



PIC16F627A/628A

18/20-Pin, FLASH Microcontrollers with Comparators, CCP and USART Product Brief

High Performance RISC CPU

- Operating Speed:
 - DC - 20 MHz Clock Speed
 - DC - 200 ns Instruction Cycle Time
- Up to 2048 x 14 on-chip FLASH program memory
- 224 x 8 general purpose registers (SRAM)
 - 16 bytes of common SRAM
- 128 x 8 on-chip EEPROM data memory
- Interrupt capability
- Eight levels of hardware stack
- Direct, Indirect and Relative addressing modes

Peripheral Features

- TMR0: 8-bit real-time clock/counter with 8-bit programmable prescaler
- TMR1: 16-bit timer/counter with external crystal/clock capability
- TMR2: 8-bit timer/counter with 8-bit period register, prescaler and postscaler
- Capture, Compare, PWM Module (CCP)
- Universal Synchronous/Asynchronous Receiver/Transmitter (USART)
- 2 analog comparators with input multiplexing
- Selectable comparator output
- Programmable reference voltage for comparators
- Brown-out detection circuitry for Brown-out Reset (BOR)
- Multiplexed $\overline{\text{MCLR}}$ pin
- Weak pull-ups on PORTB
- 15 I/O pins with individual direction control
- 1 input only pin
- High current source/sink for direct LED drive

Special Microcontroller Features

- Program and Data memory code protection
- Power-on Reset (POR)
- Power-up Timer (PWRT)
- Oscillator Start-up Timer (OST)
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- 10 interrupts
- In-Circuit Serial Programming™ (via two pins)
- In-Circuit Debugger (ICD) available
- Power saving SLEEP mode
- Oscillator Features
 - EEPROM configuration bits for oscillator options
 - 4 MHz precision Internal Oscillator (INTOSC)
 - External RC Oscillator mode (RC)
- Low Power Features
 - 37 kHz nominal Internal Oscillator (INTOSC)
 - Low Current Timer1 Oscillator
 - Low Current Watchdog Timer
- Low Voltage Programming (LVP)
- XT, HS, LP Crystal/Resonator modes
- 18-pin packages PDIP, SOIC
- 20-pin package SSOP
- 28-pin package QFN

CMOS Technology

- Wide operating voltage range
 - Industrial: 2.0V to 5.5V
 - Extended: 3.0V to 5.5V
- Wide temperature range:
 - Industrial: -40°C to 85°C
 - Extended: -40°C to 125°C
- Low power consumption

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FIGURE 1: PIN DIAGRAMS

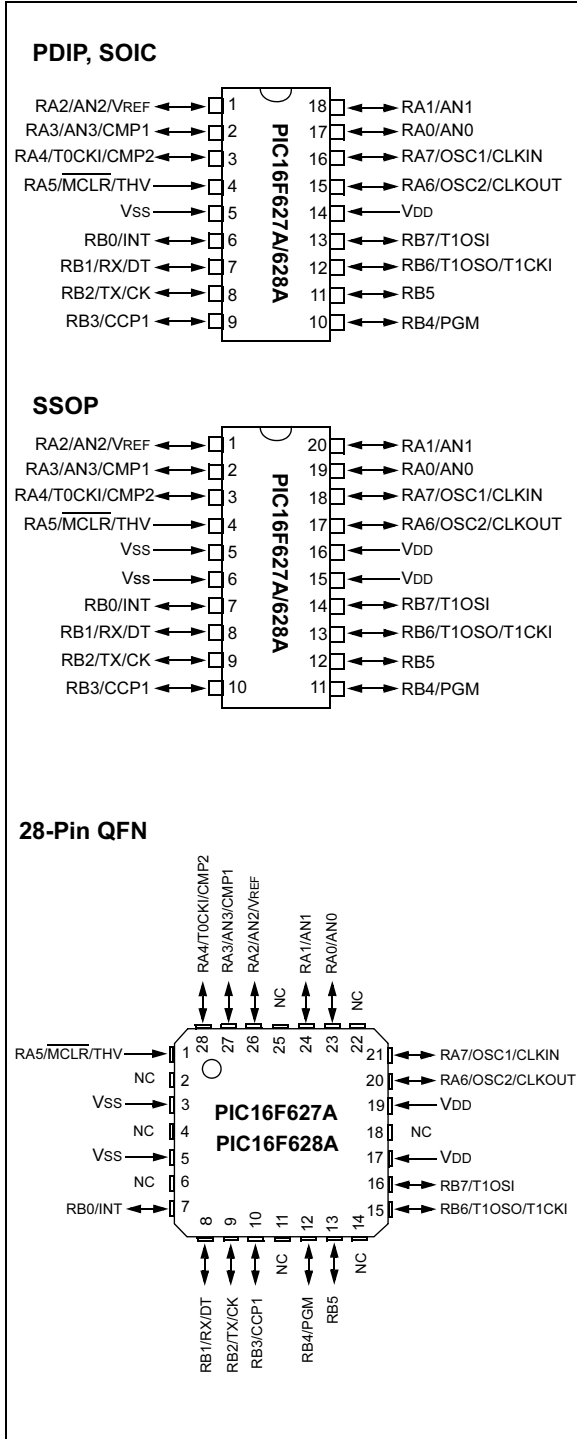


TABLE 1: DEVICE OVERVIEW

Device	Memory			VDD Range
	FLASH	Data	EEPROM Data	
PIC16F627A	1024x14	224x8	128x8	3.0V - 5.5V
PIC16F628A	2048x14	224x8	128x8	3.0V - 5.5V
PIC16LF627A	1024x14	224x8	128x8	2.0V - 5.5V
PIC16LF628A	2048x14	224x8	128x8	2.0V - 5.5V

Note the following details of the code protection feature on PICmicro® MCUs.

- The PICmicro family meets the specifications contained in the Microchip Data Sheet.
- Microchip believes that its family of PICmicro microcontrollers is one of the most secure products of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the PICmicro microcontroller in a manner outside the operating specifications contained in the data sheet. The person doing so may be engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as “unbreakable”.
- Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our product.

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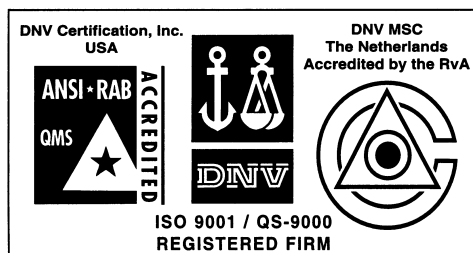
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