A Selection from Microchip's Broad Innovative Product Portfolio

PIC® 8-bit Microcontrollers - #1 in Unit Shipments Worldwide

PICmicro® Microcontroller Capability

Pins	Memory Types	Program Sizes (Bytes)	RAM (Bytes)	Data EEPROM	Package Types	Serial I/O	Analog	PWM	Capture/Compare	Timers
6	Flash	384 - 768	16 to 24	-	SOT23, PDIP	-	Comparator	-	-	8 bit
8	Flash	768 to 3,584	25 to 128	128 to 256	DIP, SOIC, DFN, MSOP	-	Comparator, 10-bit A/D	10 bit	8 & 16 bit	8 & 16 bit
	EPROM/OTP	768 to 3,584	25 to 128	-	DIP, SOIC, DFN	-	8-bit A/D	-	-	8 bit
	ROM	1,536	41	-	DIP, SOIC	-	-	-	-	8 bit
14	Flash	1,536 to 7,168	64 to 256	128 to 256	DIP, SOIC, TSSOP	RS-232, RS-485, LIN	Comparator, 10-bit A/D	10 bit	8 & 16 bit	8 & 16 bit
	EPROM/OTP	1,536	72	-	DIP, SOIC	-	-	-	-	8 bit
	ROM	-	-	-	-	-	-	-	-	
18/20	Flash	1,792 to 8,192	68 to 368	64 to 256	DIP, SOIC, SSOP, QFN	I²C™, SPI™, RS-232, RS-485	Comparator, 10-bit A/D	10 bit (1)	8 & 16 bit (up to 2)	
	EPROM/OTP	768 to 7,168	25 to 256	-	DIP, SOIC, SSOP	I²C, SPI, LIN	Comparator, 8/10/12-bit A/D	10 bit	8 & 16 bit (1)	8 & 16 bit (up to 2)
	ROM	768 to 3,072	25 to 96	-	DIP, SOIC, SSOP	-	Comparator	-	-	8 bit
28	Flash	3,072 to 65,536	72 to 3,840	128 to 1024	DIP, SOIC, SSOP, QFN	I²C, SPI, RS-232, RS-485, CAN	Comparator, 10-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 2)	8 & 16 bit
	EPROM/OTP	768 to 32,768	24 to 1,536	-	DIP, SOIC, SSOP	I²C, SPI, RS-232, RS-485	Comparator, 8/10-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 3)	
	ROM	3,072 to 7,168	72 to 192	-	DIP, SOIC, SSOP	I²C, SPI, RS-232	8-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 2)	8 & 16-bit
40/44	Flash	3,584 to 65,536	128 to 3,840	64 to 1024	DIP, SOIC, SSOP, QFN	I²C, SPI, RS-232, RS-485, CAN	Comparator, 10-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 2)	8 & 16 bit
	EPROM/OTP	3,584 to 32,768	128 to 1,536	-	DIP, TQFP, QFN	I²C, SPI, RS-232, RS-485	Comparator, 8/10-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 3)	
	ROM	7,168	192	-	DIP, TQFP	I²C, SPI, RS-232	8-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 2)	8 & 16-bit
64/68	Flash	32,768 to 131,072	2,048 to 3,840	1024	TQFP	I²C, SPI, RS-232, RS-485(2), CAN	Comparator, 10-bit A/D	10 bit (up to 5)	8 & 16 bit (up to 5)	8 & 16 bit
	EPROM/OTP*	7168 to 32,768	176 to 1,536	-	TQFP	I²C, SPI, RS-232, RS-485(2), CAN	Comparator, 8/10-bit A/D	10 bit (up to 2)	8 &16 bit	8 & 16 bit
80/84	Flash	32,768 to 131,072	2,048 to 3,840	1024	TQFP	I²C, SPI, RS-232, RS-485(2)	Comparator, 10-bit A/D	10 bit (up to 5)	8 & 16 bit (up to 5)	8 & 16 bit
	EPROM/OTP	16,384 to 32,768	678 to 1,536	-	TQFP	I²C, SPI, RS-232, RS-485(2), CAN	Comparator, 8/10-bit A/D	10 bit (up to 2)	8 & 16 bit (up to 2)	8 & 16 bit

*Segment LCD Controller

dsPIC® 16-bit Digital Signal Controllers

dsPIC® Digital Signal Controllers

Type	Pins	Flash KBytes	SRAM KBytes	EEPROM KBytes	16-bit Timers	Input Capture	PWM/Output Compare	A/D Features				Serial I/O				Family Features
								Pins	Bits	Ksps	S&Hs	UART	SPI	I²C	CAN	
Sensor Family	18-28	12 or 24	1/2	0/1	3	2	2	8/10	12	100	1	1/2	1	1	-	SOIC, PDIP Packages
General Purpose	40-80	24 to 144	2/4/6/8	1/2/4	3/5	2/4/8	2/4/8	13/16	12	100	1	2	1/2	1	0/2	CODEC interface - AC97/I²S
Motor Control/Power Conversion	28-80	12 to 144	0.5/1/2/8	1/4	3/5	4/8	2/4/8	6/9/16	10	500	4	1/2	1/2	1	0/2	Motor control PWMs & Quad Encoder Modules

Serial EEPROMs

Bus/Density	Maximum Bus Speed	Temperature (°C)	Packages							Pb-Free
			8MF	8SM	8SN	ST	8MS	SOT	Wafer	
I²C™ Compatible Interface - 1.8V - 5.5V										
128 bit-16K	400 kHz	-40C to +85/+125C			X	8	X	5	X	X
32K - 256K	1 MHz	-40C to +85/+125C		X	X	8	X		X	X
512K	1 MHz	-40C to +85/+125C	X	X		14			X	X
Microwire Compatible Interface - 1.8V - 5.5V										
1K - 16K	3 MHz	-40C to +85/+125C			X	8	X	6	X	X

Bus/Density	Maximum Bus Speed	Temperature (°C)	Packages							Pb-Free
			8MF	8SM	8SN	ST	8MS	SOT	Wafer	
SPI™ Compatible Interface - 1.8V - 5.5V										
4K	3 MHz	-40C to +85/+125C			X	8			X	X
8K - 16K	10 MHz	-40C to +85/+125C			X	8	X		X	X
32K - 64K	3 MHz	-40C to +85/+125C			X	8			X	X
256K	10 MHz	-40C to +85/+125C	X	X	X	X			X	X

Stand-alone Analog and Interface Products

POWER MANAGEMENT PRODUCTS

CPU/System Supervisors and Voltage Detectors

Typical Trip Voltages (V)	Pin Count	Typical Reset Pulsewidth (ms)	Typical Operating Current (uA)	Operating Voltage Range (V)
System Supervisors:				
10 options between 2.32V to 4.85V	3, 4, 8	50 to 700	6 to 50	1.0 to 5.5
Family Features: Crosses to most industry-standard supervisors. Active high or active low outputs, push-pull or open-drain outputs, manual reset pin **Packages:** SC-70, SOT-23, TO-92, SOT-143, SOIC				
Voltage Detectors:				
>20 options between 1.4V & 7.7V	3, 5	N/A	1	0.7 to 10.0
Family Features: Push-pull or open-drain outputs. Dual Vdets in one package. **Packages:** SOT-23, SOT-89, TO-92				

Low Dropout Linear Regulators (LDO)

Pin Count	Input Voltage Range (V)	Output Voltage Range (V)	Output Current (mA)	Typ. Act. Current (uA)	Typ. Dropout Volt. @ Max Iout (mV)	Typ. Out. Accuracy (%)
3 to 16	2.7 to 6.0, 10.0, -10.0	1.2 to 5.0, -3.0, -5.0, adjustable	50-4000 (depends on ext. transistor)	1.1 to 230	45 to 600	+/-0.4 to +/-2.0
Family Features: Shutdown, Reference bypass input, Error output, PCI compliant, External transistor, Negative/ Adjustable/Selectable output voltages **Packages:** SC-70, SOT23A, SOT223, SOT89, TO-92, MSOP, QSOP, SOIC, TO220, DDPAK, DFN						

Switching Regulators

Step-down type	Pins	VIN Range	VOUT Range	IOUT Range	Family Options
Regulators	8	2.7-5.5V	0.9-5.0V	500mA	Synchronous operation, UVLO, LDO mode
Controllers	5	1.8-10V	3.0/3.3/5.0V	1.0-2.0A	Low-power Shutdown mode, soft-start
Step-up type	**Pins**	**VIN Range**	**VOUT Range**	**IOUT Range**	**Family Options**
Regulators	5	0.9-10V	3.0/3.3/5.0V	80-140mA	Low-power Shutdown mode, feedback voltage sensing
Controllers	5,10	2-10V	3.3/5.0/ext V	0.3A-ext I	Low-power Shutdown mode, soft-start

Charge Pumps

Types	Pins	VIN Range	VOUT Range	IOUT Range	Family Options
Inverting or Doubling	5-8	1.5-18V	-VIN or 2VIN	20-100 mA	12-750 kHz switching, Low-power Shutdown mode
Multi-function	8	2.0-5.5V	+2VIN or -2VIN	10 mA	Doubles the positive or negative input voltage
Inverting & Doubling	8	2.4-5.5V	-2VIN	10 mA	12 kHz oscillator
Regulated	8	2.5-5.5V	-3.5V to +5.5V	20-120 mA	Adjustable/selectable 3.3V/5.0V, 650 kHz or 1 MHz oscillator

Power MOSFET Drivers

Pins	VIN Range	Peak Output Current	Input/Output Delay (ns)	Family Options
8-16	4.5-18V	0.5 to 9.0A	15-55/30-55	Inverting/non-Inverting, multiple packages, most offered in E/V temp. ranges, rugged construction.

Battery Management ICs

Type	Pins	Regulation Accuracy	# of Li-Ion / Li-Poly Cells	# of NiMH Cells	Charge Termination Method	Max Oper. Volt. (V)
Linear chargers	5, 8, 10, 16	0.5% & 1%	1 or 2	N/A	Min. current, safety timers	5.5 or 12
Type	**Pins**	**Accuracy**	**# of Li-Ion / Li-Poly Cells**	**# of NiMH Cells**	**Interface**	**Programmable I/Os**
Battery monitors	8, 28	1%	1 to 4	6 to 12	SMBus 1.1	1 or 8

MIXED SIGNAL PRODUCTS

Analog-to-Digital Converters (ADC)

Pins	Resolution	Speed (ksps)	Operating Voltage Range (V)	Operating Current	Temp. Range
5-16	10-13 bits	22 to 200	2.7 to 5.5V	175-550 µA	-40° to +125°C
Family Features: SAR, Dual Slope, Sigma Delta **Packages:** PDIP, SOIC, MSOP, TSSOP, QSOP, CerDIP, PLCC, PQFP, SOT-23A					

Digital Potentiometers

Pins	Res-olution	Resistance	Temp. Range (°C)
8-14	8 bit	10 k to 100 kohm	-40 to +125
Packages: PDIP, SOIC, TSSOP			

LINEAR PRODUCTS

Operational Amplifiers

Channels	Pins	GBWP	IQ Typ.	Operating Voltage Range (V)	VOS	Operating Temperature (°C)
1, 2, 4	5-16	14 kHz-10 MHz	600 nA-1.1 mA	1.4 to 5.5	150 µV-7 mV	-40 to +125
Family Features: Rail-to-Rail Input/Output **Packages**: PDIP, SOIC, MSOP, TSSOP, SOT-23A , SC-70						

Programmable Gain Amplifiers (SPI™ Controlled, Eight Gain Step 1,2,4,5,8,10,16,32 V/V)

Channels	Pins	GBWP	IQ Typ.	Operating Voltage Range (V)	VOS	Operating Temperature (°C)
1, 2, 6, 8	8-16	2 to 12 MHz	1.1 mA	2.5 to 5.5	275 µV	-40 to +85
Family Features: Rail-to-Rail Input/Output **Packages:** PDIP, SOIC, MSOP, TSSOP						

Comparators

# per pack.	Pins	Propagation Delay	IQ Typ.	Operating Voltage Range (V)	VOS	Operating Temperature (°C)
1, 2, 4	5-16	4 µs	1 µA	1.6 - 5.5	5 mV	-40 to +85
Packages: PDIP, SOIC, MSOP, TSSOP, QSOP, SOT23, SOT-23A						

THERMAL MANAGEMENT PRODUCTS

Temperature Sensors

Type	Pins	Typical Accuracy (°C)	Max Accuracy @ 25°C	Typical Operating Current (uA)	Operating Voltage Range (V)
Analog	3	0.5	2	35	2.5 to 5.5V
Packages: SOT-23					
Digital	5, 8	0.5	1 and 2	250	2.7 to 5.5V
Packages: DFN, MSOP, SOIC, SOT-23, TO-220					
Temp Switch	5, 8	0.5 and 1	3 and 5	17 to 270	2.7-5.5V and 4.5-18V
Packages: MSOP, PDIP, SOIC, SOT-23, TO-220					

Fan Managers and Predictive Failure Detectors

Type	Pins	Integrated Temperature Sensor	Extended Temperature Input	Fan Failure Detection	Operating Voltage Range (V)
Fan Manager	8, 10	X	X	X	2.8 or 3.0 to 5.5
Family Features: FanSense™ technology, auto-shutdown, over-temperature alert **Packages:** MSOP, PDIP, SOIC					
Failure Detector	6	N/A	N/A	X	3.0 to 5.5
Family Features: Programmable Alert threshold **Packages:** SOT-23					

INTERFACE PRODUCTS

CAN Communications

Type	Pin Count	CAN Version Supported	Temp. Range (°C)	Operating Voltage Range (V)
Stand-alone CAN peripherals	8, 14, 18, 20	2.0B Active	-40 to +125	2.7 to 5.5
Family Features: Includes industry-standard high speed CAN transceivers, CAN input/output expanders and stand-alone CAN controllers with SPI interface **Packages:** P, SO, TSSOP				

Infrared Communications

Type	Pin Count	IrDA® Speed (kbaud)	Temp. Range (°C)	Operating Voltage Range (V)
Stand-alone IR peripherals	8, 14, 18, 20	9.6, 115.2	-40 to +85	2.7 or 3.0 to 5.5

Serial Peripherals

Type	Pin Count	Bus Type	Temp. Range (°C)	Operating Voltage Range (V)
8-bit/16-bit port expander	18, 20, 28	I²C, SPI	-40 to +85	2.0 to 5.5
Family Features: Includes 3 HW address pins, interrupt input and 25 mA sink/source **Packages:** P, SO, SSOP, QFN				

LIN Transceiver

Pin Count	LIN Spec	Vreg Output Voltage	Max. Baud Rate	Temperature Range (°C)	Operating Voltage Range (V)
8	1.3	4.75 to 5.25V	20 Kbaud	-40 to +125	4.75 to 5.25
Family Features: Industry-standard pinout. Includes integrated voltage regulator **Packages:** P, SO					