Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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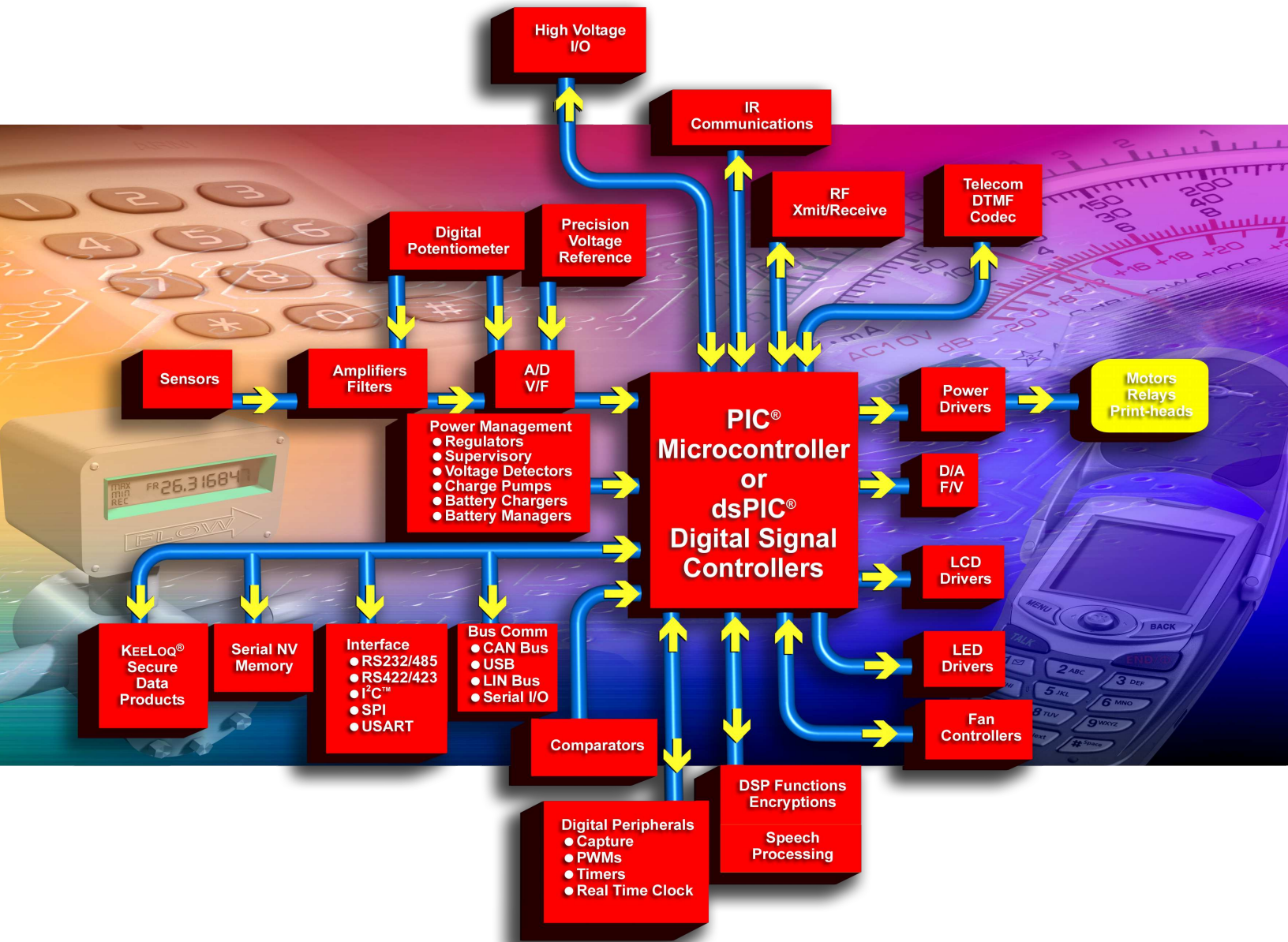Email & Skype: info@chipsmall.com Web: www.chipsmall.com
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MICROCHIP

2007 Product Selector Guide

High Voltage I/O

IR Communications

RF Xmit/Receive

Telecom DTMF Codec

Digital Potentiometer

Precision Voltage Reference

Sensors

Amplifiers Filters

A/D V/F

Power Management
- Regulators
- Supervisory
- Voltage Detectors
- Charge Pumps
- Battery Chargers
- Battery Managers

PIC® Microcontroller or dsPIC® Digital Signal Controllers

Power Drivers

Motors Relays Print-heads

D/A F/V

LCD Drivers

KᴇᴇLᴏǫ® Secure Data Products

Serial NV Memory

Interface
- RS232/485
- RS422/423
- I²C™
- SPI
- USART

Bus Comm
- CAN Bus
- USB
- LIN Bus
- Serial I/O

LED Drivers

Fan Controllers

Comparators

DSP Functions Encryptions

Digital Peripherals
- Capture
- PWMs
- Timers
- Real Time Clock

Speech Processing

Product Profile

8-bit PIC® Microcontrollers

Microchip's 8-bit PIC® microcontrollers combine high-performance, low cost and small package size to offer the best price/performance ratio in the industry. Based on a powerful RISC core, these 8-bit PIC® microcontrollers fall into three product architecture categories, providing a variety of options for any application requirement:

- **Baseline 8-bit architecture:** 12-bit instruction set, 6-44 pin count, 384-3.5 Kbytes program memory, up to 5 MIPS
- **Mid-Range 8-bit architecture:** 14-bit instruction set, 8-68 pin count, 896-14 Kbytes program memory, up to 5 MIPS
- **High-Performance (PIC18) 8-bit architecture:** 16-bit instruction set, 18-100 pin count, 8-128 Kbytes program memory, up to 16 MIPS

The common architecture provides users with an easy migration path from 6 to 100 pins among all families, with little or no code change required. Advanced features available are:

- Sophisticated timing peripherals
- Embedded analog peripherals, including A/D and D/A converters, comparators, PBOR, PLVD, DAC, V_{REF}, Op Amps and PSMC
- Communications peripherals (I^2C™/SPI/USB/CAN, LIN, USARTs and Ethernet)
- Low-power, single-chip RF and Ethernet solutions targeting connectivity for high-volume embedded control applications
- Battery management solutions
- Flexible programming options including In-Circuit Serial Programming™ technology, self-programming (Enhanced Flash), One-Time-Programmable (OTP), QTP, SQTP and ROM

16-bit PIC® Microcontrollers

The PIC24 microcontrollers build upon the high performance, wide selection of peripherals, Flash memory sizes and packaging choices found in the 8-bit PIC18 family. The PIC24 architecture, paired with the optimized MPLAB® C30 C Compiler, provides the high throughput and C code density needed to achieve system performance goals and product launch schedules.

- Leadership 16-bit microcontroller performance and C code efficiency
- Extension of the 8-bit PIC18 microcontroller performance, memory and peripherals
- Easy migration path to dsPIC® digital signal controllers with over 40 MIPS, DSP capability and MPLAB® IDE compatibility

16-bit dsPIC® Digital Signal Controllers (DSCs)

Microchip's 16-bit high-performance digital signal controllers combine, in a single core, the best features of microcontrollers with the best features of DSPs. These dsPIC DSCs reach speeds of up to 40 MIPS, are very efficient for C programming, and have Flash, data EEPROM, powerful peripherals and a variety of software libraries that allow high-performance embedded solutions to be designed effortlessly and rapidly. With a familiar microcontroller "feel", tools and design environment, these dsPIC DSCs target applications, such as motor control and power conversion, speech and audio, internet and modem connectivity, telecom, encryption, high-speed sensing and automotive applications.

Stand-Alone Analog & Interface Products

Microchip offers a broad portfolio of analog and related products:

- *Linear and Mixed-Signal.* ADCs/DACs, digital potentiometers, op amps and comparators.
- *Power and Battery Management.* LDO and switching regulators, charge pumps, voltage references, CPU/system supervisors and voltage detectors, battery chargers and power MOSFET drivers.
- *Thermal Management.* Temperature sensors (logic output, voltage output, and serial output), brushless DC fan controllers and fan fault detectors.
- *Interface.* Peripheral products supporting industry-standard networking protocols like CAN, LIN and infrared (including IrDA® Standard infrared), as well as products that provide embedded system input/output expansion capability.

Secure Data Products

Microchip's KEELOQ® code-hopping algorithm combines high security, a small package outline and a very low cost to make this an ideal cryptographic solution for RKE and PKE authentication applications. The KEELOQ code-hopping technology creates a high degree of security using a long code word length together with encryption and synchronization techniques.

Memory Products

Microchip offers one of the broadest selections of serial EEPROMs in densities from 128 bits to 1 Mbit, with operating voltages down to 1.8V, in all popular bus protocols (I^2C™, Microwire and SPI compatible). They are available in all standard temperature ranges from -40°C to +125°C, up to 16 Kbits in 5-lead SOT-23 and up to 256 Kbits in 8-lead MSOP.

Development Systems

Microchip offers a full range of microcontroller, memory and analog development systems, including the MPLAB® REAL ICE™ in-circuit emulator; free MPLAB Integrated Development Environment; MPLAB C18 and C30 Compilers; the MPLAB ICD 2 In-Circuit Debugger, MPLAB PM3 full-featured device programmer; PICSTART® low-cost development system; the PICkit™ 2 Flash Starter Kit, SEEVAL® Serial EEPROM Evaluation Kit and various demonstration boards. Microchip has shipped nearly half a million development systems worldwide.

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CURRENT 16-BIT CONTROLLER FAMILY PRODUCTS

dsPIC® Digital Signal Controller (DSC) Family

Product	Program Memory (Kbytes)	Data EEPROM (Bytes)	RAM (Bytes)	I/O Pins	Packages	A/D 12-Bit 200 ksps	A/D 10-Bit 1 Msps	Timer 16-Bit	Input Cap	Output Comp/ Std PWM	Motor Control PWM	QEI	UART w/ IrDA®	SPI	I²C™	CAN	Codec Interface	CodeGuard™ Security
dsPIC30F General Purpose Family: 30 MIPS, V$_{DD}$ = 2.5V-5.5V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
dsPIC30F3014	24	1024	2048	30	40P, 44PT, 44ML (8x8)	13 ch	—	3	2	2	—	—	2	1	1	—	—	Basic
dsPIC30F4013	48	1024	2048	30	40P, 44PT, 44ML (8x8)	13 ch	—	5	4	4	—	—	2	1	1	1	AC97, I²S	Basic
dsPIC30F5011	66	1024	4096	52	64PT	16 ch	—	5	8	8	—	—	2	2	1	2	AC97, I²S	Advanced
dsPIC30F5013	66	1024	4096	68	80PT	16 ch	—	5	8	8	—	—	2	2	1	2	AC97, I²S	Advanced
dsPIC30F6011A	132	2048	6144	52	64PF, 64PT	16 ch	—	5	8	8	—	—	2	2	1	2	—	Advanced
dsPIC30F6012A	144	4096	8192	52	64PF, 64PT	16 ch	—	5	8	8	—	—	2	2	1	2	AC97, I²S	Advanced
dsPIC30F6013A	132	2048	6144	68	80PF, 80PT	16 ch	—	5	8	8	—	—	2	2	1	2	—	Advanced
dsPIC30F6014A	144	4096	8192	68	80PF, 80PT	16 ch	—	5	8	8	—	—	2	2	1	2	AC97, I²S	Advanced
dsPIC30F Motor Control and Power Conversion Family: 30 MIPS, V$_{DD}$ = 2.5V-5.5V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
dsPIC30F2010	12	1024	512	20	28SO, 28SP, 28MM (6x6)	—	6 ch	3	4	2	6	✓	1	1	1	—	—	Basic
dsPIC30F3010	24	1024	1024	20	28SO, 28SP, 44ML (8x8)	—	6 ch	5	4	2	6	✓	1	1	1	—	—	Basic
dsPIC30F4012	48	1024	2048	20	28SO, 28SP, 44ML (8x8)	—	6 ch	5	4	2	6	✓	1	1	1	1	—	Basic
dsPIC30F3011	24	1024	1024	30	40P, 44PT, 44ML (8x8)	—	9 ch	5	4	4	6	✓	2	1	1	—	—	Basic
dsPIC30F4011	48	1024	2048	30	40P, 44PT, 44ML (8x8)	—	9 ch	5	4	4	6	✓	2	1	1	1	—	Basic
dsPIC30F4012	48	1024	2048	20	28SO, 28SP, 44ML (8x8)	—	6 ch	5	4	2	6	✓	1	1	1	1	—	Basic
dsPIC30F5015	66	1024	2048	52	64PT	—	16 ch	5	4	4	8	✓	1	2	1	1	—	Basic
dsPIC30F6015	144	4096	8192	52	64PT	—	16 ch	5	8	8	8	✓	2	2	1	1	—	Advanced
dsPIC30F5016	66	1024	2048	68	80PT	—	16 ch	5	4	4	8	✓	1	2	1	1	—	Basic
dsPIC30F6010A	144	4096	8192	68	80PF, 80PT	—	16 ch	5	8	8	8	✓	2	2	1	2	—	Advanced
dsPIC30F6015	144	4096	8192	52	64PT	—	16 ch	5	8	8	8	✓	2	2	1	1	—	Advanced

*Contact Microchip Technology Inc. for availability date.
Abbreviations are found on the last page of the Selector Guide.

dsPIC® Digital Signal Controller (DSC) Family (continued)																		
Product	Program Memory (Kbytes)	Data EEPROM (Bytes)	RAM (Bytes)	I/O Pins	Packages	A/D 12-Bit 200 ksps	A/D 10-Bit 1 Msps	Timer 16-Bit	Input Cap	Output Comp/Std PWM	Motor Control PWM	QEI	UART w/IrDA®	SPI	I²C™	CAN	Codec Interface	CodeGuard™ Security
dsPIC30F Sensor Family: 30 MIPS, V_DD = 2.5V-5.5V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
dsPIC30F2011	12	0	1024	12	18SO, 18P, 28ML (6x6)	8 ch	—	3	2	2	—	—	1	1	1	—	—	Basic
dsPIC30F2012	12	0	1024	20	28SO, 28SP, 28ML (6x6)	10 ch	—	3	2	2	—	—	1	1	1	—	—	Basic
dsPIC30F3012	24	1024	2048	12	18SO, 18P, 44ML (8x8)	8 ch	—	3	2	2	—	—	1	1	1	—	—	Basic
dsPIC30F3013	24	1024	2048	20	28SO, 28SP, 44ML (8x8)	10 ch	—	3	2	2	—	—	2	1	1	—	—	Basic

*Contact Microchip Technology Inc. for availability date.
Abbreviations are found on the last page of the Selector Guide.

dsPIC30F SMPS and Digital Power Conversion: 30 MIPS, V_DD = 2.5V-5.5V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
Product	Program Memory (Kbytes)	Data EEPROM (Bytes)	RAM (Kbytes)	I/O Pins	Packages	A/D 10-bit 2 Msps	# of S/H	Timer 16-bit	Input Cap	Output Comp/Std PWM	High speed SMPS PWNM (1.1 ns resolution)	High Speed Analog Comp	UART w/IrDA®	SPI	I²C™	CAN	Codec Interface	CodeGuard™ Security
dsPIC30F1010	6	—	256	21	28SP, 28SO, 28MM	6 ch	2	2	—	1	2 x 2	2	1	1	1	—	—	Intermediate
dsPIC30F2020	12	—	512	21	28SP, 28SO, 28MM	8 ch	4	3	1	2	4 x 2	4	1	1	1	—	—	Intermediate
dsPIC30F2023	12	—	512	35	44PT, 44ML	12 ch	4	3	1	2	4 x 2	4	1	1	1	—	—	Intermediate

*Contact Microchip Technology Inc. for availability date.
Abbreviations are found on the last page of the Selector Guide.

Current 16-Bit Controller Family

dsPIC® Digital Signal Controller (DSC) Family (continued)

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	A/D Config. as 10-Bit @ 1.1 Msps or 12-Bit @ 500 ksps[1,2]	Timer 16-Bit	Input Cap	Output Comp/ Std PWM	Motor Control PWM	QEI	UART w/ IrDA®	SPI	I²C™	ECAN™ Technology	Codec Interface	PPS	CodeGuard™ Security
dsPIC33F General Purpose Family: 40 MIPS, V_{DD} = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz, JTAG/DMA and nanoWatt Technology																	
dsPIC33FJ64GP201*	12	1	13	18P, 18SO	1 A/D, 6 ch, 4 S/H max.	3	4	2	—	—	1	1	1	—	—	—	Intermediate
dsPIC33FJ64GP202*	12	1	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	3	4	2	—	—	1	1	1	—	—	—	Intermediate
dsPIC33FJ64GP206	64	8	53	64PT	1 A/D, 18 ch, 4 S/H max.	9	8	8	—	—	2	2	1	0	1	—	Advanced
dsPIC33FJ64GP306	64	16	53	64PT	1 A/D, 18 ch, 4 S/H max.	9	8	8	—	—	2	2	2	—	1	—	Advanced
dsPIC33FJ64GP310	64	16	85	100PT, 100PF	1 A/D, 32 ch, 4 S/H max.	9	8	8	—	—	2	2	2	0	1	—	Advanced
dsPIC33FJ64GP706	64	16	53	64PT	2 A/D, 18 ch, 8 S/H max.	9	8	8	—	—	2	2	2	2	1	—	Advanced
dsPIC33FJ64GP708	64	16	69	80PT	2 A/D, 24 ch, 8 S/H max	9	8	8	—	—	2	2	2	2	1	—	Advanced
dsPIC33FJ64GP710	64	16	85	100PT, 100PF	2 A/D, 32 ch, 8 S/H max.	9	8	8	—	—	2	2	2	2	1	—	Advanced
dsPIC33FJ128GP206	128	8	53	64PT	1 A/D, 18 ch, 4 S/H max	9	8	8	—	—	2	2	1	—	1	—	Advanced
dsPIC33FJ128GP306	128	16	53	64PT	1 A/D, 18 ch, 4 S/H max.	9	8	8	—	—	2	2	2	—	1	—	Advanced
dsPIC33FJ128GP310	128	16	85	100PT, 100PF	1 A/D, 18 ch, 4 S/H max.	9	8	8	—	—	2	2	2	—	1	—	Advanced
dsPIC33FJ128GP706	128	16	53	64PT	2 A/D, 18 ch, 8 S/H max.	9	8	8	—	—	2	2	2	2	1	—	Advanced
dsPIC33FJ128GP708	128	16	69	80PT	2 A/D, 24 ch, 8 S/H max.	9	8	8	—	—	2	2	2	2	1	—	Advanced

NOTE 1: dsPIC33F devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
2: Each A/D configured as 10-bit has 4 S/H. Each A/D configured as 12-bit has 1 S/H.
*Contact Microchip Technology for availability date.
Abbreviations are found on the last page of the Selector Guide.

dsPIC® Digital Signal Controller (DSC) Family (continued)

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	A/D Config. as 10-Bit @ 1.1 Msps or 12-Bit @ 500 ksps[1,2]	Timer 16-Bit	Input Cap	Output Comp/ Std PWM	Motor Control PWM	QEI	UART w/ IrDA®	SPI	I²C™	ECAN™ Technology	Codec Interface	PPS	CodeGuard™ Security
dsPIC33F General Purpose Family: 40 MIPS, V_DD = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz, JTAG/DMA and nanoWatt Technology (continued)																	
dsPIC33FJ128GP710	128	16	85	100PT, 100PF	2 A/C, 32 ch, 8 S/H max.	9	8	8	—	—	2	2	2	2	1	—	Advanced
dsPIC33FJ256GP506	256	16	53	64PT	1 A/D, 18 ch, 4 S/H max.	9	8	8	—	—	2	2	2	1	1	—	Advanced
dsPIC33FJ256GP510	256	16	85	100PT, 100PF	1 A/D, 32 ch, 4 S/H max.	9	8	8	—	—	2	2	2	1	1	—	Advanced
dsPIC33FJ256GP710	256	30	85	100PT, 100PF	2 A/D, 32 ch, 8 S/H max.	9	8	8	—	—	2	2	2	2	1	—	Advanced
dsPIC33F Motor Control Family: 40 MIPS, V_DD = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz, JTAG/DMA and nanoWatt Technology																	
dsPIC33FJ12MC201*	12	1	15	20SP, 20SO	1 A/D, 4 ch, 4 S/H max.	3	4	2	6	✓	1	1	1	—	—	—	Intermediate
dsPIC33FJ12MC202*	12	1	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max.	3	4	2	6	✓	1	1	1	—	—	—	Intermediate
dsPIC33FJ64MC506	64	8	53	64PT	1 A/D, 16 ch, 4 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ64MC508	64	8	69	80PT	1 A/D, 18 ch, 4 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ64MC510	64	8	85	100PT, 100PF	1 A/D, 24 ch, 4 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ64MC706	64	16	53	64PT	2 A/D, 16 ch, 8 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ64MC710	64	16	85	100PT, 100PF	2 A/D, 24 ch, 8 S/H max.	9	8	8	8	✓	2	2	2	2	—	—	Advanced
dsPIC33FJ128MC506	128	8	53	64PT	1 A/D, 16 ch, 4 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ128MC510	128	8	85	100PT, 100PF	1 A/D, 24 ch, 4 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced

NOTE 1: dsPIC33F devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
2: Each A/D configured as 10-bit has 4 S/H. Each A/D configured as 12-bit has 1 S/H.
*Contact Microchip Technology for availability date.
Abbreviations are found on the last page of the Selector Guide.

Current 16-Bit Controller Family

dsPIC® Digital Signal Controller (DSC) Family (continued)

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	A/D Config. as 10-Bit @ 1.1 Msps or 12-Bit @ 500 ksps[1,2]	Timer 16-Bit	Input Cap	Output Comp/ Std PWM	Motor Control PWM	QEI	UART w/ IrDA®	SPI	I²C™	ECAN™ Technology	Codec Interface	PPS	CodeGuard™ Security
dsPIC33F Motor Control Family: 40 MIPS, VDD = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz, JTAG/DMA and nanoWatt Technology (continued)																		
dsPIC33FJ128MC706	128	16	53	64PT	2 A/D, 16 ch, 8 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ128MC708	128	16	69	80PT	2 A/D, 18 ch, 8 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ128MC710	128	16	85	100PT, 100PF	2 A/D, 24 ch, 8 S/H max.	9	8	8	8	✓	2	2	2	2	—	—	Advanced
dsPIC33FJ256MC510	256	16	85	100PT, 100PF	1 A/D, 16 ch, 4 S/H max.	9	8	8	8	✓	2	2	2	1	—	—	Advanced
dsPIC33FJ256MC710	256	30	85	100PT, 100PF	2 A/D, 24 ch, 8 S/H max.	9	8	8	8	✓	2	2	2	2	—	—	Advanced

NOTE 1: dsPIC33F devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
2: Each A/D configured as 10-bit has 4 S/H. Each A/D configured as 12-bit has 1 S/H.
*Contact Microchip Technology for availability date.
Abbreviations are found on the last page of the Selector Guide.

PIC24 16-Bit Microcontroller (MCU) Family

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	ADC	Analog Comp.	Timers 16-Bit	Input Cap	Output Comp/PWM	RTCC	UART w/IrDA®	SPI	I²C™	ECAN™ Technology	PMP	PPS	CodeGuard™ Security	Other Features
PIC24FJ Family: 16 MIPS, VDD = 2.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
PIC24FJ64GA006	64	8	53	64PT	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ64GA008	64	8	69	80PT	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ64GA010	64	8	85	100PT, 100PF	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ96GA006	96	8	53	64PT	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ96GA008	96	8	69	80PT	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG

NOTE: PIC24H devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
*Contact Microchip Technology for availability date.
Abbreviations are found on the last page of the Selector Guide.

PIC24 16-Bit Microcontroller (MCU) Family (continued)

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	ADC	Analog Comp.	Timers 16-Bit	Input Cap	Output Comp/PWM	RTCC	UART w/IrDA®	SPI	I²C™	ECAN™ Technology	PMP	PPS	CodeGuard™ Security	Other Features
PIC24FJ Family: 16 MIPS, V_{DD} = 2.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology (continued)																		
PIC24FJ96GA010	96	8	85	100PT, 100PF	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ128GA006	128	8	53	64PT	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ128GA008	128	8	69	80PT	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24FJ128GA010	128	8	85	100PT, 100PF	16x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	—	Basic	JTAG
PIC24HJ Family: 40 MIPS, V_{DD} = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
PIC24HJ12GP201*	12	1	13	18P, 18SO	6x10-bit 1.1 Msps or 12-bit 500 ksps	—	3	4	2	—	1	1	1	—	—	✓	Intermediate	
PIC24HJ12GP202*	12	1	21	28P, 28SO, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	—	3	4	2	—	1	1	1	—	—	✓	Intermediate	
PIC24HJ64GP206	64	8	53	64PT	18x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	1	—	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ64GP210	64	8	85	100PT, 100PF	32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	—	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ64GP506	64	8	53	64PT	18x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	1	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ64GP510	64	8	85	100PT, 100PF	32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	1	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ128GP206	128	8	53	64PT	18x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	—	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ128GP210	128	8	85	100PT, 100PF	32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	—	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ128GP306	128	16	53	64PT	18x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	—	—	—	Advanced	JTAG, DMA (8 ch)

NOTE: PIC24H devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
*Contact Microchip Technology for availability date.
Abbreviations are found on the last page of the Selector Guide.

Current 16-Bit Controller Family

PIC24 16-Bit Microcontroller (MCU) Family (continued)

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	ADC	Analog Comp.	Timers 16-Bit	Input Cap	Output Comp/PWM	RTCC	UART w/IrDA®	SPI	I²C™	ECAN™ Technology	PMP	PPS	CodeGuard™ Security	Other Features
PIC24HJ Family: 40 MIPS, V_{DD} = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology (continued)																		
PIC24HJ128GP310	128	16	85	100PT, 100PF	32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	—	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ128GP506	128	8	53	64PT	18x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	1	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ128GP510	128	8	85	100PT, 100PF	32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	1	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ256GP206	256	16	53	64PT	18x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	—	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ256GP210	256	16	85	100PT, 100PF	32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	2	—	—	Advanced	JTAG, DMA (8 ch)
PIC24HJ256GP610	256	16	85	100PT, 100PF	(2) 32x10-bit 1.1 Msps or 12-bit 500 ksps	—	9	8	8	—	2	2	2	2	—	—	Advanced	JTAG, DMA (8 ch)

NOTE: PIC24H devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
*Contact Microchip Technology for availability date.
Abbreviations are found on the last page of the Selector Guide.

FUTURE 16-BIT CONTROLLER FAMILY PRODUCTS

dsPIC® Digital Signal Controller (DSC) Family																
Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	A/D config as 10-Bit @ 1.1 Msps or 12-bit @ 500 ksps[1,2]	Timer 16-Bit	Input Cap	Output Comp/ Std PWM	Motor Control PWM	QEI	UART w/ IrDA®	SPI	I²C™	ECAN™ Technology	Codec Interface	PPS	CodeGuard™ Security
dsPIC33F General Purpose Family: 40 MIPS, V_DD = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																	
dsPIC33FJ32GP202	32	2	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	3	4	2	—	—	1	1	1	—	—	✓	Intermediate
dsPIC33FJ32GP204	32	2	35	44ML, 44PT	1 A/D, 13 ch, 4 S/H max.	3	4	2	—	—	1	1	1	—	—	✓	Intermediate
dsPIC33FJ32GP302	32	4	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	5	4	4	—	—	2	2	1	—	1	✓	Advanced
dsPIC33FJ32GP304	32	4	35	44ML, 44PT	1 A/D, 13 ch, 4 S/H max.	5	4	4	—	—	2	2	1	—	1	✓	Advanced
dsPIC33FJ64GP202	64	8	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	5	4	4	—	—	2	2	1	—	1	✓	Advanced
dsPIC33FJ64GP204	64	8	35	44ML, 44PT	1 A/D, 13 ch, 4 S/H max.	5	4	4	—	—	2	2	1	—	1	✓	Advanced
dsPIC33FJ64GP802	64	16	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	5	4	4	—	—	2	2	1	1	1	✓	Advanced
dsPIC33FJ64GP804	64	16	35	44ML, 44PT	1 A/D, 13 ch, 4 S/H max.	5	4	4	—	—	2	2	1	1	1	✓	Advanced
dsPIC33FJ128GP202	128	8	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	5	4	4	—	—	2	2	1	—	1	✓	Advanced
dsPIC33FJ128GP204	128	8	35	44ML, 44PT	1 A/D, 13 ch, 4 S/H max.	5	4	4	—	—	2	2	1	—	1	✓	Advanced
dsPIC33FJ128GP802	128	16	21	28SP, 28SO, 28ML	1 A/D, 10 ch, 4 S/H max.	5	4	4	—	—	2	2	1	1	1	✓	Advanced
dsPIC33FJ128GP804	128	16	35	44ML, 44PT	1 A/D, 13 ch, 4 S/H max.	5	4	4	—	—	2	2	1	1	1	✓	Advanced

NOTE   1: dsPIC33F devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
2: Each A/D configured as 10-bit has 4 S/H. Each A/D configured as 12-bit has 1 S/H.
Abbreviations are found on the last page of the Selector Guide.

Future 16-Bit Controller Family

dsPIC® Digital Signal Controller (DSC) Family (continued)

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	A/D config as 10-Bit @ 1.1 Msps or 12-bit @ 500 ksps[1,2]	Timer 16-Bit	Input Cap	Output Comp/ Std PWM	Motor Control PWM	QEI	UART w/ IrDA®	SPI	I²C™	ECAN™ Technology	Codec Interface	PPS	CodeGuard™ Security
dsPIC33F Motor Control Family: 40 MIPS, V$_{DD}$ = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																	
dsPIC33FJ32MC202	32	2	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max	3	4	2	8	1	1	1	1	—	—	✓	Intermediate
dsPIC33FJ32MC204	32	2	35	44ML, 44PT	1 A/D, 9 ch, 4 S/H max	3	4	2	8	1	1	1	1	—	—	✓	Intermediate
dsPIC33FJ32MC302	32	4	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max	5	4	4	8	2	2	2	1	—	—	✓	Advanced
dsPIC33FJ32MC304	32	4	35	44ML, 44PT	1 A/D, 9 ch, 4 S/H max	5	4	4	8	2	2	2	1	—	—	✓	Advanced
dsPIC33FJ64MC202	64	8	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max	5	4	4	8	2	2	2	1	—	—	✓	Advanced
dsPIC33FJ64MC204	64	8	35	44ML, 44PT	1 A/D, 9 ch, 4 S/H max	5	4	4	8	2	2	2	1	—	—	✓	Advanced
dsPIC33FJ64MC802	64	16	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max	5	4	4	8	2	2	2	1	1	—	✓	Advanced
dsPIC33FJ64MC804	64	16	35	44ML, 44PT	1 A/D, 9 ch, 4 S/H max	5	4	4	8	2	2	2	1	1	—	✓	Advanced
dsPIC33FJ128MC202	128	8	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max	5	4	4	8	2	2	2	1	—	—	✓	Advanced
dsPIC33FJ128MC204	128	8	35	44ML, 44PT	1 A/D, 9 ch, 4 S/H max	5	4	4	8	2	2	2	1	—	—	✓	Advanced
dsPIC33FJ128MC802	128	16	21	28SP, 28SO, 28ML	1 A/D, 6 ch, 4 S/H max	5	4	4	8	2	2	2	1	1	—	✓	Advanced
dsPIC33FJ128MC804	128	16	35	44ML, 44PT	1 A/D, 9 ch, 4 S/H max	5	4	4	8	2	2	2	1	1	—	✓	Advanced

NOTE 1: dsPIC33F devices with 2 A/D converters can achieve 2.2 Msps conversion rate.
2: Each A/D configured as 10-bit has 4 S/H. Each A/D configured as 12-bit has 1 S/H.
Abbreviations are found on the last page of the Selector Guide.

PIC24 16-Bit Microcontroller (MCU) Family

Product	Program Memory (Kbytes)	RAM (Kbytes)	I/O Pins	Packages	ADC	Analog Comp	Timers 16-Bit	Input Cap	Output Comp/PWM	RTCC	UART w/IrDA®	SPI	I²C™	ECAN™ Technology	PMP	PPS	CodeGuard™ Security	Other Features
PIC24FJ Family: 16 MIPS, VDD = 2.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
PIC24FJ32GA002	32	8	21	28SP, 28SO, 28ML	10x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	✓	Basic	JTAG
PIC24FJ64GA002	64	8	21	28SP, 28SO, 28ML	10x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	✓	Basic	JTAG
PIC24FJ32GA004	32	8	35	44ML, 44PT	13x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	✓	Basic	JTAG
PIC24FJ64GA004	64	8	35	44ML, 44PT	13x10-bit 500 ksps	2	5	5	5	✓	2	2	2	—	✓	✓	Basic	JTAG
PIC24HJ Family: 40 MIPS, VDD = 3.0V-3.6V, Self-Write Flash, IntOSC = 8 MHz or 32 kHz and nanoWatt Technology																		
PIC24HJ32GP202	32	2	21	28SP, 28SO, 28SS, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	—	3	4	2	—	1	1	1	—	—	✓	Intermediate	JTAG, DMA (8ch)
PIC24HJ32GP204	32	2	35	44ML, 44PT	13x10-bit 1.1 Msps or 12-bit 500 ksps	—	3	4	2	—	1	1	1	—	—	✓	Intermediate	JTAG, DMA (8ch)
PIC24HJ32GP302	32	4	21	28SP, 28SO, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	—	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ32GP304	32	4	35	44ML, 44PT	13x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	—	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ64GP202	64	8	21	28SP, 28SO, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	—	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ64GP204	64	8	35	44ML, 44PT	13x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	—	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ64GP502	64	8	21	28SP, 28SO, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	1	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ64GP504	64	8	35	44ML, 44PT	13x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	1	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ128GP202	128	8	21	28SP, 28SO, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	—	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ128GP204	128	8	35	44ML, 44PT	13x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	—	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ128GP502	128	8	21	28SP, 28SO, 28ML	10x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	1	✓	✓	Advanced	JTAG, DMA (8ch)
PIC24HJ128GP504	128	8	35	44ML, 44PT	13x10-bit 1.1 Msps or 12-bit 500 ksps	2	5	4	4	✓	2	2	1	1	✓	✓	Advanced	JTAG, DMA (8ch)

Abbreviations are found on the last page of the Selector Guide.

Future 16-Bit Controller Family

CURRENT ANALOG/INTERFACE PRODUCTS
Lead-free versions of many devices are currently offered. Check Microchip's web site for availability.

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
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
MCP9701	±1	±4	-10 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
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
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
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/I^{2}C™ 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/I^{2}C™ 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

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: TCN75 idle current is 250 μA. This device also has a Software Shutdown mode that reduces supply current to <1 μA.
3: MCP9805 max. accuracy measured at 85°C.

THERMAL MANAGEMENT PRODUCTS – 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
Serial Output Temperature Sensors (continued)							
MCP9802	±0.5	±1	-55 to +125	+2.7 to +5.5	400	SMbus/I^{2}C™ 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/I^{2}C™ 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
MCP9805	±0.5	±1[3]	-20 to +125	+3.0 to +3.6	400	JEDEC compatible register set, SMbus/I^{2}C™ compatible interface, programmable, shut-down modes and EVENT output	8-Pin TSSOP, 8-Pin 2x3 DFN
MCP98242	±0.5	±1[3]	-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 2x3 DFN
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 3x3 DFN
TC74	±0.5	±2	-40 to +125	+2.7 to +5.5	350	SMbus/I^{2}C™ 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/I^{2}C™ compatible interface, power-saving one-shot temperature measurement, multi-drop capability, 0.0625°C to 0.5°C adjustable temperature resolution	8-Pin SOIC, 8-Pin MSOP
TCN75	±0.5	±2	-55 to +125	+2.7 to +5.5	1,000[2]	SMbus/I^{2}C™ compatible interface, multi-drop capability, interrupt output, 0.5°C temperature resolution	8-Pin MSOP, 8-Pin SOIC

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: TCN75 idle current is 250 µA. This device also has a Software Shutdown mode that reduces supply current to <1 µA.
      3: MCP9805 max. accuracy measured at 85°C.

THERMAL MANAGEMENT PRODUCTS – Brushless DC Fan Controllers and Fan Fault Detectors

Part #	Description	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	Maximum Supply Current (µA)	Features	Packages
TC642	Fan Manager	**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	**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	**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

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

Current Analog/
Interface
Family

THERMAL MANAGEMENT PRODUCTS – Brushless DC Fan Controllers and Fan Fault Detectors (continued)

Part #	Description	Typical Accuracy (°C)	Maximum Accuracy @ 25°C (°C)	Maximum Temperature Range (°C)	Vcc Range (V)	Maximum Supply Current (μA)	Features	Packages
TC646B	Fan Manager	**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	**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	**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	**Note 1**	**Note 1**	-40 to +85	+3.0 to +5.5	1,000	Over-temperature alert, auto-shutdown	8-Pin PDIP, 8-Pin SOIC, 8-Pin MSOP
TC648B	Fan Manager	**Note 1**	**Note 1**	-40 to +85	+3.0 to +5.5	400	Over-temperature alert, auto-shutdown, fan auto-restart	8-Pin PDIP, 8-Pin SOIC, 8-Pin MSOP
TC649	Fan Manager	**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	**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	±3	-40 to +125	+2.8 to +5.5	90	Over-temperature alert	8-Pin MSOP
TC651	Fan Manager	±1	±3	-40 to +125	+2.8 to +5.5	90	Over-temperature alert, auto-shutdown	8-Pin MSOP
TC652	Fan Manager	±1	±3	-40 to +125	+2.8 to +5.5	90	FanSense™ Fan Monitor, over-temperature alert	8-Pin MSOP
TC653	Fan Manager	±1	±3	-40 to +125	+2.8 to +5.5	90	FanSense™ Fan Monitor, over-temperature alert, auto-shutdown	8-Pin MSOP
TC654	Dual SMbus Fan Manager	**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	**Note 1**	**Note 1**	-40 to +85	+3.0 to +5.5	320	FanSense™ Fan Monitor, RPM data, over-temperature alert	10-Pin MSOP
TC664	Single SMbus Fan Manager	**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	**Note 1**	**Note 1**	-40 to +85	+3.0 to +5.5	320	FanSense™ Fan Monitor, RPM data, over-temperature alert	10-Pin MSOP
TC670	Predictive Fan Fault Detector	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.

POWER MANAGEMENT – Voltage References

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

POWER MANAGEMENT – Linear Regulators

Part #	Max. Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Junction Temperature Range (°C)	Typical Active Current (μA)	Typical Dropout Voltage @ Max. Iout (mV)	Typical Output Voltage Accuracy (%)	Features	Packages
50 mA to 250 mA Low-Dropout Linear Regulators									
TC2014	6.0	1.8, 2.7, 2.8, 3.0, 3.3	50	-40 to +125	55	45	±0.4	Shutdown, Reference bypass input	5-Pin SOT-23A
TC1014	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	50	-40 to +125	50	85	±0.5	Shutdown, Reference bypass input	5-Pin SOT-23A
TC2054	6.0	1.8, 2.7, 2.8, 3.0, 3.3	50	-40 to +125	55	45	±0.4	Shutdown, Error output	5-Pin SOT-23A
TC1054	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	50	-40 to +125	50	85	±0.5	Shutdown, Error output	5-Pin SOT-23A
TC1070	6.0	1.23 → Vin	50	-40 to +125	50	85	—	Shutdown, Adjustable	5-Pin SOT-23A
TC1072	6.0	2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	50	-40 to +125	50	85	±0.5	Shutdown, Reference bypass input, Error output	6-Pin SOT-23A
TC1223	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 3.6, 4.0, 5.0	50	-40 to +125	50	85	±0.5	Shutdown	5-Pin SOT-23A
TC1016	6.0	1.8, 2.7, 2.8, 3.0	80	-40 to +125	50	150	±0.5	Shutdown	5-Pin SC-70
TC2015	6.0	1.8, 2.7, 2.8, 3.0, 3.3	100	-40 to +125	55	90	±0.4	Shutdown, Reference bypass input	5-Pin SOT-23A
TC1015	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	100	-40 to +125	50	180	±0.5	Shutdown, Reference bypass input	5-Pin SOT-23A
TC2055	6.0	1.8, 2.7, 2.8, 3.0, 3.3	100	-40 to +125	55	90	±0.4	Shutdown, Error output	5-Pin SOT-23A
TC1055	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	100	-40 to +125	50	180	±0.5	Shutdown, Error output	5-Pin SOT-23A
TC1071	6.0	1.23 → Vin	100	-40 to +125	50	180	—	Shutdown, Adjustable	5-Pin SOT-23A
TC1073	6.0	2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	100	-40 to +125	50	180	±0.5	Shutdown, Reference bypass input, Error output	6-Pin SOT-23A
TC1224	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 3.6, 4.0, 5.0	100	-40 to +125	50	180	±0.5	Shutdown	5-Pin SOT-23A
TC1188	6.0	1.8, 2.8, 2.84, 3.15	120	-40 to +125	50	130	±0.5	Shutdown	5-Pin SOT-23A
TC1189	6.0	1.8, 2.8, 2.84, 3.15	120	-40 to +125	50	130	±0.5	Shutdown	5-Pin SOT-23A
TC2185	6.0	1.8, 2.7, 2.8, 3.0, 3.3	150	-40 to +125	55	140	±0.4	Shutdown, Reference bypass input	5-Pin SOT-23A
TC1185	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	150	-40 to +125	50	270	±0.5	Shutdown, Reference bypass input	5-Pin SOT-23A
TC2186	6.0	1.8, 2.7, 2.8, 3.0, 3.3	150	-40 to +125	55	140	±0.4	Shutdown, Error output	5-Pin SOT-23A
TC1186	6.0	1.8, 2.5, 2.7, 2.8, 2.85, 3.0, 3.3, 3.6, 4.0, 5.0	150	-40 to +125	50	270	±0.5	Shutdown, Error output	5-Pin SOT-23A
TC1187	6.0	1.23 → Vin	150	-40 to +125	50	270	—	Shutdown, Adjustable	5-Pin SOT-23A
TC1017	6.0	1.8, 2.6, 2.7, 2.8, 2.85, 2.9, 3.3, 3.4	150	-40 to +125	53	285	±0.5	Shutdown	5-Pin SOT-23A, 5-Pin SC-70
MCP1700	6.0	1.2, 1.8, 2.5, 3.0, 3.3, 5.0	250	-40 to +125	1.0	300	±0.4	1.0 μF ceramic cap stable, Short-circuit protection	3-Pin TO-92, 3-Pin SOT-23A, 3-Pin SOT-89
MCP1701	10	1.8, 2.5, 3.0, 3.3, 5.0	250	-40 to +85	1.1	380	±0.5	10V max. input voltage	3-Pin SOT-23A, 3-Pin SOT-89, 3-Pin TO-92
MCP1702	12	1.2, 1.5, 1.8, 2.5, 2.8, 3.0, 3.5, 4.0, 5.0	250	-40 to +125	2	650	±0.4	Ultra-low ground current, 12V Vin max.	3-Pin SOT-23A, 3-Pin SOT-89, 3-Pin TO-92

NOTE 1: **Depending on external transistor configuration.**
2: **Each channel (for Dual and Quad LDOs).**
3: **LDOs with shutdown (except Power-Management Combination Products as indicated) have typical shutdown currents of 0.05 μA.**

Current Analog/ Interface Family

POWER MANAGEMENT – Linear Regulators (continued)

Part #	Max. Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Junction Temperature Range (°C)	Typical Active Current (μA)	Typical Dropout Voltage @ Max. I$_{OUT}$ (mV)	Typical Output Voltage Accuracy (%)	Features	Packages
300 mA Low Dropout Linear Regulators									
TC1107	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 5.0	300	-40 to +125	50	240	±0.5	Shutdown, Reference bypass input	8-Pin MSOP, 8-Pin SOIC
TC1108	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 5.0	300	-40 to +125	50	240	±0.5		3-Pin SOT-223
TC1173	6.0	2.5, 2.7, 2.8, 3.0, 3.3, 5.0	300	-40 to +125	50	240	±0.5	Shutdown, Reference bypass input, Error output	8-Pin MSOP, 8-Pin SOIC
TC1174	6.0	1.23 → V$_{IN}$	300	-40 to +125	50	240	—	Shutdown, Reference bypass input, Adjustable	8-Pin MSOP, 8-Pin SOIC
TC1269	6.0	2.5, 2.8, 3.0, 3.3, 5.0	300	-40 to +125	50	240	±0.5	Shutdown, Reference bypass input	8-Pin MSOP
500 mA to 800 mA Low Dropout Linear Regulators									
TC1262	6.0	2.5, 2.8, 3.0, 3.3, 5.0	500	-40 to +125	80	350	±0.5		3-Pin TO-220, 3-Pin DDPAK, 3-Pin SOT-223
TC1263	6.0	2.5, 2.8, 3.0, 3.3, 5.0	500	-40 to +125	80	350	±0.5	Shutdown, Reference bypass input, Error output	8-Pin SOIC, 5-Pin TO-220, 5-Pin DDPAK
TC1268	6.0	2.5	500	-40 to +125	80	350	±0.5	Shutdown, Reference bypass input, Error output	8-Pin SOIC
TC1264	6.0	1.8, 2.5, 3.0, 3.3	800	-40 to +125	80	450	±0.5		3-Pin TO-220, 3-Pin DDPAK, 3-Pin SOT-223
TC1265	6.0	1.8, 2.5, 3.0, 3.3	800	-40 to +125	80	450	±0.5	Shutdown, Reference bypass input, Error output	8-Pin SOIC, 5-Pin TO-220, 5-Pin DDPAK
TC2117	6.0	1.8, 2.5, 3.0, 3.3	800	-40 to +125	80	600	±0.5		3-Pin SOT-223, 3-Pin DDPAK
1A and Above Low Dropout Linear Regulators									
MCP1726	6.0	Fixed: 5, 3.3, 3, 2.5, 1.8, 1.2, 0.8 Adjustable: 0.8 to 5.0	1000	-40 to +125	140	300	±0.4	Ceramic output capacitor stable, Shutdown, Cdelay, Power Good	8-Pin 3x3 DFN, 8-Pin SOIC
MCP1727	6.0	Fixed: 5, 3.3, 3, 2.5, 1.8, 1.2, 0.8 Adjustable: 0.8 to 5.0	1500	-40 to +125	140	330	±0.5	Ceramic output capacitor stable, Shutdown, Cdelay, Power Good	8-Pin 3x3 DFN, 8-Pin SOIC
MCP1827	6.0	Fixed: 5, 3.3, 3, 2.5, 1.8, 1.2, 0.8 Adjustable: 0.8 to 5.0	1500	-40 to +125	140	330	±0.5	Ceramic output capacitor stable, Shutdown, Power Good	5-Pin DDPAK, 5-Pin TO-220
MCP1827S	6.0	Fixed: 5, 3.3, 3, 2.5, 1.8, 1.2, 0.8	1500	-40 to +125	140	330	±0.5	Ceramic output capacitor stable	3-Pin DDPAK, 3-Pin TO-220
Application Specific Low Dropout Linear Regulators									
TC1266	6.0	3.3	200	-5 to +70	230	200	±1.0	PCI compliant	8-Pin SOIC, 8-Pin MSOP
TC1267	6.0	3.3	400	-5 to +70	230	300	±1.0	PCI compliant	5-Pin DDPAK
TC57	8	2.5, 3.0, 3.3	4,000[1]	-40 to +85	50	100[1]	±2.0	Shutdown, External transistor	5-Pin SOT-23A
TC59	-10	-3.0, -5.0	100	-40 to +85	3	380	±0.5	Negative LDO	3-Pin SOT-23A
Power Management Combination Products									
TC1300[3]	6.0	2.5, 2.7, 2.8, 2.85, 3.0, 3.3	300	-40 to +125	80	210	±0.5	Shutdown, Reference bypass input, LDO plus Reset output	8-Pin MSOP
TC1301A[3]	6.0	LDO1: 1.5-3.3 LDO2: 1.5-3.3	LDO1: 300 LDO2: 150	-40 to +125	103	LDO1: 104 LDO2: 150	±0.5	Dual LDO plus Reset output, Shutdown, Reference bypass, Voltage detect	8-Pin MSOP, 8-Pin 3x3 DFN

NOTE 1: Depending on external transistor configuration.
2: Each channel (for Dual and Quad LDOs).
3: LDOs with shutdown (except Power-Management Combination Products as indicated) have typical shutdown currents of 0.05 μA.

POWER MANAGEMENT – Linear Regulators (continued)

Part #	Max. Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Junction Temperature Range (°C)	Typical Active Current (μA)	Typical Dropout Voltage @ Max. IOUT (mV)	Typical Output Voltage Accuracy (%)	Features	Packages
Power-Management Combination Products (continued)									
TC1301B[3]	6.0	LDO1: 1.5-3.3 LDO2: 1.5-3.3	LDO1: 300 LDO2: 150	-40 to +125	114	LDO1: 104 LDO2: 150	±0.5	Dual LDO plus Reset, per channel output shutdown, Reference bypass	8-Pin MSOP, 8-Pin 3x3 DFN
TC1302A[3]	6.0	LDO1: 1.5-3.3 LDO2: 1.5-3.3	LDO1: 300 LDO2: 150	-40 to +125	103	LDO1: 104 LDO2: 150	±0.5	Dual LDO, Output shutdown reference bypass, Voltage detect	8-Pin MSOP, 8-Pin 3x3 DFN
TC1302B[3]	6.0	LDO1: 1.5-3.3 LDO2: 1.5-3.3	LDO1: 300 LDO2: 150	-40 to +125	114	LDO1: 104 LDO2: 150	±0.5	Dual LDO, per channel output shut-down, Reference bypass	8-Pin MSOP, 8-Pin 3x3 DFN
TC1305	6.0	2.5, 2.8, 3.0	150[2]	-40 to +125	120	240	±0.5	Dual LDO plus Reset output, Reference bypass input, Shutdown, Select Mode™ selectable output voltages	10-Pin MSOP
TC1306	6.0	1.8, 2.8, 3.0	150[2]	-40 to +125	120	240	±0.5	Dual LDO plus Reset output, Shutdown, Select Mode™ selectable output voltages	8-Pin MSOP
TC1307[3]	6.0	1.8, 2.5, 2.8, 3.0	150[2]	-40 to +125	220	200	±0.5	Quad LDO plus Reset output, Shutdown, Select Mode™ selectable output voltage	16-Pin QSOP

NOTE 1: Depending on external transistor configuration.
2: Each channel (for Dual and Quad LDOs).
3: LDOs with shutdown (except Power-Management Combination Products as indicated) have typical shutdown currents of 0.05 μA.

POWER MANAGEMENT – Switching Regulators

Part #	Description	Input Voltage Range (V)	Output Voltage (V)	Operating Temperature Range (°C)	Control Scheme	Switching Frequency (kHz)	Typical Active Current (μA)	Output Current (mA)	Features	Packages
MCP1601	Synchronous Buck Regulator	2.7 to 5.5	0.9V to VIN	-40 to +85	PFM/PWM/LDO	750	825 (PWM) 125 (PFM)	500	UVLO, Auto-switching, LDO	8-Pin MSOP
MCP1602	Synchronous Buck DC/DC 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 3x3 DFN
MCP1612	Synchronous Buck DC/DC Regulator	2.7 to VIN	0.8 to 5.5	-40 to +85	Constant frequency PWM	1400	10,000	1000	Overall efficiency >94% soft start, over-temperature and over-current protection	8-Pin MSOP, 8-Pin 3x3 DFN
MCP1650	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	-40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, shutdown control, UVLO, soft start	8-Pin MSOP
MCP1651	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	-40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, shutdown control, low battery detect, UVLO, soft start	8-Pin MSOP
MCP1652	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	-40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, shutdown control, Power Good indicator, UVLO, soft start	8-Pin MSOP
MCP1653	Step-up DC/DC Controller	2.7 to 5.5	2.5 to ext. tx limited	-40 to +125	Constant frequency, 2 fixed DC	750	120	560/440	2 duty cycles for min. and max. loads, shutdown control, low battery detect, Power Good indicator, UVLO, soft start	10-Pin MSOP
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
TC120	Step-down Regulator/Controller Combination	1.8 to 10	3.0, 3.3, 5.0	-40 to +85	PFM/PWM	300	52	2,000	Soft-start, Low-Power Shutdown mode	8-Pin SOP

Current Analog/ Interface Family

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
TC125	Step-up DC/DC Regulator	0.9 to 10	3.0, 3.3, 5.0	-40 to +85	PFM	100	20	80	Low-Power Shutdown mode. Not recommended for new designs	5-Pin SOT-23A
TC126	Step-up DC/DC Regulator	0.9 to 10	3.0, 3.3, 5.0	-40 to +85	PFM	100	20	80	Feedback voltage sensing. Not recommended for new designs	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
TC1303	Synchronous Buck Regulator, LDO w/Power Good	2.7 to 5.5	DC/DC: 0.8 to 4.5 LDO: 1.5 to 3.3	-40 to +85	PFM/PWM	2000	65/600	DC/DC: 500 mA LDO: 300 mA	PFM/PWM auto-switching, Power Good output	10-Pin MSOP, 10-Pin 3x3 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 3x3 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 3x3 DFN

POWER MANAGEMENT – PWM Controllers

Part #	Description	Input Voltage Range (V)	Output Voltage (V)	Operating Temperature Range (°C)	Control Scheme	Switching Frequency (kHz)	Typical Active Supply (µA)	Output Current (mA)	Features	Packages
MCP1630	High-speed PWM to use with PIC® MCUs	2.7 to 5.5	$V_{SS} + 0.2V$ to $V_{DD} - 0.2V$	-40 to +125	Cycle-by-Cycle DC control	1000	2.5	±10	UVLO, current sense to V_{EXT}, response <25 ns	8-Pin MSOP
MCP1630V	High-speed PWM to use with PIC® MCUs	2.7 to 5.5	$V_{SS} + 0.2V$ to $V_{DD} - 0.2V$	-40 to +125	Cycle-by-Cycle DC control	1000	2.5	±10	Voltage mode and Average Current mode	8-Pin MSOP

POWER MANAGEMENT – Charge Pump DC-to-DC Converters

Part #	Input Voltage Range (V)	Output Voltage (V)	Operating Temperature Range (°C)	Maximum Input Current[1] (µA)	Typical Active Output Current (mA)	Features	Packages
Inverting or Doubling Charge Pumps							
TC1044S	1.5 to 12	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	160	20	85 kHz oscillator, Boost mode	8-Pin PDIP, 8-Pin SOIC
TC7660	1.5 to 10	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	180	20	10 kHz oscillator	8-Pin PDIP, 8-Pin SOIC
TC7660H	1.5 to 10	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	1,000	20	120 kHz oscillator	8-Pin PDIP, 8-Pin SOIC
TC7660S	1.5 to 12	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	160	20	45 kHz oscillator, Boost mode	8-Pin PDIP, 8-Pin SOIC
TC7662B	1.5 to 15	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	180	20	35 kHz oscillator, Boost mode	8-Pin PDIP, 8-Pin SOIC
TC1219	1.5 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	115	25	12 kHz oscillator, Low-Power Shutdown mode	6-Pin SOT-23A
TC1220	1.5 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	325	25	35 kHz oscillator, Low-Power Shutdown mode	6-Pin SOT-23A
TC1221	1.8 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	600	25	Shutdown, 125 kHz oscillator	6-Pin SOT-23A
TC1222	1.8 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	2,800	25	Shutdown, 750 kHz oscillator	6-Pin SOT-23A
TCM828	1.5 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	90	25	12 kHz oscillator	5-Pin SOT-23A

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

POWER MANAGEMENT – Charge Pump DC-to-DC Converters (continued)

Part #	Input Voltage Range (V)	Output Voltage (V)	Operating Temperature Range (°C)	Maximum Input Current[1] (μA)	Typical Active Output Current (mA)	Features	Packages
Inverting or Doubling Charge Pumps (continued)							
TCM829	1.5 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	260	25	35 kHz oscillator	5-Pin SOT-23A
TC1240	2.5 to 4.0	$V_{OUT} = 2 V_{IN}$	-40 to +85	900	40	Shutdown, 160 kHz oscillator	6-Pin SOT-23A
TC1240A	2.5 to 5.5	$V_{OUT} = 2 V_{IN}$	-40 to +85	900	40	Shutdown, 160 kHz oscillator	6-Pin SOT-23A
TC7662A	3 to 18	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	200	40	12 kHz oscillator	8-Pin PDIP
TC962	3 to 18	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	200	80		8-Pin PDIP, 16-Pin SOIC
TC1121	2.4 to 5.5	$V_{OUT} = -V_{IN}$ or $V_{OUT} = 2 V_{IN}$	-40 to +85	100	100	Low-Power Shutdown mode	8-Pin MSOP, 8-Pin PDIP, 8-Pin SOIC
Multi-Function Charge Pumps							
TCM680	2.0 to 5.5	$V_{OUT} = \pm 2 V_{IN}$	-40 to +85	1,000	±10	Generates ±6V from +3V or ±10V from +5V	8-Pin PDIP, 8-Pin SOIC
Inverting and Doubling Charge Pumps							
TC682	2.4 to 5.5	$V_{OUT} = -2 V_{IN}$	-40 to +85	400	10	12 kHz oscillator	8-Pin PDIP, 8-Pin SOIC
Regulated Charge Pumps							
MCP1252	2.1/2.7 to 5.5 2.0 to 5.5	Selectable 3.3V or 5.0V or Adjustable 1.5V to 5.5V	-40 to +85	120	120 mA for V_{IN}>3.0V	Power Good output, 650 kHz oscillator	8-Pin MSOP
MCP1253	2.1/2.7 to 5.5 2.0 to 5.5	Selectable 3.3V or 5.0V or Adjustable 1.5V to 5.5V	-40 to +85	120	120 mA for V_{IN}>3.0V	Power Good output, 1 MHz oscillator	8-Pin MSOP
MCP1256	1.8 to 3.6	3.3	-40 to +85	100	100	Power Good, Sleep mode	10-Pin MSOP, 10-Pin 3x3 DFN
MCP1257	1.8 to 3.6	3.3	-40 to +85	100	100	Sleep mode, low battery indication	10-Pin MSOP, 10-Pin 3x3 DFN
MCP1258	1.8 to 3.6	3.3	-40 to +85	100	100	Power Good output, input/output bypass	10-Pin MSOP, 10-Pin 3x3 DFN
MCP1259	1.8 to 3.6	3.3	-40 to +85	100	100	Low battery indication, input/output bypass	10-Pin MSOP, 10-Pin 3x3 DFN

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

POWER MANAGEMENT – CPU/System Supervisors

Part #	Vcc Range (V)	Operating Temperature Range (°C)	Nominal Reset Voltage (V)	Reset Type	Output	Typical Reset Pulse Width (ms)	Typical Supply Current (μA)	Additional Features	Packages	Bond Options
MCP102	1.0 to 5.5	-40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.9	Active-Low	CMOS Push-Pull	120	1		3-Pin SOT-23B, 3-Pin SC-70, 3-Pin TO-92	N/A
MCP103	1.0 to 5.5	-40 to +125	4.63, 4.38, 3.08, 2.93, 2.63, 2.32, 1.9	Active-Low	CMOS Push-Pull	120	1	Max. 809 Pinout	3-Pin SOT-23B, 3-Pin SC-70, 3-Pin TO-92	N/A
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
TC1270	1.2 to 5.5	-40 to +85	4.63, 4.38, 3.08, 2.93, 2.63, 1.75	Active-Low	CMOS Push-Pull	280	7	Manual Reset	4-Pin SOT-143	N/A
TCM811	1.0 to 5.5	-40 to +85	4.63, 4.38, 3.08, 2.93, 2.63, 1.75	Active-Low	CMOS Push-Pull	280	6	Manual Reset	4-Pin SOT-143	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
TCM810	1.2 to 5.5	-40 to +85	4.63, 4.38, 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

Current Analog/ Interface Family