ppm**	**0.01 sec.**	**ü**	**1. CLK 2. $\overline{IRQ}$ 3. WDT RST**	**64**	**2**	**128**	**1.8**	**1.3**	**Power Fail Timestamp, Event Detects (× 2)**	**$1.28**	**SOIC (SL), TSSOP (ST)**

Note 1: All part numbers with an "X" have three protected EEPROM programming options: [0 = Blank ID], [1 = EUI-48™ MAC Address], [2 =EUI-64™ MAC Address]
2: The Power Fail Timestamp in all RTCCs occur at Battery Switchover.

SAFETY AND SECURITY

SAFETY AND 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 AND 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 AND 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
RE46C311	Yes	Op Amp	Ionization Smoke Detector Front End	–10 to +60	8-pin PDIP, 8-pin SOIC
RE46C312	Yes	Op Amp	Ionization Smoke Detector Front End	–10 to +60	8-pin PDIP, 8-pin SOIC

SAFETY AND SECURITY: CO Detectors

Part #	Operating Voltage (Vdc)	Voltage Regulator (Vdc)	LED Driver	Horn Driver	Interconnect	Low Battery Detection	Brown Out	Boost Regulator	Op Amp Vos Max (µV)	Op Amp Ib Max (pA)	Op Amp GBWP (kHz)	Op Amp Aol (dB)	Op Amp Slew Rate (V/µS)	Op Amp Unity Gain Stable	Op Amp CMRR Min (dB)	Op Amp Rail-to-Rail	Operating Temp. Range (°C)
RE46C800	2 to 12	3.3	Yes	Yes	Yes	Yes	Yes	Yes	1000	200	10	115	0.003	Yes	80	In/Out	–10 to +60

SAFETY AND 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	–	–	–	–	–	–10 to +60	8-pin PDIP, 8-pin SOIC
RE46C318	2 to 5	–	–	–	–	–	–10 to +60	8-pin PDIP, 8-pin SOIC

Featured Analog Development Tools

For a complete list of development tools, please visit www.microchip.com/development tools.

Thermal Management Products

RTD Reference Design Board (TMPSNSRD-RTD2)

The RTD Reference Design demonstrates how to instrument Resistive Temperature Detector (RTD) and accurately measure temperature. This solution uses the MCP3551 22-bit Analog-to-Digital Converter (ADC) to measure voltage across the RTD. The ADC and the RTD are referenced using an on-board reference voltage and the ADC inputs are directly connected to the RTD terminals.

Thermocouple Reference Design (TMPSNSRD-TCPL1)

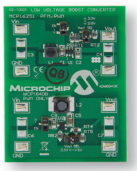
This reference design demonstrates how to instrument a thermocouple and accurately sense temperature over the entire thermocouple measurement range. This solution uses the MCP3421 18-bit Analog-to-Digital Converter (ADC) to measure voltage across the thermocouple.

Power Management Products

MCP19111 Evaluation Board (ADM00397)

The MCP19111 is a digitally-enhanced PWM controller. It combines a pure-analog PWM controller with a supervisory microcontroller making it a fast, cost-effective and configurable power conversion solution. The MCP19111 is ideal for standard power conversion, LED drivers and battery charging applications. This board demonstrates how the MCP19111 device operates in a synchronous buck topology over a wide input voltage and load range.

MCP16251 and MCP1640B Synchronous Boost Converters Evaluation Board (ADM00458)



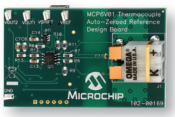
This board demonstrates the MCP16251/ MCP1640B in two boost-converter applications with multiple output voltages and was developed to help reduce product design cycle time. Three common output voltages can be selected: 2.0V, 3.3V and 5.0V.

MCP8025 TQFP BLDC Motor Driver Evaluation Board (ADM00600)

This demonstrates our MCP8025 3-phase BLDC motor gate driver with power module, used in a BLDC motor drive application. When used in conjunction with a microcontroller, the MCP8025 will provide the necessary drive signals for a 3-phase BLDC motor. The MCP8025 contains the high-side and low-side drivers for external N-channel MOSFETs. A dsPIC33EP256MC504 processor is used to supply the PWM inputs to the MCP8025 as well as handle the high-speed analog-to-digital conversion required for 50 kHz PWM operation. The MCP8025 UART interface is used to configure the MCP8025 device and to send fault information to the dsPIC® DSC.

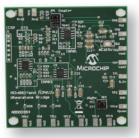
Linear Products

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



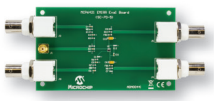
The MCP6V01 design board demonstrates how to use a different amplifier system to measure Electromotive Force (EMF) voltage at the cold junction of thermocouple in order to accurately measure temperature of the thermocouple bead. This can be done by using the MCP6V01 auto-zeroed op amp because of its 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 the MCP6N11 instrumentation amplifier (INA) and a traditional three op amp INA using the 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.

MCP6421 EMIRR Evaluation Board (ADM00443)



The MCP6421 EMIRR Evaluation Board is intended to support the electromagnetic interference rejection ratio (EMIRR) measurement and to show the electromagnetic interference (EMI) rejection capability of the MCP6421 operational amplifier.

Mixed Signal Products

MCP37X3X-200 16-bit 200 Msps ADC VTLA Evaluation Board (ADM00505)

This board provides the opportunity to evaluate the performance of the MCP37X3X-200 device family. With the on-board MCP37D31-200 16-bit 200 Msps pipelined ADC, it allows you to evaluate the functionality of the 16-bit 200 Msps ADCs and the digital signal processing features. With the help of a compatible data capture card, the evaluation board can provide you with performance analysis features through the PC GUI.

MCP37X1X-200 12-bit Msps ADC VTLA Evaluation Board (ADM00619)

This board provides the opportunity to evaluate the performance of the MCP37X1X-200 device family. With the on-board MCP37D11-200, 12-bit 200 Msps pipelined ADC, it allows you evaluate the functionality of the 12-bit 200 Msps ADCs and the digital signal processing features. With the help of a compatible data capture card, the evaluation board can provide the user with performance analysis features through the PC GUI.

Featured Analog Development Tools

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MCP39F501 Energy Metering and Power Monitoring Demonstration Board (ARD00455)

The MCP39F501 Power Monitor Demonstration Board is a fully functional single-phase power monitor. This low-cost design does not use any transformers and requires few external components. The device calculates active power, reactive power, RMS current, RMS voltage, power factor, line frequency and other typical power quantities as defined in the MCP39F501 data sheet. The MCP39F501 Power Monitor Utility software is used to calibrate and monitor the system and can be used to create custom calibration setups. For some accuracy requirements, only a single point calibration may be needed.

Interface Products

UCS81003 Evaluation Board (ADM00561)

This board provides the ability to evaluate the features of the UCS81003 Automotive USB Port Power Controller with Charger Emulation. It allows the UCS81003 to be tested in different configurations by populating jumpers on specific header locations. The Evaluation Board contains the MCP2221 USB to I^2C bridge, which allows communication via USB between the UCS81003 and the GUI running on the PC.

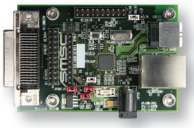
LAN7500 Hi-Speed USB 2.0 to Gigabit Ethernet Bridge Controller (EVB-LAN7500)

The EVB-LAN7500 is used to evaluate our LAN7500 Hi-Speed USB 2.0 to Gigabit Ethernet Bridge Controller solution. System architectures requiring Ethernet connectivity can utilize an existing USB port with our LAN7500 to achieve this requirement. A USB dongle version is also available (EVB-LAN7500-LC).

LAN874X 10/100 Ethernet Transceiver with EEE and Wake-On-LAN (EVB8740)

The EVB8740 is a PHY evaluation board for our LAN874X family, which integrates Energy Efficient Ethernet and Wake-on-LAN features. It interfaces to a MAC controller via a standard MII or RMII interface.

LAN9500A Hi-Speed USB 2.0 to 10/100 Ethernet Bridge Controller (EVB-LAN9500A-MII/ EVB-LAN9500A-LC)

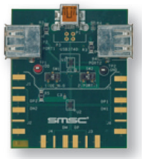


The EVB-LAN9500A-MII is used to evaluate our LAN9500A Hi-Speed USB 2.0 to Fast Ethernet Bridge Controller solution. Using an existing USB port with our LAN9500A allows you to add Ethernet connectivity to your system architecture.

USB3340 Hi-Speed USB 2.0 Transceiver with ULPI Interface (EVB-USB3340)

The EVB-USB3340 is used to evaluate our USB334X family of highly integrated USB 2.0 transceivers with ULPI interface. The features and functions are identical to those of the USB333X family except the USB334X comes in a convenient, widely used 32-pin QFN package.

USB3740 Hi-Speed USB 2.0 2-Port Switch (EVB-USB3740)

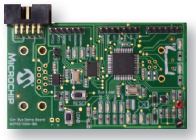


The EVB-USB3740 is used to evaluate our USB3740 USB 2.0 compliant 2-port switch. Some applications require a single USB port to be shared with other functions. The USB3740 is a small and simple 2-port switch providing system design flexibility.

USB2640 USB 2.0 Port Hub with Ultra Fast Flash Media Controller Evaluation Board (EVB-USB2640)

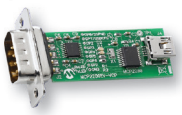
The USB2640 is an Ultra Fast USB 2.0 Hub, Flash media controller, and protocol bridge combo. The EVB-USB2640 Evaluation Board demonstrates a stand-alone application for developers of applications such as Flash media card reader/writer, printers, desktop and mobile PCs, consumer A/V and flat panel displays.

MCP2515 CAN Bus Monitor Demo Board (MCP2515DM-BM)



The MCP2515 CAN Bus Monitor Demo board kit contains two identical boards that 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.

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.

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