



Focus Product Selector Guide

Microcontrollers • Digital Signal Controllers • Analog • Memory • Wireless



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Microchip offers a full line of mobile PC solutions including embedded controllers, keyboard controllers (KBC), mobile I/O controllers and docking products. For more information visit: www.microchip.com/pcsystemscontrollersmsc.

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8-BIT PIC® MICROCONTROLLERS

Table with columns: Product, Pins, Memory, Voltage Range, Operating Speed, Analog Sensing & Measurement, Digital, Communication, Monitors, Packages (Designator), Special Features. Includes sub-sections for 14-Pin, 18-Pin, and 20-Pin devices.

Products sorted by pin count followed by pricing. Pricing subject to change; please contact your Microchip representative for most current pricing. Software P1VD 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 | Memory | | Voltage Range | Maximum MIPS | Operating Speed | | Charge Time Measurement Unit | Analog Sensing & Measurement | | Input Capture | Communication | | RTCC/CRC | PPS | 5-ku Pricing† | Monitors | System Mgmt Features | Packages (Designator) |
|-----------------|-----------------------------------|----------|--------------|--------------|---------------|----------------------|-----------------|-----------|------------------------------|------------------------------|--------------|---------------|---------------|--|--|-----|---------------|-------------------------------------|--|---|
| | | | Program (KB) | Data RAM (B) | | | EEPROM | DMA #Ch | | Internal Oscillator | Maximum MIPS | | 10-bit ADC | 10/12-bit ADC | | | | | | |
| PIC24F04KL100 | R | 12 | PIC24 | 4 | 512 | AN1095 ¹⁾ | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 1 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | - | \$1.06 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), TSSOP (ST) | |
| PIC24F04K200 | R | 12 | PIC24 | 4 | 512 | AN1095 ¹⁾ | - | 1.8V3.6V | 16 | 8 MHz, 32 kHz | ✓ | 7 | 2 | 1 UART, 1 SPI, 1 I ² C | - | - | \$1.16 | BOR, POR, WDT, Deep Sleep, XLP | SPDIP (SP), TSSOP (ST) | |
| PIC24F08KL200 | R | 12 | PIC24 | 8 | 512 | AN1095 ¹⁾ | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | 7 | 1 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | - | \$1.25 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), TSSOP (ST) | |
| PIC24F08KM101 | NR | 18 | PIC24 | 8 | 1024 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32kHz | ✓ | - | 16 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | ✓ | \$1.08 | BOR, HLVD, POR, WDT, OST, XLP | PDIP (P), SOIC (SO) | |
| PIC24F04KL101 | R | 17 | PIC24 | 4 | 512 | AN1095 ¹⁾ | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 1 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | 2 | \$1.15 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQ) | |
| PIC24F04K201 | R | 18 | PIC24 | 4 | 512 | AN1095 ¹⁾ | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 2 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | 1 | \$1.25 | BOR, POR, WDT, Deep Sleep, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F08KL201 | R | 17 | PIC24 | 8 | 512 | AN1095 ¹⁾ | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 1 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | 2 | \$1.30 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F08KL301 | R | 18 | PIC24 | 8 | 1024 | 256 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | 6 | \$1.27 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F08KL401 | R | 18 | PIC24 | 8 | 1024 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | 6 | \$1.36 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F16KL401 | R | 18 | PIC24 | 16 | 1024 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | 6 | \$1.43 | BOR, HLVD, POR, PWRT, WDT, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F08KL101 | R | 18 | PIC24 | 8 | 1536 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 9 | 2 | 2 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.44 | BOR, POR, WDT, Deep Sleep, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F16KL101 | R | 18 | PIC24 | 16 | 1536 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 9 | 2 | 2 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.51 | BOR, POR, WDT, Deep Sleep, XLP | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F32M101 | R | 15 | PIC24 | 32 | 2048 | AN1095 ¹⁾ | - | 3V-3.6V | 16 | 7.37 MHz, 32 kHz | ✓ | 6 | 3 | 1 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.68 | BOR, POR, WDT | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F16M101 | R | 15 | PIC24 | 16 | 1024 | AN1095 ¹⁾ | - | 3V-3.6V | 16 | 7.37 MHz, 32 kHz | ✓ | 4 | 3 | 1 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.73 | BOR, POR, WDT | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F16KL301 | R | 18 | PIC24 | 16 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 9 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$1.86 | OST, WDT | SPDIP (SP), SSOP (SS), SOIC (SO) | |
| PIC24F32K4301 | R | 18 | PIC24 | 32 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 9 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.00 | OST, WDT | SPDIP (SP), SSOP (SS), SOIC (SO) | |
| PIC24F08KL302 | R | 24 | PIC24 | 8 | 1024 | 256 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | 6 | \$1.32 | BOR, HLVD, POR, PWRT, WDT, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), 5 x 5 QFN (MQ), 6 x 6 QFN (ML) | |
| PIC24F08KL402 | R | 24 | PIC24 | 8 | 1024 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | 6 | \$1.40 | BOR, HLVD, POR, PWRT, WDT, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), 5 x 5 QFN (MQ), 6 x 6 QFN (ML) | |
| PIC24F16KL402 | R | 24 | PIC24 | 16 | 1024 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | 6 | \$1.47 | BOR, HLVD, POR, PWRT, WDT, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), 5 x 5 QFN (MQ), 6 x 6 QFN (ML) | |
| PIC24F08KL102 | R | 24 | PIC24 | 8 | 1536 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 9 | 2 | 2 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.51 | BOR, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) | |
| PIC24F16KL102 | R | 24 | PIC24 | 16 | 1536 | 512 | - | 1.8V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 9 | 2 | 2 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.58 | BOR, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) | |
| PIC24F16M102 | R | 21 | PIC24 | 16 | 1024 | AN1095 ¹⁾ | - | 3V-3.6V | 16 | 7.37 MHz, 32 kHz | ✓ | 6 | 3 | 1 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.68 | BOR, POR, WDT | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) TLA (TL) | |
| PIC24F32M102 | R | 15 | PIC24 | 32 | 2048 | AN1095 ¹⁾ | - | 3V-3.6V | 16 | 7.37 MHz, 32 kHz | ✓ | 4 | 3 | 1 UART, 1 SPI, 1 I ² C | - | ✓ | \$1.73 | BOR, POR, WDT | PDIP (P), SOIC (SO), SSOP (SS), QFN (MQL), VTLA (TL) | |
| PIC24F16G4002 | R | 21 | PIC24 | 16 | 4096 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 2 I ² C (MSSP) | - | ✓ | \$1.74 | BOR, LVD, POR, WDT, OST, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) | |
| PIC24F08KM102 | NR | 24 | PIC24 | 8 | 1024 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 19 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | ✓ | \$1.75 | BOR, HLVD, POR, WDT, OST, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F16KM102 | NR | 24 | PIC24 | 16 | 1024 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 19 | 1 UART, 1 SPI, 1 I ² C (MSSP) | - | ✓ | \$1.82 | BOR, HLVD, POR, WDT, OST, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MQL) | |
| PIC24F08KM202 | NR | 24 | PIC24 | 8 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 19 | 3 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | ✓ | \$1.82 | BOR, HLVD, POR, WDT, OST, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MQL) |
| PIC24F16KM202 | NR | 24 | PIC24 | 16 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 19 | 3 | 2 UART, 2 SPI, 1 I ² C (MSSP) | - | ✓ | \$1.89 | BOR, HLVD, POR, WDT, OST, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MQL) |
| PIC24F32G4002 | R | 21 | PIC24 | 32 | 8192 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.06 | BOR, LVD, POR, WDT, OST, WDT | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) | |
| PIC24F16G4302 | R | 24 | PIC24 | 16 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 10 | 3 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.06 | PWRT, HLVD, POR, OST, WDT | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) |
| PIC24F32G4302 | R | 24 | PIC24 | 32 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 10 | 3 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.20 | PWRT, HLVD, POR, OST, WDT | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) |
| PIC24F32G6102 | R | 21 | PIC24 | 32 | 8192 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 3 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.23 | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML) | |
| PIC24F32G8002 | R | 19 | PIC24 | 32 | 8192 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 3 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | \$2.44 | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML) | |
| PIC24F16G4G102 | R | 21 | PIC24 | 64 | 8192 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | - | 2 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.48 | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (ML) | |
| PIC24F16G4G102 | R | 21 | PIC24 | 64 | 8192 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 2 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | \$2.65 | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML) | |
| PIC24F16G4G8002 | R | 19 | PIC24 | 64 | 8192 | AN1095 ¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 9 | 3 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | \$2.86 | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML) | |

* Parts available with High Temperature Options (150°C).
 Note 1: See Application Note "AN1095: Emulating Data EEPROM".
 Note 2: Two 16-bit timers can be concatenated to form a 32-bit timer.
 † 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 | Memory | | Voltage Range | Operating Speed | | Analog Sensing & Measurement | | | | | LCD Segments | Graphics Controller | Output Compare/PWM | 16-bit Timer ⁽²⁾ | Communication | | RTPC/CRC | PPS | 5 ku Pricing† | Monitors | Packages (Designator) | | |
|----------------|-----------------------------------|----------|--------------|--------------|---------------|-----------------------|---------|------------------------------|--------------|------------------------------|------------|---------------|--------------|---------------------|--------------------|-----------------------------|---------------|--|----------|-----|---------------|----------|-----------------------|-------------------------------------|--------------------------------|
| | | | Program (KB) | Data RAM (B) | | EEROM | DMA #Ch | Internal Oscillator | Maximum MIPS | Charge Time Measurement Unit | 10-bit ADC | 1100/500 KSPS | | | | | Comparators | Digital Communication | | | | | | USB 2.0 (Peripheral, Host, OTG) | System Mgmt. Features |
| PIC24F16GA004 | R | 35 | PIC24 | 16 | 4096 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 13 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C ^M | - | ✓ | ✓ | 5 | \$1.93 | BOR, LVD, POR, WDT | TQFP (PT), QFN (ML) |
| PIC24F32MC104 | R | 35 | PIC24 | 32 | 2048 | AN1095 ⁽¹⁾ | - | 3V-3.6V | 16 | 7.37 MHz, 32 kHz | ✓ | 14 | - | 3 | - | 8 | 3 | 1 UART, 1 SPI, 1 I ² C | - | ✓ | ✓ | 5 | \$2.02 | BOR, POR, WDT | TQFP (PT), TLA, QFN (ML) |
| PIC24F16KM104 | NR | 38 | PIC24 | 16 | 1024 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 22 | 1 | - | 5 | 5 | 1 UART, 1 SPI/PC (MSSP) | - | - | - | - | \$2.06 | BOR, HLVD, POR, WDT, OST, XLP | TQFP, QFN, UQFN |
| PIC24F08M204 | NR | 38 | PIC24 | 8 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 22 | 3 | - | 5 | 5 | 2 UART, 2 SPI/PC (MSSP) | - | - | - | - | \$2.06 | BOR, HLVD, POR, WDT, OST, XLP | TQFP, QFN, UQFN |
| PIC24F16KM204 | NR | 38 | PIC24 | 16 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 22 | 3 | - | 5 | 5 | 2 UART, 2 SPI/PC (MSSP) | - | - | - | - | \$2.13 | BOR, HLVD, POR, WDT, OST, XLP | TQFP, QFN, UQFN |
| PIC24F32GA004 | R | 35 | PIC24 | 32 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 13 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$2.30 | BOR, LVD, POR, WDT | TQFP (PT), QFN (ML) |
| PIC24F16KA304 | R | 38 | PIC24 | 16 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 16 | 3 | - | 3 | 3 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$2.30 | PWRT, HLVD, POR, OST, WDT | TQFP (PT), QFN (ML), UQFN (MW) |
| PIC24F32KA304 | R | 38 | PIC24 | 32 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 13 | - | 3 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$2.44 | BOR, LVD, POR, WDT, Deep Sleep, XLP | TQFP (PT), QFN (ML) |
| PIC24F32GA104 | R | 38 | PIC24 | 32 | 2048 | 512 | - | 1.8V-5.5V | 16 | 8 MHz, 32 kHz | ✓ | - | 16 | 3 | - | 3 | 3 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | \$2.44 | PWRT, HLVD, POR, OST, WDT | TQFP (PT), QFN (ML), UQFN (MW) |
| PIC24F32GB004 | R | 33 | PIC24 | 32 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 13 | - | 3 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | 5 | \$2.65 | BOR, LVD, POR, WDT, Deep Sleep, XLP | TQFP (PT), QFN (ML) |
| PIC24F64GA004 | R | 35 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 13 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | 5 | \$2.72 | BOR, LVD, POR, WDT | TQFP (PT), QFN (ML) |
| PIC24F64GA104 | R | 35 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 13 | - | 3 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | 5 | \$2.86 | BOR, LVD, POR, WDT, Deep Sleep, XLP | TQFP (PT), QFN (ML) |
| PIC24F64GB004 | R | 33 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 13 | - | 3 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | 5 | \$3.07 | BOR, LVD, POR, WDT, Deep Sleep, XLP | TQFP (PT), QFN (ML) |
| PIC24F64GA306 | R | 53 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | 6 | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 16 | 3 | 240 | 7 | 7 | 4 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$2.77 | BOR, LVD, POR, WDT, XLP, Deep Sleep | TQFP (PT), QFN (MR) |
| PIC24F128GA306 | R | 53 | PIC24 | 128 | 8192 | AN1095 ⁽¹⁾ | 6 | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 16 | 3 | 240 | 7 | 7 | 4 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$3.00 | BOR, LVD, POR, WDT, XLP, Deep Sleep | TQFP (PT), QFN (MR) |
| PIC24F64GA006 | R | 53 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 16 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | 5 | \$3.05 | BOR, POR, WDT | TQFP (PT) |
| PIC24F64GA106 | R | 53 | PIC24 | 64 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | - | ✓ | ✓ | 5 | \$3.32 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F128GA006 | R | 53 | PIC24 | 128 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 16 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$3.35 | BOR, POR, WDT | TQFP (PT) |
| PIC24F128GA106 | R | 53 | PIC24 | 128 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | - | ✓ | ✓ | 5 | \$3.56 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F64GB106 | R | 52 | PIC24 | 64 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$3.64 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F128GB106 | R | 52 | PIC24 | 128 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$3.83 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F256GA106 | R | 53 | PIC24 | 256 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$3.98 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F128GB206 | R | 52 | PIC24 | 128 | 88304 | AN1095 ⁽¹⁾ | - | 2.2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$4.30 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F128DA106 | R | 52 | PIC24 | 128 | 24576 | AN1095 ⁽¹⁾ | - | 2.2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$4.34 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F256GB106 | R | 52 | PIC24 | 256 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$4.35 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F256GB206 | R | 52 | PIC24 | 256 | 98304 | AN1095 ⁽¹⁾ | - | 2.2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$4.65 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F256DA106 | R | 52 | PIC24 | 256 | 24576 | AN1095 ⁽¹⁾ | - | 2.2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$4.69 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F128DA206 | R | 52 | PIC24 | 128 | 98304 | AN1095 ⁽¹⁾ | - | 2.2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$4.76 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F256DA206 | R | 52 | PIC24 | 256 | 98304 | AN1095 ⁽¹⁾ | - | 2.2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$5.11 | BOR, LVD, POR, WDT | TQFP (PT), QFN (MR) |
| PIC24F64GA308 | R | 69 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | 6 | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 16 | 3 | 368 | 7 | 7 | 4 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$2.98 | BOR, LVD, POR, WDT, XLP, Deep Sleep | TQFP (PT) |
| PIC24F128GA308 | R | 69 | PIC24 | 128 | 8192 | AN1095 ⁽¹⁾ | 6 | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | - | 16 | 3 | 368 | 7 | 7 | 4 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$3.23 | BOR, LVD, POR, WDT, XLP, Deep Sleep | TQFP (PT) |
| PIC24F64GA008 | R | 69 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 16 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$3.30 | BOR, POR, WDT | TQFP (PT) |
| PIC24F64GA108 | R | 69 | PIC24 | 64 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | - | ✓ | ✓ | 5 | \$3.58 | BOR, LVD, POR, WDT | TQFP (PT) |
| PIC24F128GA008 | R | 69 | PIC24 | 128 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | - | 16 | - | 2 | - | 5 | 5 | 2 UART, 2 SPI, 2 I ² C | - | ✓ | ✓ | 5 | \$3.60 | BOR, POR, WDT | TQFP (PT) |
| PIC24F128GA108 | R | 69 | PIC24 | 128 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | - | ✓ | ✓ | 5 | \$3.82 | BOR, LVD, POR, WDT | TQFP (PT) |
| PIC24F64GB108 | R | 68 | PIC24 | 64 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 kHz | ✓ | 16 | - | 3 | - | 9 | 9 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | 5 | \$3.91 | BOR, LVD, POR, WDT | TQFP (PT) |

* Parts available with High Temperature Options (150°C)
 † Pricing subject to change; please contact your Microchip representative for most current pricing.
 ‡ Two 16-bit timers can be concatenated to form a 32-bit timer.

16-BIT PIC® MICROCONTROLLERS (PIC24F)

| Product | Released (R) Not Released (NR) | I/O Pins | Memory | | | Voltage Range | Operating Speed | | Analog Sensing & Measurement | | | | Graphics Controller | Communication | | Monitors | | Packages (Designator) | | | | | | | | | | | |
|-----------------|-----------------------------------|----------|--------------|--------------|--------|-----------------------|-----------------|--------------|------------------------------|------------------------------|------------------------------|---------------|---------------------|---------------|---------------|-------------|------------------------------|-----------------------|----------------------------|-----------------------|-----|-----------------------------------|----------------------------|----------------------------|-----------------------|----------|-----|----------------------------|------------------------|
| | | | Program (KB) | Data RAM (B) | EEPROM | | DMA #Ch | Maximum MIPS | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 1100/500 KSPS | | 10/12-bit ADC | 10/12-bit ADC | 10-bit ADC | Charge Time Measurement Unit | | 16-bit Timer ²⁾ | Digital Communication | PMP | RTCC/CRC | PPS | 5 ku Pricing ¹⁾ | System Mgmt. Features | | | | |
| | | | Core | Core | | | | | Maximum MIPS | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 1100/500 KSPS | 10/12-bit ADC | 10-bit ADC | Compressors | LCD Segments | | Output Compare/PWM | Motor Control PWM Ch. | QEI | Input Capture | 16-bit Timer ²⁾ | Digital Communication | PMP | RTCC/CRC | PPS | 5 ku Pricing ¹⁾ | System Mgmt. Features |
| PIC24F128GB108 | R | 68 | PIC24 | 128 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | 2 | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT) |
| PIC24F1256GA108 | R | 69 | PIC24 | 256 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | 2 | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT) |
| PIC24F1256GB108 | R | 68 | PIC24 | 256 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | 2 | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT) |
| PIC24F164GA310 | R | 85 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | 6 | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 480 | - | - | - | 7 | 7 | 5 | 4 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F128GA010 | R | 85 | PIC24 | 128 | 8192 | AN1095 ⁽¹⁾ | 6 | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 480 | - | - | - | 7 | 7 | 5 | 4 UART, 2 SPI, 2 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F164GA010 | R | 85 | PIC24 | 64 | 8192 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | - | - | 5 | 5 | 5 | 2 UART, 2 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT) |
| PIC24F164GA110 | R | 85 | PIC24 | 64 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F128GA110 | R | 85 | PIC24 | 128 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F164GB110 | R | 84 | PIC24 | 64 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 16 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F128GB110 | R | 85 | PIC24 | 128 | 16384 | AN1095 ⁽¹⁾ | - | 2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 16 | - | 3 | - | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F1256GA110 | R | 85 | PIC24 | 256 | 16384 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F128GB210 | R | 84 | PIC24 | 128 | 98304 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F1256GB110 | R | 84 | PIC24 | 256 | 16384 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F128DA110 | R | 84 | PIC24 | 128 | 24576 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F1256GB210 | R | 84 | PIC24 | 256 | 98304 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F1256DA110 | R | 84 | PIC24 | 256 | 24576 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F128DA210 | R | 84 | PIC24 | 128 | 98304 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |
| PIC24F1256DA210 | R | 84 | PIC24 | 256 | 98304 | AN1095 ⁽¹⁾ | - | 2,2V-3.6V | 16 | 8 MHz, 32 KHz | ✓ | 24 | 24 | 4 | 3 | - | - | - | 9 | 9 | 5 | 4 UART, 3 SPI, 3 I ² C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), BGA121 (BG) |

* Parts available with High Temperature Options (150°C).
 † On amp configured as comparator.
 ‡ See Application Note "AN1095: Emulating Data EEPROM".
 †† 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) | I/O Pins | Memory | | | Voltage Range | Operating Speed | | Analog Sensing & Measurement | | | | Motor Control PWM Ch. | Communication | | Monitors | | Packages (Designator) | | | | | | | | | | | |
|------------------|-----------------------------------|----------|--------------|--------------|--------|-----------------------|-----------------|--------------|------------------------------|------------------------------|------------------------------|---------------|-----------------------|---------------|------------|------------------------------|----------------------------|-----------------------|-----------------------|-----------------------|----------|-----------------------------------|----------------------------|-----------------------|-----|----------|-----|----------------------------|--|
| | | | Program (KB) | Data RAM (B) | EEPROM | | DMA #Ch | Maximum MIPS | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 1100/500 KSPS | | 10/12-bit ADC | 10-bit ADC | Charge Time Measurement Unit | 16-bit Timer ²⁾ | | Digital Communication | PMP | RTCC/CRC | PPS | 5 ku Pricing ¹⁾ | System Mgmt. Features | | | | | |
| | | | Core | Core | | | | | Maximum MIPS | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 1100/500 KSPS | 10/12-bit ADC | 10-bit ADC | Compressors | LCD Segments | | Output Compare/PWM | Motor Control PWM Ch. | QEI | Input Capture | 16-bit Timer ²⁾ | Digital Communication | PMP | RTCC/CRC | PPS | 5 ku Pricing ¹⁾ | System Mgmt. Features |
| PIC24HJ26P201 | R | 13 | PIC24 | 12 | 1 | AN1095 ⁽¹⁾ | - | 3V-3.6V | 40 | 7.37 MHz, 32 KHz | - | 6 ch | - | - | - | - | - | 2 | - | 4 | 3 | 1 UART, 1 SPI, 1 I ² C | - | - | - | ✓ | ✓ | ✓ | POIP (P), SOIC (SO) |
| PIC24EP32M2C202 | R | 21 | PIC24 | 32 | 4 | AN1095 ⁽¹⁾ | 4 | 3V-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 6 ch | 1+2* | 2 | 10 | 6 | 1 | 4 | 5 | 4 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | ✓ | ✓ | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| PIC24EP32GP202 | R | 21 | PIC24 | 32 | 4 | AN1095 ⁽¹⁾ | 4 | 3V-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 6 ch | 1+2* | 2 | 4 | - | - | 4 | - | 4 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | ✓ | ✓ | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| PIC24EP64M2C202 | R | 21 | PIC24 | 64 | 8 | AN1095 ⁽¹⁾ | 4 | 3V-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 6 ch | 1+2* | 2 | 10 | 6 | 1 | 4 | 5 | 4 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | ✓ | ✓ | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| PIC24EP64GP202 | R | 21 | PIC24 | 64 | 8 | AN1095 ⁽¹⁾ | 4 | 3V-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 6 ch | 1+2* | 2 | 4 | - | - | 4 | - | 4 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | ✓ | ✓ | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| PIC24EP128M2C202 | R | 21 | PIC24 | 128 | 16 | AN1095 ⁽¹⁾ | 4 | 3V-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 6 ch | 1+2* | 2 | 10 | 6 | 1 | 4 | 5 | 4 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | ✓ | ✓ | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| PIC24EP128GP202 | R | 21 | PIC24 | 128 | 16 | AN1095 ⁽¹⁾ | 4 | 3V-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 6 ch | 1+2* | 2 | 4 | - | - | 4 | - | 4 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | ✓ | ✓ | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |

* Parts available with High Temperature Options (150°C).
 † On amp configured as comparator.
 ‡ See Application Note "AN1095: Emulating Data EEPROM".
 †† Pricing subject to change; please contact your Microchip representative for most current pricing.

dSPIC33 DSC GENERAL PURPOSE AND MOTOR CONTROL FAMILY

| Product | Released (R) Not Released (NR) | I/O Pins | Memory | | Operating Speed | | | Analog Sensing & Measurement | | | | Communication | | Monitors | | Packages (Designator) | | | | | | | | | | | | | | |
|---------------------|--------------------------------|----------|--------|--------------|-----------------------|---------|--------------------|------------------------------|------------------------------|------------------|--------------|---------------|---------|--------------------|---------------|-----------------------|----------------------|--|-----------------------------------|------------|----------|-----|---------------------------|-----------------------|--------------|--------------|--------------|--------------|-------------------------------|-------------------------------|
| | | | Core | Data RAM (B) | EEPROM | DMA #Ch | Maximum Speed MIPS | Internal Oscillator | Charge Time Measurement Unit | ADC 100/500 ksps | DAC | Comparators | Op Amps | Output Compare/PWM | Input Capture | | Motor Control PWM Ch | QEI | 16-bit Timer ⁽²⁾ | PMP | RTCC/CRC | PPS | 5 ku Pricing [†] | System Mgmt. Features | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | Program (KB) | Program (KB) | Program (KB) | Program (KB) | Program (KB) | Program (KB) |
| dSPIC33EP128MP504* | R | 35 | dSPIC | 128 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 4 | 5 | 2 UART, 2 SPI, 1 I ² C ^m | CAN | FS USB OTG | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) |
| dSPIC33EP128MC504* | R | 35 | dSPIC | 128 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) | |
| dSPIC33EP256MC204* | R | 35 | dSPIC | 256 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) | |
| dSPIC33EP256MP504* | R | 35 | dSPIC | 256 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) | |
| dSPIC33EP512MC204* | NR | 35 | dSPIC | 512 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) | |
| dSPIC33EP512MP504* | NR | 35 | dSPIC | 512 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) | |
| dSPIC33EP512MC504* | NR | 35 | dSPIC | 512 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 9 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), VTA (TL), QFN (ML) | |
| dSPIC33EP64MP206* | R | 53 | dSPIC | 64 | AN1095 ^(h) | 8 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP64MP506* | R | 53 | dSPIC | 64 | AN1095 ^(h) | 8 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP64MP506* | R | 53 | dSPIC | 64 | AN1095 ^(h) | 8 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP128MP206* | R | 53 | dSPIC | 128 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP128MP506* | R | 53 | dSPIC | 128 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP128MP506* | R | 53 | dSPIC | 128 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP256MP206* | R | 53 | dSPIC | 256 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP256MP506* | R | 53 | dSPIC | 256 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP256MP506* | R | 53 | dSPIC | 256 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP512MP206* | NR | 53 | dSPIC | 512 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP512MP506* | NR | 53 | dSPIC | 512 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP512MP506* | NR | 53 | dSPIC | 512 | AN1095 ^(h) | 4 | 3K-3.6V | 70 | 7.37 MHz, 32 KHz | ✓ | 16 ch | - | 1+3* | 3 | 4 | 6 | 5 | 2 UART, 2 SPI, 1 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| dSPIC33EP64MP310A* | R | 85 | dSPIC | 64 | AN1095 ^(h) | 4 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP64MP510A* | R | 85 | dSPIC | 64 | AN1095 ^(h) | 4 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP128MP310A* | R | 85 | dSPIC | 128 | AN1095 ^(h) | 8 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP128MP510A* | R | 85 | dSPIC | 128 | AN1095 ^(h) | 8 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP64MP710A* | R | 85 | dSPIC | 64 | AN1095 ^(h) | 4 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP64MP710A* | R | 85 | dSPIC | 64 | AN1095 ^(h) | 4 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP256MP510A* | R | 85 | dSPIC | 256 | AN1095 ^(h) | 4 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP128MP710A* | R | 85 | dSPIC | 128 | AN1095 ^(h) | 8 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP128MP510A* | R | 85 | dSPIC | 128 | AN1095 ^(h) | 8 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP256MP710A* | R | 85 | dSPIC | 256 | AN1095 ^(h) | 8 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP256MP710A* | R | 85 | dSPIC | 256 | AN1095 ^(h) | 8 | 3K-3.6V | 40 | 7.37 MHz, 32 KHz | - | 32 ch | - | - | - | 8 | 8 | 9 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) | |
| dSPIC33EP512MP810A* | R | 83 | dSPIC | 280 | AN1095 ^(h) | 15 | 3K-3.6V | 60 | 7.37 MHz, 32 KHz | - | 32 ch, 2 ADC | - | 3 | - | 16 | 16 | 12 | 2 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) |
| dSPIC33EP512MP810A* | R | 83 | dSPIC | 280 | AN1095 ^(h) | 15 | 3K-3.6V | 60 | 7.37 MHz, 32 KHz | - | 32 ch, 2 ADC | - | 3 | - | 16 | 16 | 12 | 2 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) |
| dSPIC33EP256MP810A* | R | 122 | dSPIC | 280 | AN1095 ^(h) | 15 | 3K-3.6V | 60 | 7.37 MHz, 32 KHz | - | 32 ch, 2 ADC | - | 3 | - | 16 | 16 | 12 | 2 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) |
| dSPIC33EP512MP810A* | R | 122 | dSPIC | 536 | AN1095 ^(h) | 15 | 3K-3.6V | 60 | 7.37 MHz, 32 KHz | - | 32 ch, 2 ADC | - | 3 | - | 16 | 16 | 12 | 2 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | TQFP (PT, PF) |

* Parts available with High Temperature Options (150°C).
 † On amp configured as comparator.
 ‡ See Application Note "AN1095: Emulating Data EEPROM".
 § Two 16-bit timers can be concatenated to form a 32-bit timer.
 † Pricing subject to change; please contact your Microchip representative for most current pricing.

dsPIC33 DSC SMPS AND DIGITAL POWER CONVERSION FAMILY

| Product | Released (R) Not Released (NR) | I/O Pins | Memory | | | Voltage Range | Maximum Speed MIPS | Operating Speed | | Analog | | | Digital Communication | | 5 Ku Pricing [†] | Monitors | Packages (Designator) | | | | | | | | |
|------------------|-----------------------------------|----------|--------------------|--------------|--------------|----------------------|-----------------------|-----------------|---------|---------------------|----------------------------|------------|-----------------------|--------------------|---------------------------|----------|-----------------------|------------------------------------|-----------------------------------|-----|---------------------------|-----|--------|---------------|---|
| | | | Core | Program (KB) | Data RAM (B) | | | EEPROM | DMA #Ch | Internal Oscillator | ADC 10-bit (± 4000 ksp) | DAC | Comparators | Output Compare/PWM | | | | Input Capture | Power Supply PWM Ch [‡] | QEI | 16-bit Timer [§] | CAN | | | |
| dsPIC33F06GS001 | R | 13 | dsPIC [¶] | 6 | 256 | ANI095 | - | 3V-3.6V | 40 | 7.37 MHz, 32 kHz | 6 ch | 2 x 10-bit | 2 | - | 4 | - | 2 | 1 UART, 1 SPI, 1 I ² C™ | - | - | - | ✓ | \$1.61 | BOR, POR, WDT | PDIP (P), SOIC (SO), SSOP (SS) |
| dsPIC33F06GS101A | R | 13 | dsPIC | 6 | 256 | ANI095 | - | 3V-3.6V | 40 | 7.37 MHz, 32 kHz | 6 ch | - | - | 1 | 4 | - | 2 | 1 UART, 1 SPI, 1 I ² C | - | - | - | ✓ | \$1.75 | BOR, POR, WDT | PDIP (P), SOIC (SO), SSOP (SS) |
| dsPIC33F06GS102A | R | 21 | dsPIC | 6 | 256 | ANI095 | - | 3V-3.6V | 40 | 7.37 MHz, 32 kHz | 6 ch | - | - | 1 | 4 | - | 2 | 1 UART, 1 SPI, 1 I ² C | - | - | - | ✓ | \$1.95 | BOR, POR, WDT | SDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| dsPIC33F06GS202A | R | 21 | dsPIC | 6 | 1024 | ANI095 | - | 3V-3.6V | 40 | 7.37 MHz, 32 kHz | 6 ch | 2 x 10-bit | - | 2 | 4 | - | 2 | 1 UART, 1 SPI, 1 I ² C | - | - | - | ✓ | \$2.06 | BOR, POR, WDT | SDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| dsPIC33F09GS302 | R | 21 | dsPIC | 9 | 1024 | ANI095 | - | 3V-3.6V | 40 | 7.37 MHz, 32 kHz | 8 ch | 2 x 10-bit | - | 2 | 6 | - | 2 | 1 UART, 1 SPI, 1 I ² C | - | - | - | ✓ | \$2.17 | BOR, POR, WDT | SDIP (SP), SOIC (SO), SSOP (SS), QFN (MM) |
| dsPIC33F16GS402* | R | 21 | dsPIC | 16 | 2048 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 8 ch | - | - | 2 | 6 | - | 3 | 1 UART, 1 SPI, 1 I ² C | - | - | - | ✓ | \$2.52 | BOR, POR, WDT | SPDIP (SP), SOIC (SO), QFN (MM) |
| dsPIC33F16GS502* | R | 21 | dsPIC | 16 | 2048 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 8 ch, 2 ADC† | 4 x 10-bit | - | 4 | 2 | 8 | - | 3 | 1 UART, 1 SPI, 1 I ² C | - | - | ✓ | \$3.04 | BOR, POR, WDT | SPDIP (SP), SOIC (SO), QFN (MM) |
| dsPIC33F16GS404* | R | 35 | dsPIC | 16 | 2048 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 8 ch | - | - | - | 2 | 6 | - | 3 | 1 UART, 1 SPI, 1 I ² C | - | - | ✓ | \$2.77 | BOR, POR, WDT | TQFP (PT), QFN (ML) |
| dsPIC33F16GS504* | R | 35 | dsPIC | 16 | 2048 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 12 ch, 2 ADC† | 4 x 10-bit | - | 4 | 2 | 8 | - | 3 | 1 UART, 1 SPI, 1 I ² C | - | - | ✓ | \$3.42 | BOR, POR, WDT | TQFP (PT), QFN (ML) |
| dsPIC33F32GS406 | R | 58 | dsPIC | 32 | 4096 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 16 ch | - | - | - | 4 | 12 | 5 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | \$3.07 | BOR, POR, WDT | TQFP (PT), QFN (MR) |
| dsPIC33F64GS406 | R | 58 | dsPIC | 64 | 8192 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 16 ch | - | - | - | 4 | 12 | 5 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | \$3.35 | BOR, POR, WDT | TQFP (PT), QFN (MR) |
| dsPIC33F32GS606 | R | 58 | dsPIC | 32 | 4096 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 16 ch, 2 ADC† | 4 x 10-bit | - | 4 | 4 | 12 | 5 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | \$3.36 | BOR, POR, WDT | TQFP (PT), QFN (MR) |
| dsPIC33F64GS606 | R | 58 | dsPIC | 64 | 9216 | ANI095 | 4 | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 16 ch, 2 ADC† | 4 x 10-bit | - | 4 | 4 | 12 | 5 | 2 UART, 2 SPI, 2 I ² C | 1 | - | - | - | \$3.81 | BOR, POR, WDT | TQFP (PT), QFN (MR) |
| dsPIC33F32GS608 | R | 74 | dsPIC | 32 | 4096 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 18 ch, 2 ADC† | 4 x 10-bit | - | 4 | 4 | 16 | 5 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | \$3.85 | BOR, POR, WDT | TQFP (PT) |
| dsPIC33F64GS608 | R | 74 | dsPIC | 64 | 9216 | ANI095 | 4 | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 18 ch, 2 ADC† | 4 x 10-bit | - | 4 | 4 | 16 | 5 | 2 UART, 2 SPI, 2 I ² C | 1 | - | - | - | \$4.34 | BOR, POR, WDT | TQFP (PT) |
| dsPIC33F32GS610 | R | 85 | dsPIC | 32 | 4096 | ANI095 | - | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 24 ch, 2 ADC† | 4 x 10-bit | - | 4 | 4 | 18 | 5 | 2 UART, 2 SPI, 2 I ² C | - | - | - | - | \$4.41 | BOR, POR, WDT | TQFP (PF, PT) |
| dsPIC33F64GS610 | R | 85 | dsPIC | 64 | 9216 | ANI095 | 4 | 3V-3.6V | 50 | 7.37 MHz, 32 kHz | 24 ch, 2 ADC† | 4 x 10-bit | - | 4 | 4 | 18 | 5 | 2 UART, 2 SPI, 2 I ² C | 1 | - | - | - | \$4.89 | BOR, POR, WDT | TQFP (PF, PT) |

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

† 4 Msps devices with 2 ADCs

Note 1: See Application Note "ANI095: Emulating Data EEPROM".

Note 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 | | Communication | | | | | | | PMP | RTCC | Peripheral Pin Select (PPS) | Monitors | | Packages (Designator) | | | | | |
|-----------------|-----------------------------------|----------|-------|---------------------------|--------|-----------------------------------|---------------|------------------------|---------------------|---------------------------------|--------------------|-------------|---------------|------------------|--------|------|-------|--------|----------|-----|--------|--------------------------------|----------|--------------------------|-----------------------|------------------|---------------|---|--|--|
| | | | | Flash KB + KB RAM (KB) | EEPROM | | | Maximum Speed (MHz) | Internal Oscillator | | AOC 10-bit kSPS | Comparators | IC/OC/PWM | Timers 16/32-bit | SPI/PS | PCPM | UARTS | FS USB | Ethernet | | | | CAN | System Mgmt. Features | | Monitors | | | | |
| PIC32MX10F016B | R | 21 | PIC32 | 16 + 3 | 4 | AN1095 | 4/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | 5 ku Pricing† | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) |
| PIC32MX10F016B | R | 21 | PIC32 | 16 + 3 | 4 | AN1095 | 4/2 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.62 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX120F032B | R | 21 | PIC32 | 32 + 3 | 8 | AN1095 | 4/0 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.71 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX20F032B | R | 21 | PIC32 | 32 + 3 | 8 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.82 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX130F064B | R | 21 | PIC32 | 64 + 3 | 16 | AN1095 | 4/0 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.03 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX150F128B | R | 21 | PIC32 | 128 + 3 | 32 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.31 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX20F064B | R | 21 | PIC32 | 64 + 3 | 16 | AN1095 | 4/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | OTG | - | - | ✓ | ✓ | \$2.31 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX250F128B | R | 21 | PIC32 | 128 + 3 | 32 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 10 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | OTG | - | - | ✓ | ✓ | \$2.59 | ✓ | ✓ | SPDIP (SP), SOIC (SO), SSOC (SS), QFN (ML) | |
| PIC32MX110F016C | R | 25 | PIC32 | 16 + 3 | 4 | AN1095 | 4/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.65 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX210F016C | R | 25 | PIC32 | 16 + 3 | 4 | AN1095 | 4/2 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.76 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX120F032C | R | 25 | PIC32 | 32 + 3 | 8 | AN1095 | 4/0 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.85 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX20F032C | R | 25 | PIC32 | 32 + 3 | 8 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.96 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX130F064C | R | 25 | PIC32 | 64 + 3 | 16 | AN1095 | 4/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.17 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX150F128C | R | 25 | PIC32 | 128 + 3 | 32 | AN1095 | 4/0 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.45 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX20F064C | R | 25 | PIC32 | 64 + 3 | 16 | AN1095 | 4/2 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | OTG | - | - | ✓ | ✓ | \$2.45 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX250F128C | R | 25 | PIC32 | 128 + 3 | 32 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 12 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | OTG | - | - | ✓ | ✓ | \$2.73 | ✓ | ✓ | VTLA (TL) | |
| PIC32MX110F016D | R | 34 | PIC32 | 16 + 3 | 4 | AN1095 | 4/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.75 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX210F016D | R | 34 | PIC32 | 16 + 3 | 4 | AN1095 | 4/2 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.85 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX120F032D | R | 34 | PIC32 | 32 + 3 | 8 | AN1095 | 4/0 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$1.95 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX20F032D | R | 34 | PIC32 | 32 + 3 | 8 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.04 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX130F064D | R | 34 | PIC32 | 64 + 3 | 16 | AN1095 | 4/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.24 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX150F128D | R | 34 | PIC32 | 128 + 3 | 32 | AN1095 | 4/0 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$2.52 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX20F064D | R | 34 | PIC32 | 64 + 3 | 16 | AN1095 | 4/2 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | OTG | - | - | ✓ | ✓ | \$2.52 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX250F128D | R | 34 | PIC32 | 128 + 3 | 32 | AN1095 | 4/2 | 2.3V-3.6V | 50 | 8 MHz, 32 KHz | ✓ | 13 ch | 3 | 5/5/5 | 5/2 | 2/2 | 2 | 2 | 2 | 2 | OTG | - | - | ✓ | ✓ | \$2.80 | ✓ | ✓ | TQFP (PT), QFN (ML), VTLA (TL) | |
| PIC32MX30F064H | NR | 53 | PIC32 | 64 + 12 | 16 | AN1095 ¹⁾ | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | ✓ | 28 | 2 | 5/5/5 | 5/2 | 2/2 | 2 | 4 | 2 | 2 | Device | - | - | ✓ | ✓ | call for pricing | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX430F064H | NR | 53 | PIC32 | 64 + 12 | 16 | AN1095 ¹⁾ | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | ✓ | 28 | 2 | 5/5/5 | 5/2 | 2/2 | 2 | 4 | 2 | 2 | Device | - | - | ✓ | ✓ | call for pricing | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX20F032H | R | 51 | PIC32 | 32 + 12 | 8 | AN1095 ¹⁾ | 0/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$3.09 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX320F064H | R | 51 | PIC32 | 64 + 12 | 16 | AN1095 ¹⁾ | 0/0 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$3.36 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX40F032H | R | 51 | PIC32 | 32 + 12 | 8 | AN1095 ¹⁾ | 0/2 | 2.3V-3.6V | 40 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$3.36 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX20F128H | R | 51 | PIC32 | 128 + 12 | 16 | AN1095 ¹⁾ | 0/0 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$3.75 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX34F064H | R | 51 | PIC32 | 64 + 12 | 16 | AN1095 ¹⁾ | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 3/0 | 4 | 6 | 4 | 6 | OTG | - | - | ✓ | ✓ | \$3.89 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX40F128H | R | 51 | PIC32 | 128 + 12 | 32 | AN1095 ¹⁾ | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$3.96 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX56F064H | R | 51 | PIC32 | 64 + 12 | 32 | AN1095 ¹⁾ | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 3/0 | 4 | 6 | 4 | 6 | OTG | - | - | ✓ | ✓ | \$4.10 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX40F128H | R | 51 | PIC32 | 128 + 12 | 32 | AN1095 ¹⁾ | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$4.23 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX40F256H | R | 51 | PIC32 | 256 + 12 | 32 | AN1095 ¹⁾ | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$4.31 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX56F128H | R | 51 | PIC32 | 128 + 12 | 32 | AN1095 ¹⁾ | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 3/0 | 4 | 6 | 4 | 6 | OTG | - | - | ✓ | ✓ | \$4.34 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX64F064H | R | 51 | PIC32 | 64 + 12 | 32 | AN1095 ¹⁾ | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 3/0 | 4 | 6 | 4 | 6 | OTG | 10/100 | - | ✓ | ✓ | \$4.34 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX40F256H | R | 51 | PIC32 | 256 + 12 | 32 | AN1095 ¹⁾ | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | 2 | 2 | Device | - | - | ✓ | ✓ | \$4.58 | ✓ | ✓ | TQFP (PT), QFN (MR) | |
| PIC32MX64F128H | R | 51 | PIC32 | 128 + 12 | 32 | AN1095 ¹⁾ | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 KHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 3/0 | 4 | 6 | 4 | 6 | OTG | 10/100 | - | ✓ | ✓ | \$4.58 | ✓ | ✓ | TQFP (PT), QFN (MR) | |

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

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 | | Communication | | | | | | RTCC | Peripheral Pin Select (PPS) | 5 ku Pricing† | Monitors | | Packages (Designator) | |
|-----------------|-----------------------------------|----------|-------|--------------------------|--------|-----------------------------------|---------------|------------------------|---------------------|---------------------------------|-------------------------|-------------|---------------|------------------|--------|------|-------|--------|------|--------------------------------|---------------|----------|-----|-----------------------|-------------------------------------|
| | | | | Flash KB + Boot Flash | EEPROM | | | Maximum Speed (MHz) | Internal Oscillator | | ADC 10-bit 1,000 ksp | Comparators | IC/OC/PWM | Timers 16/32-bit | SPI/PS | PC/M | UARTS | FS USB | | | | Ethernet | CAN | | PMP |
| PIC32MX764F28H | R | 51 | PIC32 | 128 + 12 | 32 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), QFN (MR) |
| PIC32MX340F512H | R | 51 | PIC32 | 512 + 12 | 32 | AN1095 ^(U) | 4/6 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX575F256H | R | 51 | PIC32 | 256 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX40F512H | R | 51 | PIC32 | 512 + 12 | 32 | AN1095 ^(U) | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX675F256H | R | 51 | PIC32 | 256 + 12 | 64 | AN1095 ^(U) | 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 | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX575F512H | R | 51 | PIC32 | 512 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX775F512H | R | 51 | PIC32 | 256 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX775F512H | R | 51 | PIC32 | 512 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX895F512H | R | 51 | PIC32 | 512 + 12 | 128 | AN1095 ^(U) | 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 | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX795F512H | R | 51 | PIC32 | 512 + 12 | 128 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), QFN (MR) |
| PIC32MX30F064L | NR | 85 | PIC32 | 64 + 12 | 16 | AN1095 ^(U) | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | ✓ | 28 | 2 | 5/5/5 | 5/2 | 2/2 | 2 | 5 | - | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), VTLA (TL) |
| PIC32MX40F064L | NR | 85 | PIC32 | 64 + 12 | 16 | AN1095 ^(U) | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | ✓ | 28 | 2 | 5/5/5 | 5/2 | 2/2 | 2 | 5 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), VTLA (TL) |
| PIC32MX34F064L | R | 85 | PIC32 | 64 + 12 | 16 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX320F128L | R | 85 | PIC32 | 128 + 12 | 16 | AN1095 ^(U) | 0/0 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | - | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), XBGA (BG) |
| PIC32MX340F128L | R | 85 | PIC32 | 128 + 12 | 32 | AN1095 ^(U) | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | - | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), XBGA (BG) |
| PIC32MX564F064L | R | 85 | PIC32 | 64 + 12 | 32 | AN1095 ^(U) | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 4/0 | 5 | 6 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX40F128L | R | 85 | PIC32 | 128 + 12 | 32 | AN1095 ^(U) | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), XBGA (BG) |
| PIC32MX360F256L | R | 85 | PIC32 | 256 + 12 | 32 | AN1095 ^(U) | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | - | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), XBGA (BG) |
| PIC32MX564F128L | R | 85 | PIC32 | 128 + 12 | 32 | AN1095 ^(U) | 4/4 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 4/0 | 5 | 6 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX664F064L | R | 85 | PIC32 | 256 + 12 | 32 | AN1095 ^(U) | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX40F256L | R | 85 | PIC32 | 128 + 12 | 32 | AN1095 ^(U) | 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 | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX64F128L | R | 85 | PIC32 | 256 + 12 | 32 | AN1095 ^(U) | 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 | 1 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX360F512L | R | 85 | PIC32 | 512 + 12 | 32 | AN1095 ^(U) | 4/0 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | - | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), XBGA (BG) |
| PIC32MX575F256L | R | 85 | PIC32 | 256 + 12 | 64 | AN1095 ^(U) | 8/4 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 4/0 | 5 | 6 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX40F512L | R | 85 | PIC32 | 512 + 12 | 32 | AN1095 ^(U) | 4/2 | 2.3V-3.6V | 80 | 8 MHz, 32 kHz | - | 16 ch | 2 | 5/5/5 | 5/1 | 2/0 | 2 | 2 | OTG | - | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT), XBGA (BG) |
| PIC32MX675F256L | R | 85 | PIC32 | 256 + 12 | 64 | AN1095 ^(U) | 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 | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX575F512L | R | 85 | PIC32 | 512 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX775F256L | R | 85 | PIC32 | 256 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX675F512L | R | 85 | PIC32 | 512 + 12 | 64 | AN1095 ^(U) | 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 | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX775F512L | R | 85 | PIC32 | 512 + 12 | 64 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX895F512L | R | 85 | PIC32 | 512 + 12 | 128 | AN1095 ^(U) | 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 | - | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG) |
| PIC32MX795F512L | R | 85 | PIC32 | 512 + 12 | 128 | AN1095 ^(U) | 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 | ✓ | ✓ | POR, BOR, LVD, WDT | TQFP (PT, PF), XBGA (BG), VTLA (TL) |

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

THERMAL MANAGEMENT: Temperature Sensors

| Product | Description | # Temps. Monitored | Typical/Max Accuracy (°C) | Temp. Range (°C) | Vcc Range (V) | Typical Supply Current (µA) | Alerts | Resistance Error Correction | Beta Compensation | Packages |
|---------------|---|--------------------|---------------------------|------------------|---------------|-----------------------------|--------|-----------------------------|-------------------|---|
| MCP9501/2/3/4 | Temperature Switch replacing MAX6601/2/3/4 | 1 | 1.0/3.0 | -40 to +125 | +2.7 to +5.5 | 25 | - | - | - | 5-pin SOT-23 |
| MCP9509/10 | Resistor-Programmable Temperature Switch | 1 | 0.5/3.5 | -40 to +125 | +2.7 to +5.5 | 30 | - | - | - | 5-pin SOT-23 |
| MCP9800/1/2/3 | SMBus/1°C ^m Temperature Sensor | 1 | 0.5/1.0 | -55 to +125 | +2.7 to +5.5 | 200 | 1 | - | - | 5-pin SOT-23 |
| MCP9804 | SMBus/1°C Temperature Sensor | 1 | 0.25/1.0 | -40 to +125 | +2.7 to +5.5 | 200 | 1 | - | - | 8-pin DFN, 8-pin MSOP |
| MCP9808 | SMBus/1°C Temperature Sensor | 1 | 0.25/0.5 | -40 to +125 | +2.7 to +5.5 | 200 | 1 | - | - | 8-pin DFN, 8-pin MSOP |
| MCP98243 | SMBus/1°C Temperature Sensor with EEPROM | 1 | 0.5/3.0 | -40 to +125 | +3.0 to +3.6 | 200 | 1 | - | - | 8-pin DFN, 8-pin TDR, 8-pin TSSOP, 8-pin UDFN |
| MCP9843 | SMBus/1°C JEDEC Temperature Sensor | 1 | 0.5/3.0 | -40 to +125 | +3.0 to +3.6 | 200 | 1 | - | - | 8-pin DFN, 8-pin TDR, 8-pin TSSOP |
| TON75A | SMBus/1°C Temperature Sensor | 1 | 0.5/3.0 | -40 to +125 | +2.7 to +5.5 | 200 | 1 | - | - | 8-pin MSOP, 8-pin SOIC 150mil |
| MCP9700/01 | Linear Active Thermistor IC | 1 | 1.0/4.0 | -40 to +150 | +2.3 to +5.5 | 6 | - | - | - | 3-pin SOT-23, 3-pin TO-92, 5-pin SC-70 |
| MCP9700/01A | Linear Active Thermistor IC | 1 | 1.0/2.0 | -40 to +150 | +2.3 to +5.5 | 6 | - | - | - | 3-pin SOT-23, 3-pin TO-92, 5-pin SC-70 |
| EMC1033 | SMBus/1°C Multi Temperature Sensor | 3 | 1.0/3.0 | -40 to +125 | +3.0 to +3.6 | 50 | 2 | ✓ | - | 8-pin MSOP |
| EMC1043 | SMBus/1°C Multi Temperature Sensor | 3 | 0.5/1.0 | -40 to +125 | +3.0 to +3.6 | 105 | - | ✓ | Configurable | 8-pin MSOP |
| EMC1046 | SMBus/1°C Multi Temp Sensor with Hottest of Zones | 6 | 0.25/1.0 | -40 to +125 | +3.0 to +3.6 | 395 | - | ✓ | Automatic | 10-pin MSOP |
| EMC1047 | SMBus/1°C Multi Temp Sensor with Hottest of Zones | 7 | 0.25/1.0 | -40 to +125 | +3.0 to +3.6 | 395 | - | ✓ | Automatic | 10-pin MSOP |
| EMC1412/3/4 | SMBus/1°C Multi Temperature Sensor | 2/3/4 | 0.25/1.0 | -40 to +125 | +3.0 to +3.6 | 430 | 2 | ✓ | Automatic | 8-pin TDFN, 8-pin MSOP, 10-pin DFN, 10-pin MSOP |
| EMC1422/3/4 | SMBus/1°C Multi Temp Sensor with Shutdown | 2/3/4 | 0.25/1.0 | -40 to +125 | +3.0 to +3.6 | 430 | 1 | ✓ | Automatic | 8-pin MSOP, 10-pin MSOP |
| EMC1428 | SMBus/1°C Multi Temp Sensor with Hottest of Zones | 8 | 0.25/1.0 | -40 to +125 | +3.0 to +3.6 | 450 | 1 | ✓ | Automatic | 16-pin QFN |

THERMAL MANAGEMENT: Fan Controllers

| Product | Description | # Fan Drivers | PWM/Linear Control | # External Temp. Inputs | Typical Accuracy | Typical/Max. Accuracy | Vcc Range (V) | Interface | Alerts | Fan Speed Lookup Table | Packages |
|---------------|---|---------------|--------------------|-------------------------|------------------|-----------------------|---------------|------------------------|--------|------------------------|---|
| EMC2101 | Programmable Fan Controller with Thermal Mgt | 1 | PWM | 2 | 0.5 | 0.5/1.0 | +3.0 to +3.6 | SMBus/1°C ^m | ✓ | ✓ | 8-pin MSOP, 8-pin SOIC |
| EMC2300 | Programmable MultiFan Controller with Thermal Mgt | 3 | PWM | 3 | 0.25 | 0.25/3.0 | +3.0 to +3.6 | SMBus/1°C | ✓ | ✓ | 16-pin SSOP |
| EMC2112 | Programmable Fan Controller with Thermal Mgt | 1 | Linear | 3 | 0.25 | 0.25/1.0 | +3.3 and +5 | SMBus/1°C | ✓ | ✓ | 20-pin QFN |
| EMC2103-1 | Programmable Fan Controller with Thermal Mgt | 1 | PWM | 1 | 0.5 | 0.5/1.0 | +3.0 to +3.6 | SMBus/1°C | ✓ | ✓ | 12-pin QFN |
| EMC2103-4 | Programmable Fan Controller with EEPROM Load | 1 | PWM | 3 | 0.5 | 0.5/1.0 | +3.0 to +3.6 | SMBus/1°C | ✓ | ✓ | 16-pin QFN |
| EMC2104 | Programmable MultiFan Controller with Thermal Mgt | 2 | PWM | 4 | 0.25 | 0.25/1.0 | +3.0 to +3.6 | SMBus/1°C | ✓ | ✓ | 20-pin QFN |
| EMC2105 | Programmable Fan Controller with Thermal Mgt | 1 | Linear | 4 | 0.25 | 0.25/1.0 | +3.3 and +5 | SMBus/1°C | ✓ | ✓ | 20-pin QFN |
| EMC2113 | Programmable Fan Controller with Thermal Mgt | 1 | PWM | 3 | 0.5 | 0.5/1.0 | +3.0 to +3.6 | SMBus/1°C | ✓ | ✓ | 16-pin QFN |
| EMC2301/2/3/5 | Programmable Fan Controller | 1/2/3/5 | PWM | - | - | - | +3.0 to +3.6 | SMBus/1°C | ✓ | - | 8-pin MSOP, 10-pin MSOP, 12-pin QFN, 16-pin QFN |

POWER MANAGEMENT: Switching Regulators/PWM Controllers

| Product | Input Voltage Range (V) | Output Voltage (V) | Operating Temp. 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 amplifier, Overvoltage comparator and integrated MOSFET driver | MSOP, DFN, TSSOP, DFN |
| MCP1630/1631/V/HV | 3.0 to 16 | - | -40 to +125 | PWM | 1000/2000 | 2800/3700 | Ext | Voltage mode PWM synchronous buck controller. Integrates LDO, error amplifier, current and voltage sense, UVLO/OVLO/MOSFET Dead time adj. and MOSFET Drivers | DFN |
| MCP19035 | 4.5 to 30 | - | -40 to +125 | PWM | 300 | 6000 | Ext | Integrated synchronous boost regulator, -0.65V start-up voltage, Soft-start, True load disconnect or input/output bypass option | DFN |
| MCP1640/B/C/D | 0.65 to 6 | 2.0 to 5.5 | -40 to +85 | PWM or PWM/PFM | 500 | 19 | 350 | Step-up DC/DC Controller with shutdown control, Low battery detect, Power Good indicator, UVLO, Soft start | 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 | Integrated N-channel, UVLO, Soft-start, Over-temperature protection | MSOP |
| MCP16301 | 4.0 to 30 | 2.0 to 15 | -40 to +85 | PWM | 500 | 2000 | 600 | Integrated synchronous boost regulator, -0.65V start-up voltage, Soft-start, True load disconnect or input/output bypass option | 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: Hybrid PWM Controllers

| Product | Input Voltage Range (V) | Output Voltage (V) | Operating Temp. Range (°C) | Topologies Supported | Integrated MCU | Program Memory Size (kWords) | RAM (bytes) | Features | Packages |
|----------|-------------------------|--------------------|----------------------------|----------------------|----------------|------------------------------|-------------|--|----------|
| MCP19111 | 4.5 to 32 | - | -40 to +125 | Buck | ✓ | 4 | 256 | Synchronous buck controller, Integrated MCU, LDO, and synchronous MOSFET driver, User configurable/programmable including MOSFET dead time, Switching frequency, Analog loop compensation, and protection thresholds | QFN |

POWER MANAGEMENT: Power MOSFETs

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

POWER MANAGEMENT: Linear Regulators

| Product | Max. Input Voltage (V) | Output Voltage (V) | Output Current (mA) | Typical Active Current (µA) | Typical Dropout Voltage @ Max. Iout (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 | LD01: 300 LD02: 150 | 103/114 | LD01: 104 LD02: 150 | ±0.5 | Dual LDO plus Reset output, Shutdown, Reference bypass, Voltage detect | MSOP, DFN |
| TC1302AB | 6 | 1.5 to 3.3 | LD01: 300 LD02: 150 | 103/114 | LD01: 104 LD02: 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 |
| TC2084/5, 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 Iq | SOT-23A, SOT-89, TO-92 |
| MCP1702/3/3A | 13.2/16/16 | 1.2 to 5.0 | 250 | 2 | 330/625/625 | ±0.4 | Very low Iq | 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, CRELAY, 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, DPAK |
| 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, DPAK |
| 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, DPAK |

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 _{IN} or 2*V _{IN} | -40 to +85 | 160 | 20 | 85 kHz oscillator Boost mode | PDIP, SOIC |
| TC7660 | 1.5 to 10 | -V _{IN} or 2*V _{IN} | -40 to +85 | 180 | 20 | 10 kHz oscillator | PDIP, SOIC |
| TC7660H | 1.5 to 10 | -V _{IN} or 2*V _{IN} | -40 to +85 | 1000 | 20 | 120 kHz oscillator | PDIP, SOIC |
| TC7660S | 1.5 to 12 | -V _{IN} or 2*V _{IN} | -40 to +85 | 160 | 20 | 45 kHz oscillator Boost mode | PDIP, SOIC |
| TC7662B | 1.5 to 15 | -V _{IN} or 2*V _{IN} | -40 to +85 | 180 | 20 | 35 kHz oscillator Boost mode | PDIP, SOIC |
| TC7662A | 3.0 to 18 | -V _{IN} or 2*V _{IN} | -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(L/2) TC112(3/4) | System Voltage Detectors (No Reset Delay) | -40 to +125 -40 to +85 | Wide V _{IN} 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 |
| MCP90S, 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-23, 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 |
| TO4467/8/9 Quad | Inverting/Non-inverting | -40 to +85 | 1.2 | 15/15 | 18 | 40/40 | PDF, SOIC |
| TO4426A/27A/28A Dual | Inverting/Non-inverting | -40 to +125 | 1.5 | 9/9 | 18 | 30/30 | PDF, SOIC, DFN |
| TO4423A/24A/25A Dual | Inverting/Non-inverting | -40 to +125 | 3 | 3 (typ.)/4 (typ.) | 18 | 40 (typ.)/40 (typ.) | PDF, SOIC, DFN |
| MCP14E3/EA/ES Dual | Inverting/Non-inverting | -40 to +125 | 4 | 3.5/3.0 | 18 | 55/55 | PDF, SOIC, DFN |
| MCP14E6/E7/ES Dual | Inverting/Non-inverting/Inverting and Non-inverting | -40 to +125 | 2 | 2.2/2.8 | 18 | 45/45 | PDF, SOIC, DFN |
| MCP14E9/E10/E11 Dual | Inverting/Non-inverting/Inverting and Non-inverting | -40 to +125 | 3 | 2.2/2.8 | 18 | 75/75 | PDF, SOIC, DFN |
| MCP1406/07 Single | Inverting/Non-inverting | -40 to +125 | 6 | 1.8/2.0 (typ.) | 18 | 30/30 | TO-220, PDF, SOIC, DFN |
| TO4420/29 | Inverting/Non-inverting | -40 to +125 | 6 | 2.8/2.5 | 18 | 55/55 | TO-220, PDF, SOIC, DFN |
| TO4421A/22A Single | Inverting/Non-inverting | -40 to +125 | 9 | 1.25 (typ.)/1.5 | 18 | 38/42 | TO-220, PDF, SOIC, DFN |
| TO4451/52 Single | Inverting/Non-inverting | -40 to +125 | 12 | 0.6 (typ.)/1.5 | 18 | 15/15 | TO-220, PDF, SOIC, DFN, DPAK |
| TO4431/32 Single | Inverting/Non-inverting | -40 to +85 | 1.5 | 10/10 | 30 | 62/78 | PDF, 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 _{ov}), 38 (Boot Pin) | 18/20 | SOIC, DFN |

POWER MANAGEMENT: Battery Chargers

| Product | Mode | Cell Type | # of Cells | V _{oc} Range (V) | Cell Voltage (V) | Max Charging Current (mA) | Max Voltage Regulation (%) | Int/Ext FET | Features | Packages |
|---------------|--------|-----------------------------|------------|---------------------------|--------------------------|---------------------------------|----------------------------|-------------|---|-------------------------------|
| MCP3313/14/23 | Linear | LiIon/LiPolymer 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 3 x 3 DFN |
| MCP3313/23 | Linear | LiIon/LiPolymer 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 3 x 3 DFN |
| MCP33630/L | Linear | LiIon/LiPolymer | 1 | 3.75 to 6 | 4.2 | 1000/200 | ±0.75 | Int | Softstart, Charge enable pin | 6-pin 2 x 2 TDFN |
| MCP33631/2 | Linear | LiIon/LiPolymer | 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 2 x 3 DFN, 5-pin SOT-23 |
| MCP33637/8 | Linear | LiIon/LiPolymer | 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 3 x 3 DFN |
| MCP33671 | Linear | LiIon/LiPolymer | 1 | 3.75 to 6.0 | 4.1, 4.2, 4.35, 4.4 | 1500 (A/C Adapter) 500 (USB) | ±0.5 | Int | Simultaneous charging of load and battery, Load-dependent charging, Multiple programmable charge currents | 20-pin 4 x 4 QFN |

LINEAR: Op Amps

| Product | # per Package | GBWP (MHz) | I _o Typical (µA) | V _{os} Max (mV) | Operating Voltage (V) | Packages |
|---------------------|---------------|------------|-----------------------------|--------------------------|-----------------------|---|
| MCP661/2/3/4/5/9 | 1/2/1/4/2/4 | 60 | 6000 | 8 | 2.5 to 5.5 | SOIC, MSOP, DFN, TSSOP, QFN, SOT |
| MCP651/1S/2/3/4/5/9 | 1/2/1/4/2/4 | 50 | 6000 | 0.2 | 2.5 to 5.5 | SOIC, MSOP, DFN, TSSOP, QFN, SOT |
| MCP631/2/3/4/5/9 | 1/2/1/4/2/4 | 24 | 2500 | 8 | 2.5 to 5.5 | SOIC, MSOP, DFN, TSSOP, QFN, SOT |
| MCP621/1S/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 |
| MCP6191/2/4 | 1/2/4 | 10 | 2000 | 4 | 3.5 to 12.0 | DFN, SOIC, TSSOP |
| MCP6021/2/3/4 | 1/2/1/4 | 10 | 1000 | 0.5 | 2.5 to 5.5 | PDF, SOIC, MSOP, TSSOP, SOT |
| MCP6291/2/3/4/5 | 1/2/1/4/2 | 10 | 1000 | 3 | 2.4 to 6.0 | PDF, SOIC, MSOP, TSSOP, SOT |
| MCP6491 | 1 | 7.5 | 530 | 1 | 2 to 5.5 | SOT, SC70 |
| MCP6H81/2/4 | 1/2/4 | 5.5 | 700 | 4 | 3.5 to 12.0 | DFN, SOIC, TSSOP |
| MCP6281/2/3/4/5 | 1/2/1/4/2 | 5 | 445 | 3 | 2.2 to 6.0 | PDF, SOIC, MSOP, TSSOP, SOT |
| MCP6481 | 1 | 4 | 240 | 1 | 2 to 5.5 | SOT, SC70 |
| MCP6286 | 1 | 3.5 | 540 | 1.5 | 2.2 to 5.5 | SOT |
| MCP601/2/3/4 | 1/2/1/4 | 2.8 | 230 | 2 | 2.7 to 6.0 | PDF, SOIC, TSSOP, SOT |
| MCP6H71/2/4 | 1/2/4 | 2.7 | 480 | 4 | 3.5 to 12.0 | DFN, SOIC, TSSOP |
| MCP6271/2/3/4/5 | 1/2/1/4/2 | 2 | 170 | 3 | 2.0 to 6.0 | PDF, SOIC, MSOP, TSSOP, SOT |
| MCP6471 | 1 | 2 | 100 | 1 | 2 to 5.5 | SOT, SC70 |
| MCP6V01/2/3 | 1/2/1 | 1.3 | 300 | 0.002 | 1.8 to 5.5 | SOIC, DFN, TDFN |
| MCP6V06/7/8 | 1/2/1 | 1.3 | 300 | 0.003 | 1.8 to 5.5 | SOIC, DFN, TDFN |
| MCP6V26/7/8 | 1/2/1 | 1.2 | 300 | 0.002 | 1.8 to 5.5 | SOIC, MSOP, TSSOP, SOT, SC70 |
| MCP6V31/2/4 | 1/2/4 | 1.2 | 110 | 0.15 | 1.8 to 6.0 | SOIC, TSSOP, DFN, SOT |
| MCP6H01/2/4 | 1/2/4 | 1.2 | 135 | 4.5 | 3.5 to 16 | SOIC, TSSOP, DFN, SOT, SC70 |
| MCP6001/2/4 | 1/2/4 | 1 | 100 | 4.5 | 1.8 to 6.0 | PDF, SOIC, MSOP, TSSOP, TDFN, SOT, SC70 |
| MCP6401/2/4 | 1/2/4 | 1 | 45 | 4.5 | 1.8 to 6.0 | SOIC, TSSOP, TDFN, SOT, SC70 |
| MCP6061/2/4 | 1/2/4 | 0.73 | 60 | 0.15 | 1.8 to 6.0 | SOIC, TSSOP, DFN, SOT |
| MCP6241/2/4 | 1/2/4 | 0.55 | 50 | 5 | 1.8 to 5.5 | PDF, SOIC, MSOP, TSSOP, TDFN, SOT, SC70 |
| MCP6051/2/4 | 1/2/4 | 0.385 | 30 | 0.15 | 1.8 to 6.0 | SOIC, TSSOP, DFN, SOT |
| MCP6V31 | 1 | 0.3 | 23 | 0.008 | 1.8 to 5.5 | SOT, SC70 |
| MCP6231/2/4 | 1/2/4 | 0.3 | 20 | 5 | 1.8 to 6.0 | PDF, SOIC, MSOP, TSSOP, TDFN, SOT, SC70 |
| MCP616/7/8/9 | 1/2/1/4 | 0.19 | 19 | 0.15 | 2.3 to 5.5 | PDF, SOIC, MSOP, TSSOP |
| MCP606/7/8/9 | 1/2/1/4 | 0.155 | 19 | 0.25 | 2.5 to 6.0 | PDF, SOIC, TSSOP, SOT |
| MCP6141/2/3/4 | 1/2/1/4 | 0.1 | 0.6 | 3 | 1.4 to 6.0 | PDF, SOIC, MSOP, TSSOP, SOT |
| MCP6V11 | 1 | 0.08 | 7.5 | 0.008 | 1.6 to 5.5 | SOT, SC70 |
| MCP6041/2/3/4 | 1/2/1/4 | 0.014 | 0.6 | 3 | 1.4 to 6.0 | PDF, SOIC, MSOP, TSSOP, SOT |
| MCP6031/2/3/4 | 1/2/1/4 | 0.01 | 0.9 | 0.15 | 1.8 to 5.5 | SOIC, MSOP, TSSOP, DFN, SOT |
| MCP6441/2/4 | 1/2/4 | 0.009 | 0.45 | 4.5 | 1.4 to 6.0 | SOIC, MSOP, TSSOP, SOT, SC70 |

LINEAR: Comparators

| Product | # per Package | Typical Propagation Delay (µs) | I _O Typical (µA) | V _{OS} 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, $\overline{9V}$, 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 _{ref} (1.21V or 2.4V) | SOT23 |
| 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 | Interface | Input Type | DNL (±LSB) | Typical Operating Current (µA) | Temperature Range (°C) | Packages |
|---------------|-------------------|--------------------------------------|---------------------|-----------|--------------|------------------|--------------------------------|------------------------|-------------------------|
| MCP3021/3221 | 10/12 | 22 | 1 | FC™ | Single-ended | 0.25 | 250 | -40 to +125 | SOT23A |
| MCP3001/2/4/8 | 10 | 200 | 1/2/4/8 | SPI | Single-ended | 0.05/0.188/0.715 | 500-550 | -40 to +85 | PDIP, SOIC, MSOP, TSSOP |
| MCP3201/2/4/8 | 12 | 100 | 1/2/4/8 | SPI | Single-ended | 0.75 | 400-550 | -40 to +85 | PDIP, SOIC, MSOP, TSSOP |
| MCP3301/2/4 | 13 | 100 | 1/2/4 | SPI | Differential | 0.75 | 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 |
|---------------|-------------------|--------------|-----------|-------------------|---------------------------|------------------|--------------------------------|------------------------|---------------------------|
| MCP47DA1 | 6 | 1 | FC™ | V _{DD} | 6 | 0.25 | 130 | -40 to +125 | SOT-23 |
| MCP4706/16/26 | 8/10/12 | 1 | FC | Ext | 6 | 0.05/0.188/0.715 | 210 | -40 to +125 | SOT-23 |
| MCP4725 | 12 | 1 | FC | V _{DD} | 6 | 0.75 | 175 | -40 to +125 | SOT-23 |
| MCP4728 | 12 | 4 | FC | 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 |
|--------------|-------------------|------------------|--------------|----------------|------------------------|-----------------------------|--------------------------|---------------------------|------------------------|-----------|
| MCP3911 | 24-bit resolution | 94.5 dB SINAD | 2 | up to 32 | SPI | 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 |
| MCP3905V/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: Current/DC Power Measurement ICs

| Product | # Current Sensors | Description | Full Scale Range (mV) | Current Measurement Max. Accr. (%) | Effective Sampling Interval Min. to Max. (msec) | Bus Voltage Range (V) | # Temp. Monitors (ambient, remote) | Temp. Accuracy Typ./Max. (°C) | Alert/Therm. | Peak Detection | Interface | Packages |
|-------------|-------------------|---|-----------------------|------------------------------------|---|-----------------------|------------------------------------|-------------------------------|--------------|----------------|-----------|--|
| PAC1710 | 1 | Current/DC Power Sensor | 10, 20, 40, 80 | ±1 | 2.5 to 2600 | 0 to +40 | N/A | N/A | 1 | - | SMBus/FC™ | 10-pin DFN |
| PAC1720 | 2 | Dual Current/DC Power Sensor | 10, 20, 40, 80 | ±1 | 2.5 to 2600 | 0 to +40 | N/A | N/A | 1 | - | SMBus/FC | 10-pin DFN |
| EMCI701/2/4 | 1 | Current/DC Power Sensor with Temperature Monitoring | 10, 20, 40, 80 | ±1 | 2.5 to 2600 | +3 to +24 | 1, 0/1/3 | ±0.25/±1.0 | 2 | ✓ | SMBus/FC | 12-pin QFN, 10-pin MSOP, 16-pin QFN, 14-pin SOIC |

MIXED SIGNAL: Digital Potentiometers

| Product | # of Taps | Memory | Channels | Interface | Resistance (kΩ) | Temperature Range (°C) | Packages |
|------------------|-----------|-------------|----------|-----------|-----------------|------------------------|----------------|
| MCP4021/12/13/14 | 64 | Volatile | 1 | Up/Down | 2.1, 5, 10, 50 | -40 to +125 | DFN, SOT-23 |
| MCP4017/18/19 | 128 | Volatile | 1 | PC™ | 5, 10, 50, 100 | -40 to +125 | SC70 |
| MCP40017/D18/D19 | 128 | Volatile | 1 | PC | 5, 10, 50, 100 | -40 to +125 | SC70 |
| MCP4021/22/23/24 | 64 | Nonvolatile | 1 | Up/Down | 2.1, 5, 10, 50 | -40 to +125 | DFN, SOT-23 |
| MCP4441/42 | 128 | Nonvolatile | 1 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4241/42 | 128 | Nonvolatile | 2 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4131/32 | 128 | Volatile | 1 | SPI | 5, 10, 50, 100 | -40 to +125 | QFN, DFN |
| MCP4231/32 | 128 | Volatile | 2 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4151/52 | 256 | Volatile | 1 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4161/62 | 256 | Nonvolatile | 1 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4251/52 | 256 | Volatile | 2 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4261/62 | 256 | Nonvolatile | 2 | SPI | 5, 10, 50, 100 | -40 to +125 | MSOP, QFN, DFN |
| MCP4341/42 | 129 | Nonvolatile | 4 | SPI | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |
| MCP4661/62 | 257 | Nonvolatile | 4 | SPI | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |

| Product | # of Taps | Memory | Channels | Interface | Resistance (kΩ) | Temperature Range (°C) | Packages |
|------------|-----------|-------------|----------|-----------|-----------------|------------------------|------------|
| MCP4331/32 | 129 | Volatile | 4 | SPI | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |
| MCP4351/52 | 257 | Volatile | 4 | SPI | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |
| MCP4431/32 | 129 | Volatile | 4 | PC | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |
| MCP4441/42 | 129 | Nonvolatile | 4 | PC | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |
| MCP4451/52 | 257 | Volatile | 4 | PC | 5, 10, 50, 100 | -40 to +125 | TSSOP, QFN |
| MCP4461/62 | 257 | Nonvolatile | 4 | PC | 5, 10, 50, 102 | -40 to +125 | TSSOP, QFN |
| MCP4531/32 | 128 | Volatile | 1 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4631/32 | 128 | Volatile | 2 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4541/42 | 128 | Nonvolatile | 1 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4641/42 | 128 | Nonvolatile | 2 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4651/52 | 256 | Volatile | 1 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4651/62 | 256 | Volatile | 2 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4661/62 | 256 | Nonvolatile | 1 | PC | 5, 10, 50, 100 | -40 to +125 | MSOP, DFN |
| MCP4661/62 | 256 | Nonvolatile | 2 | PC | 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 |
|--------------|-------------------|-------------------------------------|---------------------|-----------|-----------------------------|------------------------|----------------------|-----------------------------|
| MCP421/2/3/4 | 18 to 12 | 4 to 240 | 1/2/2/4 Diff | PC™ | 155 | -40 to +125 | PGA, Vref | SOIC, TSSOP, MSOP, DFN, SOT |
| MCP425/6/7/8 | 16 to 12 | 15 to 240 | 1/2/2/4 Diff | PC | 155 | -40 to +125 | PGA, Vref | 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 |
| MCP2003/4/A, MCP2021/2/A, MCP2050 | LIN (Local Interconnect Network) transceivers | -40 to +125 | Product options: Stand-alone transceiver, integrated Vref = 3.3V or 5V @ 70 mA, integrated WWDT, integrated ratiometric battery monitor, Vcc Range = 6 to 18 V, Max Baud Rate = 20 Kbaud, Compliant with LIN 1.3, 2.0, 2.1, SAE J2602, Automotive grade | PDIP, SOIC, TSSOP, DFN, QFN |
| MCP23009/18 | 8-bit I/O port expander, 16-bit I/O port expander | -40 to +125 | PC™ (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, IDA* standard protocol handler plus encoder/decoder | PDIP, SDIP, SOIC, SSOP |
| MCP2200, MCP2210 | USB Bridge Products: USB-to-UART, USB-to-SPI | -40 to +85 | Supports full speed, USB 2.0 compliant, integrated PHY, Tx/Rx buffer size 64-128 bytes each, 8-9 GPIO, Vio Range = 3.0 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 |
| ENC24J600 | 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 |
| ENC524J600 | 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: USB Port Power Controllers with Charger Emulation

| Product | Description | USB Port Power Switch (55 mW) | Hi-Speed USB 2.0 Switch | Battery Charger Emulation Profiles | 8 Resistor Set Current Limits | Indicator Output | Current Measurement | Interface | Packages |
|-------------|---|-------------------------------|-------------------------|------------------------------------|-------------------------------|------------------------|---------------------|--------------|------------------|
| UCS1001-1/2 | USB Port Power Controller with Charger Emulation | 1 | 1 | 9 | Up to 2.5A | Charging/Attach Detect | - | Discrete I/O | 20-pin 4 x 4 QFN |
| UCS1002-1 | Programmable USB Port Power Controller with Charger Emulation | 1 | 1 | 9 plus 1 programmable | Up to 2.5A | Charging | ✓ | PC™ / SMBus | 20-pin 4 x 4 QFN |

INTERFACE: mTouch™ AR1000 Resistive Touch Screen Controllers

| Product | Type | Communication | Touch Screens Supported | A/D | Resolution | Power | Points per second | Operating Temp. Range (°C) | Static Protection | 5 ku Pricing† | Special Features | Packages |
|-----------|------------------|------------------------|--------------------------------------|--------------------------------|-------------|----------------------------|-------------------|----------------------------|-------------------|---------------|--|--|
| AR1021 | Analog Resistive | SPI, I ² C™ | All Manufacturers 4, 5 and 8 wire | Internal 10-bit Ratiometric | 1024 x 1024 | 2.5V DC ±5% 5.5V DC ±5% | 140 pps | -40 to +85 | Per schematic | \$1.32 | Controller driven calibration & Universal for all touch screens | 20-pin SSOP (SS), SOIC (SO), QFN (ML) |
| AR1011 | Analog Resistive | UART | All Manufacturers 4, 5 and 8 wire | Internal 10-bit Ratiometric | 1024 x 1024 | 2.5V DC ±5% 5.5V DC ±5% | 140 pps | -40 to +85 | Per schematic | \$1.39 | Controller driven calibration & Universal for all touch screens | 20-pin SSOP (SS), SOIC (SO), QFN (ML) |
| AR1100 | Analog Resistive | USB, UART | All Manufacturers 4, 5 and 8 wire | Internal 10-bit Ratiometric | 1024 x 1024 | 3.3V DC ±5% 5.5V DC ±5% | 150 pps | -40 to +85 | Per schematic | \$1.61 | Controller driven calibration & Universal for all touch screens | 20-pin SSOP (SS), SOIC (SO), QFN (ML) |
| AR1100BRD | Analog Resistive | USB, RS-232 | All Manufacturers 4, 5 and 8 wire | Internal 10-bit Ratiometric | 1024 x 1024 | 3.3V DC ±5% 5.5V DC ±5% | 150 pps | -40 to +85 | Per schematic | \$12.78 | Controller driven calibration & Universal for all touch screens | Board Module |

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 |
| RE46C317/8 | Yes | Just Driver | No | No | No | No | -10 to +60 | PDIP, 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 | Temp. Operating Range (°C) | Features | Packages |
|--------------|--|-------------------------|------------------------|---------------------|--|---------------------------|---|----------------------------|--|------------------------------|
| | | | | | | | | | | |
| SRAM (Bytes) | EERPOM (Kbits) | ID/MAC (Bits) | Min Vcc | Min Icc | Unique Features ⁽²⁾ | 5 ku Pricing [†] | Packages | | | |
| MTS6C19A | One Bipolar Stepper Motor or Two DC Motors | 1.0 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 | 1.0 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 |
| MTD6605 | 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 BEWF Coefficient Range, Fsw = 30 kHz | 10-UDFN (3 x 3) |
| MTD6601C/D/G | 3-Phase Brushless DC Motor | 2.0 to 14.0 | Internal | 800/500/800 | Sensorless Sinusoidal | Frequency Generator | Overcurrent, Short Circuit, Overtemperature, Motor Lock-up | -30 to +95 | 180° Sinusoidal Sensorless Drive, Direction Control, Boost Mode (D), Fsw = 20 kHz (C/D), 23 kHz (G) | 8-SOP (C, G), 10-MSOP (D) |
| MTD6602B | 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, Fsw = 30 kHz | 10-TDFN (3 x 3) |

REAL-TIME CLOCK/CALENDAR (RTCC)

| Product | Pins | Digital Trimming (Adj./Range) | Timing Features | | | Memory ⁽¹⁾ | | | Power | | | Unique Features ⁽²⁾ | 5 ku Pricing [†] | Packages |
|-----------|------|-------------------------------|-----------------|-----|--------------------------------|-----------------------|----------------|---------------|---------|---------|---|--------------------------------|---------------------------|--|
| | | | Alarm Settings | WDT | Outputs | SRAM (Bytes) | EERPOM (Kbits) | ID/MAC (Bits) | Min Vcc | Min Icc | | | | |
| MCP7940M | 8 | ±127 ppm | 1 sec. | - | IRQ/CLK | 64 | 0 | 0 | 1.8 | - | - | - | \$0.46 | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY), PDIP (P) |
| MCP7940N | 8 | ±127 ppm | 1 sec. | - | IRQ/CLK | 64 | 0 | 0 | 1.8 | - | Power Fail Timestamp | - | \$0.59 | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY), PDIP (P) |
| MCP7940X | 8 | ±127 ppm | 1 sec. | - | IRQ/CLK | 64 | 0 | 64 | 1.8 | 1.3 | Power Fail Timestamp | - | \$0.66 | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |
| MCP7941X | 8 | ±127 ppm | 1 sec. | - | IRQ/CLK | 64 | 1 | 64 | 1.8 | 1.3 | Power Fail Timestamp | - | \$0.72 | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |
| MCP7951X | 10 | ±255 ppm | 0.01 sec. | - | IRQ/CLK | 64 | 1 | 128 | 1.8 | 1.3 | Power Fail Timestamp | - | \$0.90 | SOIC (SL), TSSOP (ST) |
| MCP7952X | 10 | ±255 ppm | 0.01 sec. | - | IRQ/CLK | 64 | 2 | 128 | 1.8 | 1.3 | Power Fail Timestamp | - | \$0.96 | MSOP (MS), TDFN (MNY) |
| MCP795W1X | 14 | ±255 ppm | 0.01 sec. | ✓ | 1. CLK 2. IRQ 3. WDT RST | 64 | 1 | 128 | 1.8 | 1.3 | Power Fail Timestamp, Event Detects (x 2) | - | \$1.22 | SOIC (SL), TSSOP (ST) |
| MCP795W2X | 14 | ±255 ppm | 0.01 sec. | ✓ | 1. CLK 2. IRQ 3. WDT RST | 64 | 2 | 128 | 1.8 | 1.3 | Power Fail Timestamp, Event Detects (x 2) | - | \$1.28 | SOIC (SL), TSSOP (ST) |

Note 1: All part numbers with an "X" have three ID programming options: [0 = Blank ID], [1 = EU-48™ MAC Address], [2 = EU-64™ MAC Address]

Note 2: The Power Fail Timestamp in all RTCCs occur at Battery Switchover.

Products sorted by pin count followed by pricing.
† Pricing subject to change; please contact your Microchip representative for most current pricing.

SERIAL MEMORY PRODUCTS

| Product | Released (R) Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage | Temperature Range | E/W Endurance (Minimum) | Data Retention (Minimum) | Max. Write Spreads | Max. Standby Current (@ 5.5V, 85°C) | Write Protect | | Protected Array Size | 5 Ku Pricing† | Special/Unique Features | Packages |
|----------------------|-----------------------------------|---------|--------------|----------------------|-------------------------|-------------------|----------------------------|-----------------------------|--------------------|-------------------------------------|---------------|----------|----------------------|---------------|--|---|
| | | | | | | | | | | | Hardware | Software | | | | |
| Serial SRAM | | | | | | | | | | | | | | | | |
| 23X640 | R | 64 Kb | x 8 | 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 | x 8 | 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 | R | 512 Kb | x 8 | 20 x 4 MHz | 1.7V-2.2V 2.5V-5.5V | -40°C to +125°C | ∞ | Volatile | 0 ms | 4 µA | - | - | - | \$1.24 | Fast Speed: Quad SPI available (80 MHz); Infinite endurance; Zero write times, 5V capable | SOIC (SN), PDIP (P), TSSOP (ST) |
| 23XX1024 | R | 1024 Kb | x 8 | 20 x 4 MHz | 1.7V-2.2V 2.5V-5.5V | -40°C to +125°C | ∞ | Volatile | 0 ms | 4 µA | - | - | - | \$1.73 | Fast Speed: Quad SPI available (80 MHz); Infinite endurance; Zero write times, 5V capable | SOIC (SN), PDIP (P), TSSOP (ST) |
| Serial NVRAM | | | | | | | | | | | | | | | | |
| 23LCV612 | R | 512 Kb | x 8 | 20 MHz | - | -40°C to +125°C | ∞ | 20 Years via battery | 0 ms | 4 µA | - | - | - | \$1.40 | Battery backed nonvolatile SRAM; infinite endurance; Zero write times | SOIC (SN), PDIP (P), TSSOP (ST) |
| 23LCV1024 | R | 1024 Kb | x 8 | 20 MHz | - | -40°C to +125°C | ∞ | 20 Years via battery | 0 ms | 4 µA | - | - | - | \$1.98 | Battery backed nonvolatile SRAM; infinite endurance; Zero write times | SOIC (SN), PDIP (P), TSSOP (ST) |
| Serial EEPROM | | | | | | | | | | | | | | | | |
| 11XX010 | R | 1 Kb | x 8 | 100 kHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | - | ✓ | W, 1/2, 1/4 | \$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-SOT23 (TT), WLCSP (CS) |
| 11XX020/E48 | R | 2 Kb | x 8 | 100 kHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | - | ✓ | W, 1/2, 1/4 | \$0.25 | Single I/O for all clock, data, control and write protection, Unique EU-48™/EU-64™, MAC address option available | PDIP (P), SOIC (SN), MSOP (MNY), DFN (MC), TO-92 (TO), 3-SOT23 (TT), WLCSP (CS) |
| 11XX040 | R | 4 Kb | x 8 | 100 kHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | - | ✓ | W, 1/2, 1/4 | \$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-SOT23 (TT), WLCSP (CS) |
| 11XX080 | R | 8 Kb | x 8 | 100 kHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | - | ✓ | W, 1/2, 1/4 | \$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-SOT23 (TT), WLCSP (CS) |
| 11XX160 | R | 16 Kb | x 8 | 100 kHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | - | ✓ | W, 1/2, 1/4 | \$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-SOT23 (TT), WLCSP (CS) |
| 24XX00 | R | 128 b | x 8 | 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-SOT23 (OT) |
| 24XX01/014 | R | 1 Kb | x 8 | 400 kHz | 1.7V-5.5V 1.5V-3.6V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$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-SOT23 (OT), SC70 (LT) |
| 24XX02/024/E48 | R | 2 Kb | x 8 | 400 kHz | 1.7V-5.5V 1.5V-3.6V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$0.20 | Address pin option: connect up to 8 devices on bus, Very low voltage option, Unique EU-48™/EU-64™ MAC address option available | PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT23 (OT), SC70 (LT) |
| 34XX02 | R | 2 Kb | x 8 | 1 MHz | 1.7V-5.5V 1.5V-3.6V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2 | \$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-SOT23 (OT), |
| 24XX00 | R | 128 b | x 8 | 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-SOT23 (OT) |
| 24XX01/014 | R | 1 Kb | x 8 | 400 kHz | 1.7V-5.5V 1.5V-3.6V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$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-SOT23 (OT), SC70 (LT) |
| 24XX02/024/E48 | R | 2 Kb | x 8 | 400 kHz | 1.7V-5.5V 1.5V-3.6V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$0.20 | Address pin option: connect up to 8 devices on bus, Very low voltage option, Unique EU-48™/EU-64™ MAC address option available | PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MNY), DFN (MC), 5-SOT23 (OT), SC70 (LT) |
| 34XX02 | R | 2 Kb | x 8 | 1 MHz | 1.7V-5.5V 1.5V-3.6V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2 | \$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-SOT23 (OT) |
| 24XX04 | R | 4 Kb | x 8 | 400 kHz | 1.7V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$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-SOT23 (OT), WLCSP (CS) |
| 24XX08 | R | 8 Kb | x 8 | 400 kHz | 1.7V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$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-SOT23 (OT), |
| 24XX16 | R | 16 Kb | x 8 | 400 kHz | 1.7V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/2 | \$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-SOT23 (OT), WLCSP (CS) |
| 24XX32A | R | 32 Kb | x 8 | 400 kHz | 1.7V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/4 | \$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-SOT23 (OT), WLCSP (CS) |
| 24XX64/65 | R | 64 Kb | x 8 | 1 MHz | 1.7V-5.5V | -40°C to +125°C | 1M 10M | 200 Years | 5 ms | 1 µA | ✓ | - | W, 1/4 | \$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-SOT23 (OT), WLCSP (CS) |
| 24XX128 | R | 128 Kb | x 8 | 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 | x 8 | 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 | x 8 | 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 (WF), SOU (SM), WLCSP (CS) |
| 24XX1025/26 | R | 1 Mb | x 8 | 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 | x 8 | 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 (kV (HBM)) > 400V (MIL) on all pins.
 3: Write Protect (WP), W = Whole Array, 1/2 = Half Array, 1/4 = Quarter Array.
 4: Factory program and unique ID option's 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

| Product | Released (R) Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage | Temperature Range | E/W Endurance (Minimum) | Data Retention (Minimum) | Max. Write Spreads | Max. Standby Current @ 5.5V, 85°C | Write Protect | | Protected Array Size | 5 ku Pricing† | Special/Unique Features | Packages |
|------------------------------|-----------------------------------|---------|--------------|----------------------|-------------------|-------------------|----------------------------|-----------------------------|--------------------|-----------------------------------|---------------|----------|----------------------|---------------|--|---|
| | | | | | | | | | | | Hardware | Software | | | | |
| Serial EERPOM (Cont.) | | | | | | | | | | | | | | | | |
| Bus | | | | | | | | | | | | | | | | |
| Microwire | | | | | | | | | | | | | | | | |
| 93XX46A/B/C | R | 1 Kb | x 8/x 16 | 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), 6SOT-23 (OT) |
| 93XX56A/B/C | R | 2 Kb | x 8/x 16 | 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), 6SOT-23 (OT) |
| 93XX66A/B/C | R | 4 Kb | x 8/x 16 | 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), 6SOT-23 (OT) |
| 93XX76A/B/C | R | 8 Kb | x 8/x 16 | 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), 6SOT-23 (OT) |
| 93XX86A/B/C | R | 16 Kb | x 8/x 16 | 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), 6SOT-23 (OT) |
| 25XX010A | R | 1 Kb | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$0.30 | 5 MHz @ 2.5V, Status register, 16 byte page | PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6SOT-23 (OT) |
| 25XX020A/E4B | R | 2 Kb | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$0.31 | 5 MHz @ 2.5V, Status register, 16 byte page, Unique EUJ48™/EUJ64™ MAC address option available | PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6SOT-23 (OT) |
| 25XX040A | R | 4 Kb | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$0.33 | 5 MHz @ 2.5V, Status register | PDIP (P), SOIC (SN), TSSOP (ST), MSOP (MS), DFN (MNY), 6SOT-23 (OT) |
| 25XX080C/D | R | 8 Kb | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$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 | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$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 | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$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 | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$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 | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$0.74 | 5 MHz @ 2.5V, Status register, 64 byte page | PDIP (P), SOIC (SN), TSSOP (ST), DFN (MF) |
| 25XX256 | R | 256 Kb | x 8 | 10 MHz | 1.8V-5.5V | -40°C to +150°C | 1M | 200 Years | 5 ms | 1 µA | ✓ | ✓ | W, 1/2, 1/4 | \$1.01 | 5 MHz @ 2.5V, Status register, 64 byte page | PDIP (P), SOIC (SN), TSSOP (ST), DFN (MF), SOU (SM) |
| 25XX512 | R | 512 Kb | x 8 | 20 MHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 5 ms | 10 µA | ✓ | ✓ | W, 1/2, 1/4 | \$1.53 | 10 MHz @ 2.5V, Deep power down, Status register, Page/sector/chip erase | PDIP (P), SOIC (SN), DFN (MF), SOI (SM) |
| 25XX1024 | R | 1 Mb | x 8 | 20 MHz | 1.8V-5.5V | -40°C to +125°C | 1M | 200 Years | 6 ms | 12 µA | ✓ | ✓ | W, 1/2, 1/4 | \$2.59 | 10 MHz @ 2.5V, Deep power down, Status register, Page/sector/chip erase | PDIP (P), DFN (MF), SOIJ (SM) |

1: All devices are Pb-Free and RoHS compliant.
 2: ESD protection > 4kV (HBM); > 400V (MM) on all pins.
 3: Write Protect (WP); W = Whole Array, 1/2 = Half Array, 1/4 = 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 FLASH MEMORY

| Product | Released (R) Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage | Temperature Range | E/W Endurance (Minimum) | Data Retention (Minimum) | Write Speed (Typical) | Write Protect | | | Special/Unique Features | Packages* |
|----------------|-----------------------------------|---------|--------------|----------------------|-------------------|---|--------------------------|--------------------------|-----------------------|----------------------|----------|----------------------|---|----------------------------|
| | | | | | | | | | | Max. Standby Current | Hardware | Protected Array Size | | |
| 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, 8B-XFPGA |
| 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, 8B-XFPGA |
| 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 |
| SST25VF020B | R | 2 Mb | 256K x 8 | 40 MHz | 2.3-3.6V | 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 |
| SST25VF020A | NR | 2 Mb | 256K x 8 | 40 MHz | 1.65-1.95V | 0°C to 70°C -40°C to +85°C | 100,000 cycles (typical) | 20 years | 3 ms (Page Program) | 10 µA | ✓ | Various | Single-input page program, Fast read, program and erase | 8L-SOIC, 8C-WSON, 8B-XFPGA |
| 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 |
| SST25VF040B | R | 4 Mb | 512K x 8 | 40 MHz | 2.3-3.6V | 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, 8B-XFPGA |
| 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, 8B-XFPGA |
| SST25VF080B | R | 8 Mb | 1M x 8 | 40 MHz | 2.3-3.6V | 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 |
| 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 |
| SST25VF040B | NR | 4 Mb | 512K x 8 | 40 MHz | 1.65-1.95V | 0°C to 70°C -40°C to +85°C | 100,000 cycles (typical) | 20 years | 1 ms (Page Program) | 10 µA | ✓ | Various | Dual output and dual I/O read, Single- and dual-input page program, Fast read, program and erase | 8L-SOIC, 8C-WSON |
| SST25VF080B | NR | 8 Mb | 1M x 8 | 40 MHz | 1.65-1.95V | 0°C to 70°C -40°C to +85°C | 100,000 cycles (typical) | 20 years | 1 ms (Page Program) | 10 µA | ✓ | Various | Dual output and dual I/O read, Single- and dual-input page program, Fast read, program and erase | 8L-SOIC, 8C-WSON |
| SST25VF04C | 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 |
| 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 | SQ™ 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 |
| 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 | SQ 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 |
| SST26VF080B | 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 dual-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase | 8L-SOIC, 8C-WSON |
| SST26VF016B | 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 dual-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase | 8L-SOIC, 8C-WSON |
| SST26VF032B/BA | 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 dual-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase | 8L-SOIC, 8C-WSON |
| SST26VF064B/BA | 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 dual-input page program, Burst read, Write suspend, Individual block read and write protection, Fast read, program and erase | 8L-SOIC, 8C-WSON |

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

LPC FIRWARE FLASH/FIRMWARE HUB FLASH MEMORY

| Product | Released (R) Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage | Temperature Range | E/W Endurance (Minimum) | Data Retention (Minimum) | Write Speed (Typical) | Write Protect | | | Special/Unique Features | Packages |
|-------------|-----------------------------------|---------|--------------|----------------------|-------------------|-------------------|--------------------------|--------------------------|-----------------------|----------------------|----------|----------------------|--|--------------------|
| | | | | | | | | | | Max. Standby Current | Hardware | Protected Array Size | | |
| SST49LF08A | 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 PCBIOS application, provide protection for the storage and update of code and data | 32L-PLCC, 32L-TSOP |
| 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 PCBIOS 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 |

PARALLEL FLASH MEMORY

| Product* | Released (R) Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage | Temperature Range | E/W Endurance (Minimum) | Data Retention (Minimum) | Write Speed (Typical) | Write Protect | | | Special/Unique Features | Packages** |
|--------------|--------------------------------|---------|--------------|----------------------|-------------------|-------------------------------|-------------------------|--------------------------|-------------------------------------|----------------------|----------|----------|-------------------------|---------------------------------|
| | | | | | | | | | | Max. Standby Current | Hardware | Software | | |
| Bus | | | | | | | | | | | | | | |
| SST39SF00A | 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 | 32L-PLCC, 32L-PDIP, 32LTSOP |
| 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 | 48B-IFBGA, 32LTSOP, 32L-PLCC |
| SST39WF010 | 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 | 48B-IFBGA, 32LTSOP, 32L-PLCC |
| SST39LF020 | R | 2 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 | 48B-IFBGA, 32LTSOP, 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 | 32L-PLCC, 32L-PDIP, 32LTSOP |
| SST39WF020 | 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 | 48B-IFBGA, 32LTSOP, 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 | 32L-PLCC, 32L-PDIP, 32LTSOP |
| 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 | 48B-IFBGA, 32LTSOP, 32L-PLCC |
| SST39WF040 | 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 | 48B-IFBGA, 32LTSOP, 32L-PLCC |
| SST39WF08X | 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 (Word Program) | 3 µA | ✓ | - | 64 KB | 48B-IFBGA, 48LTSOP |
| 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 | 48B-IFBGA, 48LTSOP |
| SST39WF200A | 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 | 48B-IFBGA, 48LTSOP, 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 | 48B-IFBGA, 48LTSOP, 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 | 48B-IFBGA, 48B-WFBGA, 48B-XFBGA |
| SST39WF40XC | 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 | 48B-IFBGA, 48LTSOP, 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 | 48B-IFBGA, 48B-WFBGA, 48B-XFBGA |
| SST39WF80XC | 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 | 48B-IFBGA, 48LTSOP, 48B-WFBGA |
| SST39WF80XC | 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 | 48B-IFBGA, 48LTSOP, 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 | 48B-IFBGA, 48B-WFBGA, 48B-XFBGA |
| SST39WF160XC | 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 | 48B-IFBGA, 48LTSOP, 48B-WFBGA |
| SST39WF160X | 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 | 48B-IFBGA, 48LTSOP |
| SST39WF320XB | 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 | 48B-IFBGA, 48LTSOP |
| SST39WF320XC | 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 | 48B-IFBGA, 48LTSOP |
| SST39WF640X | 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 | 48B-IFBGA, 48LTSOP |
| SST39WF640XB | 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 | 48B-IFBGA, 48LTSOP |

*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.

WIRELESS PRODUCTS

| 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 | Protocols | Encryption | Interface | Volume Pricing ¹ | Packages |
|---|-----------|-----------------------|-------------------|--------------------|------|---------------------------|---------------------------|--------|-----------------------|-----|--|--|--------------------------|-----------------------|-----------------------------|-----------|
| IEEE 802.11 Modules | | | | | | | | | | | | | | | | |
| MR24WB0MA | 36 | 2.412-2.484 | -91 | 10 | Yes | 156 | 85 | 25 MHz | 0.1 µA ⁽¹⁾ | Yes | 802.11b | WiFi® Connection Manager, Announce, DNS, DDNS, DHCP FTP, HTTP, NBS, SNMP, SMTP, SSL, TCP, UDP, ZeroConf ⁽²⁾ | WPA, WPA2, WEP | 4-wire SPI | \$12.48 | 36/Module |
| MR24WB0MB | 36 | 2.412-2.484 | -91 | 10 | Yes | 156 | 85 | 25 MHz | 0.1 µA ⁽¹⁾ | Yes | 802.11b | WiFi Connection Manager, Announce, DNS, DDNS, DHCP FTP, HTTP, NBS, SNMP, SMTP, SSL, TCP, UDP, ZeroConf ⁽²⁾ | WPA, WPA2, WEP | 4-wire SPI | \$12.48 | 36/Module |
| RN171 | 49 | 2.412-2.484 | -83 | 12 | Yes | 130 | 30 | 44 MHz | 4 µA | Yes | 802.11b/g, WiFi Direct, SoftAP, WFS, Webscan | DHCP, DNS, ARP, ICMP, FTP client, HTTP client, TCP, UDP | WEP, WPA, WPA2 | UART, SPI Slave, WiFi | \$18.11 | 49/Module |
| MR24WG0MA | 36 | 2.412-2.484 | -95 | 18 | Yes | 240 | 156 | 25 MHz | 0.1 mA ⁽¹⁾ | Yes | 802.11b/g, WiFi Direct, SoftAP, WFS | WiFi Connection Manager, Announce, DNS, DDNS, DHCP FTP, HTTP, NBS, SNMP, SMTP, SSL, TCP, UDP, ZeroConf ⁽²⁾ | WPA2, WPA3, WPA-PSK, WEP | 4-wire SPI | \$18.75 | 36/Module |
| MR24WG0MB | 36 | 2.412-2.484 | -95 | 18 | Yes | 240 | 156 | 25 MHz | 0.1 mA ⁽¹⁾ | Yes | 802.11b/g, WiFi Direct, SoftAP, WFS | WiFi Connection Manager, Announce, DNS, DDNS, DHCP FTP, HTTP, NBS, SNMP, SMTP, SSL, TCP, UDP, ZeroConf ⁽²⁾ | WPA2, WPA3, WPA-PSK, WEP | 4-wire SPI | \$18.75 | 36/Module |
| RN131C | 44 | 2.412-2.484 | -85 | 18 | Yes | 210 (+1.8 dBm) | 40 | 44 MHz | 4 µA | Yes | 802.11b/g, WiFi Direct, SoftAP, WFS, Webscan | DHCP, DNS, ARP, ICMP, FTP client, HTTP client, TCP, UDP | WEP, WPA, WPA2 | UART, SPI Slave, WiFi | \$24.90 | 44/Module |
| RN131G | 44 | 2.412-2.484 | -85 | 18 | Yes | 210 (+1.8 dBm) | 40 | 44 MHz | 4 µA | Yes | 802.11b/g, WiFi Direct, SoftAP, WFS, Webscan | DHCP, DNS, ARP, ICMP, FTP client, HTTP client, TCP, UDP | WEP, WPA, WPA2 | UART, SPI Slave, WiFi | \$27.75 | 44/Module |
| IEEE 802.15.4 Transceivers/Modules | | | | | | | | | | | | | | | | |
| MR24J40 | 40 | 2.405-2.48 | -95 | 0 | Yes | 23 | 19 | 20 MHz | 2 µA | Yes | CSMA-CA | - | - | 4-wire SPI | \$2.36 | 40/QFN |
| MR24J40MA | 12 | 2.405-2.48 | -95 | 0 | Yes | 23 | 19 | 20 MHz | 2 µA | Yes | CSMA-CA | - | - | 4-wire SPI | \$4.94 | 12/Module |
| MR24J40MB | 12 | 2.405-2.48 | -102 | 20 | Yes | 130 | 25 | 20 MHz | 5 µA | Yes | CSMA-CA | - | - | 4-wire SPI | \$10.66 | 12/Module |
| MR24J40MC | 12 | 2.405-2.48 | -108 | 20 | Yes | 120 | 25 | 20 MHz | 12 µA | Yes | CSMA-CA | - | - | 4-wire SPI | \$10.66 | 12/Module |

1. Indicates "off" current for sleep column.
2. Supported in the provided stack.

WIRELESS PRODUCTS

| Product | Pin Count | Frequency Range (GHz) | Sensitivity (dBm) | Power Output (dBm) | Power Consumption | | | Sleep | MAC | Profiles | Interface | Volume Pricing | Packages |
|-------------------|-----------|-----------------------|-------------------|--------------------|---|---|---|-------|---|--|-----------|----------------|----------|
| Bluetooth® | | | | | | | | | | | | | |
| RN421/1RM | 35 | 2.4 to 2.48 | -80 | 4 | Standby/Idle 25 mA, Connected (normal mode) 3 mA, Connected (low power sniff) 8 mA | Standby/Idle 25 mA, Connected (normal mode) 3 mA, Connected (low power sniff) 8 mA | Standby/Idle 25 mA, Connected (normal mode) 3 mA, Connected (low power sniff) 8 mA | Yes | SPP, DUN, HID, IAP, HCI, RFCOMM, L2CAP, SDP | UART, USB, Bluetooth® | \$12.50 | 35/Module | |
| RN521/1RM* | 40 | 2.4 to 2.48 | -85 | 4 | TBD | TBD | TBD | Yes | AZDP, AVRCP, SPP, HFP, HSP, IAP | (audio) Analog speaker, microphone, iS master mode, S/PDIF, (data) UART, USB, GPIO | \$16.04 | 40/Module | |
| RN411/1RM | 35 | 2.4 to 2.48 | -80 | 15 | Standby/Idle 25 mA, Connected (normal mode) 30 mA, Connected (low power sniff) 8 mA | Standby/Idle 25 mA, Connected (normal mode) 30 mA, Connected (low power sniff) 8 mA | Standby/Idle 25 mA, Connected (normal mode) 30 mA, Connected (low power sniff) 8 mA | Yes | SPP, DUN, HID, IAP, HCI, RFCOMM, L2CAP, SDP | UART, USB, Bluetooth | \$18.75 | 35/Module | |

* Not yet released.

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 ¹ | Packages |
|------------|-----------|-----------------------|-------------------|--------------------|------|---------------------------|---------------------------|----------|--------|------------|-----------------------------|-----------|
| MR69XA | 16 | 433/689/915 | -110 | 7 | Yes | 15 mA @ 0 dBm | 1.1 | 10 MHz | 0.3 µA | 4-wire SPI | \$1.71 | 16/TSSOP |
| MR69XA | 32 | 689/915/950 | -113 | 12.5 | Yes | 25 mA @ 0 dBm | 3 | 12.8 MHz | 0.1 µA | 4-wire SPI | \$1.76 | 32/QFN |
| MR69XAMB | 12 | 868 | -113 | 12.5 | Yes | 25 mA @ 0 dBm | 3 | 12.8 MHz | 0.1 µA | 4-wire SPI | \$5.20 | 12/Module |
| MR69XAMB9A | 12 | 915 | -113 | 12.5 | Yes | 25 mA @ 0 dBm | 3 | 12.8 MHz | 0.1 µA | 4-wire SPI | \$5.20 | 12/Module |

rPIC™ Transmitters + PIC® MCUs

| Product | I/O Pins | Frequency Range (MHz) | Program Memory (Bytes) | EEPROM (Bytes) | RAM (Bytes) | Digital Timer | Watch Dog Timer | Max Speed (MHz) | ICSP™ | Modulation | Data Rate (Kbps) | Output Power (dBm) | Operating Voltage | Volume Pricing | Packages |
|----------------|----------|-----------------------|------------------------|----------------|-------------|---------------|-----------------|-----------------|-------|------------|------------------|--------------------|-------------------|----------------|----------|
| PIC12F529T48A | 6 | 418-568 | 2.3 K | - | 201 | 1 | 1 | 8 | Yes | OOK/FSK | 100 | 10 | 2.0-3.7 | \$0.85 | 14/TSSOP |
| PIC12F529T39A | 6 | 310-928 | 2.3 K | - | 201 | 1 | 1 | 8 | Yes | OOK/FSK | 100 | 10 | 2.0-3.7 | \$0.95 | 14/TSSOP |
| PIC12F1840T48A | 6 | 418-868 | 7.1 K | 256 | 256 | 2 | 1 | 32 | Yes | OOK/FSK | 100 | 10 | 1.8-3.6 | \$1.12 | 14/TSSOP |
| PIC12F1840T39A | 6 | 310-928 | 7.1 K | 256 | 256 | 2 | 1 | 32 | Yes | OOK/FSK | 100 | 10 | 1.8-3.6 | \$1.27 | 14/TSSOP |
| rPIC12F675F | 6 | 380-450 | 1.7 K | 128 | 64 | 1 | 1 | 20 | Yes | ASK/FSK | 40 | 10 | 2.0-5.5 | \$2.11 | 20/SSOP |
| rPIC12F675H | 6 | 850-930 | 1.7 K | 128 | 64 | 1 | 1 | 20 | Yes | ASK/FSK | 40 | 10 | 2.0-5.5 | \$2.11 | 20/SSOP |
| rPIC12F675K | 6 | 290-350 | 1.7 K | 128 | 64 | 1 | 1 | 20 | Yes | ASK/FSK | 40 | 10 | 2.0-5.5 | \$2.11 | 20/SSOP |

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

USB: SuperSpeed USB 3.0 Hubs

USB 3.0 Hub Controller Family for Computing and Consumer Applications

| Product | Features | Downstream USB Ports | Industrial Temp. Option (-40 to 85°C) | Pin | Packages |
|----------|---|--------------------------|--|-----|----------|
| USB5532B | USB 3.0 Superspeed hub, two port, OTP flash programmable with advanced battery charging support | 2 | USB5532BI | 64 | QFN |
| USB5533B | USB 3.0 Superspeed hub, three port, OTP flash programmable with advanced battery charging support | 3 | USB5533BI | 64 | QFN |
| USB5534B | USB 3.0 Superspeed hub, four port, OTP flash programmable with advanced battery charging support | 4 | USB5534BI | 64 | QFN |
| USB5537B | USB 3.0 hybrid hub, seven total ports, four USB 3.0 with three additional USB 2.0 downstream ports, OTP flash programmable with advanced battery charging support | USB 3.0: 4 USB 2.0: 3 | USB5537BI | 72 | QFN |

USB: Hi-Speed USB 2.0 Hubs

Low-Power, Small-Footprint, Cost-Effective USB 2.0 Hub Controller Family

| Product | Features | Downstream USB Ports | Industrial Temp. Option (-40 to 85°C) | Pin | Packages |
|----------|--|-------------------------|--|-------|------------|
| USB2422 | Small-footprint, two port value hub, commercial and industrial temperature with USB battery charging 1.1 | 2 | USB2422I | 24 | QFN |
| USB2412 | Small-footprint, low-power, standard commercial temperature range | 2 | - | 28 | QFN |
| USB2512B | Low-power, extended commercial temperature range, USB Battery Charging 1.1 | 2 | USB2512BI | 36 | QFN |
| USB2513B | Low-power, small-footprint, extended commercial temperature range, USB Battery Charging 1.1 (USB2513B/2514B only), SNOSC's proprietary PortMap, PortSwap, TrueSpeed, PHYBoost and MultiTRAK technologies | 3 | USB2513BI | 36 | QFN |
| USB2514B | Low-power, small-footprint, extended commercial temperature range, USB Battery Charging 1.1 (USB2513B/2514B only), SNOSC's proprietary PortMap, PortSwap, TrueSpeed, PHYBoost and MultiTRAK technologies | 4 | USB2514BI | 36/64 | QFN, VFBGA |
| USB2517 | Low-power, small-footprint, extended commercial temperature range, USB Battery Charging 1.1 (USB2513B/2514B only), SNOSC's proprietary PortMap, PortSwap, TrueSpeed, PHYBoost and MultiTRAK technologies | 7 | USB2517I | 64 | QFN |
| USB2524 | MultiSwitch™ technology combining Hi-Speed USB hub and switching functionality in a single-chip, cost-effective solution | 2 upstream/4 downstream | - | 56 | QFN |
| USB2532 | Low-power, small-footprint, extended commercial temperature range, USB Battery Charging 1.2, PortMap, PortSwap, TrueSpeed, PHYBoost, MultiTRAK, VarSense and FlexConnect technologies | 2 | USB2532I | 36 | SOQFN |
| USB2533 | Low-power, small-footprint, extended commercial temperature range, USB Battery Charging 1.2, PortMap, PortSwap, TrueSpeed, PHYBoost, MultiTRAK, VarSense and FlexConnect technologies | 3 | USB2533I | 36 | SOQFN |
| USB2534 | Low-power, small-footprint, extended commercial temperature range, USB Battery Charging 1.2, PortMap, PortSwap, TrueSpeed, PHYBoost, MultiTRAK, VarSense and FlexConnect technologies | 4 | USB2534I | 36 | SOQFN |
| USB3613 | Ultra small, extremely low power, mobile embedded USB 2.0 hub with HSC host connectivity, LPM compatibility and advanced battery charging support | USB 2.0: 2 HSC: 1 | USB3613I | 30 | WLCSOP |
| USB3813 | Ultra small, extremely low power, mobile embedded USB 2.0 hub with HSC host connectivity, LPM compatibility and advanced battery charging support | USB 2.0: 2 HSC: 1 | USB3813I | 30 | WLCSOP |
| USB4604 | Advanced USB 2.0 hub with USB 2.0 downstream ports and HSC or USB host connectivity, I/O bridging, low power and advanced battery charging support | USB 2.0: 4 | USB4604I | 48 | QFN |
| USB4624 | Advanced USB 2.0 hub with USB 2.0/HSC downstream ports and HSC or USB host connectivity, I/O bridging, low power and advanced battery charging support | USB 2.0: 2 HSC: 2 | USB4624I | 48 | QFN |

USB: Hi-Speed USB 2.0 Portable Hubs

Ultra-Small Hubs for Portable Applications

| Product | Features | Industrial Temp. Option (-40 to 85°C) | Upstream Interface | Pin/Ball | Packages |
|----------|---|--|--------------------|----------|----------|
| USB3803C | Ultra-small, extremely low standby power, high-performance, built-in ESD protection, USB Battery Charging 1.2 detection | USB3803I | USB | 25 | WLCSOP |
| USB3503A | Ultra-small, extremely low standby power, high-performance, built-in ESD protection, USB Battery Charging 1.2 detection | USB3503I | HSC | 25 | WLCSOP |

USB: Hi-Speed USB to Ethernet Controllers

USB 2.0 to 10/100 or 10/100/1000 Ethernet Controllers

| Product | Features | Industrial Temp. Option (-40 to 85°C) | Pin | Packages |
|----------|---|--|-----|----------|
| LAN9500A | 10/100, NetDetach™ technology, EEPROM-less operation, UniClock™ technology | LAN9500AI | 56 | QFN |
| LAN7500 | 10/100/1000 Gigabit controller with integrated USB and Ethernet PHYs, single-chip, high-performance, cost-effective, EEPROM-less operation, UniClock technology | LAN7500I | 56 | QFN |
| LAN9730 | HSC Ethernet controller, multiple low-power modes, HSC interface reduces pin count and power budget, drivers fully backward compatible to existing USB 2.0 software for seamless transition, industrial temperature for rugged environments | LAN9730I | 56 | QFN |

USB: Hi-Speed USB to Ethernet Controllers

USB 2.0 Hub and 10/100 Ethernet Controllers with Superior ESD Protection

| Product | Features | Downstream USB Ports | Industrial Temp. Option (-40 to 85°C) | Pin | Packages |
|---------|--|----------------------|--|-----|----------|
| LAN9512 | Industry's first fully-integrated, single-chip device, UniClock™ technology, EEPROM-less design option | 2 | LAN9512I | 64 | QFN |
| LAN9513 | Industry's first fully-integrated, single-chip device, UniClock™ technology, EEPROM-less design option | 3 | LAN9513I | 64 | QFN |
| LAN9514 | Industry's first fully-integrated, single-chip device, UniClock™ technology, EEPROM-less design option | 4 | LAN9514I | 64 | QFN |

USB: Hi-Speed USB Flash Media Controllers

| Product | Features | Socket Type | Supports | Interface | Reference Clock | Pin/Ball | Pin | Packages |
|---------|---|-------------|--|----------------|-----------------|-----------------|-----|----------|
| USB2240 | Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options | Single | SD™/MultiMediaCard™/SmartMedia™/xD-Picture Card™/Memory Stick® | 1.8V ULPI | Multi-frequency | 24-pin | 36 | QFN |
| USB2241 | Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options | Single | SD/MultiMediaCard/SmartMedia/Memory Stick | 1.8V ULPI | 26 MHz | 24-pin /25-ball | 36 | QFN |
| USB2242 | Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options | Single | Memory Stick | 1.8V-3.3V ULPI | 26 MHz | 25-ball | 36 | QFN |
| USB2244 | Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options | Single | SD/MultiMediaCard | 1.8V-3.3V ULPI | 24 MHz | 24-pin | 36 | QFN |
| USB2250 | Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options | Multi | SD/MultiMediaCard/SmartMedia/xD-Picture Card/Memory Stick/Compact Flash® and external memory | 1.8V-3.3V ULPI | 19.2 MHz | 24-pin /25-ball | 128 | VTQFP |
| USB2251 | Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options | Multi | SD/MultiMediaCard/SmartMedia/xD-Picture Card/Memory Stick/Compact Flash and external memory | 1.8V ULPI | 13 MHz | 24-pin | 128 | VTQFP |
| | | | | 1.8V-3.3V ULPI | 13 MHz | 24-pin /25-ball | | |
| | | | | 1.8V ULPI | Multi-frequency | 32-pin | | QFN |
| | | | | 1.8V ULPI | 26 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 12 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 19.2 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 27 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 13 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | Multi-frequency | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 26 MHz | 25-ball | | WLCSP |
| | | | | 1.8V-3.3V ULPI | 19.2 MHz/26 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 19.2 MHz | 25-ball | | WLCSP |
| | | | | 1.8V ULPI | 38.4 MHz | 25-ball | | WLCSP |
| | | | | 1.8V-3.3V ULPI | Multi-frequency | 32-pin | | QFN |
| | | | | 1.8V ULPI | 26 MHz | 24-pin | | QFN |
| | | | | 1.8V-3.3V ULPI | 26 MHz crystal | 24-pin | | QFN |
| | | | | 1.8V ULPI | 19.2 MHz | 24-pin | | QFN |
| | | | | 1.8V ULPI | 27 MHz | 24-pin | | QFN |

USB: Transceivers

| Product | Features | Socket Type | Supports | Interface | Reference Clock | Pin/Ball | Pin | Packages |
|---------|--|-------------|----------|----------------|-----------------|-----------------|-----|-------------------|
| USB3310 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR® technology | | | 1.8V ULPI | Multi-frequency | 24-pin | | QFN |
| USB3311 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V ULPI | 26 MHz | 24-pin /25-ball | | QFN, VFPGA |
| USB3313 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V-3.3V ULPI | 26 MHz | 25-ball | | VFPGA |
| USB3315 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V-3.3V ULPI | 24 MHz | 24-pin | | QFN |
| USB3316 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V ULPI | 19.2 MHz | 24-pin /25-ball | | QFN, VFPGA, VFPGA |
| USB3317 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V-3.3V ULPI | 26 MHz | 24-pin /25-ball | | QFN, VFPGA |
| USB3318 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V-3.3V ULPI | 13 MHz | 24-pin | | QFN |
| USB3319 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR technology | | | 1.8V ULPI | 13 MHz | 24-pin /25-ball | | QFN, VFPGA |
| USB3320 | Full-featured, USB OTG transceiver, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60 MHz clock-in mode including crystal support, flexPWR technology | | | 1.8V-3.3V ULPI | Multi-frequency | 32-pin | | QFN |
| USB3321 | Small-footprint, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60 MHz clock-in mode, flexPWR technology | | | 1.8V ULPI | 26 MHz | 25-ball | | WLCSP |
| USB3322 | Small-footprint, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60 MHz clock-in mode, flexPWR technology | | | 1.8V ULPI | 12 MHz | 25-ball | | WLCSP |
| USB3326 | Small-footprint, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60 MHz clock-in mode, flexPWR technology | | | 1.8V ULPI | 19.2 MHz | 25-ball | | WLCSP |
| USB3327 | Small-footprint, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60 MHz clock-in mode, flexPWR technology | | | 1.8V ULPI | 27 MHz | 25-ball | | WLCSP |
| USB3329 | Small-footprint, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60 MHz clock-in mode, flexPWR technology | | | 1.8V ULPI | 13 MHz | 25-ball | | WLCSP |
| USB3330 | Small-footprint, integrated Vbus over-voltage protection, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere™ technology | | | 1.8V ULPI | Multi-frequency | 25-ball | | WLCSP |
| USB3331 | Small-footprint, integrated Vbus over-voltage protection, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, integrated USB switch, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V ULPI | 26 MHz | 25-ball | | WLCSP |
| USB3333 | Small-footprint, integrated Vbus over-voltage protection, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V-3.3V ULPI | 19.2 MHz/26 MHz | 25-ball | | WLCSP |
| USB3336 | Small-footprint, integrated Vbus over-voltage protection, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, integrated USB switch, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V ULPI | 19.2 MHz | 25-ball | | WLCSP |
| USB3338 | Small-footprint, integrated Vbus over-voltage protection, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, integrated USB switch, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V ULPI | 38.4 MHz | 25-ball | | WLCSP |
| USB3340 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, integrated USB switch, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V-3.3V ULPI | Multi-frequency | 32-pin | | QFN |
| USB3341 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, integrated USB switch, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V ULPI | 26 MHz | 24-pin | | QFN |
| USB3343 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V-3.3V ULPI | 26 MHz crystal | 24-pin | | QFN |
| USB3346 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, integrated USB switch, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V ULPI | 19.2 MHz | 24-pin | | QFN |
| USB3347 | Highly-integrated, small footprint, internal ESD protection circuits, integrated 1.8V & 3.3V LDO regulators, ULPI 60 MHz clock-in mode, flexPWR technology, battery charger detection supported through RapidCharge Anywhere technology | | | 1.8V ULPI | 27 MHz | 24-pin | | QFN |

USB: Switches

| Product | Features | Pin | Packages |
|---------|---|-----|----------|
| USB3740 | Ultra-small package options, high-bandwidth, extremely low operating power, low on resistance | 10 | QFN |

USB: Hi-Speed USB Hub and Flash Media Controllers

Hi-Speed USB 2.0 Hub and Multi-Format Flash Media Reader Combos

| Product | Features | Socket Type | Supports | Downstream USB Ports | Industrial Temp. Option (-40 to 85° C) | Pin | Packages |
|--------------|--|-------------|--|----------------------|--|-----|----------|
| USB2660 | Ultra Hi-Speed, cost-effective, low-power, small footprint | Dual | SD™/MultiMediaCard™/xD-Picture Card™/Memory Stick® | 2 | USB2660I | 64 | QFN |
| USB2640 | Ultra Hi-Speed, cost-effective, low-power, small footprint | Single | SD/MultiMediaCard/Memory Stick | 2 | USB2640I | 48 | QFN |
| USB2641 | Ultra Hi-Speed, cost-effective, low-power, small footprint | Single | SD/MultiMediaCard/xD-Picture Card/Memory Stick | 2 | USB2641I | 48 | QFN |
| USB2601/2602 | Integrated card power FETs and Hi-Speed USB 2.0 hub | Multi | SD/MultiMediaCard/SmartMedia™/Memory Stick® /CompactFlash® and external memory | 3 | - | 128 | VTQFP |
| USB4640 | Ultra-fast digital, Hi-Speed Interchip Interface (HSIC) | Single | SD/MultiMediaCard/xD-Picture Card/Memory Stick | 2 | USB4640I | 48 | QFN |

USB: Hi-Speed USB 2.0 Portable Power

| Product | Features | Pin | Packages |
|---------|---|-----|----------|
| USB3750 | Ultra-small package options, VBUS overvoltage and ESD protection, USB Battery Charging v1.2 detection | 16 | QFN |
| USB3751 | Ultra-small package options, VBUS overvoltage and ESD protection, USB Battery Charging v1.2 detection | 16 | QFN |

USB: HSIC Controllers

Hi-Speed USB Interchip Controllers for On-Board USB Connectivity

| Product | Features | Upstream Port | Downstream Port | Bridge Function | Pin/Ball | Packages |
|---------|---|---------------|-----------------|-----------------------------------|----------|----------|
| USB4640 | HSIC Flash media reader hub multi-function controller | HSIC | USB | SD™/MultiMediaCard™/Memory Stick® | 48 | QFN |
| USB3503 | 3-port HSIC hub for portable applications, ultra-small, extremely low standby power, high-performance, built-in ESD protection, USB Battery Charging 1.2 detection | HSIC | USB | USB pass-thru | 25 | WLCSP |
| LAN9730 | HSIC Ethernet controller, multiple low-power modes, HSIC interface reduces pin count and power budget, drivers fully backward compatible to existing USB 2.0 software for seamless transition, industrial temperature for rugged environments | HSIC | N/A | 10/100 Ethernet | 56 | QFN |
| SEC4410 | USB secure authentication and encrypted storage token with AES encryption, 35 MB/s transfer rates and 32-bit controller | HSIC | N/A | SD/MultiMediaCard/ISO-7816 | 64/72 | QFN |

ETHERNET: Hi-Speed USB to Ethernet Controllers

USB 2.0 to 10/100 or 10/100/1000 Ethernet Controllers

| Product | Features | Industrial Temp. Option (-40 to 85° C) | Pin | Packages |
|----------|---|--|-----|----------|
| LAN9500A | 10/100, NetDetach™ technology, EEPROM-less operation, UniClock™ technology | LAN9500AI | 56 | QFN |
| LAN7500 | 10/100/1000 gigabit controller integrated USB and Ethernet PHYs, single-chip, high-performance, cost-effective, EEPROM-less operation, UniClock technology | LAN7500I | 56 | QFN |
| LAN9730 | HSIC Ethernet controller, multiple low-power modes, HSIC interface reduces pin count and power budget, drivers fully backward compatible to existing USB 2.0 software for seamless transition, industrial temperature for rugged environments | LAN9730I | 56 | QFN |

ETHERNET: Hi-Speed USB and Ethernet Controllers

USB 2.0 and 10/100 Ethernet Controllers with Superior ESD Protection

| Product | Features | Downstream USB Ports | Industrial Temp. Option (-40 to 85° C) | Pin | Packages |
|---------|---|----------------------|--|-----|----------|
| LAN9512 | Industry's first fully-integrated, single-chip device, ±8 kV/±15 kV ESD protection, UniClock™ technology, EEPROM-less design option | 2 | LAN9512I | 64 | QFN |
| LAN9513 | Industry's first fully-integrated, single-chip device, ±8 kV/±15 kV ESD protection, UniClock technology, EEPROM-less design option | 3 | LAN9513I | 64 | QFN |
| LAN9514 | Industry's first fully-integrated, single-chip device, ±8 kV/±15 kV ESD protection, UniClock technology, EEPROM-less design option | 4 | LAN9514I | 64 | QFN |

ETHERNET: PCI Ethernet Controllers

High-Performance 10/100 Ethernet Controllers Supporting HP Auto-MDIX

| Product | Features | Bus Interface (Bits) | Industrial Temp. Option (-40 to 85° C) | Pin | Packages |
|---------|-------------------------------------|----------------------|--|-----|----------|
| LAN9420 | 33 MHz, PCI 3.0-compliant interface | 32 | LAN9420I | 128 | VTQFP |

ETHERNET: Local Bus Ethernet Controllers

10/100 Ethernet Controllers Supporting HP Auto-MDIX

| Product | Features | BUS Interface (Bits) | Industrial Temp. Option (-40 to 85° C) | Pin | Packages |
|---------|--|----------------------|--|-----|----------|
| LAN9221 | Small footprint, advanced performance options, supports a wide range of software drivers, supports local bus interface from 1.8V to 3.3V, integrated checksum offload engine | 16 | LAN9221I | 56 | QFN |
| LAN9220 | Small footprint, advanced performance options, supports a wide range of software drivers, supports local bus interface from 1.8V to 3.3V, integrated checksum offload engine | 16 | - | 56 | QFN |
| LAN9218 | High-throughput performance options | 32 | LAN9218I | 100 | TQFP |
| LAN9217 | External MII, high-throughput performance options | 16 | - | 100 | TQFP |

ETHERNET: Ethernet Switches

| Product | Features | Ports | Host Interface | Industrial Temp. Option (-40 to 85 °C) | Pin | Packages |
|----------|--|----------------|------------------|--|-----|---------------|
| LAN9303 | High-performance, small-footprint, full-featured | 3 | Single MII/RMII | LAN9303i | 56 | QFN |
| LAN9303M | High-performance, small-footprint, full-featured | 3 | Dual MII/RMII | LAN9303MI | 72 | QFN |
| LAN9311 | Local bus, IEEE 1588 support | 2 | 16-bit local bus | LAN9311i | 128 | VTQFP, XVTQFP |
| LAN9312 | Local bus, IEEE 1588 support | 2 | 32-bit local bus | - | 128 | VTQFP, XVTQFP |
| LAN9313 | MII interface, IEEE 1588 support | 3 (1-port MII) | Single MII | LAN9313i | 128 | VTQFP, XVTQFP |

ETHERNET: Ethernet Transceivers

| Product | Features | Industrial Temp. Option (-40 to 85 °C) | Host Interface | Pin | Packages |
|----------|--|--|----------------|-----|----------|
| LAN8710A | Full-featured, small-footprint, variable I/O, low power consumption | LAN8710Ai | MII/RMII | 32 | QFN |
| LAN8720A | Full-featured, small-footprint, variable I/O, low power consumption | LAN8720Ai | RMII | 24 | QFN |
| LAN8740A | Small-footprint, full-featured, variable I/O with Energy Efficient Ethernet, Wake-on-LAN for overall system power reduction, cable diagnostics for ease of network installation and maintenance (Devices available for sampling) | LAN8740i | MII/RMII | 32 | SQFN |
| LAN8741A | Small-footprint, full-featured, variable I/O with Energy Efficient Ethernet, Wake-on-LAN for overall system power reduction, cable diagnostics for ease of network installation and maintenance (Devices available for sampling) | LAN8741i | MII/RMII | 32 | SQFN |
| LAN8742A | Small-footprint, full-featured, variable I/O with Energy Efficient Ethernet, Wake-on-LAN for overall system power reduction, cable diagnostics for ease of network installation and maintenance (Devices available for sampling) | LAN8742i | RMII | 24 | SQFN |
| LAN8810 | Single-chip Ethernet physical layer transceiver (PHY), compliant with IEEE 802.3ab (1000BASE-T), IEEE 802.3u (Fast Ethernet) and ISO 802.3/IEEE 802.3 (10BASE-T) | LAN8810i | GMI | 72 | QFN |
| LAN8820 | Single-chip Ethernet physical layer transceiver (PHY), compliant with IEEE 802.3ab (1000BASE-T), IEEE 802.3u (Fast Ethernet) and ISO 802.3 (10BASE-T) (Devices available for sampling) | LAN8820i | RGMI | 56 | QFN |

ETHERNET: Ethernet Transceivers with Superior Performance

| Product | Features | Speed | Pin | Packages |
|--------------|---|-----------------|-------|-----------|
| COM20019i | Controller with operating temperature range of -40° to 85°C | 312.5 Kbps | 28/48 | PLCC/TQFP |
| COM20020i | Controller with operating temperature range of -40° to 85°C | 5 Mbps | 28/48 | PLCC/TQFP |
| COM20022i | Controller with operating temperature range of -40° to 85°C | 10 Mbps | 48 | TQFP |
| TMC2005 | 5-port hub | 156.25K-10 Mbps | 64 | TQFP |
| HYC5068A RLF | High-impedance transceiver | 2.5 Mbps | 20 | SIP |
| HYC2000 | High-impedance transceiver | 156.25-625 Kbps | 8 | SIP |
| HYC5000 | High-impedance transceiver | 2.5M-10 Mbps | 8 | SIP |

NETWORKING: ARCNET Controllers

| Product | Features | Speed | Pin | Packages |
|--------------|---|-----------------|-------|-----------|
| COM20019i | Controller with operating temperature range of -40° to 85°C | 312.5 Kbps | 28/48 | PLCC/TQFP |
| COM20020i | Controller with operating temperature range of -40° to 85°C | 5 Mbps | 28/48 | PLCC/TQFP |
| COM20022i | Controller with operating temperature range of -40° to 85°C | 10 Mbps | 48 | TQFP |
| TMC2005 | 5-port hub | 156.25K-10 Mbps | 64 | TQFP |
| HYC5068A RLF | High-impedance transceiver | 2.5 Mbps | 20 | SIP |
| HYC2000 | High-impedance transceiver | 156.25-625 Kbps | 8 | SIP |
| HYC5000 | High-impedance transceiver | 2.5M-10 Mbps | 8 | SIP |

NETWORKING: CirrusLink® Controllers

| Product | Features | Speed | Pin | Packages |
|---------|---------------------------|--------|-----|----------|
| TMC2074 | Peripheral and standalone | 5 Mbps | 128 | VTQFP |
| TMC2072 | Peripheral | 5 Mbps | 100 | TQFP |
| TMC2084 | Standalone | 5 Mbps | 48 | TQFP |

AUTOMOTIVE: MOST® (Media Oriented Systems Transport) Network Interface Controllers

| Product | Features | Interface | Temperature Range | Pin | Packages |
|--------------|--|---|---|-----|------------|
| OS8110 INIC | Fully-encapsulated, single-chip, embedded network management, supports MOST embedded Ethernet channel and isochronous channels (MOST150) | MOST150 FOT or MOST150 coax transceiver, iPC™, iPS™/SPDIF, TSI, SPI, MediaLB® | -40° to 105°C | 48 | QFN |
| OS81082 INIC | Fully-encapsulated, single-chip, embedded network management (MOST150) | MOST150 electrical (UTP), iPC, iPS, MediaLB | -40° to 95°C | 64 | ETQFP |
| OS81092 INIC | ROM version of OS81082 INIC (MOST150) | MOST150 electrical (UTP), iPC, iPS, MediaLB | -40° to 105°C | 48 | QFN |
| OS81050 INIC | Fully-encapsulated, single-chip with embedded network management (MOST125) | MOST125 FOT, iPC, iPS, MediaLB | Standard range: -40° to 85°C Extended range: -40° to 105°C | 44 | QFP, ETQFP |
| OS81060 INIC | ROM version of OS81050 INIC (MOST125) | MOST125 FOT, iPC, iPS, MediaLB | -40° to 105°C (targeted) | 40 | QFN |

| AUTOMOTIVE: Power Management Companion For Diagnostics, Status Monitoring and Power Supply | | | | | |
|--|--|----------------------------|-------------------|-----|----------|
| Product | Features | Interface | Temperature Range | Pin | Packages |
| MPM85000 | Power management companion for diagnostics, status monitoring and power supply | LIN 2.0, I ² C™ | -40° to 105°C | 24 | QFN |

| AUTOMOTIVE: Multimedia I/O Companion Multimedia I/O Port Expander | | | | | |
|---|---|--|-------------------|-----|----------|
| Product | Features | Interface | Temperature Range | Pin | Packages |
| OS88650 | Low-cost multimedia I/O port expander, DTCP co-processor | MediaLB 3-pin and 6-pin, Host Bus Interface (HBI), 2 x multi-channel streaming ports, 2 x TSI, 2 x SPI, I ² C™ | -40° to 105°C | 128 | ETQFP |
| OS88652 | Low-cost multimedia I/O port expander | MediaLB 3-pin and 6-pin, Host Bus Interface (HBI), 2 x multi-channel streaming ports, 2 x TSI, 2 x SPI, I ² C | -40° to 105°C | 128 | ETQFP |
| OS88656 | Low-cost multimedia I/O port expander well-suited for streaming applications | MediaLB 3-pin, streaming port FS™, FCLK, 4 x IN, 4 x Out, @ 51.2 Fs), serial transport stream interface (TSI), I ² C | -40° to 105°C | 48 | QFN |
| OS88654 | Low-cost multimedia I/O port expander well-suited for streaming applications, DTCP co-processor | MediaLB 3-pin, streaming port FS™, FCLK, 4 x IN, 4 x Out, @ 51.2 Fs), serial transport stream interface (TSI), I ² C | -40° to 105°C | 48 | QFN |

| AUTOMOTIVE: Ethernet Controllers 10/100 Ethernet Controllers with USB 2.0, HSIC or HBI | | | | | |
|--|---|---|-------------------|-----|----------|
| Product | Features | Interface | Temperature Range | Pin | Packages |
| LAN8924B | High-performance, single-chip controller with HP Auto-MDIX support* | MAC/PHY, 10BASE-T/100BASE-TX, 32- and 16-bit Host Bus Interface (HBI) | -40° to 85°C | 100 | TQFP |
| LAN89530 | HiSpeed USB 2.0 to 10/100 Ethernet controller | USB 2.0 | -40° to 85°C | 56 | QFN |
| LAN89730 | HiSpeed HSIC to 10/100 Ethernet controller | HSIC | -40° to 85°C | 56 | QFN |

*HP Auto MDIX eliminates the need for special "crossover" cables when connecting LAN devices together.

| AUTOMOTIVE: Ethernet Switch 10/100 Managed Ethernet Switch with HP Auto-MDIX Support | | | | | | |
|--|---|--|-------------------|-------|-----|----------|
| Product | Features | Interface | Temperature Range | Ports | Pin | Packages |
| LAN89303 | High-performance, small footprint, full-featured, single MII/RMII/Turbo MII support | MIU/RMII, 2 x 10/100 PHYs, 3 x 10/100 MACs | -40° to 85°C | 4 | 56 | QFN |

| AUTOMOTIVE: Ethernet Transceiver 10/100 Ethernet Transceiver with HP Auto-MDIX Support*, Featuring flexPWR® Technology | | | | | |
|--|---|-------------------------------|---|-----|----------|
| Product | Features | Interface | Temperature Range | Pin | Packages |
| LAN88730 | Small footprint, low-power consumption, full-featured | 10BASE-T/100BASE-TX, MII/RMII | LAN88730AM: -40° to 85°C LAN88730BM: -40° to 105°C | 32 | QFN |

*HP Auto MDIX eliminates the need for special "crossover" cables when connecting LAN devices together.

| AUTOMOTIVE: Hi-Speed USB 2.0 Hub USB 2.0 Hub Featuring MultiTRAK™ Technology | | | | | | |
|--|---|-----------|-------------------|-------|-----|----------|
| Product | Features | Interface | Temperature Range | Ports | Pin | Packages |
| USB82512 | Versatile, cost-effective, energy-efficient, incorporating MultiTRAK™, PortMap, PortSwap, PHYBoost technologies | SMBus/PC™ | -40° to 85°C | 2 | 36 | QFN |
| USB82513 | Versatile, cost-effective, energy-efficient, incorporating MultiTRAK, PortMap, PortSwap, PHYBoost technologies | SMBus/PC | -40° to 85°C | 3 | 36 | QFN |
| USB82514 | Versatile, cost-effective, energy-efficient, incorporating MultiTRAK, PortMap, PortSwap, PHYBoost technologies | SMBus/PC | -40° to 85°C | 4 | 36 | QFN |

| AUTOMOTIVE: Hi-Speed USB 2.0 Hub and Flash Media Card Controllers USB 2.0 Hub and Card Controller Combos | | | | | | | |
|--|---|-------------|---|-------------------|-----------|-----|----------|
| Product | Features | Socket Type | Supports | Temperature Range | USB Ports | Pin | Packages |
| USB82640 | Features PortMap, PortSwap and PHYBoost technologies | Single | SD™/SD High Capacity™/MultiMediaCard™/Memory Stick™/MS PRO™, MS PRO-HG™ | -40° to 85°C | 2 | 48 | QFN |
| USB82642 | USB bridge/card reader combo with USB to SDIO and USB to PC™ bridging functionality and PortMap, PortSwap and PHYBoost technologies | Single | SD/SD High Capacity/MultiMediaCard/Memory Stick/MS PRO, MS PRO-HG | -40° to 85°C | 2 | 48 | QFN |
| USB82662 | USB bridge/card reader combo with USB to SDIO and USB to PC bridging functionality and PortMap, PortSwap and PHYBoost technologies | Dual | SD/SD High Capacity/MultiMediaCard/Memory Stick/MS PRO, MS PRO-HG | -40° to 105°C | 2 | 64 | QFN |

| AUTOMOTIVE: Hi-Speed USB 2.0 Transceiver USB 2.0 Transceiver with 1.8V ULP1 Interface | | | | | | |
|---|---------------------------------|-----------|-------------------|-------|-----|----------|
| Product | Features | Interface | Temperature Range | Ports | Pin | Packages |
| USB83340 | Multi-frequency reference clock | 1.8V ULP1 | -40° to 105°C | 1 | 32 | QFN |

AUTOMOTIVE: Hi-Speed USB 2.0 Battery Charger

| Product | Features | Temperature Range | Supports | Pin | Packages |
|----------|---|-------------------|-------------------------------|-----|----------|
| UCS81001 | USB battery charger supporting BCL2, China charging, Apple® and RIM® charging profiles as well as programmable charging profiles for unforeseen peripherals | -40° to 85°C | USB, I ² C™, SMBus | 28 | QFN |
| UCS81002 | USB battery charger supporting BCL2, China charging, Apple and RIM charging profiles as well as programmable charging profiles for unforeseen peripherals | -40° to 85°C | USB, I ² C, SMBus | 28 | QFN |

AUTOMOTIVE: Wireless Audio

| Product | Features | Typical Sink Mode Power Consumption | PA Output Power | Audio | Qualification |
|----------|---|-------------------------------------|-----------------|--------------------------|---------------|
| KLR83012 | Wirelessly streams uncompressed lossless audio up to 25m over robust 2.4 GHz radio link, multi-point to multi-point connectivity, strong Wi-Fi® co-existence, data channel for audio playback control, very low power consumption | 20 mW | 1.5 dBm | 16 bit, 44.1 Ks/s stereo | AEC Q100 |

AUTOMOTIVE: Capacitive Touch Sensors

| Product | Features | Input Channels | LED Drivers | Proximity Included | Interface | Pin | Packages |
|----------|---|----------------|-------------|--------------------|--------------------------------------|-----|----------|
| CAF81188 | Reset, wake and alert, automatic recalibration, base capacitance compensation | 8 | 8 | ✓ | I ² C™/SPI/SMBus/BC-Link™ | 24 | QFN |

PC SYSTEM & I/O CONTROLLERS: Notebook PC Products

| Product | Features | I/O Ports | System Interface | Pin | Packages |
|------------|---|--|-----------------------|---------|--------------|
| MEC1621 | 32bit embedded controller with 192K bytes embedded flash, 1K bytes EEPROM, 16K bytes SRAM, ADC, temp sensing, connected standby support | 3 PS/2, 3 SMBus, 2 SPI, 16 PWM, 6 tachs, 1 serial (2-pin), 16 ADC channels, 4 temp inputs, 3 LED, 1 HDMI-CEC, 146 GPIOs, 3 SMSC BC-Link™ | LPC/SMBus | 176/225 | LFBGA, LFBGA |
| MEC1620 | 32bit embedded controller with 192K bytes embedded flash, 1K bytes EEPROM, 16K bytes SRAM, ADC, connected standby support | 3 PS/2, 3 SMBus, 2 SPI, 16 PWM, 6 tachs, 1 serial (2-pin), 16 ADC channels, 3 LED, 1 HDMI-CEC, 153 GPIOs, 3 SMSC BC-Link | LPC/SMBus | 176 | LFBGA, LFBGA |
| MEC1308 | 8-bit embedded controller with 64K bytes SRAM, SPI Flash Memory Interface, ADC, Consumer IR, SMSC BC-Link technology | 4 PS/2, 2 SMBus, 4 PWMs, 2 tachs, 1 serial (2-pin), 55 GPIOs, RC-6 CIR, 1 SMSC BC-Link | LPC/SMBus | 128/144 | VTOFP, TFBGA |
| MEC1312 | 8-bit embedded controller with 96K bytes SRAM, SPI Flash Memory Interface, PECE, ADC, PID Fan Control, SMSC BC-Link technology | 4 PS/2, 3 SMBus, PECE, 4 PWMs, 2 tachs, 1 serial (2-pin), 63 GPIOs, 1 SMSC BC-Link | LPC/SMBus | 128 | VTQFP |
| SI01028 | Super I/O controller, small form factor package | 3 serial, 24 GPIOs | LPC | 64 | QFN |
| LPC47N217 | Super I/O controller for notebook and embedded PC applications | 1 serial, 1 parallel, 14 GPIOs, I ² A* - CIR | LPC | 64/56 | STQFP |
| LPC47N217N | Super I/O controller for notebook and embedded PC applications | 1 serial, 1 parallel, 14 GPIOs | LPC | 64/56 | STQFP, QFN |
| ECE1088 | GPIO expander with SMSC BC-Link technology | 20 GPIOs | SMBus or SMSC BC-Link | 28 | QFN |
| ECE1099 | GPIO expander with Keyscan and SMSC BC-Link technology | 32 GPIOs, 23.8 Keyscan | SMBus or SMSC BC-Link | 40 | QFN |
| ECE1105 | GPIO expander with Keyscan, PS/2 and SMSC BC-Link technology | 40 GPIOs, 23.8 Keyscan, 2 PS/2 | SMBus or SMSC BC-Link | 48 | QFN |

PC SYSTEM & I/O CONTROLLERS: Desktop PC Products

| Product | Features | I/O Ports | System Interface | Pin | Packages |
|----------|--|---|------------------|-----|----------|
| SCH5636 | Desktop embedded controller, embedded SRAM for custom applications, close-loop fan control, PECE 3.0 support, temperature and voltage monitoring | FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 4 PWMs, 4 tachs, 60 GPIOs | LPC | 128 | QFP |
| SCH5627 | Desktop embedded controller, SMBus master for PCH temperature support, PECE 3.0 support, voltage monitoring | FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 4 PWMs, 4 tachs, 60 GPIOs | LPC | 128 | QFP |
| SCH5627P | Desktop embedded controller with "XLS5" power savings mode, SMBus master for PCH temperature support, PECE 3.0 support and voltage monitoring | FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 4 PWMs, 4 tachs, 60 GPIOs | LPC | 128 | QFP |
| SCH5147 | Super I/O controller, LPC hardware monitoring, PECE support, voltage monitoring | FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 3 PWMs, 3 tachs, 29 GPIOs | LPC | 128 | QFP |

PC SYSTEM & I/O CONTROLLERS: Server/Workstation Products

| Product | Features | I/O Ports | System Interface | Pin | Packages |
|---------|--|---|------------------|-----|----------|
| SCH4304 | Super I/O controller, X-Bus interface, RTC and auto fan control over SensorBus™ sensor interface | FDC, parallel, 2 serial, 8042 KB controller, SMBus, 3 PWMs, 8 tachs, 51 GPIOs | LPC | 128 | QFP |

PC SYSTEM & I/O CONTROLLERS: Embedded I/O Products

| Product | Features | I/O Ports | System Interface | Pin | Packages |
|-----------|---|---|------------------|-----|----------|
| SCH3112 | Super I/O controller with SMBus hardware and voltage monitoring | 2 serial, parallel, FDC, 8042 KB controller, 40 GPIOs | LPC | 128 | VTQFP |
| SCH3114 | Super I/O controller with SMBus hardware and voltage monitoring | 4 serial, parallel, FDC, 8042 KB controller, 40 GPIOs | LPC | 128 | VTQFP |
| SCH3116 | Super I/O controller with SMBus hardware and voltage monitoring | 6 serial, parallel, FDC, 8042 KB controller, 40 GPIOs | LPC | 128 | VTQFP |
| LPC47M10X | Super I/O controller, full legacy I/O support | 2 serial ports, parallel, 8042 KB controller, FDC, 37 GPIOs | LPC | 100 | QFP |
| SI010N268 | Super I/O controller for ISA or LPC designs, X-Bus interface for I/O memory and RWH emulation | 4 serial ports, parallel, FDC, WDT, 33 GPIOs | LPC/ISA | 128 | VTQFP |
| FDC37B78X | Super I/O controller, real-time clock, consumer IR, watchdog timer, 5V operation | 2 serial ports, parallel, FDC, 8042 KB controller, parallel IRQs, serial IRQs, 20 GPIOs | ISA | 128 | QFP |

CAPACITIVE TOUCH SENSORS

| Product | Input Channels | LED Drivers | Additional Features | Proximity Included | Interface | Pin | Packages |
|---------|----------------|-------------|---|--------------------|----------------------|-----|----------|
| CAP1114 | 14 | 11 | Slider, reset and alert, automatic recalibration, base capacitance compensation | ✓ | PC™/SMBus | 32 | QFN |
| CAP1188 | 8 | 8 | Reset, wake and alert, automatic recalibration, base capacitance compensation | ✓ | PC/SPI/SMSC BC-Link™ | 24 | QFN |
| CAP1128 | 8 | 2 | Reset, wake and alert, automatic recalibration, base capacitance compensation | ✓ | PC/SPI/SMSC BC-Link | 20 | QFN |
| CAP1166 | 6 | 6 | Reset, wake and alert, automatic recalibration, base capacitance compensation | ✓ | PC/SPI/SMSC BC-Link | 20 | QFN |
| CAP1126 | 6 | 2 | Reset, wake and alert, automatic recalibration, base capacitance compensation | ✓ | PC/SPI/SMSC BC-Link | 16 | QFN |
| CAP1133 | 3 | 3 | Alert, automatic recalibration, base capacitance compensation | ✓ | PC/SMBus | 10 | DFN |
| CAP1106 | 6 | 0 | Alert, automatic recalibration, base capacitance compensation | ✓ | PC/SMSC BC-Link | 10 | DFN |
| CAP1105 | 5 | 0 | Automatic recalibration, base capacitance compensation | ✓ | SPI | 10 | DFN |
| CAP1214 | 14 | 11 | Slider, reset and alert, automatic recalibration, base capacitance compensation, audio output | ✓ | PC/SMBus | 32 | QFN |

WIRELESS AUDIO: Highly Integrated Wireless Audio Baseband Processors

| Product | Additional Features | Frequency | Interface | Pin | Packages |
|---------|---|------------------------|--|-----|----------|
| DARR82 | Supports streaming of four wireless, uncompressed stereo audio channels, simultaneously or complete wireless 7.1 channel surround sound system, latency < 20 ms, point-to-multipoint transmission in home audio networking, SD & HD audio, excellent WiFi® and Bluetooth® coexistence, bi-directional audio support, control data channel up to 100 kbps, integrated MCU and SRC | Dualband 2.4/5.8GHz | PS, S/PDIF, PC™, SPI | 80 | LQFP |
| DARR83 | Supports streaming of four wireless, uncompressed stereo audio channels, simultaneously or complete wireless 7.1 channel surround sound system, latency < 20 ms, point-to-multipoint transmission in home audio networking, SD & HD audio, excellent WiFi and Bluetooth coexistence, bi-directional audio support, control data channel up to 100 kbps, integrated MCU and SRC, integrated audio class USB | Triband 2.4/5.2/5.8GHz | PS, S/PDIF, PC, SPI, USB 2.0 | 129 | FBGA |
| DARR84 | Supports streaming of two wireless, uncompressed stereo audio channels, simultaneously, supports a microphone input for voice applications, latency < 20 ms, point-to-multipoint transmission, SD & HD audio, excellent WiFi and Bluetooth coexistence using Wireless DMA™ technology, control data channel up to 100 kbps, integrated MCU and SRC, integrated codec and headphone amplifier for headset applications | Triband 2.4/5.2/5.8GHz | PS, S/PDIF, PC, SPI/Analog In | 129 | FBGA |
| DM870A | Networked media processor, highly-flexible interface processor well-suited for secure, real time encoding/decoding and processing of multi-channel media content, offering industry standard networking and I/O interfaces, enables rapid product development by OEMs and ODMs, API structure on the software packages allows for easy product customization resulting in a faster time to market. | 2.4GHz, 802.11 b/g | PS, S/PDIF, PC, USB, SD/SDIO, Ethernet, TFT for Display, SPI, CCIR 656 out | 320 | LFBGA |
| DM875 | Reduced feature set version of the DM870A with no LCD and video output capability, well-suited for customer applications that support standard software APIPlay® software package | 2.4GHz, 802.11 b/g | PS, S/PDIF, PC, USB, SD/SDIO, Ethernet, SPI, Display, SPI, CCIR 656 out | 320 | LFBGA |
| DM860A | Available as an alternative to DM870A with no WiFi capability. | - | - | 320 | LFBGA |

WIRELESS AUDIO: Reference Designs

| Product | Features | Frequency | Interface | Pin | Module Dimensions |
|----------|--|---------------------------|----------------------|-----------------------------|-----------------------|
| DWM862 | Uncompressed wireless digital audio transmitter OEM modules based on the DARR82 and DARR83 chipsets, supports up to four stereo audio streams, data encryption, bi-directional control messaging, automatic pairing, WLAN detection, automatic frequency allocation | Single-band, 5.8 GHz | PS, S/PDIF, PC™, SPI | 26-pin FFC Connector | 42 x 42 mm Square PCB |
| DWM883 | Uncompressed wireless digital audio transmitter OEM modules based on the DARR82 and DARR83 chipsets, supports up to four stereo audio streams, data encryption, bi-directional control messaging, automatic pairing, WLAN detection, automatic frequency allocation | Tri-band, 2.4/5.2/5.8 GHz | PS, S/PDIF, PC, SPI | 26-pin FFC Connector | 35 x 35 mm Square PCB |
| DWU883 | Uncompressed wireless digital audio transmitter OEM modules based on the DARR82 and DARR83 chipsets, supports up to four stereo audio streams, data encryption, bi-directional control messaging, automatic pairing, WLAN detection, automatic frequency allocation | Tri-band, 2.4/5.2/5.8 GHz | USB | - | 49 x 18 mm |
| DWPCIE83 | Uncompressed wireless digital audio transmitter OEM module based on the DARR82 chip, supports up to two stereo audio streams, data encryption, bi-directional control messaging, automatic pairing, WLAN detection, automatic frequency allocation, well-suited for receiver applications such as speakers | Tri-band, 2.4/5.2/5.8 GHz | USB | - | 30 x 26.8 mm |
| LC0382 | Uncompressed wireless digital audio transmitter OEM module based on the DARR82 chip, supports up to two stereo audio streams, data encryption, bi-directional control messaging, automatic pairing, WLAN detection, automatic frequency allocation, well-suited for receiver applications such as speakers | Single-band, 2.4 GHz | PS, S/PDIF, PC, SPI | 26-pin Pin Header Connector | 30 x 50 mm Rectangle |

WIRELESS AUDIO: Highly-Integrated Wireless Audio Modules

| Product | Features | Frequency | Interface | Pin | Module Dimensions |
|---------|---|-------------------------------|--|----------------------------------|-------------------|
| DWH584 | Uncompressed digital audio ready-to-go headset and headphone application reference design that supports audio and microphone inputs to process gaming and VOIP headsets/headphone applications, supports multiple RF bands making it well-suited to effectively manage the interference commonly associated with Wi-Fi®, Bluetooth® and microwave ovens, using our Wireless DNA architecture, integrates 3MB SPI Flash, enabling SMS2's KleeNet™ interoperability platform which allows for connectivity across products and brands | Tri-band 2.4/5/2.7/5.8 GHz | PS, S/PDIF, I ² C, SPI | - | 54 x 54.5 mm |
| DWLC84 | Uncompressed wireless digital audio transceiver OEM module based on the DWR824 chip, supports up to two stereo audio streams, data encryption, bi-directional control messaging, automatic pairing, WLAN detection, excellent Wi-Fi and Bluetooth coexistence using Wireless DNA architecture, well-suited for applications such as speakers and soundbars with subwoofers | Tri-band 2.4/5/2.7/5.8 GHz | PS, S/PDIF, I ² C, SPI | - | 30 x 42 mm |
| CX870 | Single-board, networked, media player module based on the DM870A media processors, enables fast product developments with Ethernet, USB and Wi-Fi connectivity, connects to standard legacy components in various audio, video/LCD and control formats. | 2.4GHz, 802.11 b/g | PS, S/PDIF, I ² C, USB, SD/SDIO, Ethernet, I ² C, I ² S, Display, SPI, CCIR B56 out | 64-pin PCB Low Density Connector | 46 x 85.8 mm |

WIRELESS AUDIO: Radio Frequency Digital Audio Transceivers

| Product | Features | Typical Sink Mode Power Consumption | PA Output Power | Audio | Qualification |
|---------|--|-------------------------------------|-----------------|-----------------------------|---------------|
| KLR3012 | Wireless streams, uncompressed, lossless audio up to 25m over robust 2.4 GHz radio link, multi-point to multi-point connectivity, strong Wi-Fi® coexistence, data channel for audio playback control, very low power consumption | 20 mW | 1.5 dBm | 16 bit, 44.1 Ks/s stereo | JEDEC |

SECURITY: Smart Card Readers and Encrypted Storage

| Product | Features | USB Interface | Pin | Packages |
|---------|---|---------------|-------|---------------|
| SEC1100 | USB single-port smart card reader with integrated self clock | USB 1.1 | 16 | QFN |
| SEC1200 | USB dual-port smart card reader with UART/SPI interface and integrated self clock | USB 1.1 | 24/48 | QFN |
| SEC1300 | USB keyboard and LCD controller with smart card reader and self clock (Device available for sampling) | USB 1.1 | 64 | QFN, Bare Die |
| SEC2410 | USB secure authentication and encrypted storage token with AES encryption, 35 MB/s transfer rates and 32-bit controller | USB 2.0 | 64/72 | QFN |
| SEC4410 | USB secure authentication and encrypted storage token with AES encryption, 35 MB/s transfer rates and 32-bit controller | HSC | 64/72 | QFN |

TERMS AND DEFINITIONS

| | | | | | |
|--------------------|--|-------------------------------|---|-------------------------|--|
| 1 KB | 1024 bytes | EBL | Enhanced Baseline | MSSP/SSP | Master/Synchronous Serial Port (I ² C & SPI Peripheral) |
| 1 Kw | 1024 words | EEPROM | Electrically Erasable Programmable Read Only Memory | mTouch | Proprietary Touch Sensing Technology |
| 18F/PIC18 | 16-bit instruction word: 75/83 instructions | EFT | Electrical Fast Transient | NCO | Numerically Controlled Oscillator |
| ADC | Analog to Digital Converter | EMC | Electromagnetic Compatibility | Op Amp | Operational Amplifier |
| AUSART | Addressable Universal Synchronous Asynchronous Receiver Transceiver | EMI | Electromagnetic Interference | PIC10/12/16/18 | 8-bit Core |
| BL/Baseline | 1.2-bit instruction word: 33 instructions | EMF/Enhanced Mid-Range | 1.4-bit instruction word: 49 instructions (denoted as PIC1XF1XXX) | PIC24 | 16-bit Core |
| BOR/PBOR | Brown Out Reset/Programmable Brown Out Reset | ESD | Electrostatic Discharge | PIC32 | 32-bit Core |
| CCP/ECPP | Controller Area Network Capture Compare PWM/Enhanced Capture Compare PWM | EUSART | Enhanced Universal Synchronous Asynchronous Receiver Transceiver | PLVD | Programmable Low Voltage Detect |
| CLC | Configurable Logic Cell | EWDT/WDT | Extended Watch Dog Timer/Watch Dog Timer | POR/POOR | Power ON Reset/Power ON/OFF Reset |
| COG | Complementary Output Generator | HV | High Voltage | PSMC | Programmable Switch Mode Controller |
| Comp | Capacitive Sensing implemented via Comparator | ICD | In-Circuit Debug | PWM | Pulse Width Modulation |
| CRC | Cyclical Redundancy Check | ICE | In-Circuit Emulation | RAM | Random Access Memory |
| CSP | Chip Scale Package | ICSP™ | In-Circuit Serial Programming™ | RTCC | Real-Time Clock Calendar |
| CSP | Chip Scale Package | IDE | Integrated Development Environment | SR Latch | Set Reset Latch |
| CTMU | mTouch™: Charge Time Measurement Unit | Inst Amp | Instrumentation Amplifier | SRAM | Static Random Access Memory |
| CVD | Charge Voltage Divide (Capacitive Sensing Implemented via ADC) | LCD | Liquid Crystal Display | SPI | Serial Peripheral Interface |
| CWG | Complementary Waveform Generator | LDO | Low Drop-Out voltage regulator | T1G | Timer 1 Gate |
| DAC | Digital-to-Analog Converter | LF | Low Power Flash | USART | Universal Synchronous Asynchronous Receiver Transceiver |
| DSM | Data Signal Modulator | M1FC/12C™ | Master Inter-Integrated Circuit bus/Inter-Integrated Circuit bus | USB | Universal Serial Bus |
| dsPIC® | 16-bit Core with DSP | MIPS | Million Instructions Per Second | USB (Full Speed) | 12 Mb/s Data Rate |
| | | MR/Mid-Range | 14-bit instruction word: 35 instructions | USB OTG | USB On-The-Go |
| | | | | XLP | nanoWatt XLP eXtreme Low Power Technology |

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 Package Options

NOR Flash Memory



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



32-lead PDIP (P2/PHE)
600 mil



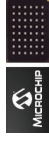
32-lead PLCC (PE/NHE)
0.452" x 0.552"



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



48-lead WFBGA (3T/MAQE)
4 x 6 x 0.73 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 0.5 mm



8-lead XSON (Q7/QX8E)
2 x 2 x 0.5 mm



6-lead UQFN (QU/QU6E)
3 x 1.6 x 0.5 mm



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

8051-based Microcontrollers



44-lead PLCC (T2/NJE)
0.652" x 0.652"

Packages are shown approximate size.

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