



## Focus Product Selector Guide

Featuring:

8-, 16- and 32-bit PIC® Microcontrollers

dsPIC® Digital Signal Controllers

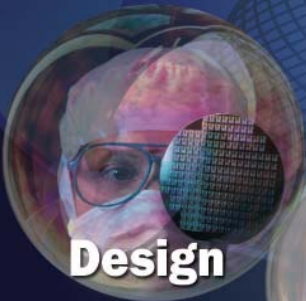
Analog & Interface Products

EEPROM, SRAM and Flash Memory

Wireless and RF Products

# Microchip

# A Partner in Your Success



**Design**



**Training**



**Collateral**



**Development**



**Support**



**Availability**

# Microchip: A Partner in Your Success

Microchip is a leading provider of microcontroller and analog semiconductors, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. Offering outstanding technical support along with dependable delivery and quality, Microchip serves over 63,000 customers in more than 65 countries who are designing high-volume embedded control applications in the consumer, automotive, office-automation, communications and industrial-control markets worldwide.

## 8-bit PIC® Microcontrollers

Based on a powerful RISC core, the PIC microcontroller 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 include sophisticated timing peripherals, integrated analog-to-digital converters and communications peripherals (Ethernet/I<sup>2</sup>C™/SPI/USB/CAN ports and LIN USARTs). For more information visit: [www.microchip.com/8bit](http://www.microchip.com/8bit)

## 16-bit PIC® Microcontrollers

The 16-bit PIC24 Family is comprised of two sub-families. The PIC24F offers a cost-effective low power step up in performance, memory and peripherals for many applications that are pushing the envelope of 8-bit microcontroller capabilities. For more demanding applications, the PIC24H/E offers up to 70 MIPS performance, more memory and additional peripherals, such as CAN communication modules. For more information visit: [www.microchip.com/16bit](http://www.microchip.com/16bit)

## 32-bit PIC® Microcontrollers

The PIC32 family adds more performance and more memory while maintaining pin, peripheral and software compatibility with Microchip's 16-bit MCU/DSC families. The PIC32 family operates at up to 80 MHz and offers ample code and data space capabilities with up to 512 KB Flash and 128 KB RAM. For more information visit: [www.microchip.com/32bit](http://www.microchip.com/32bit)

## dsPIC® Digital Signal Controllers

The dsPIC family of Digital Signal Controllers (DSCs) features a fully implemented digital signal processor (DSP) engine, with up to 70 MIPS performance, C compiler friendly design and a familiar microcontroller architecture and design environment. The dsPIC 16-bit Flash DSCs provide the industry's highest performance, and have features supporting motor control, digital power conversion, speech and audio, intelligent sensing and general purpose embedded control applications. For more information visit: [www.microchip.com/dsPIC](http://www.microchip.com/dsPIC)

## Analog and Interface Products

Microchip's integrated analog technology, peripherals and features are engineered to meet today's demanding design

requirements. Our broad spectrum of analog products addresses thermal management, power management, battery management, mixed-signal, linear, interface and safety & security solutions. Our broad portfolio of stand-alone analog and interface devices offers highly integrated solutions that combine various analog functions in space-saving packages and support a variety of bus interfaces. Many of these devices support functionality that enhances the analog features currently available on PIC microcontrollers. For more information visit: [www.microchip.com/analog](http://www.microchip.com/analog)

## RF Front End Products

Microchip's selection of RF front end devices enhance the performance and operating range of wireless products at 2.4 and 5 GHz. SST Power amplifier products provide high linear output power as required for 802.11 (WiFi®) and 802.15.4 (ZigBee®) standards with industry leading efficiency and reliability. Our selection of integrated Front End Modules (FEM), combines the function of power amplifier with switches, Low Noise Amplifier (LNA) and filters into a single space saving package. The FEM reduces board complexity and sizes. For more information visit:

[www.microchip.com/analog](http://www.microchip.com/analog)

## Wireless Products

Microchip offers radio-frequency products for adding wireless connectivity to embedded PIC microcontroller and dsPIC DSC-based designs for the following technologies: IEEE 802.15.4/ZigBee®, Sub-GHz RF and IEEE 802.11/Wi-Fi. For more information visit:

[www.microchip.com/wireless](http://www.microchip.com/wireless)

## Memory Products

Microchip's broad portfolio of memory devices include Serial EEPROM, Serial SRAM, Serial Flash and Parallel Flash Devices. Our innovative, low-power designs and extensive testing have ensured industry leading robustness and endurance along with best-in-class quality at low costs. For more information visit:

[www.microchip.com/memory](http://www.microchip.com/memory)

## Real-Time Clocks

Microchip offers a family of highly integrated, low cost Real-Time Clock/Calendar devices with battery backup capability, digital trimming along with onboard EEPROM and SRAM memory. For more information visit: [www.microchip.com/clock](http://www.microchip.com/clock)

## Table of Contents

8-bit PIC Microcontrollers .....	3	Mixed Signal .....	24
16-bit PIC Microcontrollers (PIC24F).....	10	Interface .....	26
16-bit PIC Microcontrollers (PIC24H/E) .....	13	Safety & Security .....	26
32-bit PIC Microcontrollers .....	15	Motor Drivers .....	26
dsPIC30F DSC Families .....	17	Real Time Clock/Calendar (RTCC).....	27
dsPIC33 DSC General Purpose Family.....	17	Serial EEPROM and Serial SRAM .....	28
dsPIC33 DSC Motor Control and Power Conversion Family....	19	Serial Flash Memory.....	30
dsPIC33 DSC SMPS and Digital Power Conversion Family.....	21	LPC Firmware Flash/Firmware Hub Flash Memory .....	30
Analog and Interface Products		Parallel Flash Memory .....	31
Thermal Management .....	22	RF Products .....	32
Power Management .....	22	Wireless Products .....	33
Linear .....	24	Terms and Definitions .....	33
		Packaging.....	34















# 8-bit PIC® Microcontrollers

Product	Released (R) Not Released (NR)		Pins		Core	Memory			Voltage Range	Operating Speed		LCD Segments	Analog Sensing & Measurement										Digital					Communication					Monitors		5 Ku Pricing†	Packages (Designator)	Special Features					
	Released (R)	Not Released (NR)	Total	I/O		Program	Self-Read/Write	Data RAM (B)		Data EE (B)	Maximum Speed		Internal Oscillator	mTouch™ Channels	8-bit ADC	10-bit ADC	12-bit ADC	Comparators	Charge Time Measurement Unit	Op Amp	DAC (5b/8b)	PWM	CCP	ECCP	CW/C/COG	INCO	PSMC	CLC	8-bit Timer	16-bit Timer	AUSART	EUSART	I <sup>2</sup> C™/SPI	Enhanced (MAC/PHY)				USB 2.0 Device	CAN	BOR/PBOR	PLVD	SR Latch
PIC18F83J11	R		80	70	PIC18	8 KB 4 Kw	RW	1024	-	2V-3.6V	40 MHz	8 MHz, 31 kHz	-	12	-	12	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	BOR	SW <sup>Ⓞ</sup>	-	-	\$2.46	TOFP (PT)	
PIC18F85J10	R		80	66	PIC18	32 KB 16 Kw	RW	2048	-	2V-3.6V	40 MHz	31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.49	TOFP (PT)	
PIC18F84J11	R		80	70	PIC18	16 KB 8 Kw	RW	1024	-	2V-3.6V	40 MHz	8 MHz, 31 kHz	-	12	-	12	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	BOR	SW <sup>Ⓞ</sup>	-	-	\$2.52	TOFP (PT)	
PIC18F83J90	R		80	66	PIC18	8 KB 4 Kw	RW	1024	-	2V-3.6V	40 MHz	8 MHz, 31 kHz	192	12	-	12	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.60	TOFP (PT)	Integrated LCD Driver
PIC18F85J11	R		80	70	PIC18	32 KB 16 Kw	RW	2048	-	2V-3.6V	40 MHz	8 MHz, 31 kHz	-	12	-	12	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	BOR	SW <sup>Ⓞ</sup>	-	-	\$2.63	TOFP (PT)	
PIC18F85K22 <sup>†</sup>	R		80	69	PIC18	32 KB 16 Kw	RW	2048	1024	1.8V-5.5V	64 MHz	31 kHz, 500 kHz, 16 MHz	24	24	-	24	3	✓	-	-	-	-	-	-	5	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.66	TOFP (PT)	
PIC18F84J90	R		80	66	PIC18	16 KB 8 Kw	RW	1024	-	2V-3.6V	40 MHz	8 MHz, 31 kHz	192	12	-	12	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.67	TOFP (PT)	Integrated LCD Driver
PIC18F86J10	R		80	66	PIC18	64 KB 32 Kw	RW	2048	-	2V-3.6V	40 MHz	31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.74	TOFP (PT)	
PIC18F85J90	R		80	66	PIC18	32 KB 16 Kw	RW	2048	-	2V-3.6V	40 MHz	8 MHz, 31 kHz	192	12	-	12	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.77	TOFP (PT), LOFP (PL)	Integrated LCD Driver
PIC18F85K90 <sup>†</sup>	R		80	69	PIC18	32 KB 16 Kw	RW	2048	1024	1.8V-5.5V	64 MHz	31 kHz, 500 kHz, 16 MHz	192	24	-	24	3	✓	-	-	-	-	-	-	5	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.80	TOFP (PT)	Integrated LCD Driver
PIC18F85J50	R		80	65	PIC18	32 KB 16 Kw	RW	3904	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	-	12	-	12	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.90	TOFP (PT)	
PIC18F86J11	R		80	66	PIC18	64 KB 32 Kw	RW	3904	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.90	TOFP (PT)	
PIC18F86J93	R		80	67	PIC18	64 KB 32 Kw	RW	3900	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	192	12	-	12	2	✓	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.97	TOFP (PT)	Integrated LCD Driver, RTCC
PIC18F86K22 <sup>†</sup>	R		80	69	PIC18	64 KB 32 Kw	RW	4096	1024	1.8V-5.5V	64 MHz	31 kHz, 500 kHz, 16 MHz	24	24	-	24	3	✓	-	-	-	-	-	-	7	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$2.97	TOFP (PT)	
PIC18F87J10	R		80	66	PIC18	128 KB 64 Kw	RW	3936	-	2V-3.6V	40 MHz	31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.02	TOFP (PT), LOFP (PL)	
PIC18F86K90 <sup>†</sup>	R		80	69	PIC18	64 KB 32 Kw	RW	4096	1024	1.8V-5.5V	64 MHz	31 kHz, 500 kHz, 16 MHz	192	24	-	24	3	✓	-	-	-	-	-	-	7	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.11	TOFP (PT)	Integrated LCD Driver
PIC18F86J50	R		80	65	PIC18	64 KB 32 Kw	RW	3904	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	-	12	-	12	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.15	TOFP (PT)	
PIC18F87J11	R		80	66	PIC18	128 KB 64 Kw	RW	3904	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.19	TOFP (PT)	
PIC18F87K22 <sup>†</sup>	R		80	69	PIC18	128 KB 64 Kw	RW	4096	1024	1.8V-5.5V	64 MHz	31 kHz, 500 kHz, 16 MHz	24	24	-	24	3	✓	-	-	-	-	-	-	7	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.21	TOFP (PT)	
PIC18F87J93	R		80	67	PIC18	128 KB 64 Kw	RW	3900	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	192	12	-	12	2	✓	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.26	TOFP (PT)	Integrated LCD Driver, RTCC
PIC18F87K90 <sup>†</sup>	R		80	69	PIC18	128 KB 64 Kw	RW	4096	1024	1.8V-5.5V	64 MHz	31 kHz, 500 kHz, 16 MHz	192	24	-	24	3	✓	-	-	-	-	-	-	7	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.35	TOFP (PT)	Integrated LCD Driver
PIC18F87J50	R		80	65	PIC18	128 KB 64 Kw	RW	3904	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	-	12	-	12	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.44	TOFP (PT)	
PIC18F86J60	R		80	55	PIC18	64 KB 32 Kw	RW	3808	-	2V-3.6V	42 MHz	31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.63	TOFP (PT)	Integrated MAC, 10 Base T PHY
PIC18F87J60	R		80	55	PIC18	128 KB 64 Kw	RW	3808	-	2V-3.6V	42 MHz	32 kHz, 31 kHz	-	15	-	15	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.92	TOFP (PT)	Integrated MAC, 10 Base T PHY
PIC18F86J72	R		80	51	PIC18	64 KB 32 Kw	RW	3923	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	132	12	-	12	2	✓	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$4.12	TOFP (PT)	2x 24-bit ADC, RTCC
PIC18F87J72	R		80	51	PIC18	128 KB 64 Kw	RW	3923	-	2V-3.6V	48 MHz	8 MHz, 31 kHz	132	12	-	12	2	✓	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$4.35	TOFP (PT)	2x 24-bit ADC, RTCC
PIC18F96J60	R		100	70	PIC18	64 KB 32 Kw	RW	3808	-	2V-3.6V	42 MHz	31 kHz	-	16	-	16	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$3.84	TOFP (PT)	Integrated MAC, 10 Base T PHY
PIC18F97J60	R		100	70	PIC18	128 KB 64 Kw	RW	3808	-	2V-3.6V	42 MHz	31 kHz	-	16	-	16	-	2	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	BOR	✓	-	-	\$4.13	TOFP (PT), LOFP (PL)	Integrated MAC, 10 Base T PHY

Products sorted by pin count followed by pricing.  
 †Pricing subject to change; please contact your Microchip representative for most current pricing.  
 ⓄSoftware PLVD implemented via ADC.  
 †Integrated Temperature Indicator – Reference Application Note AN1333 for implementation.  
 † – eXtreme Low Power variants available.

# 16-bit PIC® Microcontrollers (PIC24F)

Product	Released (R) Not Released (NR)	I/O Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement				LCD Segments	Graphics Controller	Output Compare/PWM	Input Capture	16-bit Timer <sup>2</sup>	Communication			5-ku Pricing <sup>†</sup>	Monitors	Packages (Designator)			
				Program (KB)	Data RAM (B)	EEPROM	DMA #Ch		Maximum MIPS	Internal Oscillator	Charge Time Measurement Unit	10-bit ADC	10/12-bit ADC 1100/500 KSPS	Comparators						Digital Communication	USB 2.0 (Peripheral, Host, OTG)	PMP		RTCCGRC		PPS	System Mgmt. Features	
14-Pin	PIC24F04KL100	R	12	PIC24	4	512	AN1095 <sup>1</sup>	-	1.8V-3.6V	16	8MHz, 32kHz	-	-	-	1	-	-	2	2	2	1 UART, 1 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.06	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), TSSOP (ST)
	PIC24F04KA200	R	12	PIC24	4	512	AN1095 <sup>1b</sup>	-	1.8V-3.6V	16	8 MHz, 32 kHz	✓	7	-	2	-	-	1	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	-	\$1.16	BOR, POR, WDT, Deep Sleep, XLP	SPDIP (SP), TSSOP (ST)
	PIC24F08KL200	R	12	PIC24	8	512	AN1095 <sup>1</sup>	-	1.8V-3.6V	16	8MHz, 32kHz	-	7	-	1	-	-	2	2	2	1 UART, 1 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.25	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), TSSOP (ST)
20-Pin	PIC24F04KL101	R	17	PIC24	4	512	AN1095 <sup>1</sup>	-	1.8V-3.6V	16	8MHz, 32kHz	-	-	-	1	-	-	2	2	2	1 UART, 1 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.15	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), SOIC (SO), SSOP (SS), 5x5 QFN (MO)
	PIC24F04KA201	R	18	PIC24	4	512	AN1095 <sup>1b</sup>	-	1.8V-3.6V	16	8 MHz, 32 kHz	✓	9	-	2	-	-	1	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	-	\$1.25	BOR, POR, WDT, Deep Sleep, XLP	PDIP (P), SOIC (SO), SSOP (SS), OFN (MOL)
	PIC24F08KL201	R	17	PIC24	8	512	AN1095 <sup>1</sup>	-	1.8V-3.6V	16	8MHz, 32kHz	-	12	-	1	-	-	2	2	2	1 UART, 1 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.30	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), SOIC (SO), SSOP (SS), 5x5 QFN (MO)
	PIC24F08KL301	R	18	PIC24	8	1024	256	-	1.8V-3.6V	16	8MHz, 32kHz	-	-	-	2	-	-	6	3	2	2 UART, 2 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.27	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), SOIC (SO), SSOP (SS), 5x5 QFN (MO)
	PIC24F08KL401	R	18	PIC24	8	1024	512	-	1.8V-3.6V	16	8MHz, 32kHz	-	12	-	2	-	-	6	3	2	2 UART, 2 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.36	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), SOIC (SO), SSOP (SS), 5x5 QFN (MO)
	PIC24F16KL401	R	18	PIC24	16	1024	512	-	1.8V-3.6V	16	8MHz, 32kHz	-	12	-	2	-	-	6	3	2	2 UART, 2 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.43	BOR, HLVD, POR, PWRT, WDT, XLP	PDIP (P), SOIC (SO), SSOP (SS), 5x5 QFN (MO)
	PIC24F08KA101	R	18	PIC24	8	1536	512	-	1.8V-3.6V	16	8 MHz, 32 kHz	✓	9	-	2	-	-	1	1	3	2 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	-	\$1.44	BOR, POR, WDT, Deep Sleep, XLP	PDIP (P), SOIC (SO), SSOP (SS), OFN (MOL)
	PIC24F16KA101	R	18	PIC24	16	1536	512	-	1.8V-3.6V	16	8 MHz, 32 kHz	✓	9	-	2	-	-	1	1	3	2 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	-	\$1.51	BOR, POR, WDT, Deep Sleep, XLP	PDIP (P), SOIC (SO), SSOP (SS), OFN (MOL)
	PIC24FJ16MC101	R	15	PIC24	16	1024	AN1095 <sup>1b</sup>	-	3V-3.6V	16	7.37 MHz, 32 kHz	✓	4	-	3	-	-	8	3	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$1.57	BOR, POR, WDT	PDIP (P), SOIC (SO), SSOP (SS), QFN (MOL)
	PIC24F16KA301	R	18	PIC24	16	2048	512	-	1.8V-5.5V	16	8 MHz, 32 kHz	✓	-	9	3	-	-	3	3	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	✓	-	\$1.86	PWRT, HLVD, POR, OST, WDT	SPDIP (SP), SSOP (SS), SOIC (SO)
28-Pin	PIC24F32KA301	R	18	PIC24	32	2048	512	-	1.8V-5.5V	16	8 MHz, 32 kHz	✓	-	9	3	-	-	3	3	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	✓	-	\$2.00	PWRT, HLVD, POR, OST, WDT	SPDIP (SP), SSOP (SS), SOIC (SO)
	PIC24F08KL302	R	24	PIC24	8	1024	256	-	1.8V-3.6V	16	8MHz, 32kHz	-	-	-	2	-	-	6	3	2	2 UART, 2 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.32	BOR, HLVD, POR, PWRT, WDT, XLP	SPDIP (SP), SOIC (SO), SSOP (SS), 5x5 QFN (MO), 6x6 QFN (ML)
	PIC24F08KL402	R	24	PIC24	8	1024	512	-	1.8V-3.6V	16	8MHz, 32kHz	-	12	-	2	-	-	6	3	2	2 UART, 2 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.40	BOR, HLVD, POR, PWRT, WDT, XLP	SPDIP (SP), SOIC (SO), SSOP (SS), 5x5 QFN (MO), 6x6 QFN (ML)
	PIC24F16KL402	R	24	PIC24	16	1024	512	-	1.8V-3.6V	16	8MHz, 32kHz	-	12	-	2	-	-	6	3	2	2 UART, 2 SPI/I <sup>2</sup> C (MSSP)	-	-	-	-	\$1.47	BOR, HLVD, POR, PWRT, WDT, XLP	SPDIP (SP), SOIC (SO), SSOP (SS), 5x5 QFN (MO), 6x6 QFN (ML)
	PIC24F08KA102	R	24	PIC24	8	1536	512	-	1.8V-3.6V	16	8 MHz, 32 kHz	✓	9	-	2	-	-	1	1	3	2 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	-	\$1.51	BOR, POR, WDT, Deep Sleep, XLP	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)
	PIC24F16KA102	R	24	PIC24	16	1536	512	-	1.8V-3.6V	16	8 MHz, 32 kHz	✓	9	-	2	-	-	1	1	3	2 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	-	\$1.58	BOR, POR, WDT, Deep Sleep, XLP	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)
	PIC24FJ16MC102	R	21	PIC24	16	1024	AN1095 <sup>1b</sup>	-	3V-3.6V	16	7.37 MHz, 32 kHz	✓	6	-	3	-	-	8	3	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$1.68	BOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML) TLA (TL)
	PIC24F16GA002	R	21	PIC24	16	4096	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	-	10	-	2	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$1.74	BOR, LVD, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)
	PIC24FJ32GA002	R	21	PIC24	32	8192	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	-	10	-	2	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$2.06	BOR, LVD, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)
	PIC24F16KA302	R	24	PIC24	16	2048	512	-	1.8V-5.5V	16	8 MHz, 32 kHz	✓	-	10	3	-	-	3	3	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	✓	-	\$2.06	PWRT, HLVD, POR, OST, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)
PIC24F32KA302	R	24	PIC24	32	2048	512	-	1.8V-5.5V	16	8 MHz, 32 kHz	✓	-	10	3	-	-	3	3	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	✓	-	\$2.20	PWRT, HLVD, POR, OST, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)	
PIC24FJ32GA102	R	21	PIC24	32	8192	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	10	-	3	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$2.23	BOR, LVD, POR, WDT, Deep Sleep, XLP	SPDIP (SP), SOIC (SO), OFN (ML)	
PIC24FJ32GB002	R	19	PIC24	32	8192	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	9	-	3	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	✓	✓	✓	✓	\$2.44	BOR, LVD, POR, WDT, Deep Sleep, XLP	SPDIP (SP), SOIC (SO), OFN (ML)	
PIC24FJ64GA002	R	21	PIC24	64	8192	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	-	10	-	2	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$2.48	BOR, LVD, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), OFN (ML)	
PIC24FJ64GA102	R	21	PIC24	64	8192	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	10	-	3	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$2.65	BOR, LVD, POR, WDT, Deep Sleep, XLP	SPDIP (SP), SOIC (SO), OFN (ML)	
PIC24FJ64GB002	R	19	PIC24	64	8192	AN1095 <sup>1b</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	9	-	3	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	✓	✓	✓	✓	\$2.86	BOR, LVD, POR, WDT, Deep Sleep, XLP	SPDIP (SP), SOIC (SO), OFN (ML)	

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

†Pricing subject to change; please contact your Microchip representative for most current pricing.



# 16-bit PIC® Microcontrollers (PIC24F)

Product	Released (R) Not Released (NR)	I/O Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement				LCD Segments	Graphics Controller	Output Compare/PWM	Input Capture	16-bit Timer <sup>2</sup>	Communication				5 ku Pricing <sup>1</sup>	Monitors		Packages (Designator)		
				Program (KB)	Data RAM (B)	EEPROM	DMA #Ch		Maximum MIPS	Internal Oscillator	Charge Time Measurement Unit	10-bit ADC	10/12-bit ADC 1100/500 KSPS	Comparators						Digital Communication	USB 2.0 (Peripheral, Host, DTG)	PMP	RTCCGRC		PPS	System Mgmt. Features			
80-Pin (Cont.)	PIC24FJ128GB108	R	68	PIC24	128	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.20	BOR, LVD, POR, WDT	TOFP (PT)	80-Pin (Cont.)
	PIC24FJ256GA108	R	69	PIC24	256	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	-	✓	✓	✓	\$4.24	BOR, LVD, POR, WDT	TOFP (PT)	
	PIC24FJ256GB108	R	68	PIC24	256	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.62	BOR, LVD, POR, WDT	TOFP (PT)	
100-Pin	PIC24FJ64GA310	R	85	PIC24	64	8192	AN1095 <sup>(1)</sup>	6	2V-3.6V	16	8 MHz, 32 kHz	✓	-	24	3	480	-	7	7	5	4 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$3.16	BOR, LVD, POR, WDT, Deep Sleep	TOFP (PT), BGA121 (BG)	100-Pin
	PIC24FJ128GA310	R	85	PIC24	128	8192	AN1095 <sup>(1)</sup>	6	2V-3.6V	16	8 MHz, 32 kHz	✓	-	24	3	480	-	7	7	5	4 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	✓	\$3.42	BOR, LVD, POR, WDT, Deep Sleep	TOFP (PT), BGA121 (BG)	
	PIC24FJ64GA010	R	85	PIC24	64	8192	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	-	16	-	2	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	-	\$3.51	BOR, POR, WDT	TOFP (PT)	
	PIC24FJ64GA110	R	85	PIC24	64	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	-	✓	✓	✓	\$3.79	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ128GA010	R	85	PIC24	128	8192	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	-	16	-	2	-	-	5	5	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	✓	✓	-	\$3.81	BOR, POR, WDT	TOFP (PT)	
	PIC24FJ128GA110	R	85	PIC24	128	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	-	✓	✓	✓	\$4.03	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ64GB110	R	84	PIC24	64	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.12	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ128GB110	R	84	PIC24	128	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	16 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.41	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ256GA110	R	85	PIC24	256	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	-	✓	✓	✓	\$4.45	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ128GB210	R	84	PIC24	128	98304	AN1095 <sup>(1)</sup>	-	2.2V-3.6V	16	8 MHz, 32 kHz	✓	24	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.79	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ128DA110	R	84	PIC24	128	24576	AN1095 <sup>(1)</sup>	-	2.2V-3.6V	16	8 MHz, 32 kHz	✓	24	-	3	-	✓	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.83	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ256GB110	R	84	PIC24	256	16384	AN1095 <sup>(1)</sup>	-	2V-3.6V	16	8 MHz, 32 kHz	✓	16	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$4.83	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ256GB210	R	84	PIC24	256	98304	AN1095 <sup>(1)</sup>	-	2.2V-3.6V	16	8 MHz, 32 kHz	✓	24	-	3	-	-	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$5.14	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ256DA110	R	84	PIC24	256	24576	AN1095 <sup>(1)</sup>	-	2.2V-3.6V	16	8 MHz, 32 kHz	✓	24	-	3	-	✓	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$5.18	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ128DA210	R	84	PIC24	128	98304	AN1095 <sup>(1)</sup>	-	2.2V-3.6V	16	8 MHz, 32 kHz	✓	24	-	3	-	✓	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$5.25	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	
	PIC24FJ256DA210	R	84	PIC24	256	98304	AN1095 <sup>(1)</sup>	-	2.2V-3.6V	16	8 MHz, 32 kHz	✓	24	-	3	-	✓	9	9	5	4 UART, 3 SPI, 3 I <sup>2</sup> C	✓	✓	✓	✓	\$5.60	BOR, LVD, POR, WDT	TOFP (PT), BGA121 (BG)	

<sup>1</sup>Parts available with High Temperature options (150°C).

<sup>2</sup>Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

<sup>1</sup>Pricing subject to change; please contact your Microchip representative for most current pricing.



# 16-bit PIC® Microcontrollers (PIC24H/E)

Product	Released (R) Not Released (NR)	IO Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement					Communication					5 kV Pricing†	Monitors		Packages (Designator)					
				Program KB	Data RAM (B)	EEPROM	DMA #Ch		Maximum MIPS	Internal Oscillator	Charge Time Measurement Unit	10-bit ADC	10/12-bit ADC 1100/500 KSPS	Comparators	Op-Amps	Output Compare/PWM	Motor Control PWM Ch.	OEI	Input Capture	16-bit Timer <sup>2)</sup>		Digital Communication	CAN		FS USB OTG	PMP	RTCC/CRC	PPS	System Mgmt. Features
PIC24HJ64GP506A	R	53	PIC24	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	18 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	-	\$3.60	PBOR, POR, WDT	TOFP (PT), OFN (MR)
PIC24HJ128GP206A	R	53	PIC24	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	18 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	-	-	\$3.63	PBOR, POR, WDT	TOFP (PT), OFN (MR)
PIC24HJ128GP306A	R	53	PIC24	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	18 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	-	\$3.79	PBOR, POR, WDT	TOFP (PT), OFN (MR)
PIC24HJ128GP506A*	R	53	PIC24	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	18 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	-	\$3.85	PBOR, POR, WDT	TOFP (PT), OFN (MR)
PIC24HJ256GP206A*	R	53	PIC24	256	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	18 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	-	\$4.05	PBOR, POR, WDT	TOFP (PT, PF)
PIC24EP512GP806	NR	53	PIC24	536	53248	AN1095	15	3V-3.6V	70	7.37 MHz, 32 kHz	-	-	24 ch, 2-A/D	3	-	16	-	-	16	9	4 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	✓	✓	✓	\$5.60	PBOR, POR, WDT	TOFP (PT), OFN (MR)
PIC24HJ64GP210A	R	85	PIC24	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	-	\$3.88	PBOR, POR, WDT	TOFP (PT, PF)
PIC24HJ64GP510A	R	85	PIC24	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	-	\$4.06	PBOR, POR, WDT	TOFP (PT, PF)
PIC24HJ128GP210A	R	85	PIC24	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	-	\$4.14	PBOR, POR, WDT	TOFP (PT, PF)
PIC24HJ128GP310A	R	85	PIC24	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	-	\$4.26	PBOR, POR, WDT	TOFP (PT, PF)
PIC24HJ128GP510A*	R	85	PIC24	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	-	\$4.31	PBOR, POR, WDT	TOFP (PT, PF)
PIC24HJ256GP210A	R	85	PIC24	256	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	-	\$4.63	PBOR, POR, WDT	TOFP (PT, PF)
PIC24HJ256GP610A*	R	85	PIC24	256	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	-	2 ADC 32 ch	-	-	8	-	-	8	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	-	\$5.08	PBOR, POR, WDT	TOFP (PT, PF)
PIC24EP256GU810	R	83	PIC24	280	28672	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	-	2 ADC 32 ch	3	-	16	-	-	16	9	4 UART, 4 SPI, 2 I <sup>2</sup> C	2	1	✓	✓	✓	\$5.70	BOR, POR, WDT	TOFP (PT, PF)
PIC24EP512GU810	R	83	PIC24	536	53248	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	-	2 ADC 32 ch	3	-	16	-	-	16	9	4 UART, 4 SPI, 2 I <sup>2</sup> C	2	1	✓	✓	✓	\$6.37	BOR, POR, WDT	TOFP (PT, PF)
PIC24EP256GU814	R	122	PIC24	280	28672	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	-	2 ADC 32 ch	3	-	16	-	-	16	9	4 UART, 4 SPI, 2 I <sup>2</sup> C	2	1	✓	✓	✓	\$6.31	BOR, POR, WDT	TOFP (PH), LOFP (PL)
PIC24EP512GU814	R	122	PIC24	536	53248	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	-	2 ADC 32 ch	3	-	16	-	-	16	9	4 UART, 4 SPI, 2 I <sup>2</sup> C	2	1	✓	✓	✓	\$6.99	BOR, POR, WDT	TOFP (PH), LOFP (PL)

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

†Pricing subject to change; please contact your Microchip representative for most current pricing.



### 32-bit PIC32 Microcontrollers

Product	Released (R) Not Released (NR)	I/O Pins	Core	Memory			DMA Channels General/Dedicated	Voltage Range	Operating Speed		Charge Time Measurement Unit	Analog		IC/OCP/PWM	Timers 16/32-bit	Communication						PMP	RTCC	Peripheral Pin Select (PPS)	5 ku Pricing <sup>1</sup>	Monitors  System Mgmt. Features	Packages (Designator)
				Flash KB + Boot Flash	Data RAM (KB)	EEPROM			Maximum Speed (MHz)	Internal Oscillator		ADC 10-bit 1000 ksps	Comparators			SPI/PS	I <sup>2</sup> C <sup>SM</sup>	UARTs	FS USB	Ethernet	CAN						
PIC32MX440F256H	R	51	PIC32	256+12	32	AN1095 <sup>(1)</sup>	4/2	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	OTG	-	-	✓	✓	-	\$4.58	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX664F128H	R	51	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	-	✓	✓	-	\$4.58	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX764F128H	R	51	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/6	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	1	✓	✓	-	\$4.69	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX340F512H	R	51	PIC32	512+12	32	AN1095 <sup>(1)</sup>	4/0	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	-	-	-	✓	✓	-	\$4.77	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX575F256H	R	51	PIC32	256+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	-	1	✓	✓	-	\$4.96	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX440F512H	R	51	PIC32	512+12	32	AN1095 <sup>(1)</sup>	4/2	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	OTG	-	-	✓	✓	-	\$5.04	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX675F256H	R	51	PIC32	256+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	-	✓	✓	-	\$5.19	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX575F512H	R	51	PIC32	512+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	-	1	✓	✓	-	\$5.42	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX775F256H	R	51	PIC32	256+12	64	AN1095 <sup>(1)</sup>	8/8	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	2	✓	✓	-	\$5.42	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX675F512H	R	51	PIC32	512+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	-	✓	✓	-	\$5.66	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX775F512H	R	51	PIC32	512+12	64	AN1095 <sup>(1)</sup>	8/8	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	2	✓	✓	-	\$5.88	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX695F512H	R	51	PIC32	512+12	128	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	-	✓	✓	-	\$6.13	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX795F512H	R	51	PIC32	512+12	128	AN1095 <sup>(1)</sup>	8/8	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	3/0	4	6	OTG	10/100	2	✓	✓	-	\$6.36	POR, BOR, LVD, WDT	TQFP (PT), QFN (MR)
PIC32MX534F064L	R	85	PIC32	64+12	16	AN1095 <sup>(1)</sup>	4/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	-	1	✓	✓	-	\$4.37	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX320F128L	R	85	PIC32	128+12	16	AN1095 <sup>(1)</sup>	0/0	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	-	-	-	✓	✓	-	\$4.44	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX340F128L	R	85	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/0	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	-	-	-	✓	✓	-	\$4.44	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX564F064L	R	85	PIC32	64+12	32	AN1095 <sup>(1)</sup>	4/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	-	1	✓	✓	-	\$4.58	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX440F128L	R	85	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/2	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	OTG	-	-	✓	✓	-	\$4.70	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX360F256L	R	85	PIC32	256+12	32	AN1095 <sup>(1)</sup>	4/0	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	-	-	-	✓	✓	-	\$4.79	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX564F128L	R	85	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	-	1	✓	✓	-	\$4.82	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX664F064L	R	85	PIC32	64+12	32	AN1095 <sup>(1)</sup>	4/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	-	✓	✓	-	\$4.82	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX460F256L	R	85	PIC32	256+12	32	AN1095 <sup>(1)</sup>	4/2	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	OTG	-	-	✓	✓	-	\$5.05	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX664F128L	R	85	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	-	✓	✓	-	\$5.05	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX764F128L	R	85	PIC32	128+12	32	AN1095 <sup>(1)</sup>	4/6	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	1	✓	✓	-	\$5.17	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX360F512L	R	85	PIC32	512+12	32	AN1095 <sup>(1)</sup>	4/0	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	-	-	-	✓	✓	-	\$5.25	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX575F256L	R	85	PIC32	256+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	-	1	✓	✓	-	\$5.43	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX460F512L	R	85	PIC32	512+12	32	AN1095 <sup>(1)</sup>	4/2	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	2/0	2	2	OTG	-	-	✓	✓	-	\$5.52	POR, BOR, LVD, WDT	TQFP (PT), XBGA (BG)
PIC32MX675F256L	R	85	PIC32	256+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	-	✓	✓	-	\$5.67	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX575F512L	R	85	PIC32	512+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	-	1	✓	✓	-	\$5.89	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX775F256L	R	85	PIC32	256+12	64	AN1095 <sup>(1)</sup>	8/8	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	2	✓	✓	-	\$5.89	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX675F512L	R	85	PIC32	512+12	64	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	-	✓	✓	-	\$6.13	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX775F512L	R	85	PIC32	512+12	64	AN1095 <sup>(1)</sup>	8/8	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	2	✓	✓	-	\$6.36	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX695F512L	R	85	PIC32	512+12	128	AN1095 <sup>(1)</sup>	8/4	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	-	✓	✓	-	\$6.61	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)
PIC32MX795F512L	R	85	PIC32	512+12	128	AN1095 <sup>(1)</sup>	8/8	2.3V-3.6V	80	8 MHz, 32 kHz	-	16 ch	2	5/5/5	5/1	4/0	5	6	OTG	10/100	2	✓	✓	-	\$6.83	POR, BOR, LVD, WDT	TQFP (PT, PF), XBGA (BG)

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

Products sorted by pin count followed by pricing.

<sup>1</sup>Pricing subject to change; please contact your Microchip representative for most current pricing.



## dsPIC30F DSC Families

Product	Released (R) Not Released (NR)	IO Pins	Core	Memory			Voltage Range	Operating Speed		Analog			Output Compare/PWM	Input Capture	Motor Control PWM Ch	Power-Supply PWM Ch	OEI	Codes: (FS, AC97)	16-bit Timer <sup>(1)</sup>	Communication		5-ku Pricing <sup>1</sup>	Monitors	Packages (Designator)
				Program KB	Data RAM (B)	EEPROM		Maximum Speed MIPS	Internal Oscillator	ADC	DAC	Comparators								Digital Communication	CAN		System Mgmt. Features	
dsPIC30F3012	R	12	dsPIC	24	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	8 x 12-bit @ 200 (ksps)	-	-	2	2	-	-	-	-	3	1 UART, 1 SPI, 1 PC	-	\$2.68	PBOR, LVD, POR, WDT	PDIP (P), SOIC (SO), QFN (ML)
dsPIC30F2010	R	20	dsPIC	12	512	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	6 x 10-bit @ 1000 (ksps)	-	-	2	4	6	-	1	-	3	1 UART, 1 SPI, 1 PC	-	\$2.43	PBOR, LVD, POR, WDT	PDIP (P), SPDIP (SP), SOIC (SO), QFN (ML)
dsPIC30F3013	R	20	dsPIC	24	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	10 x 12-bit @ 200 (ksps)	-	-	2	2	-	-	-	-	3	2 UART, 1 SPI, 1 PC	-	\$2.77	PBOR, LVD, POR, WDT	SPDIP (SP), SOIC (SO), QFN (ML)
dsPIC30F4012	R	20	dsPIC	48	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	6 x 10-bit @ 1000 (ksps)	-	-	2	4	6	-	1	-	5	1 UART, 1 SPI, 1 PC	1	\$3.71	PBOR, LVD, POR, WDT	SPDIP (SP), SOIC (SO), QFN (ML)
dsPIC30F4013	R	30	dsPIC	48	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	13 x 12-bit @ 200 (ksps)	-	-	4	4	-	-	-	1	5	2 UART, 1 SPI, 1 PC	1	\$3.91	PBOR, LVD, POR, WDT	PDIP (P), TOFP (PT), QFN (ML)
dsPIC30F4011	R	30	dsPIC	48	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	9 x 10-bit @ 1000 (ksps)	-	-	4	4	6	-	1	-	5	2 UART, 1 SPI, 1 PC	1	\$4.02	PBOR, LVD, POR, WDT	PDIP (P), TOFP (PT), QFN (ML)
dsPIC30F5015	R	52	dsPIC	66	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	16 x 10-bit @ 1000 (ksps)	-	-	4	4	8	-	1	-	5	1 UART, 2 SPI, 1 PC	1	\$5.08	PBOR, LVD, POR, WDT	TOFP (PT)
dsPIC30F6011A	R	52	dsPIC	132	6144	2048	2.5V-5.5V	30	7.37 MHz, 32 kHz	16 x 12-bit @ 200 (ksps)	-	-	8	8	-	-	-	-	5	2 UART, 2 SPI, 1 PC	2	\$6.89	PBOR, LVD, POR, WDT	TOFP (PT)
dsPIC30F5016	R	68	dsPIC	66	2048	1024	2.5V-5.5V	30	7.37 MHz, 32 kHz	16 x 10-bit @ 1000 (ksps)	-	-	4	4	8	-	1	-	5	1 UART, 2 SPI, 1 PC	1	\$5.59	PBOR, LVD, POR, WDT	TOFP (PF)
dsPIC30F6014A	R	68	dsPIC	144	8192	4096	2.5V-5.5V	30	7.37 MHz, 32 kHz	16 x 12-bit @ 200 (ksps)	-	-	8	8	-	-	-	1	5	2 UART, 2 SPI, 1 PC	2	\$7.25	PBOR, LVD, POR, WDT	TOFP (PF)
dsPIC30F6010A	R	68	dsPIC	144	8192	4096	2.5V-5.5V	30	7.37 MHz, 32 kHz	16 x 10-bit @ 1000 (ksps)	-	-	8	8	8	-	1	-	5	2 UART, 2 SPI, 1 PC	2	\$7.36	PBOR, LVD, POR, WDT	TOFP (PF)

Note 1: Two 16-bit timers can be concatenated to form a 32-bit timer.

## dsPIC33 DSC General Purpose Family

Product	Released (R) Not Released (NR)	IO Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement				Output Compare/PWM	Input Capture	Codes: (FS, AC97)	16-bit Timer <sup>(1)</sup>	Communication			5-ku Pricing <sup>1</sup>	Monitors	Packages (Designator)				
				Program KB	Data RAM (B)	EEPROM	DMA #Ch		Maximum Speed MIPS	Internal Oscillator	Charge Time Measurement Unit	ADC 10/12-bit 1100/500 ksps	DAC	Comparators					Op Amps	Digital Communication	CAN		PMP		RTCC/CRC	PPS	System Mgmt. Features	
dsPIC33FJ16GP101	R	15	dsPIC*	16	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	16	7.37 MHz, 32 kHz	✓	4 Ch (10-bit)	-	3	-	2	3	-	3	1 UART, 1 SPI, 1 PC	-	-	✓	✓	\$1.57	BOR, POR, WDT	PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL)	
dsPIC33FJ12GP201	R	13	dsPIC	12	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	-	-	2	4	-	3	1 UART, 1 SPI, 1 PC	-	-	-	✓	\$2.09	PBOR, POR, WDT	PDIP (P), SOIC (SO)	
dsPIC33FJ16GP102	R	21	dsPIC	16	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	16	7.37 MHz, 32 kHz	✓	6 Ch (10-bit)	-	3	-	2	3	-	3	1 UART, 1 SPI, 1 PC	-	-	✓	✓	\$1.68	BOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML), VTLA (TL)	
dsPIC33FJ12GP202	R	21	dsPIC	12	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	-	-	-	2	4	-	3	1 UART, 1 SPI, 1 PC	-	-	-	✓	\$2.24	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM), SSOP (SS)	
dsPIC33FJ32GP202	R	21	dsPIC	32	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	-	-	-	2	4	-	3	1 UART, 1 SPI, 1 PC	-	-	-	✓	\$2.56	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
dsPIC33EP64GP502	R	21	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	6 ch	-	-	1+2 <sup>†</sup>	2	4	4	-	5	2 UART, 2 SPI, 1 I2C	1	-	✓	✓	\$2.66	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM)
dsPIC33FJ32GP302	R	21	dsPIC	32	4096	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	-	2	-	4	4	-	5	2 UART, 2 SPI, 1 PC	-	-	-	✓	\$2.76	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
dsPIC33FJ64GP202	R	21	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	-	2	-	4	4	1	5	2 UART, 2 SPI, 1 PC	-	✓	-	✓	\$3.12	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
dsPIC33EP256GP502	NR	21	dsPIC	256	32768	AN1095	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	6 ch	-	-	1+2 <sup>†</sup>	2	4	4	-	5	2 UART, 2 SPI, 1 PC	1	-	✓	✓	\$3.14	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM)
dsPIC33FJ64GP802*	R	21	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	2 x 16-bit @ 100 (ksps)	2	-	4	4	1	5	2 UART, 2 SPI, 1 PC	1	✓	✓	✓	\$3.42	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
dsPIC33FJ128GP202	R	21	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	-	2	-	4	4	1	5	2 UART, 2 SPI, 1 PC	-	✓	✓	✓	\$3.44	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
dsPIC33FJ128GP802	R	21	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	10 ch	2 x 16-bit @ 100 (ksps)	2	-	4	4	1	5	2 UART, 2 SPI, 1 PC	1	✓	✓	✓	\$3.72	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
dsPIC33EP64GP503	NR	25	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	8 ch	-	1+3 <sup>†</sup>	3	4	4	-	5	2 UART, 2 SPI, 1 PC	1	-	✓	✓	\$2.73	PBOR, POR, WDT	VTLA (TL)	
dsPIC33EP256GP503	NR	25	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	8 ch	-	1+3 <sup>†</sup>	3	4	4	-	5	2 UART, 2 SPI, 1 PC	1	-	✓	✓	\$3.21	PBOR, POR, WDT	VTLA (TL)	

\*Parts available with High Temperature options (150°C).

†Op amp configured as comparator.

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

†Pricing subject to change; please contact your Microchip representative for most current pricing.

# dsPIC33 DSC General Purpose Family

Product	Released (R) Not Released (NR)	IO Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement					Communication					5-ku Pricing <sup>†</sup>	Monitors System Mgmt. Features	Packages (Designator)					
				Program KB	Data RAM (B)	EEPROM	DMA #Ch		Maximum Speed MIPS	Internal Oscillator	Charge Time Measurement Unit	ADC 10/12-bit 1100/500 Ksps	DAC	Comparators	Op-Amps	Output Compare/PWM	Input Capture	Codec (FS, AC97)	16-bit Timer <sup>‡</sup>	Digital Communication				CAN	PMP	RTCC/RCR	PPS	
dsPIC33FJ16GP304	R	35	dsPIC	16	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	-	-	-	2	4	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.58	BOR, POR, WDT	TOFP (PT), OFN (ML)	44-Pin
dsPIC33FJ32GP204*	R	35	dsPIC	32	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	-	-	-	2	4	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.66	PBOR, POR, WDT	TOFP (PT), OFN (ML)	
dsPIC33EP64GP504	R	35	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	9 ch	-	1 + 3 <sup>‡</sup>	3	4	4	-	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$2.80	PBOR, POR, WDT	VTLA (TL), TOFP (PT), OFN (ML)	
dsPIC33FJ32GP304	R	35	dsPIC	32	4096	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	-	2	-	4	4	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.01	PBOR, POR, WDT	TOFP (PT), OFN (ML)	
dsPIC33EP256GP504	NR	35	dsPIC	256	32768	AN1095	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	9 ch	-	1 + 3 <sup>‡</sup>	3	4	4	-	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$3.28	PBOR, POR, WDT	VTLA (TL), TOFP (PT), OFN (ML)	
dsPIC33FJ64GP204	R	35	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	-	2	-	4	4	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	✓	-	✓	\$3.29	PBOR, POR, WDT	TOFP (PT), OFN (ML)	
dsPIC33FJ128GP204	R	35	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	-	2	-	4	4	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	✓	✓	✓	\$3.58	PBOR, POR, WDT	TOFP (PT), OFN (ML)	
dsPIC33FJ64GP804	R	35	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	2 x 16-bit @ 100 (ksps)	2	-	4	4	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	✓	✓	✓	\$3.65	PBOR, POR, WDT	TOFP (PT), OFN (ML)	
dsPIC33FJ128GP804*	R	35	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	13 ch	2 x 16-bit @ 100 (ksps)	2	-	4	4	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	✓	✓	✓	\$3.96	PBOR, POR, WDT	TOFP (PT), OFN (ML)	
dsPIC33EP64GP506	R	53	dsPIC	64	8192	AN1095	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	16 ch	-	1 + 3 <sup>‡</sup>	3	4	4	-	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$2.94	PBOR, POR, WDT	TOFP (PT), OFN (MR)	64-Pin
dsPIC33FJ64GP206A	R	53	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	-	\$3.39	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33EP256GP506	NR	53	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	16 ch	-	1 + 3 <sup>‡</sup>	3	4	4	-	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$3.42	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ64GP306A	R	53	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.53	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ128GP206A	R	53	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	-	\$3.63	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ128GP306A	R	53	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.79	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ64GP706A	R	53	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$4.14	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ256GP506A*	R	53	dsPIC	256	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	\$4.20	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ128GP706A*	R	53	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$4.40	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33EP512GP806	NR	53	dsPIC	536	53248	AN1095 <sup>(1)</sup>	15	3V-3.6V	70	7.37 MHz, 32 kHz	-	24 ch, 2 ADC	-	3	-	16	16	1	9	4 UART, 2 SPI, 2 I <sup>2</sup> C	2	✓	✓	✓	\$5.60	PBOR, POR, WDT	TOFP (PT), OFN (MR)	
dsPIC33FJ64GP708A	R	69	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$4.44	PBOR, POR, WDT	TOFP (PT)	80-Pin
dsPIC33FJ128GP708A	R	69	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$4.69	PBOR, POR, WDT	TOFP (PT)	
dsPIC33FJ64GP310A	R	85	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	32 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.99	PBOR, POR, WDT	TOFP (PT, PF)	100-Pin
dsPIC33FJ128GP310A	R	85	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	32 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$4.26	PBOR, POR, WDT	TOFP (PT, PF)	
dsPIC33FJ64GP710A	R	85	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	32 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$4.61	PBOR, POR, WDT	TOFP (PT, PF)	
dsPIC33FJ256GP510A	R	85	dsPIC	256	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	32 ch	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	\$4.66	PBOR, POR, WDT	TOFP (PT, PF)	
dsPIC33FJ128GP710A*	R	85	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	32 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$4.86	PBOR, POR, WDT	TOFP (PT, PF)	
dsPIC33FJ256GP710A*	R	85	dsPIC	256	30720	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	32 ch, 2 ADC	-	-	-	8	8	1	9	2 UART, 2 SPI, 2 I <sup>2</sup> C	2	-	-	-	\$5.32	PBOR, POR, WDT	TOFP (PT, PF)	

\*Parts available with High Temperature options (150°C).

<sup>‡</sup>Op amp configured as comparator.

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

<sup>†</sup>Pricing subject to change; please contact your Microchip representative for most current pricing.

# dsPIC33 DSC Motor Control and Power Conversion Family

Product	Released (R) Not Released (NR)	IO Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement					Communication					5 kV Pricing <sup>†</sup>	Monitors	Packages (Designator)						
				Program KB	Data RAM (B)	EEPROM	DMA #Ch		Maximum Speed MIPS	Internal Oscillator	Charge Time Measurement Unit	ADC 10/12-bit 1100/500 ksps	DAC	Comparators	Op Amps	Output Compare/PWM	Input Capture	Motor Control PWM Ch	OEI	16-bit Timer <sup>(2)</sup>				Digital Communication	CAN	FS USB OTG	PMP	RTCC/CRC	PPS
20-Pin	dsPIC33F16MC101	R	15	dsPIC*	16	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	16	7.37 MHz, 32 kHz	✓	4 ch (10-bit)	-	3	-	2	3	6	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$1.57	BOR, POR, WDT	SOIC (SO), PDIP (P), SSOP (SS)
	dsPIC33F12MC201	R	15	dsPIC	12	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	4 ch	-	-	-	2	4	4+2	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.09	PBOR, POR, WDT	SOIC (SO), PDIP (P), SSOP (SS)
28-Pin	dsPIC33F16MC102	R	21	dsPIC	16	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	16	7.37 MHz, 32 kHz	✓	6 ch (10-bit)	-	3	-	3	3	6	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$1.68	BOR, POR, WDT	QFN (ML), SOIC (SO), SPDIP (SP), SSOP (SS), VTLA (TL)
	dsPIC33F12MC202	R	21	dsPIC	12	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	-	-	2	4	6+2	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.31	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM), SSOP (SS)
	dsPIC33EP64MC202	R	21	dsPIC	64	8192	AN1095	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	6 ch	-	1+2 <sup>‡</sup>	2	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.45	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM)
	dsPIC33FJ32MC202*	R	21	dsPIC	32	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	-	-	2	4	6+2	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.63	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)
	dsPIC33EP64MC502	R	21	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	6 ch	-	1+2 <sup>‡</sup>	2	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$2.66	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM)
	dsPIC33FJ32MC302	R	21	dsPIC	32	4096	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$2.87	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)
	dsPIC33EP256MC202	NR	21	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	6 ch	-	1+2 <sup>‡</sup>	2	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.14	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM)
	dsPIC33FJ64MC202	R	21	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$3.29	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)
	dsPIC33EP256MC502	NR	21	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	6 ch	-	1+2 <sup>‡</sup>	2	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$3.35	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM)
	dsPIC33FJ64MC802*	R	21	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$3.50	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)
36-Pin	dsPIC33FJ128MC202	R	21	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$3.57	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)
	dsPIC33FJ128MC802*	R	21	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	6 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$3.82	PBOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)
	dsPIC33EP64MC203	NR	25	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	8 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.52	PBOR, POR, WDT	VTLA (TL)
	dsPIC33EP64MC503	NR	25	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	8 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$2.73	PBOR, POR, WDT	VTLA (TL)
	dsPIC33EP256MC203	NR	25	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	8 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.21	PBOR, POR, WDT	VTLA (TL)
	dsPIC33EP256MC503	NR	25	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	8 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$3.42	PBOR, POR, WDT	VTLA (TL)
	dsPIC33EP64MC204	R	35	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	9 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.59	PBOR, POR, WDT	VTLA (TL), TQFP (PT), QFN (ML)
	dsPIC33FJ16MC304*	R	35	dsPIC	16	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	9 ch	-	-	-	2	4	6+2	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.65	BOR, POR, WDT	TQFP (PT), QFN (ML)
	dsPIC33FJ32MC204*	R	35	dsPIC	32	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	9 ch	-	-	-	2	4	6+2	1	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.76	PBOR, POR, WDT	TQFP (PT), QFN (ML)
	dsPIC33EP64MC504	R	35	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	9 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$2.80	PBOR, POR, WDT	VTLA (TL), TQFP (PT), QFN (ML)
44-Pin	dsPIC33FJ32MC304	R	35	dsPIC	32	4096	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	-	9 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$3.12	PBOR, POR, WDT	TQFP (PT), QFN (ML)
	dsPIC33EP256MC204	NR	35	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	9 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.28	PBOR, POR, WDT	VTLA (TL), TQFP (PT), QFN (ML)
	dsPIC33FJ64MC204	R	35	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	9 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$3.39	PBOR, POR, WDT	TQFP (PT), QFN (ML)
	dsPIC33EP256MC504	NR	35	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	9 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$3.49	PBOR, POR, WDT	VTLA (TL), TQFP (PT), QFN (ML)
	dsPIC33FJ128MC204	R	35	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	9 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	✓	✓	\$3.68	PBOR, POR, WDT	TQFP (PT), QFN (ML)
	dsPIC33FJ64MC804*	R	35	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	9 ch	-	2	-	4	4	6+2	2	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	✓	✓	\$3.89	PBOR, POR, WDT	TQFP (PT), QFN (ML)
64-Pin	dsPIC33EP64MC206	R	53	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	16 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.73	PBOR, POR, WDT	TQFP (PT), QFN (MR)
	dsPIC33EP64MC506	R	53	dsPIC	64	8192	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	16 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	1	-	-	✓	\$2.94	PBOR, POR, WDT	TQFP (PT), QFN (MR)
	dsPIC33EP256MC206	NR	53	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	16 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.42	PBOR, POR, WDT	TQFP (PT), QFN (MR)

\*Parts available with High Temperature options (150°C).

<sup>†</sup>Op amp configured as comparator.

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

<sup>†</sup>Pricing subject to change; please contact your Microchip representative for most current pricing.

# dsPIC33 DSC Motor Control and Power Conversion Family

Product	Released (R) Not Released (NR)	IO Pins	Core	Memory				Voltage Range	Operating Speed		Analog Sensing & Measurement					Output Compare/PWM	Input Capture	Motor Control PWM Ch	OEI	16-bit Timer <sup>(2)</sup>	Communication				5-ku Pricing <sup>†</sup>	Monitors	Packages (Designator)			
				Program KB	Data RAM (B)	EEPROM	DMA #Ch		Maximum Speed MIPS	Internal Oscillator	Charge Time Measurement Unit	ADC 10/12-bit 1100/500 Ksps	DAC	Comparators	Op-Amps						Digital Communication	CAN	FS USB OTG	PMP				RTCC/CRC	PPS	System Mgmt. Features
64-Pin (Cont.)	dsPIC33EP256MC506	NR	53	dsPIC	256	32768	AN1095 <sup>(1)</sup>	4	3V-3.6V	70	7.37 MHz, 32 kHz	✓	16 ch	-	1+3 <sup>‡</sup>	3	4	4	6	1	5	2 UART, 2 SPI, 1 PC	1	-	-	✓	✓	\$3.63	PBOR, POR, WDT	TOFP (PT), QFN (MR)
	dsPIC33FJ64MC506A*	R	53	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	16 ch	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$3.84	PBOR, POR, WDT	TOFP (PT), QFN (MR)
	dsPIC33FJ128MC506A*	R	53	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	16 ch	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.10	PBOR, POR, WDT	TOFP (PT), QFN (MR)
	dsPIC33FJ64MC706A	R	53	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	16 ch, 2 ADC	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.21	PBOR, POR, WDT	TOFP (PT), QFN (MR)
	dsPIC33FJ128MC706A*	R	53	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.3V	40	7.37 MHz, 32 kHz	-	16 ch, 2 ADC	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.49	PBOR, POR, WDT	TOFP (PT), QFN (MR)
	dsPIC33EP256MU806	R	53	dsPIC	280	28672	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	24 ch, 2-ADC	-	3	-	16	16	8	2	9	4 UART, 4 SPI, 2 PC	2	1	✓	✓	✓	\$5.22	BOR, POR, WDT	TOFP (PT), QFN (MR)
80-Pin	dsPIC33EP512MC806	NR	53	dsPIC	536	53248	AN1095 <sup>(1)</sup>	15	3V-3.6V	70	7.37 MHz, 32 kHz	-	24 ch, 2-A/D	-	3	-	16	16	8	2	9	4 UART, 2 SPI, 2 PC	2	-	✓	✓	✓	\$5.60	PBOR, POR, WDT	TOFP (PT), QFN (MR)
	dsPIC33FJ64MC508A	R	69	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	16 ch	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.14	PBOR, POR, WDT	TOFP (PT)
100-Pin	dsPIC33FJ128MC708A	R	69	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	18 ch, 2 ADC	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	2	-	-	-	-	\$5.00	PBOR, POR, WDT	TOFP (PT)
	dsPIC33FJ64MC510A	R	85	dsPIC	64	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.33	PBOR, POR, WDT	TOFP (PT, PF)
	dsPIC33FJ128MC510A	R	85	dsPIC	128	8192	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.59	PBOR, POR, WDT	TOFP (PT, PF)
	dsPIC33FJ64MC710A	R	85	dsPIC	64	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch, 2 ADC	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	2	-	-	-	-	\$4.91	PBOR, POR, WDT	TOFP (PT, PF)
	dsPIC33FJ256MC510A	R	85	dsPIC	256	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	16 ch	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	1	-	-	-	-	\$4.97	PBOR, POR, WDT	TOFP (PT, PF)
	dsPIC33FJ128MC710A*	R	85	dsPIC	128	16384	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch, 2 ADC	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	2	-	-	-	-	\$5.18	PBOR, POR, WDT	TOFP (PT, PF)
	dsPIC33FJ256MC710A*	R	85	dsPIC	256	30720	AN1095 <sup>(1)</sup>	8	3V-3.6V	40	7.37 MHz, 32 kHz	-	24 ch, 2 ADC	-	-	-	8	8	8	1	9	2 UART, 2 SPI, 2 PC	2	-	-	-	-	\$5.67	PBOR, POR, WDT	TOFP (PT, PF)
	dsPIC33EP256MU810	R	83	dsPIC	280	28672	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	32 ch, 2 A/D	-	3	-	16	16	12	2	9	4 UART, 4 SPI, 2 PC	2	1	✓	✓	✓	\$5.70	BOR, POR, WDT	TOFP (PT, PF)
144-Pin	dsPIC33EP512MU810	R	83	dsPIC	536	53248	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	32 ch, 2 A/D	-	3	-	16	16	12	2	9	4 UART, 4 SPI, 2 PC	2	1	✓	✓	✓	\$6.37	BOR, POR, WDT	TOFP (PT, PF)
	dsPIC33EP256MU814	R	122	dsPIC	280	28672	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	32 ch, 2 A/D	-	3	-	16	16	14	2	9	4 UART, 4 SPI, 2 PC	2	1	✓	✓	✓	\$6.31	BOR, POR, WDT	TOFP (PH), LOFP (PL)
	dsPIC33EP512MU814	R	122	dsPIC	536	53248	AN1095 <sup>(1)</sup>	15	3V-3.6V	60	7.37 MHz, 32 kHz	-	32 ch, 2 A/D	-	3	-	16	16	14	2	9	4 UART, 4 SPI, 2 PC	2	1	✓	✓	✓	\$6.99	BOR, POR, WDT	TOFP (PH), LOFP (PL)

\*Parts available with High Temperature options (150°C).

<sup>†</sup>Op amp configured as comparator.

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

# dsPIC33 DSC SMPS and Digital Power Conversion Family

Product	Released (R) Not Released (NR)	I/O Pins	Core	Memory				Voltage Range	Operating Speed		Analog			Output Compare/PWM	Input Capture	Power Supply PWM Ch <sup>(1)</sup>	OEI	16-bit Timer <sup>(2)</sup>	Communication		PMP	RTCC	PPS	5-ku Pricing <sup>†</sup>	Monitors System Mgmt. Features	Packages (Designator)		
				Program KB	Data RAM (B)	EEPROM	DMA #Ch		Maximum Speed MIPS	Internal Oscillator	ADC 10-bit 2000/4000 kSps	DAC	Comparators						Digital Communication	CAN								
18-Pin	dsPIC33FJ06GS101	R	13	dsPIC*	6	256	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	6 ch	-	-	1	-	4	-	2	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$1.96	BOR, POR, WDT	SOIC (SO)	18-Pin
28-Pin	dsPIC33FJ06GS102	R	21	dsPIC	6	256	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	6 ch	-	-	1	-	4	-	2	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.20	BOR, POR, WDT	QFN (MM), SOIC(SO), SPDIP (SP)	28-Pin
	dsPIC33FJ06GS202	R	21	dsPIC	6	1024	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	6 ch	2 x 10-bit	2	1	1	4	-	2	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.38	BOR, POR, WDT	QFN (MM), SOIC(SO), SPDIP (SP)	
	dsPIC33FJ16GS402	R	21	dsPIC	16	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	8 ch	-	-	2	2	6	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.52	BOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
	dsPIC33FJ16GS502	R	21	dsPIC	16	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	8 ch, 2 ADC*	4 x 10-bit	4	2	2	8	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.04	BOR, POR, WDT	SPDIP (SP), SOIC (SO), QFN (MM)	
44-Pin	dsPIC33FJ16GS404	R	35	dsPIC	16	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	8 ch	-	-	2	2	6	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$2.77	BOR, POR, WDT	TQFP (PT), QFN (ML)	44-Pin
	dsPIC33FJ16GS504	R	35	dsPIC	16	2048	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	12 ch, 2 ADC*	4 x 10-bit	4	2	2	8	-	3	1 UART, 1 SPI, 1 I <sup>2</sup> C	-	-	-	✓	\$3.42	BOR, POR, WDT	TQFP (PT), QFN (ML)	
64-Pin	dsPIC33FJ32GS406	R	58	dsPIC	32	4096	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	16 ch	-	-	4	4	12	1	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.07	BOR, POR, WDT	TQFP (PT), QFN (MR)	64-Pin
	dsPIC33FJ64GS406	R	58	dsPIC	64	8192	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	16 ch	-	-	4	4	12	1	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.35	BOR, POR, WDT	TQFP (PT), QFN (MR)	
	dsPIC33FJ32GS606	R	58	dsPIC	32	4096	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	16 ch, 2 ADC*	4 x 10-bit	4	4	4	12	2	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.36	BOR, POR, WDT	TQFP (PT), QFN (MR)	
	dsPIC33FJ64GS606	R	58	dsPIC	64	9216	AN1095 <sup>(1)</sup>	4	3V-3.6V	40	7.37 MHz, 32 kHz	16 ch, 2 ADC*	4 x 10-bit	4	4	4	12	2	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	\$3.81	BOR, POR, WDT	TQFP (PT), QFN (MR)	
80-Pin	dsPIC33FJ32GS608	R	74	dsPIC	32	4096	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	18 ch, 2 ADC*	4 x 10-bit	4	4	4	16	2	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$3.85	BOR, POR, WDT	TQFP (PT)	80-Pin
	dsPIC33FJ64GS608	R	74	dsPIC	64	9216	AN1095 <sup>(1)</sup>	4	3V-3.6V	40	7.37 MHz, 32 kHz	18 ch, 2 ADC*	4 x 10-bit	4	4	4	16	2	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	\$4.34	BOR, POR, WDT	TQFP (PT)	
100-Pin	dsPIC33FJ32GS610	R	85	dsPIC	32	4096	AN1095 <sup>(1)</sup>	-	3V-3.6V	40	7.37 MHz, 32 kHz	24 ch, 2 ADC*	4 x 10-bit	4	4	4	18	2	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	-	-	-	-	\$4.41	BOR, POR, WDT	TQFP (PF, PT)	100-Pin
	dsPIC33FJ64GS610	R	85	dsPIC	64	9216	AN1095 <sup>(1)</sup>	4	3V-3.6V	40	7.37 MHz, 32 kHz	24 ch, 2 ADC*	4 x 10-bit	4	4	4	18	2	5	2 UART, 2 SPI, 2 I <sup>2</sup> C	1	-	-	-	\$4.89	BOR, POR, WDT	TQFP (PF, PT)	

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

## Thermal Management – Temperature Sensors

Product	Typical Accuracy (°C)	Max. Accuracy @ 25°C (°C)	Max. Temperature Range (°C)	Vcc Range (V)	Max. Op Current (µA)	Features	Packages
MCP9501/2/3/4	±0.5	±3	-55 to +125	+2.7 to +5.5	40	Cross to MAX6501/2/3/4, Open-drain and push-pull output options	SOT-23A
MCP9509/10	±0.5	NS	-40 to +125	+2.7 to +5.5	50	Resistor-programmable temperature switch	SOT-23A
MCP9700/01	±1	±4	-40 to +125	+2.3 to +5.5	12	Linear Active Thermistor® IC	SOT-23A, TO-92, SC70
MCP9700/01A	±1	±2	-40 to +125	+2.3 to +5.5	12	Linear Active Thermistor® IC	SOT-23A, TO-92, SC70
TC1046	±0.5	±2	-40 to +125	+2.7 to +4.4	60	High precision temperature-to-voltage converter, 6.25 mV/°C	SOT-23A
TC1047A	±0.5	±2	-40 to +125	+2.5 to +5.5	60	High precision temperature-to-voltage converter, 10 mV/°C	SOT-23A
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	MSOP, DFN
MCP9800/1/2/3	±0.5	±1	-55 to +125	+2.7 to +5.5	400	SMbus/I <sup>2</sup> C™ compatible interface, 0.0625°C to 0.5°C adj. resolution, Power-saving one-shot temperature measurement	SOIC, MSOP, SOT-23A
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	MSOP, DFN
MCP9843	±0.5	±1	-20 to +125	+3.0 to +3.6	400	JEDEC compatible register set, SMbus/I <sup>2</sup> C™ compatible interface, Programmable, Shut-down modes and EVENT output	TSSOP, DFN
MCP98243	±1	±3	-40 to +125	+3.0 to +3.6	500	Serial output temperature sensor with integrated EEPROM	TSSOP, DFN, TDFN
TCN75A	±0.5	±2	-40 to +125	+2.7 to +5.5	500	SMbus/I <sup>2</sup> C™ compatible interface, Power-saving one-shot temperature measurement, Multi-drop capability, 0.0625°C to 0.5°C adjustable temperature resolution	SOIC, MSOP

## Power Management – Switching Regulators/PWM Controllers

Product	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
TC1303/04/13	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	Synchronous Buck Regulator, LDO w/Power Good with PFM/PWM auto-switching, Power Good output or Power Sequencing	MSOP, DFN
MCP1602/3	2.7 to 5.5	0.8 to 4.5 /4.0	-40 to +85	PFM/PWM	2000	35/45	500	Synchronous Buck Regulator PFM, PWM auto-switching, UVLO, Soft-start, Power Good indicator, Over-temperature/current protection	MSOP, DFN, TSOT
MCP1630V 1631V	3.0 to 5.5	–	-40 to +125	PWM	1000/2000	2800/3700	Ext	Current/Voltage mode PWM controller, UVLO, Short Circuit and Over-temperature Protection, Integrated MOSFET driver	MSOP, SSOP, TSSOP, DFN
MCP1631HV/VHV	3.5 to 16	–	-40 to +125	PWM	2000	3700	Ext	Current/Voltage mode PWM controller with integrated 16V LDO, UVLO, Integrated error, Current and voltage sense amplifier, Overvoltage comparator and MOSFET driver	SSOP, TSSOP
MCP1640B/C/D	0.65 to 6	2.0 to 5.5	-40 to +85	PWM or PWM/PFM	500	19	350	Integrated synchronous boost regulator, -65V start-up voltage, Soft-start, True load disconnect or input-to-output bypass option	SOT-23, DFN
MCP1650/1/2/3	2.7 to 5.5	2.5 to ext. tx limited	-40 to +125	Constant Frequency	750	120	560/440	Step-up DC/DC Controller with shutdown control, Low battery detect, Power Good indicator, UVLO, Soft start	MSOP
MCP16301	4.0 to 30	2.0 to 15	-40 to +85	PWM	500	2000	600	Integrated N-channel, UVLO, Soft-start, Over-temperature protection	SOT-23
MCP16321	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	QFN
MCP16322	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	QFN
MCP16323	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	QFN

## Power Management – Linear Regulators

Product	Max. Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Typical Active Current (µA)	Typical Dropout Voltage @ Max. I <sub>out</sub> (mV)	Typical Output Voltage Accuracy (%)	Features	Packages
TC1016/17	6	1.8 to 4.0	80/150	53	150/285	±0.5	Shutdown	SOT-23A, SC70
TC1301A/B	6	1.5 to 3.3	LDO1: 300 LDO2: 150	103/114	LDO1: 104 LDO2: 150	±0.5	Dual LDO plus Reset output, Shutdown, Reference bypass, Voltage detect	MSOP, DFN
TC1302AB	6	1.5 to 3.3	LDO1: 300 LDO2: 150	103/114	LDO1: 104 LDO2: 150	±0.5	Dual LDO, Shutdown, Reference bypass, Voltage detect	MSOP, DFN
TC2014/5, TC2185	6	1.8 to 5.0	50/100/150	55	45/90/140	±0.4	Shutdown, Reference bypass input	SOT-23A
TC2054/5, TC2186	6	1.8 to 5.0	50/100/150	55	45/90/140	±0.4	Shutdown, Error output	SOT-23A
MCP1700	6	1.2 to 5.0	250	1.6	300	±0.4	Very low I <sub>o</sub>	SOT-23A, SOT-89, TO-92
MCP1702/3	13.2/16	1.2 to 5.0	250	2	330/625	±0.4	Very low I <sub>o</sub>	DFN, TO-92, SOT-23A, SOT-89, SOT-223
MCP1725/6/7	6	0.8 to 5.0	500/1000/1500	120/140/140	210/300/330	±0.5	Shutdown, C <sub>DELAY</sub> , Power Good	SOIC, DFN
MCP1754/S	16	1.8 to 5.5	150	56	300	± 0.4	Power Good, Shutdown	DFN, SOT-23A, SOT-89, SOT-223
MCP1790/1	30	3.0, 3.3, 5.0	70	70	500	±0.2	Load dump, Shutdown, Power Good	SOT-223, DDPK
MCP1801/2	10	0.9 to 6.0	150/300	25	250/800	±0.4	Shutdown, High PSRR	SOT-23A
MCP1804	28	1.8 to 18	150	50	300	±0.5	Shutdown, High PSRR	SOT-23, SOT-89, SOT-223
MCP1824/5/6/7	6	0.8 to 5.0	300/500/1000/1500	120/120/140/140	200/210/300/330	±0.5	Fixed and Adjustable output, Shutdown, Power Good	SOT-23, SOT-223, TO-220, DDPK
MCP1824S/5S/6S/7S	6	0.8 to 5.0	300/500/1000/1500	120/120/140/140	200/210/300/330	±0.5	3-pin high current LDOs	SOT-223, TO-220, DDPK

## Power Management – Charge Pump DC-to-DC Converters

Product	Input Voltage Range (V)	Output Voltage (V)	Operating Temp Range (°C)	Max. Input Current (µA)	Typical Output Current (mA)	Features	Packages
TC1044S	1.5 to 12	-V <sub>IN</sub> or 2*V <sub>IN</sub>	-40 to +85	160	20	85 kHz oscillator Boost mode	PDIP, SOIC
TC7660	1.5 to 10	-V <sub>IN</sub> or 2*V <sub>IN</sub>	-40 to +85	180	20	10 kHz oscillator	PDIP, SOIC
TC7660H	1.5 to 10	-V <sub>IN</sub> or 2*V <sub>IN</sub>	-40 to +85	1000	20	120 kHz oscillator	PDIP, SOIC
TC7660S	1.5 to 12	-V <sub>IN</sub> or 2*V <sub>IN</sub>	-40 to +85	160	20	45 kHz oscillator Boost mode	PDIP, SOIC
TC7662B	1.5 to 15	-V <sub>IN</sub> or 2*V <sub>IN</sub>	-40 to +85	180	20	35 kHz oscillator Boost mode	PDIP, SOIC
TC7662A	3.0 to 18	-V <sub>IN</sub> or 2*V <sub>IN</sub>	-40 to +85	200	40	12 kHz oscillator	PDIP, SOIC
MCP1256	1.8 to 3.6	3.3	-40 to +85	100	100	Power Good Sleep mode	MSOP, DFN
MCP1257	1.8 to 3.6	3.3	-40 to +85	100	100	Sleep mode low battery indication	MSOP, DFN
MCP1258	1.8 to 3.6	3.3	-40 to +85	100	100	Low battery indication input/output bypass 1	MSOP, DFN

## Power Management – CPU/System Supervisors

Product	Description	Operating Temp Range (°C)	Features	Packages
MCP111(1/2) TC5(1/2/3/4)	System Voltage Detectors (No Reset Delay)	-40 to +125 -40 to +85	Wide V <sub>CC</sub> input range, Wide detection range (custom options available), Low current, CMOS/Push-Pull active low reset options	5-SOT-23, 3-TO-92, 3-SOT-23A, 3-SOT-89, 3-SC70
MCP809, MCP100, MCP130, MCP120 MCP13XX, TC1270A and more	System Voltage Supervisors (Available Reset Delays)	-40 to +125 -40 to +85	Wide detection range (custom options available), Low current, Push-Pull/Open Drain, Active high/low, Watchdog, Manual reset, Dual output options, Multiple reset delay options	8-SOIC (150 mil), 5-SOT-23, 4-SOT-143, 3-TO-92, 3-SOT-23, 5-SC70

## Power Management – Power MOSFET Drivers

Product	Configuration	Operating Temp Range (°C)	Peak Output Current (A)	Output Resistance (Max. @ 25°C)	Max Supply Voltage (V)	Input/Output Delay (ns)	Packages
MCP1401/02 Single	Inverting/Non-inverting	-40 to +125	0.5	18/16	18	40/40	SOT-23
MCP1415/16 Single	Inverting/Non-inverting	-40 to +125	1.5	7.5/5.5	18	50/55	SOT-23
TC4467/8/9 Quad	Inverting/ Non-inverting	-40 to +85	1.2	15/15	18	40/40	PDIP, SOIC
TC4426A/27A/28A Dual	Inverting/Non-inverting	-40 to +125	1.5	9/9	18	30/30	PDIP, SOIC, DFN
TC4423A/24A/25A Dual	Inverting/Non-inverting	-40 to +125	3	3 (typ.)/4 (typ.)	18	40 (typ.)/40 (typ.)	PDIP, SOIC, DFN
MCP14E3/E4/E5 Dual	Inverting/Non-inverting	-40 to +125	4	3.5/3.0	18	55/55	PDIP, SOIC, DFN
MCP14E6/E7/E8 Dual	Inverting/Non-inverting/Inverting and Non-inverting	-40 to +125	2	2.2/2.8	18	45/45	PDIP, SOIC, DFN
MCP14E9/E10/E11 Dual	Inverting/Non-inverting/Inverting and Non-inverting	-40 to +125	3	2.2/2.8	18	75/75	PDIP, SOIC, DFN
MCP1406/07 Single	Inverting/Non-inverting	-40 to +125	6	1.8/2.0 (typ.)	18	30/30	TO-220, PDIP, SOIC, DFN
TC4420/29	Inverting/Non-inverting	-40 to +125	6	2.8/2.5	18	55/55	TO-220, PDIP, SOIC, DFN
TC4421A/22A Single	Inverting /Non-inverting	-40 to +125	9	1.25 (typ.)/1.5	18	38/42	TO-220, PDIP, SOIC, DFN
TC4451/52 Single	Inverting /Non-inverting	-40 to +125	12	0.6 (typ.)/1.5	18	15/15	TO-220, PDIP, SOIC, DFN, DPAK
TC4431/32 Single	Inverting /Non-inverting	-40 to +85	1.5	10/10	30	62/78	PDIP, SOIC

## Power Management – Synchronous Buck High-Side Driver

Product	Configuration	Operating Temp Range (°C)	Peak Output Current (A)	Output Resistance (Max. @ 25°C)	Max Supply Voltage (V)	Input/Output Delay (ns)	Packages
MCP14700/14628	Dual input/Single input	-40 to +85	2	2.5/2.5	5 (V <sub>DD</sub> ), 36 (Boot Pin)	18/20	SOIC, DFN

## Power Management – Battery Chargers

Product	Mode	Cell Type	# of Cells	Vcc Range (V)	Cell Voltage (V)	Max. Charging Current (mA)	Max. Voltage Regulation (%)	Int/Ext FET	Features	Packages
MCP73113/14/23	Linear	Li-Ion/Li-Polymer and LiFePO4	1	4 to 16	3.6, 4.1, 4.2, 4.35, 4.4	1100	±0.5	Int	6.5/5.8V Overvoltage protection, UVLO, Thermal regulation	10-pin 3x3 DFN
MCP73213/23	Linear	Li-Ion/Li-Polymer and LiFePO4	2	4 to 16	7.2, 8.2, 8.4, 8.7, 8.8	1100	±0.6	Int	13V Overvoltage protection	10-pin 3x3 DFN
MCP73830/L	Linear	Li-Ion/Li-Polymer	1	3.75 to 6	4.2	1000/200	±0.75	Int	Soft-start, Charge enable pin	6-pin 2x2 TDFN
MCP73831/2	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 or open-drain STAT pin	8-pin 2x3 DFN, 5-SOT-23
MCP73837/8	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) auto-switching, Thermistor input, Power Good output or Timer enable input	10-pin MSOP, 10-pin 3x3 DFN
MCP73871	Linear	Li-Ion/Li-Polymer	1	3.75 to 6.0	4.2, 4.35, 4.4, 4.5	1500 (A/C Adapter) 500 (USB)	±0.5	Int	Simultaneous charging of load and battery, Load-dependent charging, Multiple programmable charge currents	20-pin 4x4 QFN

## Linear – Op Amps

Product	# per Package	GBWP (MHz)	I <sub>o</sub> Typical (µA)	V <sub>os</sub> Max (mV)	Operating Voltage (V)	Packages	Product	# per Package	GBWP (MHz)	I <sub>o</sub> Typical (µA)	V <sub>os</sub> Max (mV)	Operating Voltage (V)	Packages
MCP6612/3/4/5/9	1/2/1/4/2/4	60	6000	8	2.5 to 5.5	SOIC, MSOP, DFN, TSSOP, QFN, SOT	MCP6071/2/4	1/2/4	1.2	110	0.15	1.8 to 6.0	SOIC, TSSOP, DFN, SOT
MCP6511/5/2/3/4/5/9	1/1/2/1/4/2/4	50	6000	0.2	2.5 to 5.5	SOIC, MSOP, DFN, TSSOP, QFN, SOT	MCP6H01/2/4	1/2/4	1.2	135	4.5	3.5 to 16	SOIC, TSSOP, TDFN, SOT, SC70
MCP6312/3/4/5/9	1/2/1/4/2/4	24	2500	8	2.5 to 5.5	SOIC, MSOP, DFN, TSSOP, QFN, SOT	MCP6001/2/4	1/2/4	1	100	4.5	1.8 to 6.0	PDIP, SOIC, MSOP, TSSOP, TDFN, SOT, SC70
MCP6211/5/2/3/4/5/9	1/1/2/1/4/2/4	20	2500	0.2	2.5 to 5.5	SOIC, MSOP, DFN, TSSOP, QFN, SOT	MCP6401/2/4	1/2/4	1	45	4.5	1.8 to 6.0	SOIC, TSSOP, TDFN, SOT, SC70
MCP6021/2/3/4	1/2/1/4	10	1000	0.5	2.5 to 5.5	PDIP, SOIC, MSOP, TSSOP, SOT	MCP6L01/2/4	1/2/4	1	85	5	1.8 to 6.0	SOIC, MSOP, TSSOP, SOT, SC70
MCP6291/2/3/4/5	1/2/1/4/2	10	1000	3	2.4 to 6.0	PDIP, SOIC, MSOP, TSSOP, SOT	MCP6061/2/4	1/2/4	0.73	60	0.15	1.8 to 6.0	SOIC, TSSOP, DFN, SOT
MCP6L91/2/4	1/2/4	10	850	4	2.4 to 6.0	SOIC, MSOP, TSSOP, SOT	MCP6241/2/4	1/2/4	0.55	50	5	1.8 to 5.5	PDIP, SOIC, MSOP, TSSOP, TDFN, SOT, SC70
MCP6281/2/3/4/5	1/2/1/4/2	5	445	3	2.2 to 6.0	PDIP, SOIC, MSOP, TSSOP, SOT	MCP6051/2/4	1/2/4	0.385	30	0.15	1.8 to 6.0	SOIC, TSSOP, DFN, SOT
MCP6286	1	3.5	540	1.5	2.2 to 5.5	SOT	MCP6231/2/4	1/2/4	0.3	20	5	1.8 to 6.0	PDIP, SOIC, MSOP, TSSOP, TDFN, SOT, SC70
MCP6012/3/4	1/2/1/4	2.8	230	2	2.7 to 6.0	PDIP, SOIC, TSSOP, SOT	MCP616/7/8/9	1/2/1/4	0.19	19	0.15	2.3 to 5.5	PDIP, SOIC, MSOP, TSSOP
MCP6L12/4	1/2/4	2.8	200	3	2.7 to 6.0	SOIC, MSOP, TSSOP, SOT	MCP606/7/8/9	1/2/1/4	0.155	19	0.25	2.5 to 6.0	PDIP, SOIC, TSSOP, SOT
MCP6271/2/3/4/5	1/2/1/4/2	2	170	3	2.0 to 6.0	PDIP, SOIC, MSOP, TSSOP, SOT	MCP6141/2/3/4	1/2/1/4	0.1	0.6	3	1.4 to 6.0	PDIP, SOIC, MSOP, TSSOP, SOT
MCP6L71/2/4	1/2/4	2	150	4	2.0 to 6.0	SOIC, MSOP, TSSOP, SOT	MCP6041/2/3/4	1/2/1/4	0.014	0.6	3	1.4 to 6.0	PDIP, SOIC, MSOP, TSSOP, SOT
MCP6V01/2/3	1/2/1	1.3	300	0.002	1.8 to 5.5	SOIC, DFN, TDFN	MCP6031/2/3/4	1/2/1/4	0.01	0.9	0.15	1.8 to 5.5	SOIC, MSOP, TSSOP, DFN, SOT
MCP6V06/7/8	1/2/1	1.3	300	0.003	1.8 to 5.5	SOIC, DFN, TDFN	MCP6441/2/4	1/2/4	0.009	0.45	4.5	1.4 to 6.0	SOIC, MSOP, TSSOP, SOT, SC70
MCP6V26/7/8	1/2/1	2	620	0.002	2.3 to 5.5	SOIC, MSOP, DFN							

## Linear – Comparators

Product	# per Package	Typical Propagation Delay (µs)	I <sub>o</sub> Typical (µA)	V <sub>os</sub> Max (mV)	Operating Voltage (V)	Temperature Range (°C)	Features	Packages
MCP6541/2/3/4	1/2/1/4	4	1	5	1.6 to 5.5	-40 to +125	Push-Pull, Rail-to-Rail Input/Output	PDIP, SOIC, MSOP, TSSOP, SOT, SC70
MCP6546/7/8/9	1/2/1/4	4	1	5	1.6 to 5.5	-40 to +125	Open-drain, 9V, Rail-to-Rail Input/Output	PDIP, SOIC, MSOP, TSSOP, SOT, SC70
MCP65R41/6	1	4	2.5	10	1.8 to 5.5	-40 to +125	Integrated V <sub>REF</sub> (1.21V or 2.4V)	SOT-23
MCP6561/2/4	1/2/4	0.047	100	10	1.8 to 5.5	-40 to +125	Push-Pull, Rail-to-Rail Input/Output	SOIC, MSOP, TSSOP, SOT, SC70
MCP6566/7/9	1/2/4	0.047	100	10	1.8 to 5.5	-40 to +125	Open-Drain, Rail-to-Rail Input/Output	SOIC, MSOP, TSSOP, SOT, SC70

## Mixed Signal – Successive Approximation Register (SAR) Analog-to-Digital Converters

Product	Resolution (bits)	Maximum Sampling Rate (ksamples/sec)	# of Input Channels	Input Type	Interface	Max. Supply Current (µA)	Temperature Range (°C)	Packages
MCP3021/3221	10/12	22	1	Single-ended	I <sup>2</sup> C™	250	-40 to +125	SOT-23A
MCP3001/2/4/8	10	200	1/2/4/8	Single-ended	SPI	500-550	-40 to +85	PDIP, SOIC, MSOP, TSSOP
MCP3201/2/4/8	12	100	1/2/4/8	Single-ended	SPI	400-550	-40 to +85	PDIP, SOIC, MSOP, TSSOP
MCP3301/2/4	13	100	1/2/4	Differential	SPI	450	-40 to +85	PDIP, SOIC, MSOP, TSSOP



## Mixed Signal – Digital-to-Analog Converters

Product	Resolution (Bits)	DAC Channels	Interface	Voltage Reference	Output Settling Time (µs)	DNL (±LSB)	Typical Operating Current (µA)	Temperature Range (°C)	Packages
MCP4706/16/26	8/10/12	1	I <sup>2</sup> C™	Ext	6	.05/188/75	210	-40 to +125	SOT-23
MCP4725	12	1	I <sup>2</sup> C™	V <sub>DD</sub>	6	0.75	175	-40 to +125	SOT-23
MCP4728	12	4	I <sup>2</sup> C™	Int	6	0.75	250	-40 to +125	MSOP
MCP4801/11/21	8/10/12	1	SPI	Int	4.5	0.5/0.5/0.75	330	-40 to +125	PDIP, SOIC, MSOP, 2x3 DFN
MCP4802/12/22	8/10/12	2	SPI	Int	4.5	0.5/0.5/0.75	415	-40 to +125	MSOP, PDIP, SOIC
MCP4901/11/21	8/10/12	1	SPI	Ext	4.5	0.5/0.5/0.75	175	-40 to +125	PDIP, SOIC, MSOP, 2x3 DFN
MCP4902/12/22	8/10/12	2	SPI	Ext	4.5	0.5/0.5/0.75	350	-40 to +125	PDIP, SOIC, TSSOP
TC1320/1	8/10	1	SMbus	Ext	10	0.8/2	350	-40 to +85	MSOP, SOIC

## Mixed Signal – Energy Measurement ICs

Product	Dynamic Range	Typical Accuracy	ADC Channels	Gain Selection	Output Type	Typical Supply Current (mA)	Analog Voltage Range (V)	Digital Voltage Range (V)	Temperature Range (°C)	Packages
MCP3910/11	24-bit resolution	94.5 dB SINAD	2	up to 32	SPI/2-wire	1.7	2.7 to 3.6	2.7 to 3.6	-40 to +125	SSOP, QFN
MCP3903	24-bit resolution	91 dB SINAD	6	up to 32	SPI	8.3	4.5 to 5.5	2.7 to 3.6	-40 to +125	SSOP
MCP3905A/06A	500:1 /1000:1	0.1%	2	up to 32	Active power pulse	3.9	4.5 to 5.5	4.5 to 5.5	-40 to +125	SSOP
MCP3909	1000:1	0.1%	2	up to 16	Active power pulse/SPI	3.9	4.5 to 5.5	4.5 to 5.5	-40 to +125	SSOP

## Mixed Signal – Digital Potentiometers

Product	# of Taps	Memory	Channels	Interface	Resistance (kΩ)	Temperature Range (°C)	Packages	Product	# of Taps	Memory	Channels	Interface	Resistance (kΩ)	Temperature Range (°C)	Packages
MCP4011/12/13/14	64	Volatile	1	Up/Down	2.1, 5, 10, 50	-40 to +125	DFN, SOT-23	MCP4331/32	129	Volatile	4	SPI	5, 10, 50, 100	-40 to +125	TSSOP, QFN
MCP4017/18/19	128	Volatile	1	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	SC70	MCP4351/52	257	Volatile	4	SPI	5, 10, 50, 100	-40 to +125	TSSOP, QFN
MCP40D17/D18/D19	128	Volatile	1	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	SC70	MCP4431/32	129	Volatile	4	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	TSSOP, QFN
MCP4021/22/23/24	64	Nonvolatile	1	Up/Down	2.1, 5, 10, 50	-40 to +125	DFN, SOT-23	MCP4441/42	129	Nonvolatile	4	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	TSSOP, QFN
MCP4141/42	128	Nonvolatile	1	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4451/52	257	Volatile	4	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	TSSOP, QFN
MCP4241/42	128	Nonvolatile	2	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4461/62	257	Nonvolatile	4	I <sup>2</sup> C™	5, 10, 50, 102	-40 to +125	TSSOP, QFN
MCP4131/32	128	Volatile	1	SPI	5, 10, 50, 100	-40 to +125	QFN, DFN	MCP4531/32	128	Volatile	1	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4231/32	128	Volatile	2	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4631/32	128	Volatile	2	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4151/52	256	Volatile	1	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4541/42	128	Nonvolatile	1	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4161/62	256	Nonvolatile	1	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4641/42	128	Nonvolatile	2	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4251/52	256	Volatile	2	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4551/52	256	Volatile	1	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4261/62	256	Nonvolatile	2	SPI	5, 10, 50, 100	-40 to +125	MSOP, QFN, DFN	MCP4651/52	256	Volatile	2	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4341/42	129	Nonvolatile	4	SPI	5, 10, 50, 100	-40 to +125	TSSOP, QFN	MCP4561/62	256	Nonvolatile	1	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN
MCP4361/62	257	Nonvolatile	4	SPI	5, 10, 50, 100	-40 to +125	TSSOP, QFN	MCP4661/62	256	Nonvolatile	2	I <sup>2</sup> C™	5, 10, 50, 100	-40 to +125	MSOP, DFN

## Mixed Signal – Delta Sigma Analog-to-Digital Converters

Product	Resolution (bits)	Maximum Sampling Rate (samples/sec)	# of Input Channels	Interface	Typical Supply Current (µA)	Temperature Range (°C)	Features	Packages
MCP3421/2/3/4	18 to 12	4 to 240	1/2/2/4 Diff	I <sup>2</sup> C™	155	-40 to +125	PGA, V <sub>REF</sub>	SOIC, TSSOP, MSOP, DFN, SOT
MCP3425/6/7/8	16 to 12	15 to 240	1/2/2/4 Diff	I <sup>2</sup> C™	155	-40 to +125	PGA, V <sub>REF</sub>	SOIC, TSSOP, MSOP, DFN, SOT
MCP3550/1/3	22	13/14/60	1 Diff	SPI	120	-40 to +125	50 & 60 Hz Rejection	SOIC, MSOP

## Interface – Controller Area Network (CAN), Infrared, LIN Transceivers, Ethernet, Serial Peripherals, USB

Product	Description	Operating Temperature Range (°C)	Other Features	Packages
MCP2515	Stand-alone CAN controller with SPI interface	-40 to +125	3 TX Buffers, 2 RX Buffers, 6 Filters, 2 Masks, Interrupt output, MCP2510 upgrade	PDIP, SOIC, TSSOP, QFN
MCP2551	CAN (Controller Area Network), High-speed CAN transceiver	-40 to +125	1 Mbps max. CAN bus speed, ISO11898 compatible, Industry standard pinout	PDIP, SOIC
MCP202(1/2)	LIN (Local Interconnect Network), LIN transceiver with voltage regulator	-40 to +125	V <sub>REG</sub> = 3.3V or 5V @ 50 mA, V <sub>CC</sub> Range = 7 to 18V, Max Baud Rate = 20 Kbaud, Compliant with LIN 1.3, 2.0, 2.1, SAE J2602, Automotive approved	PDIP, SOIC, TSSOP, DFN
MCP200(3/4)A	Stand-alone LIN transceiver	-40 to +125	V <sub>CC</sub> Range = 6 to 27V, Max Baud Rate = 20 Kbaud, Compliant with LIN 1.3, 2.0, 2.1, SAE J2602, Automotive approved	PDIP, SOIC, DFN
MCP23X09/18	8-bit I/O port expander, 16-bit I/O port expander	-40 to +125	I <sup>2</sup> C (up to 3.4 MHz) or SPI (up to 10 MHz) interface, 25 mA source/sink per I/O	PDIP, SDIP, SOIC, SSOP
MCP212(0/2), MCP2140A, MCP215(0/5)	Infrared IrDA encoders, Decoders, Protocol handlers	-40 to +85	UART to IR encoder/decoder w/hardware & software baud rate selection, IrDA* standard protocol handler plus encoder/decoder	PDIP, SDIP, SOIC, SSOP
MCP2200	UART-to-USB protocol converter	-40 to +85	Supports full speed, USB 2.0 compliant, Integrated PHY, Tx/Rx Buffer size 128 bytes each, 8 GPIO, V <sub>DD</sub> Range = 3.0 to 5.5V	SOIC, SSOP, QFN
MCP2210	USB-to-SPI protocol converter	-40 to +85	Supports full speed, USB 2.0 compliant, Integrated PHY, Tx/Rx Buffer size 64 bytes each, 9 GPIO, V <sub>DD</sub> Range = 3.3 to 5.5V	SOIC, SSOP, QFN
ENC28J60	Stand-alone 10 Base-T Ethernet controller with SPI interface	-40 to +85	Ethernet controller, 8 KB RAM Buffer, Integrated 10 BASE-T PHY	SPDIP, SOIC, SSOP, QFN
ENC424J600	Stand-alone 10/100 Base-T Ethernet controller with SPI and parallel interface	-40 to +85	Ethernet controller, 24 KB RAM Buffer, Cryptographic Security Engine, 10/100 Base-T PHY	TQFP, QFN
ENC624J600	Stand-alone 10/100 Base-T Ethernet controller with SPI and parallel interface	-40 to +85	Ethernet controller, 24 KB RAM Buffer, Cryptographic Security Engine, 10/100 Base-T PHY	TQFP

## Interface – mTouch™ AR1000 Resistive Touch Screen Controllers

Product	Type	Communication	Touch Screens Supported	A/D	Resolution	Power	Points per second	Baud Rate	Operating Temperature Range (°C)	Static Protection	5 ku Pricing <sup>1</sup>	Special Features	Packages
AR1010	Analog Resistive	UART	All Manufacturers 4, 5 and 8 wire	Internal 10-bit Ratiometric	1024 X 1024	3.3V DC ±5% 5.5V DC ±5%	140 pps	Standard 9600	-40 to +85	Per schematic	\$1.39	Controller driven calibration & Universal for all touch screens	20-pin SSOP (SS), SOIC (SO), QFN (ML)
AR1020	Analog Resistive	SPI, I <sup>2</sup> C™	All Manufacturers 4, 5 and 8 wire	Internal 10-bit Ratiometric	1024 X 1024	3.3V DC ±5% 5.5V DC ±5%	140 pps	Standard 9600	-40 to +85	Per schematic	\$1.39	Controller driven calibration & Universal for all touch screens	20-pin SSOP (SS), SOIC (SO), QFN (ML)

## Safety & Security – Smoke Detector and Horn Driver ICs

Product	Horn Driver	Detection Method	Low Battery Detection	Alarm Memory	Alarm Interconnect	Hush/Sensitivity Timer	Operating Temperature Range (°C)	Packages
RE46C140/1/3/4/5	Yes	Photo	Yes	No	Yes	140/4/5	-25 to +75	PDIP, SOIC
RE46C12X & 152	Yes	Ion	Yes	No	Not 120	122/7,152	-10 to +60	PDIP
RE46C10X & 11X	Yes	Just Driver	5/7/9/19	NA	9/19	None	See Datasheet	See Datasheet
RE46C162/3, 5/6/7/8	Yes	Ion/Photo	Yes	Yes	Yes	Yes	-25 to +75	PDIP, SOIC
RE46C180	Yes	Ion	Yes	Yes	Yes	Yes	-10 to +60	PDIP, SOIC
RE46C190	Yes	Photo	Yes	Yes	Yes	Yes	-10 to +60	SOIC

## Motor Drivers – Stepper Motors, DC Motors and 3 Phase BLDC Fan Controllers

Product	Motor Type	Input Voltage Range (V)	Internal/External FETs	Output Current (mA)	Control Scheme	Motor Speed Output	Protections	Temperature Operating Range (°C)	Features	Packages
MTS62C19A	One Bipolar Stepper Motor or Two DC Motors	10.0 to 40.0	Internal	750	Direct PWM Input, Current Limit Control, Microstepping	No	Overcurrent, Overtemperature, Under Voltage	-20 to +85	Dual Full Bridge Motor Driver for Stepper Motors, Pin Compatible with Allegro 6219	24-SOP
MTS2916A	One Bipolar Stepper Motor or Two DC Motors	10.0 to 40.0	Internal	750	Direct PWM Input, Current Limit Control, Microstepping	No	Overcurrent, Overtemperature, Under Voltage	-20 to +85	Dual Full Bridge Motor Driver for Stepper Motors, Pin Compatible with Allegro 2916	24-SOP
MTD6505	3-Phase Brushless DC Motor	2.0 to 5.5	Internal	750	Sensorless Sinusoidal	Frequency Generator	Overcurrent, Overvoltage, Short Circuit, Overtemperature, Motor Lock-up	-40 to +125	180° Sinusoidal Sensorless Drive, Direction Control, Programmable BEMF Coefficient Range	10-UDFN (3x3)
MTD6501C	3-Phase Brushless DC Motor	2.0 to 14.0	Internal	800	Sensorless Sinusoidal	Frequency Generator	Overcurrent, Short Circuit, Overtemperature, Motor Lock-up	-30 to +95	180° Sinusoidal Sensorless Drive, Direction Control	8-SOP
MTD6501D	3-Phase Brushless DC Motor	2.0 to 14.0	Internal	500	Sensorless Sinusoidal	Frequency Generator	Overcurrent, Short Circuit, Overtemperature, Motor Lock-up	-30 to +95	180° Sinusoidal Sensorless Drive, Direction Control, Boost Mode	10-MSOP
MTD6502B	3-Phase Brushless DC Motor	2.0 to 5.5	Internal	750	Sensorless Sinusoidal	Frequency Generator	Overcurrent, Short Circuit, Overtemperature, Motor Lock-up	-40 to +125	180° Sinusoidal Sensorless Drive, Direction Control	10-TDFN (3x3)

## Real-Time Clock/Calendar (RTCC)

Bus	Product	Timing Features				Memory <sup>(1)</sup>			Power		Unique Features <sup>(2)</sup>	Pins	Packages	Bus
		Digital Trimming (Adj/Range)	Alarm Settings	WDT	Outputs	SRAM (Bytes)	EEPROM (Kbits)	ID/MAC (Bits)	Minimum Voltages	I <sub>BAT</sub> (nA)				
I <sup>2</sup> C™	MCP7941X	± 127 ppm/+1 ppm	2 (1 sec.)	–	MFP (I <sup>2</sup> O/CLK)	64	1	64	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp	8	SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY)	I <sup>2</sup> C™
	MCP7940X	± 127 ppm/+1 ppm	2 (1 sec.)	–	MFP (I <sup>2</sup> O/CLK)	64	0	64	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp	8	SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY)	
	MCP7940N	± 127 ppm/+1 ppm	2 (1 sec.)	–	MFP (I <sup>2</sup> O/CLK)	64	0	0	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp	8	SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY)	
	MCP7940M	± 127 ppm/+1 ppm	2 (1 sec.)	–	MFP (I <sup>2</sup> O/CLK)	64	0	0	V <sub>CC</sub> : 1.8V	–	–	8	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY)	
SPI	MCP795W2X	± 255 ppm/+1 ppm	2 (0.01 sec.)	✓	1. CLK 2. IRO 3. WDT RST	64	2	128	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp, Event Detects (x2)	14	SOIC (SL), TSSOP (ST)	SPI
	MCP795W1X	± 255 ppm/+1 ppm	2 (0.01 sec.)	✓	1. CLK 2. IRO 3. WDT RST	64	1	128	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp, Event Detects (x2)	14	SOIC (SL), TSSOP (ST)	
	MCP795B2X	± 255 ppm/+1 ppm	2 (0.01 sec.)	✓	1. CLK 2. IRO 3. WDT RST	64	2	128	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp, Event Detects (x2), 32 KHz Boot Clock	14	SOIC (SL), TSSOP (ST)	
	MCP795B1X	± 255 ppm/+1 ppm	2 (0.01 sec.)	✓	1. CLK 2. IRO 3. WDT RST	64	1	128	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp, Event Detects (x2), 32 KHz Boot Clock	14	SOIC (SL), TSSOP (ST)	
	MCP7952X	± 255 ppm/+1 ppm	2 (0.01 sec.)	–	MFP (I <sup>2</sup> O/CLK)	64	2	128	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp	10	MSOP (MS), TDFN (MN)	
	MCP7951X	± 255 ppm/+1 ppm	2 (0.01 sec.)	–	MFP (I <sup>2</sup> O/CLK)	64	1	128	V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V	<700	Power Fail Timestamp	10	MSOP (MS), TDFN (MN)	

1. All part numbers with an 'X' have 3 ID 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.

# Serial Memory Products

Bus	Product	Released (R) Not Released (NR)	Density	Organization	Max. Clock Frequency	Operating Voltage	Temperature Range	E/W Endurance (Minimum)	Data Retention (Minimum)	Max. Write Speeds	Max. Standby Current (@5.5V, 85°C)	Write Protect		Protected Array Size	5-yr Pricing†	Special/Unique Features	Packages	Bus
												Hardware	Software					
<b>Serial SRAM</b>																		
SPI	23X640	R	64 Kb	x8	20 MHz	1.5V-1.95V 2.7V-3.6V	-40°C to +125°C	∞	Volatile	0 ms	4 µA	-	-	-	\$0.51	Zero write cycle time, Infinite endurance, Volatile RAM, Byte/page/sequential read-write modes	PDIP (P), SOIC (SN), TSSOP (ST)	
	23X256	R	256 Kb	x8	20 MHz	1.5V-1.95V 2.7V-3.6V	-40°C to +125°C	∞	Volatile	0 ms	4 µA	-	-	-	\$0.87	Zero write cycle time, Infinite endurance, Volatile RAM, Byte/page/sequential read-write modes	PDIP (P), SOIC (SN), TSSOP (ST)	
	23XX512	NR	512 Kb	x8	20 MHz	1.5V-1.95V 2.7V-3.6V 4.5V-5.5V	-40°C to +125°C	∞	Volatile or Non-Volatile	0 ms	4 µA	-	-	-	Call for Pricing	Non-Volatile RAM: Battery backup available, Fast speed: Quad SPI available, Infinite endurance, Zero write times	SOIC (SN), TSSOP (ST)	
	23XX1024	NR	1024 Kb	x8	20 MHz	1.5V-1.95V 2.7V-3.6V 4.5V-5.5V	-40°C to +125°C	∞	Volatile or Non-Volatile	0 ms	4 µA	-	-	-	\$1.73	Non-Volatile RAM: Battery backup available, Fast speed: Quad SPI available, Infinite endurance, Zero write times	SOIC (SN), TSSOP (ST)	
<b>Serial EEPROM</b>																		
UNI/O <sup>™</sup> Bus	11XX010	R	1 Kb	x8	100 kHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	-	✓	W, ½, ¼	\$0.23	Single I/O for all clock, data, control and write protection	PDIP (P), SOIC (SN), MSOP (MNY), DFN (MC), TO-92 (TO), 3-SOT-23 (TT), WLCSP (CS)	
	11XX020/E48	R	2 Kb	x8	100 kHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	-	✓	W, ½, ¼	\$0.25	Single I/O for all clock, data, control and write protection, Unique EUI-48™/EUI-64™ MAC address option available	PDIP (P), SOIC (SN), MSOP (MNY), DFN (MC), TO-92 (TO), 3-SOT-23 (TT), WLCSP (CS)	
	11XX040	R	4 Kb	x8	100 kHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	-	✓	W, ½, ¼	\$0.26	Single I/O for all clock, data, control and write protection	PDIP (P), SOIC (SN), MSOP (MNY), DFN (MC), TO-92 (TO), 3-SOT-23 (TT), WLCSP (CS)	
	11XX080	R	8 Kb	x8	100 kHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	-	✓	W, ½, ¼	\$0.30	Single I/O for all clock, data, control and write protection	PDIP (P), SOIC (SN), MSOP (MNY), DFN (MC), TO-92 (TO), 3-SOT-23 (TT), WLCSP (CS)	
	11XX160	R	16 Kb	x8	100 kHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	-	✓	W, ½, ¼	\$0.33	Single I/O for all clock, data, control and write protection	PDIP (P), SOIC (SN), MSOP (MNY), DFN (MC), TO-92 (TO), 3-SOT-23 (TT), WLCSP (CS)	
I <sup>2</sup> C <sup>™</sup>	24XX00	R	128 b	x8	400 kHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	4 ms	1 µA	-	-	-	\$0.17	100 KHz operation from 1.7V to 4.5V	PDIP (P), SOIC (SN), TSSOP (ST), DFN (MC), 5-SOT-23 (OT)	
	24XX01/014	R	1 Kb	x8	400 kHz	1.7V-5.5V 1.5V-3.6V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.18	Address pin option – connect up to 8 devices on bus, Very low voltage option	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), SC70 (LT)	
	24XX02/024/E48	R	2 Kb	x8	400 kHz	1.7V-5.5V 1.5V-3.6V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.20	Address pin option – connect up to 8 devices on bus, Very low voltage option, Unique EUI-48™/EUI-64™ MAC address option available	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), SC70 (LT)	
	34XX02	R	2 Kb	x8	1 MHz	1.7V-5.5V 1.5V-3.6V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½	\$0.18	1 MHz @ 2.5V, Permanent and restable software WP - DIMM-DDR2/3	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	24XX00	R	128 b	x8	400 kHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	4 ms	1 µA	-	-	-	\$0.17	100 KHz operation from 1.7V to 4.5V	PDIP (P), SOIC (SN), TSSOP (ST), DFN (MC), 5-SOT-23 (OT)	
	24XX01/014	R	1 Kb	x8	400 kHz	1.7V-5.5V 1.5V-3.6V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.18	Address pin option – connect up to 8 devices on bus, Very low voltage option	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), SC70 (LT)	
	24XX02/024/E48	R	2 Kb	x8	400 kHz	1.7V-5.5V 1.5V-3.6V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.20	Address pin option – connect up to 8 devices on bus, Very low voltage option, Unique EUI-48™/EUI-64™ MAC address option available	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), SC70 (LT)	
	34XX02	R	2 Kb	x8	1 MHz	1.7V-5.5V 1.5V-3.6V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½	\$0.18	1 MHz @ 2.5V, Permanent and restable software WP - DIMM-DDR2/3	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	24XX04	R	4 Kb	x8	400 kHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.21	400 KHz @ 2.5V, 16 byte page write buffer, No address pins	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), WLCSP (CS)	
	24XX08	R	8 Kb	x8	400 kHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.23	400 KHz @ 2.5V, 16 byte page write buffer, No address pins	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 5-SOT-23 (OT)	
	24XX16	R	16 Kb	x8	400 kHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W, ½	\$0.25	400 KHz @ 2.5V, 16 byte page write buffer, No address pins	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), WLCSP (CS)	
	24XX32A	R	32 Kb	x8	400 kHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W, ¼	\$0.31	400 KHz @ 2.5V, 32 byte page write buffer, connect up to 8 devices on bus	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), WLCSP (CS)	
	24XX64/65	R	64 Kb	x8	1 MHz	1.7V-5.5V	-40°C to +125°C	1M, 10M	200 Years	5 ms	1 µA	✓	-	W, ¼	\$0.38	1 MHz @ 2.5V, 32/64 byte page, Relocatable 4 Kb block with 10M cycles endurance	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT-23 (OT), WLCSP (CS)	
	24XX128	R	128 Kb	x8	1 MHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W	\$0.54	1 MHz @ 2.5V, 64 byte page, Connect up to 8 devices on bus	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), WLCSP (CS)	
24XX256	R	256 Kb	x8	1 MHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W	\$0.83	1 MHz @ 2.5V, 64 byte page, Connect up to 8 devices on bus	PDIP (P), SOIC (SN), TSSOP (ST), SOU (SM), MSOP (MS), DFN (MF), WLCSP (CS)		
24XX512	R	512 Kb	x8	1 MHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	1 µA	✓	-	W	\$1.50	1 MHz @ 2.5V, 128 byte page, Connect up to 8 devices on bus	PDIP (P), SOIC (SN), TSSOP (ST), DFN (MF), SOU (SM), WLCSP (CS)		
24XX1025/26	R	1 Mb	x8	1 MHz	1.7V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	5 µA	✓	-	W	\$3.14	1 MHz @ 2.5V, 128 byte page, Connect up to 4 devices on bus	PDIP (P), SOIC (SN), SOU (SM)		
24XX1024	NR	1 Mb	x8	1 MHz	2.5V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	5 µA	✓	-	W	-	1 MHz @ 2.5V, 256 byte page, Connect up to 4 devices on bus	PDIP (P), SOIC (SN), TSSOP (ST), DFN (MF), SOU (SM)		

1. All devices are Pb-Free and RoHS compliant.  
 2. ESD protection > 4 kV (HBM); >400V (MM) on all pins.  
 3. Write Protect (WP): W = Whole Array, ½ = Half Array, ¼ = Quarter Array.  
 4. Factory program and unique ID options available.  
 5. Die and wafer options available on all devices.  
 † - Pricing subject to change; please contact your Microchip representative for most current pricing.

## Serial Memory Products

Bus	Product	Released (R) Not Released (NR)	Density	Organization	Max. Clock Frequency	Operating Voltage	Temperature Range	EW Endurance (Minimum)	Data Retention (Minimum)	Max. Write Speeds	Max. Standby Current (@5.5V, 85°C)	Write Protect		Protected Array Size	5-yr Pricing†	Special/Unique Features	Packages	Bus
												Hardware	Software					
<b>Serial EEPROM (Cont.)</b>																		
Microwire	93XX46A/B/C	R	1 Kb	x8/x16	3 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	6 ms	1 µA	-	-	-	\$0.18	ORG pin to select word size on 46C version	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	Microwire
	93XX56A/B/C	R	2 Kb	x8 / x16	3 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	6 ms	1 µA	-	-	-	\$0.20	ORG pin to select word size in 56C version	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	93XX66A/B/C	R	4 Kb	x8 / x16	3 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	6 ms	1 µA	-	-	-	\$0.21	ORG pin to select word size in 66C version	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	93XX76A/B/C	R	8 Kb	x8 / x16	3 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	6 ms	1 µA	✓	-	W	\$0.30	ORG pin to select word size in 76C version	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	93XX86A/B/C	R	16 Kb	x8 / x16	3 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	6 ms	1 µA	✓	-	W	\$0.33	ORG pin to select word size in 86C version	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
SPI	25XX010A	R	1 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.30	5 MHz @ 2.5V, Status register, 16 byte page	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	SPI
	25XX020A/E48	R	2 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.31	5 MHz @ 2.5V, Status register, 16 byte page, Unique EUI-48™/EUI-64™ MAC address option available	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	25XX040A	R	4 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.33	5 MHz @ 2.5V, Status register, 16 byte page	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6-SOT-23 (OT)	
	25XX080C/D	R	8 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.40	16/32 byte page, 5 MHz @ 2.5V, Status register	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY)	
	25XX160C/D	R	16 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.41	16/32 byte page, 5 MHz @ 2.5V, Status register	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY)	
	25XX320A	R	32 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.45	5 MHz @ 2.5V, Status register, 32 byte page	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY)	
	25XX640A	R	64 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.46	5 MHz @ 2.5V, Status register, 32 byte page	PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY, MF)	
	25XX128	R	128 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$0.74	5 MHz @ 2.5V, Status register, 64 byte page	PDIP (P), SOIC (SN), TSSOP (ST), DFN (MF)	
	25XX256	R	256 Kb	x8	10 MHz	1.8V-5.5V	-40°C to +150°C	1M	200 Years	5 ms	1 µA	✓	✓	W, ½, ¼	\$1.01	5 MHz @ 2.5V, Status register, 64 byte page	PDIP (P), SOIC (SN), TSSOP (ST), DFN (MF), SOJ (SM)	
	25XX512	R	512 Kb	x8	20 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	5 ms	10 µA	✓	✓	W, ½, ¼	\$1.53	10 MHz @ 2.5V, Deep power down, Status register, Page/sector/chip erase	PDIP (P), SOIC (SN), DFN (MF), SOJ (SM)	
25XX1024	R	1 Mb	x8	20 MHz	1.8V-5.5V	-40°C to +125°C	1M	200 Years	6 ms	12 µA	✓	✓	W, ½, ¼	\$2.59	10 MHz @ 2.5V, Deep power down, Status register, Page/sector/chip erase	PDIP (P), DFN (MF), SOJ (SM)		

1. All devices are Pb-Free and RoHS compliant.

2. ESD protection > 4 kV (HBM); >400V (MM) on all pins.

3. Write Protect (WP): W = Whole Array, ½ = Half Array, ¼ = Quarter Array.

4. Factory program and unique ID options available.

5. Die and wafer options available on all devices.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

## SST Serial Flash Memory

Bus	Product*	Released (R) Not Released (NR)	Density	Organization	Max. Clock Frequency	Operating Voltage	Temperature Range	EW Endurance (Typical)	Data Retention (Minimum)	Write Speed (Typical)	Write Protect				Special/Unique Features	Packages**	Bus
											Max. Standby Current	Hardware	Software	Protected Array Size			
x1	SST25VF512A	R	512 Kb	64K x 8	33 MHz	2.7-3.6V	0°C to 70°C -40°C to +85°C -20 to +85°C	100,000 cycles (typical)	100 years	14 µs (Byte Program)	8 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON, 8-XFBGA	x1
	SST25VF010A	R	1 Mb	128K x 8	33 MHz	2.7-3.6V	0°C to 70°C -40°C to +85°C -20 to +85°C	100,000 cycles (typical)	100 years	14 µs (Byte Program)	8 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON, 8-XFBGA	
	SST25VF020B	R	2 Mb	256K x 8	80 MHz	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles (typical)	100 years	7 µs (Word Program)	5 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON	
	SST25VF040B	R	4 Mb	512K x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (typical)	100 years	7 µs (Word Program)	5 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON, 8-XFBGA	
	SST25VF080B	R	8 Mb	1M x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (typical)	100 years	7 µs (Word Program)	5 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON, 8-XFBGA	
	SST25VF016B	R	16 Mb	2M x 8	75 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (typical)	100 years	7 µs (Word Program)	5 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON	
	SST25VF032B	R	32 Mb	4M x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (typical)	100 years	7 µs (Word Program)	5 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON	
	SST25VF032B	R	32 Mb	4M x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (typical)	100 years	7 µs (Word Program)	5 µA	✓	✓	Various	Auto address increment programming, Fast read, program and erase	8L-SOIC, 8C-WSON	
x1, x2	SST25VF064C	R	64 Mb	8M x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (typical)	100 years	1.5 ms (Page Program)	5 µA	✓	✓	Various	Dual output and dual I/O read, Single- and dual-input page program, One-time programmable area, Fast read, program and erase	8L-SOIC, 8C-WSON, 16L-SOIC	x1, x2
x4	SST26VF016	R	16 Mb	2M x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (minimum)	100 years	1 ms (Page Program)	8 µA	✓	✓	Various	SQI™ Quad I/O read/program/erase, Burst read, Index jump feature, Individual block read and write protection, Fast read, program and erase	8L-SOIC, 8C-WSON	x4
	SST26VF032	R	32 Mb	4M x 8	80 MHz	2.7-3.6V	-40°C to +85°C	100,000 cycles (minimum)	100 years	1 ms (Page Program)	8 µA	✓	✓	Various	SQI™ Quad I/O read/program/erase, Burst read, Index jump feature, Individual block read and write protection, Fast read, program and erase	8L-SOIC, 8C-WSON	
x1, x2, x4	SST26WF080B	NR	8 Mb	1M x 8	104 MHz	1.65-1.95V	0°C to 70°C -40°C to +85°C	100,000 cycles (minimum)	100 years	1 ms (Page Program)	3 µA	✓	✓	Various	x1, x2, x4 read, Single- and quad-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase	8L-SOIC, 8C-WSON	x1, x2, x4
	SST26WF016B	NR	16 Mb	2M x 8	104 MHz	1.65-1.95V	0°C to 70°C -40°C to +85°C	100,000 cycles (minimum)	100 years	1 ms (Page Program)	3 µA	✓	✓	Various	x1, x2, x4 read, Single- and quad-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase	8L-SOIC, 8C-WSON	
	SST26VF032B	NR	32 Mb	4M x 8	104 MHz	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles (minimum)	100 years	1 ms (Page Program)	15 µA	✓	✓	Various	x1, x2, x4 read, Single- and quad-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase	8L-SOIC, 8C-WSON	
	SST26VF064B	NR	64 Mb	8M x 8	104 MHz	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles (minimum)	100 years	1 ms (Page Program)	15 µA	✓	✓	Various	x1, x2, x4 read, Single- and quad-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase	8L-SOIC, 8C-WSON	

\*2.5V available on certain 25 series devices.

\*\*Only standard packages are listed here. Please inquire with your local sales office for devices in die form or in chip-scale packages.

## LPC Firmware Flash/Firmware Hub Flash Memory

Bus	Product	Released (R) Not Released (NR)	Density	Organization	Max. Clock Frequency	Operating Voltage	Temperature Range	EW Endurance (Typical)	Data Retention (Minimum)	Write Speed (Typical)	Write Protect				Special/Unique Features	Packages**	Bus
											Max. Standby Current	Hardware	Software	Protected Array Size			
x4	SST49LF008A	R	8 Mb	1M x 8	33 MHz	3.0-3.6V	0°C to 70°C	100,000 cycles (minimum)	100 years	14 µs (Byte Program)	14 µA	✓	✓	Various	Firmware Hub (FWH) device for PC-BIOS application, provide protection for the storage and update of code and data	32L-PLCC, 32L-TSOP	x4
	SST49LF016C	R	16 Mb	2M x 8	33 MHz	3.0-3.6V	0°C to 70°C	100,000 cycles (minimum)	100 years	14 µs (Byte Program)	14 µA	✓	✓	Various	Firmware Hub (FWH) device for PC-BIOS application, provide protection for the storage and update of code and data	32L-PLCC, 32L-TSOP	
	SST49LF080A	R	8 Mb	1M x 8	33 MHz	3.0-3.6V	0°C to 70°C	100,000 cycles (minimum)	100 years	14 µs (Byte Program)	14 µA	✓	✓	Various	LPC Flash devices comply with the standard Intel Low Pin Count (LPC) Interface Specification 1.1, provide protection for the storage and update of code and data	32L-PLCC, 32L-TSOP	
	SST49LF160C	R	16 Mb	2M x 8	33 MHz	3.0-3.6V	0°C to 70°C	100,000 cycles (minimum)	100 years	14 µs (Byte Program)	14 µA	✓	✓	Various	LPC Flash devices comply with the standard Intel Low Pin Count (LPC) Interface Specification 1.1, provide protection for the storage and update of code and data	32L-PLCC	

# SST Parallel Flash Memory

Bus	Product*	Released (R) Not Released (NR)	Density	Organization	Read Access Speed	Operating Voltage	Temperature Range	E/W Endurance (Typical)	Data Retention (Minimum)	Write Speed (Typical)	Write Protect				Special/Unique Features	Packages**
											Max. Standby Current	Hardware	Software	Protected Array Size		
x8	SST39SF010A	R	1 Mb	128K x 8	45/70 ns	4.5-5.5V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Byte Program)	30 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	32L-PLCC, 32L-PDIP, 32L-TSOP
	SST39LF010	R	1 Mb	512K x 8	45 ns	3.0-3.6V	0°C to 70°C	100,000 cycles	100 years	14 µs (Byte Program)	1 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 32L-TSOP, 32L-PLCC
	SST39VF010	R	1 Mb	512K x 8	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Byte Program)	1 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 32L-TSOP, 32L-PLCC
	SST39LF020	R	2 Mb	512K x 8	45/55 ns	3.0-3.6V	0°C to 70°C	100,000 cycles	100 years	14 µs (Byte Program)	1 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 32L-TSOP, 32L-PLCC
	SST39SF020A	R	2 Mb	256K x 8	45/55/70 ns	4.5-5.5V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Byte Program)	30 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	32L-PLCC, 32L-PDIP, 32L-TSOP
	SST39VF020	R	2 Mb	512K x 8	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Byte Program)	1 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 32L-TSOP, 32L-PLCC
	SST39SF040	R	4 Mb	512K x 8	45/70 ns	4.5-5.5V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Byte Program)	30 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	32L-PLCC, 32L-PDIP, 32L-TSOP
	SST39LF040	R	4 Mb	512K x 8	45 ns	3.0-3.6V	0°C to 70°C	100,000 cycles	100 years	14 µs (Byte Program)	1 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 32L-TSOP, 32L-PLCC
	SST39VF040	R	4 Mb	512K x 8	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Byte Program)	1 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 32L-TSOP, 32L-PLCC
SST39VF168X	R	16 Mb	2M x 8	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Byte Program)	3 µA	✓	-	64 KB	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48B-TSOP	
x16	SST39LF200A	R	2 Mb	128K x 16	55 ns	3.0-3.6V	0°C to 70°C	100,000 cycles	100 years	14 µs (Word Program)	3 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48L-TSOP
	SST39VF200A	R	2 Mb	128K x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	14 µs (Word Program)	3 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48L-TSOP, 48B-WFBGA
	SST39LF40XC	R	4 Mb	256K x 16	55 ns	3.0-3.6V	0°C to 70°C	100,000 cycles	100 years	7 µs (Word Program)	3 µA	✓	-	8 KB	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure	48B-TFBGA, 48B-TSOP, 48B-WFBGA
	SST39WF400B	R	4 Mb	256K x 16	70 ns	1.65-1.95V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	28 µs (Word Program)	5 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48B-WFBGA, 48B-XFBGA
	SST39VF40XC	R	4 Mb	256K x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Word Program)	3 µA	✓	-	8 KB	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure	48B-TFBGA, 48B-TSOP, 48B-WFBGA
	SST39WF800B	R	8 Mb	512K x 16	70 ns	1.65-1.95V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	28 µs (Word Program)	5 µA	-	-	N/A	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48B-WFBGA, 48B-XFBGA
	SST39LF80XC	R	8 Mb	512K x 16	55 ns	3.0-3.6V	0°C to 70°C	100,000 cycles	100 years	7 µs (Word Program)	3 µA	✓	-	N/A	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure	48B-TFBGA, 48L-TSOP, 48B-WFBGA
	SST39VF80XC	R	8 Mb	512K x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Word Program)	3 µA	✓	-	N/A	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure	48B-TFBGA, 48L-TSOP, 48B-WFBGA
	SST39WF160X	R	16 Mb	1M x 16	70 ns	1.65-1.95V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	28 µs (Word Program)	5 µA	✓	-	32 KB	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48B-WFBGA, 48B-XFBGA
	SST39VF160XC	R	16 Mb	1M x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Word Program)	3 µA	✓	-	8 KB	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure	48B-TFBGA, 48B-TSOP, 48B-WFBGA
	SST39VF160X	R	16 Mb	2M x 8	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Byte Program)	3 µA	✓	-	64 KB	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48B-TSOP
	SST39VF320XB	R	32 Mb	2M x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Word Program)	4 µA	✓	-	32 KB	Fast read, program and erase, Low power, Small erase sector	48B-TFBGA, 48B-TSOP
	SST39VF320XC	R	32 Mb	2M x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs (Word Program)	4 µA	✓	-	8 KB	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure	48B-TFBGA, 48B-TSOP
	SST38VF640X	R	64 Mb	4M x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs/1.75 µs (Write Buffer Program)	3 µA	✓	✓	32 KB/ 8 KB	Fast read, program and erase, Low power, Small erase sector, Industry standard command set and boot block structure, Security features	48B-TFBGA, 48B-TSOP
SST38VF640XB	NR	64 Mb	4M x 16	70 ns	2.7-3.6V	0°C to 70°C -40°C to +85°C	100,000 cycles	100 years	7 µs/1.75 µs (Write Buffer Program)	3 µA	✓	✓	32 KB/ 8 KB	Fast read, program and erase, Low power, Industry standard command set and boot block structure, Security features	48B-TFBGA, 48B-TSOP	

\*X is a wildcard to indicate "top" or "bottom" boot block support. Please refer to the respective datasheets for more details.

\*\*Only standard packages are listed here. Please inquire with your local sales office for devices in die form or in chip-scale packages.

## SST RF Products

### WLAN Power Amplifiers

Product	Description	Frequency (GHz)	PA/Tx Gain (dB)	Linear Power (dBm)	% EVM	Voltage Range (V)	LNA/Rx Gain (dB)	LNA/Rx NF (dB)	Package Option
SST11CP15-QUBE	WLAN 11a/n PA (Low Current)	5	25.5-28.5	18.5 21	3.0% 3.0%	3.3 5	-	-	12-pin 2x2 mm
SST11LP12-QCF	WLAN 11a/n PA (High Power)	5	35	21	3.0%	3.3	-	-	16-pin 3x3 mm
SST12LP07A-QXBE	WLAN 11b/g/n PA	3.4	28	20.5	3.0%	3.3	-	-	12-pin 2x2 mm
SST12CP11-QVCE	WLAN 11b/g/n PA (Ultra High Power)	2.4	34	25	3.0%	5	-	-	16-pin 3x3 mm
SST12LP07-QVCE-MM007	WLAN 11b/g/n PA	2.4	29	19.5	3.0%	3.3	-	-	16-pin 3x3 mm
SST12LP08A-QX8E	WLAN 11b/g/n High Gain PA	2.4	29	20.5	3.0%	3.3	-	-	8-pin 2x2 mm
SST12LP08-QX6E	WLAN 11b/g/n High Gain PA	2.4	30	20	3.0%	3.3	-	-	6-pin 1.5x1.5 mm
SST12LP08-QXBE	WLAN 11b/g/n High Gain PA	2.4	30	20	3.0%	3.3	-	-	12-pin 2x2 mm
SST12LP14A-QVCE	WLAN 11b/g PA	2.4	29	21	3.0%	3.3	-	-	16-pin 3x3 mm
SST12LP14C-QVCE	WLAN 11b/g PA	2.4	32	20	4.0%	3.3	-	-	16-pin 3x3 mm
SST12LP14E-QX6E	WLAN 11b/g/n PA (Low Current)	2.4	23	19	3.0%	3.3	-	-	6-pin 1.5x1.5 mm
SST12LP14E-QX8E	WLAN 11b/g/n PA (Low Current)	2.4	23	19	3.0%	3.3	-	-	8-pin 2x2 mm
SST12LP14-QVCE	WLAN 11b/g PA	2.4	30	20	4.0%	3.3	-	-	16-pin 3x3 mm
SST12LP15A-QVCE	WLAN 11b/g/n PA (High Power)	2.4	32	22	3.0%	3.3	-	-	16-pin 3x3 mm
SST12LP15B-QVCE	WLAN 11b/g/n PA (High Power)	2.4	32	22	<3%	3.3	-	-	16-pin 3x3 mm
SST12LP18E-QX8E	WLAN 11b/g/n PA (Low Current /Low Voltage)	2.4	25	18	3.0%	3.3	-	-	8-pin 2x2 mm
SST12LP19E-QX6E	WLAN 11b/g/n PA (Low Current)	2.4	25	20	3.0%	3.3	-	-	6-pin 1.5x1.5 mm
SST12LP19E-QX8E	WLAN 11b/g/n PA (Low Current)	2.4	25	20	3.0%	3.3	-	-	8-pin 2x2 mm

### WLAN Power Amplifier Modules

SST13LP05-MLCF	WLAN 11a/b/g Dual-Band 50 Ω Matched PAM	2.4 5	29 29-26	18.5 17.5	3.0%	3.3	-	-	16-pin 4x4 mm
SST12LP17E-QU8E	WLAN 11b/g/n 50 Ω Matched PAM	2.4	29	18	<3%	3.3	-	-	8-pin 2x2 mm

### Front End Modules

SST12LF01-QDE	WLAN 11b/g FEM (PA+LNA)	2.4	29	19	3.0%	3.3	14	1.5	24-pin 4x4 mm
SST12LF02-QXCE	WLAN 11b/g/n FEM (PA+SP3T)	2.4	29	18.5	3.0%	3.3	-0.5	0.5	16-pin 3x3 mm

### Low-Noise Amplifier

SST12LN01-QU6E	WLAN 2.4 GHz LNA	2.4	-	-	-	3.3	14	1.2-1.5	6-pin 3x1.6 mm
----------------	------------------	-----	---	---	---	-----	----	---------	----------------



## Wireless Products

### IEEE 802.11 Modules

Product	Pin Count	Frequency Range (GHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	TX Power Consumption (mA)	RX Power Consumption (mA)	Clock	Sleep	MAC	MAC Features	Encryption	Interface	Volume Pricing <sup>1</sup>	Packages
MRF24WB0MA	36	2.412-2.484	-91	10	Yes	156	85	25 MHz	0.1	Yes	802.11	WPA, WPA2, WEP	4-wire SPI	\$12.48	36/Module
MRF24WBOMB	36	2.412-2.484	-91	10	Yes	156	85	25 MHz	0.1	Yes	802.11	WPA, WPA2, WEP	4-wire SPI	\$12.48	36/Module

### IEEE 802.15.4 Transceivers/Modules

Product	Pin Count	Frequency Range (GHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	TX Power Consumption (mA)	RX Power Consumption (mA)	Clock	Sleep	MAC	MAC Features	Encryption	Interface	Volume Pricing <sup>1</sup>	Packages
MRF24J40	40	2.405-2.48	-95	0	Yes	23	19	20 MHz	2 µA	Yes	CSMA-CA	AES128	4-wire SPI	\$2.36	40/QFN
MRF24J40MA	12	2.405-2.48	-95	0	Yes	23	19	20 MHz	2 µA	Yes	CSMA-CA	AES128	4-wire SPI	\$4.94	12/Module
MRF24J40MB	12	2.405-2.48	-102	20	Yes	130	25	20 MHz	5 µA	Yes	CSMA-CA	AES128	4-wire SPI	\$10.66	12/Module
MRF24J40MC	12	2.405-2.48	-108	20	Yes	120	25	20 MHz	12 µA	Yes	CSMA-CA	AES128	4-wire SPI	\$10.66	12/Module

### Sub-GHz Transceivers/Modules

Product	Pin Count	Frequency Range (MHz)	Sensitivity (dBm)	Power Output (dBm)	RSSI	TX Power Consumption (mA)	RX Power Consumption (mA)	Clock	Sleep	Interface	Volume Pricing <sup>1</sup>	Packages
MRF49XA	16	433/868/915	-110	7	Yes	15 mA @ 0 dBm	11	10 MHz	0.3 µA	4-wire SPI	\$1.71	16/TSSOP
MRF89XA	32	868/915/950	-113	12.5	Yes	25 mA @ 0 dBm	3	12.8 MHz	0.1 µA	4-wire SPI	\$1.76	32/QFN
MRF89XAM8A	12	868	-113	12.5	Yes	25 mA @ 0 dBm	3	12.8 MHz	0.1 µA	4-wire SPI	\$5.20	12/Module
MRF89XAM9A	12	915	-113	12.5	Yes	25 mA @ 0 dBm	3	12.8 MHz	0.1 µA	4-wire SPI	\$5.20	12/Module

### rfPIC™ Transmitters + PIC® MCUs

Product	I/O Pins	Frequency Range (MHz)	Program Words	EEPROM	RAM (bytes)	Digital Timer	Watch Dog Timer	Max. Speed (MHz)	ICSP™	Modulation	Data Rate (kpbs)	Output Power (dBm)	Operating Voltage	Volume Pricing <sup>1</sup>	Packages
PIC12F529T48A	6	418-868	1024 X 1.5	-	201	1	1	8	Yes	OOK/FSK	100	10	2.0-3.7	\$0.85	14/TSSOP
PIC12F529T48AT	6	418-868	1024 X 1.5	-	201	1	1	8	Yes	OOK/FSK	100	10	2.0-3.7	\$0.87	14/TSSOP
PIC12F529T39A	6	310-928	1024 X 1.5	-	201	1	1	8	Yes	OOK/FSK	100	10	2.0-3.7	\$0.95	14/TSSOP
PIC12F529T39AT	6	310-928	1024 X 1.5	-	201	1	1	8	Yes	OOK/FSK	100	10	2.0-3.7	\$0.97	14/TSSOP
PIC12LF1840T48A	6	418-868	1024 x 4	256	256	2	1	32	Yes	OOK/FSK	100	10	1.8-3.6	\$1.12	14/TSSOP
PIC12LF1840T48AT	6	418-868	1024 x 4	256	256	2	1	32	Yes	OOK/FSK	100	10	1.8-3.6	\$1.15	14/TSSOP
PIC12LF1840T39A	6	310-928	1024 x 4	256	256	2	1	32	Yes	OOK/FSK	100	10	1.8-3.6	\$1.27	14/TSSOP
PIC12LF1840T39AT	6	310-928	1024 x 4	256	256	2	1	32	Yes	OOK/FSK	100	10	1.8-3.6	\$1.29	14/TSSOP
rfPIC12F675F	6	380-450	1024 x 12	128	64	1	1	20	Yes	ASK/FSK	40	10	2.0-5.5	\$2.11	20/SSOP 208 mil
rfPIC12F675H	6	850-930	1024 x 12	128	64	1	1	20	Yes	ASK/FSK	40	10	2.0-5.5	\$2.11	20/SSOP 208 mil
rfPIC12F675K	6	290-350	1024 x 12	128	64	1	1	20	Yes	ASK/FSK	40	10	2.0-5.5	\$2.11	20/SSOP 208 mil

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

## Terms and Definitions

<b>1 KB</b>	1024 bytes	<b>CVD</b>	Charge Voltage Divide (Capacitive Sensing Implemented via ADC)	<b>ICD</b>	In-Circuit Debug	<b>PIC32</b>	32-bit Core
<b>1 Kw</b>	1024 words	<b>CWG</b>	Complementary Waveform Generator	<b>ICE</b>	In-Circuit Emulation	<b>PLVD</b>	Programmable Low Voltage Detect
<b>18F/PIC18</b>	16-bit instruction word – 75/83 instructions	<b>DAC</b>	Digital-to-Analog Converter	<b>ICSP™</b>	In-Circuit Serial Programming™	<b>POR/POOR</b>	Power ON Reset/Power ON/OFF Reset
<b>ADC</b>	Analog to Digital Converter	<b>DSM</b>	Data Signal Modulator	<b>IDE</b>	Integrated Development Environment	<b>PSMC</b>	Programmable Switch Mode Controller
<b>AUSART</b>	Addressable Universal Synchronous Asynchronous Receiver Transceiver	<b>dsPIC*</b>	16-bit Core with DSP	<b>Inst Amp</b>	Instrumentation Amplifier	<b>PWM</b>	Pulse Width Modulation
<b>BL/Baseline</b>	12-bit instruction word – 33 instructions	<b>EEPROM</b>	Electrically Erasable Programmable Read Only Memory	<b>LCD</b>	Liquid Crystal Display	<b>RAM</b>	Random Access Memory
<b>BOR/PBOR</b>	Brown Out Reset/Programmable Brown Out Reset	<b>EFT</b>	Electrical Fast Transient	<b>LDO</b>	Low Drop-Out voltage regulator	<b>RTCC</b>	Real-Time Clock Calendar
<b>CAN</b>	Controller Area Network	<b>EMC</b>	Electromagnetic Compatibility	<b>LF</b>	Low Power Flash	<b>Source/Sink Current</b>	All Products Support 25 mA per I/O
<b>CCP/ECCP</b>	Capture Compare PWM/Enhanced Capture Compare PWM	<b>EMI</b>	Electromagnetic Interference	<b>MFC/PC</b>	Master Inter-Integrated Circuit bus/Inter-Integrated Circuit bus	<b>SR Latch</b>	Set/Reset Latch
<b>CLC</b>	Configurable Logic Cell	<b>EMR/Enhanced-Mid-Range</b>	14-bit instruction word – 49 instructions (denoted as PIC1XF1XXX)	<b>MIPS</b>	Million Instructions Per Second	<b>SRAM</b>	Static Random Access Memory
<b>COG</b>	Complementary Output Generator	<b>ESD</b>	Electrostatic Discharge	<b>MR/Mid-Range</b>	14-bit instruction word – 35 instructions	<b>SPI</b>	Serial Peripheral Interface
<b>Comp</b>	Capacitive Sensing implemented via Comparator	<b>EUSART</b>	Enhanced Universal Synchronous Asynchronous Receiver Transceiver	<b>MSSP/SSP</b>	Master/Synchronous Serial Port (I <sup>2</sup> C & SPI Peripheral)	<b>T1G</b>	Timer 1 Gate
<b>CRIC</b>	Cyclical Redundancy Check	<b>EWD/WD</b>	Extended Watch Dog Timer/Watch Dog Timer	<b>mTouch™</b>	Proprietary Touch Sensing Technology	<b>USART</b>	Universal Synchronous Asynchronous Receiver Transceiver
<b>CSM</b>	mTouch – Capacitive Sensing Module	<b>HV</b>	High Voltage	<b>NCO</b>	Numerically Controlled Oscillator	<b>USB</b>	Universal Serial Bus
<b>CSP</b>	Chip Scale Package			<b>Op Amp</b>	Operational Amplifier	<b>USB (Full Speed)</b>	12 Mb/s Data Rate
<b>CTMU</b>	mTouch – Charge Time Measurement Unit			<b>PIC10/12/16/18</b>	8-bit Core	<b>USB OTG</b>	USB On-The-Go
				<b>PIC24</b>	16-bit Core	<b>XLP</b>	nanoWatt XLP Extreme Low Power Technology

# Product Packages

Small Outline		Dual Flat No Lead DFN	Quad Flat No Lead QFN	Plastic Shrink Small Outline SSOP	Plastic Small Outline SOIC
Bumped Die (WLCSP)	3-lead DDPACK (EB)	8-lead DFN (MC) 2 x 3 x 0.9 mm	16-lead QFN (MG) 3 x 3 x 0.9 mm	8-lead MSOP (MS)	8-lead SOIC (SN)
Die/Wafer (WLCSP)	5-lead DDPACK (ET)	8-lead TDFN (MN) 2 x 3 x 0.75 mm	20-lead QFN (ML) 4 x 4 x 0.9 mm	10-lead MSOP (UN)	8-lead SOIC (SM)
3-lead SC70 (LB)	3-lead SOT-89	8-lead UDFN (MU) 2 x 3 x 0.5 mm	20-lead QFN (MQ) 5 x 5 x 0.9 mm	16-lead QSOP (QR)	14-lead SOIC (SL)
5-lead SC70 (LT)	3-lead TO-92 (TO/ZB)	8-lead DFN (MF) 3 x 3 x 0.9 mm	28-lead UQFN (MV) 4 x 4 x 0.5 mm	20-lead SSOP (SS)	16-lead SOIC (SL)
3-lead SOT-23 (TT/CB)	5-lead TO-220 (AT)	8-lead DFN (MD) 4 x 4 x 0.9 mm	28-lead QFN (MQ) 5 x 5 x 0.9 mm	28-lead SSOP (SS)	18-lead SOIC (SO)
5-lead SOT-23 (OT)		8-lead DFN (MF) 6 x 5 x 0.9 mm	28-lead QFN (MM & ML) 6 x 6 x 0.9 mm	<b>Plastic Thin Shrink Small Outline TSSOP</b>	20-lead SOIC (SO)
6-lead SOT-23 (OT/CH)			40-lead UQFN (MV) 5 x 5 x 0.5 mm	8-lead TSSOP (ST)	28-lead SOIC (SO)
3-SOT-223 (DB)			44-lead QFN (ML) 8 x 8 x 0.9 mm	14-lead TSSOP (ST)	
4-lead SOT-143 (RC)			64-lead QFN (MR) 9 x 9 x 0.9 mm	20-lead TSSOP (ST)	

Packages are shown approximate size.

Additional packages are available – contact your local Microchip sales office for information.

For detailed dimensions, view our Package Drawing and Dimensions Specification at: [www.microchip.com/packageing](http://www.microchip.com/packageing)

## Product Packages

### Plastic Thin Quad Flatpack TQFP



44-lead TQFP (PT)  
10 x 10 x 1 mm



64-lead TQFP (PT)  
10 x 10 x 1 mm



64-lead TQFP (PF)  
14 x 14 x 1 mm



80-lead TQFP (PT)  
12 x 12 x 1 mm



80-lead TQFP (PF)  
14 x 14 x 1 mm



100-lead TQFP (PT)  
12 x 12 x 1 mm



100-lead TQFP (PF)  
14 x 14 x 1 mm



144-lead TQFP (PH)  
16 x 16 x 1 mm

### Plastic Quad Flatpack QFP



32-lead LQFP (LQ)  
7 x 7 x 1.4 mm



44-lead MQFP (PQ)  
10 x 10 x 2 mm

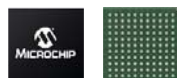


144-lead LQFP (PL)  
20 x 20 x 1.4 mm

### Ball Grid Array BGA



100-ball BGA (BG)  
10 x 10 x 1.1 mm



121-ball BGA (BG)  
10 x 10 x 0.8 mm

### Plastic Dual In-Line PDIP



8-lead PDIP (P)



14-lead PDIP (P)



18-lead PDIP (P)



20-lead PDIP (P)



24-lead PDIP (P)



28-lead SPDIP (SP)



40-lead PDIP (P)

### Additional SST Package Options

#### NOR Flash Memory



8-lead WSON (A6/QAE)  
5 x 6 mm



32-lead PDIP (P2/PHE)  
600 mil



32-lead PLCC (PE/NHE)  
.452" x .552"



40-lead TSOP (W8/EIE)  
10 x 20 mm



48-lead WFBGA (3T/MAQE)  
4 x 6 x .73 mm



48-lead TFBGA (8T/B3KE)  
6 x 8 x 1.2 mm



48-lead TSOP (W9/EKE)  
12 x 20 x 1.2 mm

#### RF Devices



6-lead XSON (QX/QX6E)  
1.5 x 1.5 x .5 mm



8-lead XSON (Q7/QX8E)  
2 x 2 x .5 mm



6-lead UQFN (QU/QU6E)  
3 x 1.6 x .5 mm



16-lead LFLGA (MF/MLCF)  
4 x 4 x 1.4 mm

#### 8051-based Microcontrollers



44-lead PLCC (T2/NJE)  
.652" x .652"

Packages are shown approximate size.

Additional packages are available – contact your local Microchip sales office for information.

For detailed dimensions, view our Package Drawing and Dimensions Specification at: [www.microchip.com/packaging](http://www.microchip.com/packaging)

## Support

Microchip is committed to supporting its customers in developing products faster and more efficiently. We maintain a worldwide network of field applications engineers and technical support ready to provide product and system assistance. In addition, the following service areas are available at [www.microchip.com](http://www.microchip.com):

- **Support** link provides a way to get questions answered fast: <http://support.microchip.com>
- **Sample** link offers evaluation samples of any Microchip device: <http://sample.microchip.com>
- **Forum** link provides access to knowledge base and peer help: <http://forum.microchip.com>
- **Buy** link provides locations of Microchip Sales Channel Partners: [www.microchip.com/sales](http://www.microchip.com/sales)

## Sales Office Listing

### AMERICAS

#### Atlanta

Tel: 678-957-9614

#### Boston

Tel: 774-760-0087

#### Chicago

Tel: 630-285-0071

#### Cleveland

Tel: 216-447-0464

#### Dallas

Tel: 972-818-7423

#### Detroit

Tel: 248-538-2250

#### Indianapolis

Tel: 317-773-8323

#### Los Angeles

Tel: 949-462-9523

#### Santa Clara

Tel: 408-961-6444

#### Toronto

Mississauga, Ontario

Tel: 905-673-0699

### EUROPE

#### Austria - Wels

Tel: 43-7242-2244-39

#### Denmark - Copenhagen

Tel: 45-4450-2828

#### France - Paris

Tel: 33-1-69-53-63-20

#### Germany - Munich

Tel: 49-89-627-144-0

#### Italy - Milan

Tel: 39-0331-742611

#### Netherlands - Drunen

Tel: 31-416-690399

#### Spain - Madrid

Tel: 34-91-708-08-90

#### UK - Wokingham

Tel: 44-118-921-5869

## Training

If additional training interests you, then Microchip can help. We continue to expand our technical training options, offering a growing list of courses and in-depth curriculum locally, as well as significant online resources – whenever you want to use them.

- Technical Training Centers: [www.microchip.com/training](http://www.microchip.com/training)
- MASTERS Conferences: [www.microchip.com/masters](http://www.microchip.com/masters)
- Worldwide Seminars: [www.microchip.com/seminars](http://www.microchip.com/seminars)
- eLearning: [www.microchip.com/webseminars](http://www.microchip.com/webseminars)
- Resources from our Distribution and Third Party Partners [www.microchip.com/training](http://www.microchip.com/training)

### ASIA/PACIFIC

#### Australia - Sydney

Tel: 61-2-9868-6733

#### China - Beijing

Tel: 86-10-8569-7000

#### China - Chengdu

Tel: 86-28-8665-5511

#### China - Chongqing

Tel: 86-23-8980-9588

#### China - Hangzhou

Tel: 86-571-2819-3187

#### China - Hong Kong SAR

Tel: 852-2401-1200

#### China - Nanjing

Tel: 86-25-8473-2460

#### China - Qingdao

Tel: 86-532-8502-7355

#### China - Shanghai

Tel: 86-21-5407-5533

#### China - Shenyang

Tel: 86-24-2334-2829

#### China - Shenzhen

Tel: 86-755-8203-2660

#### China - Wuhan

Tel: 86-27-5980-5300

#### China - Xiamen

Tel: 86-592-2388138

#### China - Xian

Tel: 86-29-8833-7252

#### China - Zhuhai

Tel: 86-756-3210040

### ASIA/PACIFIC

#### India - Bangalore

Tel: 91-80-3090-4444

#### India - New Delhi

Tel: 91-11-4160-8631

#### India - Pune

Tel: 91-20-2566-1512

#### Japan - Osaka

Tel: 81-6-6152-7160

#### Japan - Yokohama

Tel: 81-45-471- 6166

#### Korea - Daegu

Tel: 82-53-744-4301

#### Korea - Seoul

Tel: 82-2-554-7200

#### Malaysia - Kuala Lumpur

Tel: 60-3-6201-9857

#### Malaysia - Penang

Tel: 60-4-227-8870

#### Philippines - Manila

Tel: 63-2-634-9065

#### Singapore

Tel: 65-6334-8870

#### Taiwan - Hsin Chu

Tel: 886-3-5778-366

#### Taiwan - Kaohsiung

Tel: 886-7-2137828

#### Taiwan - Taipei

Tel: 886-2-2500-6610

#### Thailand - Bangkok

Tel: 66-2-694-1351

11/29/11

Microcontrollers • Digital Signal Controllers • Analog • Memory • Wireless

Information subject to change. The Microchip name and logo, the Microchip logo, dsPIC, MPLAB and PIC are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. SQI is a trademark of Microchip Technology Inc. All other trademarks mentioned herein are property of their respective companies. © 2012, Microchip Technology Incorporated. Silicon Storage Technology is a subsidiary of Microchip Technology Inc. All Rights Reserved. Printed in the U.S.A. 2/12 DS01308G



  
**MICROCHIP**  
[www.microchip.com](http://www.microchip.com)

Microchip Technology Inc.  
2355 W. Chandler Blvd.  
Chandler, AZ 85224-6199

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[SST12LP14E-QX8E](#) [SST12LP08A-QX8E](#)