

18/20-Pin, 8-Bit CMOS Microcontrollers with 10/12-Bit A/D

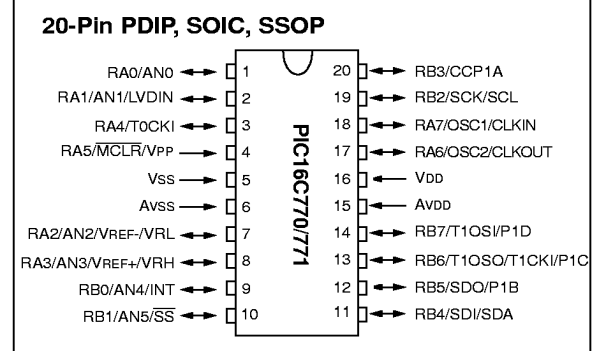
Microcontroller Core Features:

- High-performance RISC CPU
- Only 35 single word instructions to learn
- All single cycle instructions except for program branches which are two cycle
- Operating speed: DC - 20 MHz clock input
DC - 200 ns instruction cycle

Device	Memory		Pins	A/D Resolution	A/D Channels
	Program x14	Data x8			
PIC16C717	2K	256	18, 20	10 bits	6
PIC16C770	2K	256	20	12 bits	6
PIC16C771	4K	256	20	12 bits	6

- Interrupt capability (up to 10 internal/external interrupt sources)
- Eight level deep hardware stack
- Direct, indirect, and relative addressing modes
- Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Selectable oscillator options:
 - INTRC - Internal RC, dual speed (4MHz and 37KHz), with or without clock output
 - ER - External resistor, dual speed (user selectable frequency and 37KHz), with or without clock output
 - EC - External clock
 - HS - High speed crystal/resonator
 - XT - Crystal/resonator
 - LP - Low power crystal
- Low-power, high-speed CMOS EPROM technology
- In-Circuit Serial Programming™ (ISCP)
- Wide operating voltage range: 2.5V to 5.5V
- 15 I/O pins with control for:
 - Direction (15)
 - Port/analog input (6)
 - PORTB interrupt on change (8)
 - PORTB weak pull-up (8)
 - High voltage open drain (1)
- Commercial and Industrial temperature ranges
- Low-power consumption:
 - < 2 mA @ 5V, 4 MHz
 - 22.5 µA typical @ 3V, 32 kHz
 - < 1 µA typical standby current

Pin Diagram



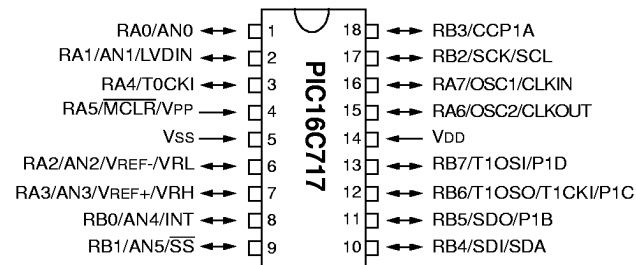
Peripheral Features:

- Timer0: 8-bit timer/counter with 8-bit prescaler
- Timer1: 16-bit timer/counter with prescaler, can be incremented during sleep via external crystal/clock
- Timer2: 8-bit timer/counter with 8-bit period register, prescaler and postscaler
- Enhanced Capture, Compare, PWM (ECCP) module
 - Capture is 16-bit, max. resolution is 12.5 ns
 - Compare is 16-bit, max. resolution is 200 ns
 - PWM max. resolution is 10-bit
 - Enhanced PWM
- Analog-to-Digital converter:
 - PIC16C717 10-bit resolution
 - PIC16C770/771 12-bit resolution
- On-chip absolute bandgap voltage reference generator
- Programmable Brown-out Detection (PBOD) circuitry for Brown-out Reset (BOR)
- Programmable Low-Voltage Detection (PLVD) circuitry
- Master Synchronous Serial Port (MSSP) with two modes of operation:
 - 3-wire SPI (supports all 4 SPI modes)
 - I²C compatible including master mode support

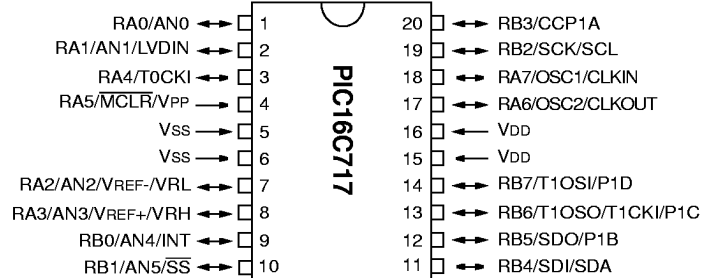
PIC16C717/770/771

PIN DIAGRAMS

18-Pin PDIP, SOIC



20-Pin SSOP



Key Features PICmicro™ Mid-Range Reference Manual (DS33023)	PIC16C717	PIC16C770	PIC16C771
Operating Frequency	DC - 20 MHz	DC - 20 MHz	DC - 20 MHz
Resets (and Delays)	POR, BOR, MCLR, WDT (PWRT, OST)	POR, BOR, MCLR, WDT (PWRT, OST)	POR, BOR, MCLR, WDT (PWRT, OST)
Program Memory (14-bit words)	2K	2K	4K
Data Memory (bytes)	256	256	256
Interrupts	10	10	10
I/O Ports	Ports A,B	Ports A,B	Ports A,B
Timers	3	3	3
Enhanced Capture/Compare/PWM (ECCP) modules	1	1	1
Serial Communications	MSSP	MSSP	MSSP
10-bit Analog-to-Digital Module	6 input channels	—	—
12-bit Analog-to-Digital Module	—	6 input channels	6 input channels
Instruction Set	35 Instructions	35 Instructions	35 Instructions