

28/40/44-Pin, 8-Bit CMOS Flash Microcontroller Product Brief

High-Performance RISC CPU:

- Only 35 instructions to learn:
 - All single-cycle instructions except branches
- Operating speed:
 - DC – 20 MHz oscillator/clock input
 - DC – 200 ns instruction cycle
- Up to 8K x 14 words of Flash Program Memory
- Up to 368 bytes of data memory (RAM)
- Interrupt capability
- 8-level deep hardware stack
- Direct, Indirect and Relative Addressing modes
- Processor read access to program memory
- Pinout compatible to other 28/40-pin PIC16CXXX and PIC16FXXX microcontrollers

Special Microcontroller Features:

- Precision Internal Oscillator:
 - 16 MHz or 500 kHz operation
 - Factory calibrated to $\pm 1\%$, typical
 - Software tunable
 - Software selectable $\div 1$, $\div 2$, $\div 4$ or $\div 8$ divider
- Power-Saving Sleep mode
- Industrial and Extended temperature range
- Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Brown-out Reset (BOR)
 - Selectable between two trip points
 - Disable in Sleep option
- Multiplexed Master Clear with pull-up/input pin
- Programmable code protection
- High-Endurance Flash cell:
 - 10,000 write Flash endurance (typical)
 - Flash retention: > 40 years
- Wide operating voltage range (1.8V-5.5V)
- On chip 3.2V Regulator
 - External capacitor pin can be used as I/O in lower voltage (1.8V-3.6V) applications.

Low-Power Features:

- Standby Current:
 - 100 nA @ 2.0V, typical
- Operating Current:
 - 6.0 μ A @ 32 kHz, 2.0V, typical
 - 54 μ A @ 1 MHz, 2.0V, typical
- Low-Power Watchdog Timer Current:
 - 1.0 μ A @ 2.0V, typical

Peripheral Features:

- Up to 35 I/O pins and 1 input-only pin:
 - High-current source/sink for direct LED drive
 - Interrupt-on-pin change
 - Individually programmable weak pull-ups
- In-Circuit Serial Programming™ (ICSP™) via two pins
- A/D Converter:
 - 8-bit resolution and up to 14 channels
 - Can operate during Sleep
 - Selectable 1.024/2.048/4.096V voltage reference
- Timer0: 8-bit timer/counter with 8-bit programmable prescaler
- Enhanced Timer1
 - Dedicated low-power 32 kHz oscillator
 - 16-bit timer/counter with prescaler
 - External Gate Input mode with toggle and single shot modes
 - Interrupt on gate completion
- Timer2: 8-bit timer/counter with 8-bit period register, prescaler and postscaler
- Two Capture, Compare, PWM modules
 - 16-bit Capture, max. resolution 12.5 ns
 - 16-bit Compare, max. resolution 200 ns
 - 10-bit PWM, max. frequency 20 kHz
- Addressable Universal Synchronous Asynchronous Receiver Transmitter (AUSART)
- Synchronous Serial Port (SSP)
 - SPI (Master/Slave)
 - I²C™ (Slave) with Address Mask

PIC16F72X

Device	Program Memory Flash (words)	SRAM (bytes)	I/Os	Interrupts	8-bit A/D (ch)	AUSART	CCP	Timers 8/16-bit
PIC16F722	2048	128	25	12	11	Yes	2	2/1
PIC16F723	4096	192	25	12	11	Yes	2	2/1
PIC16F724	4096	192	36	12	14	Yes	2	2/1
PIC16F726	8192	368	25	12	11	Yes	2	2/1
PIC16F727	8192	368	36	12	14	Yes	2	2/1

FIGURE 1: 28-PIN PDIP/SOIC/SSOP DIAGRAM FOR PIC16F722/723/726

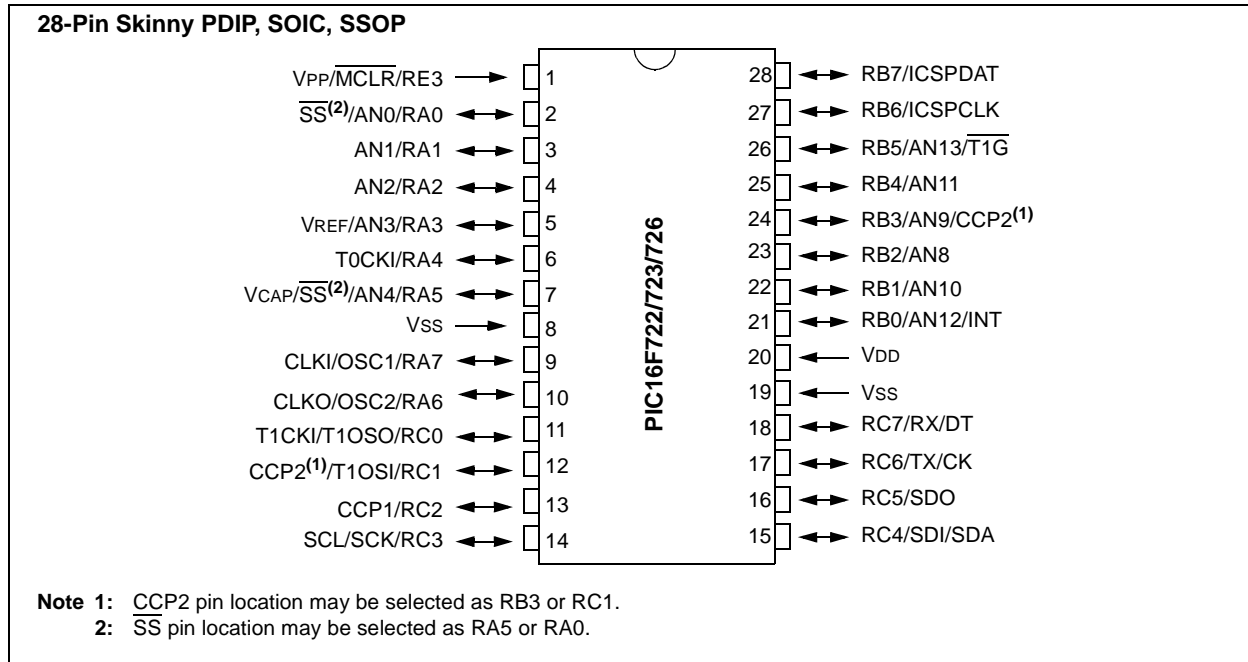
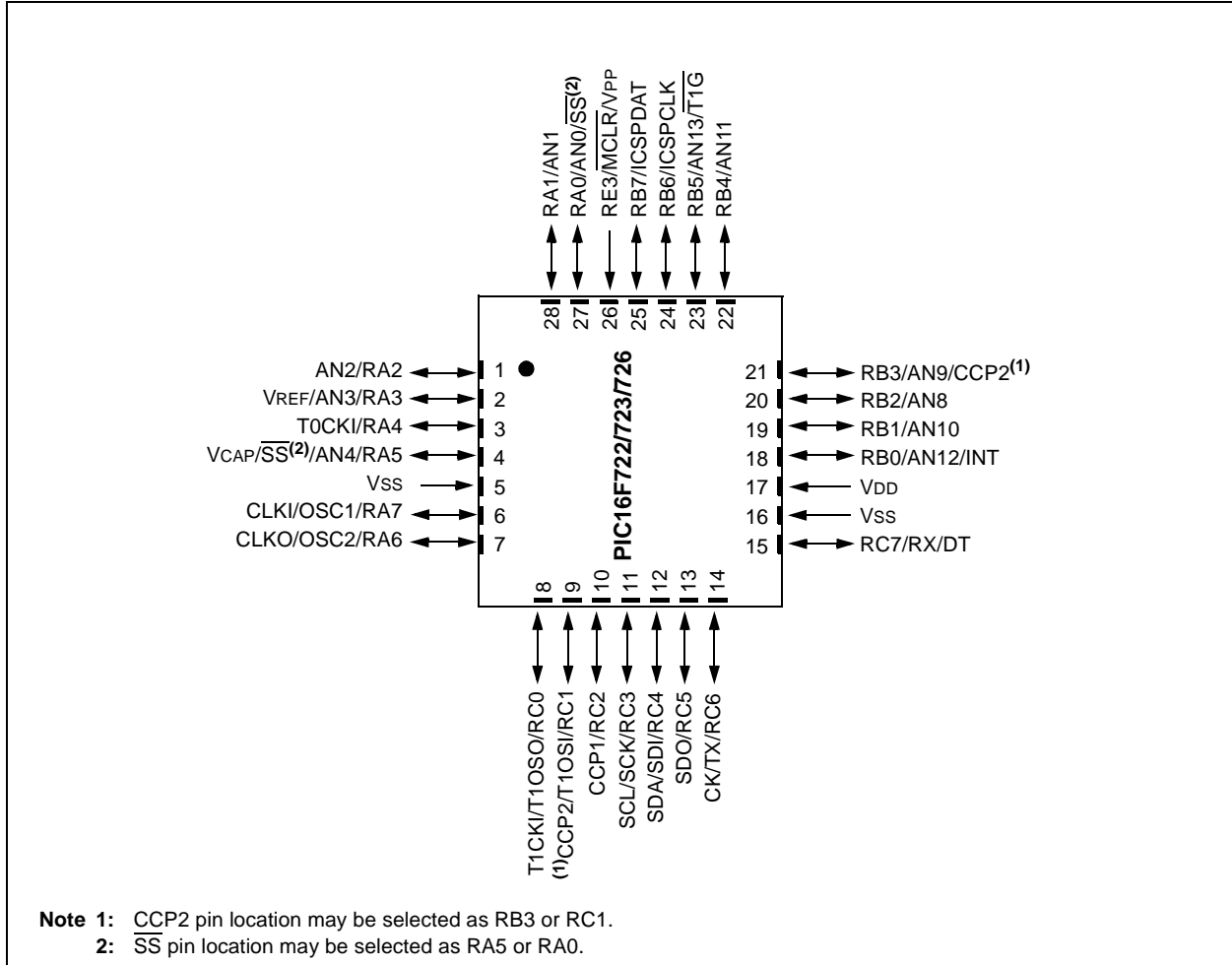


FIGURE 2: 28-PIN QFN (6X6 MM) PACKAGE DIAGRAM FOR PIC16F722/723/726



PIC16F72X

FIGURE 3: 40-PIN PDIP PACKAGE DIAGRAM FOR PIC16F724/727

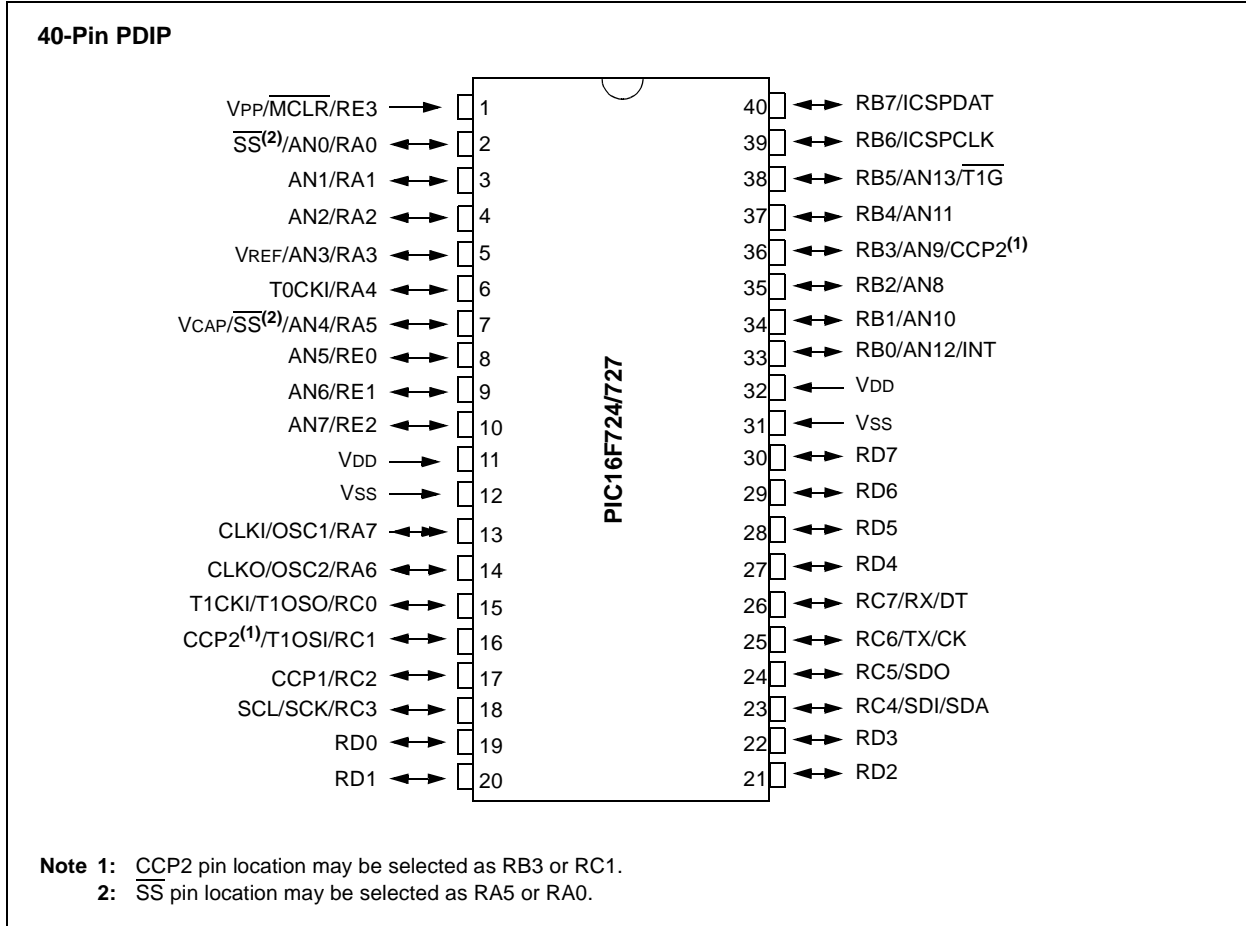
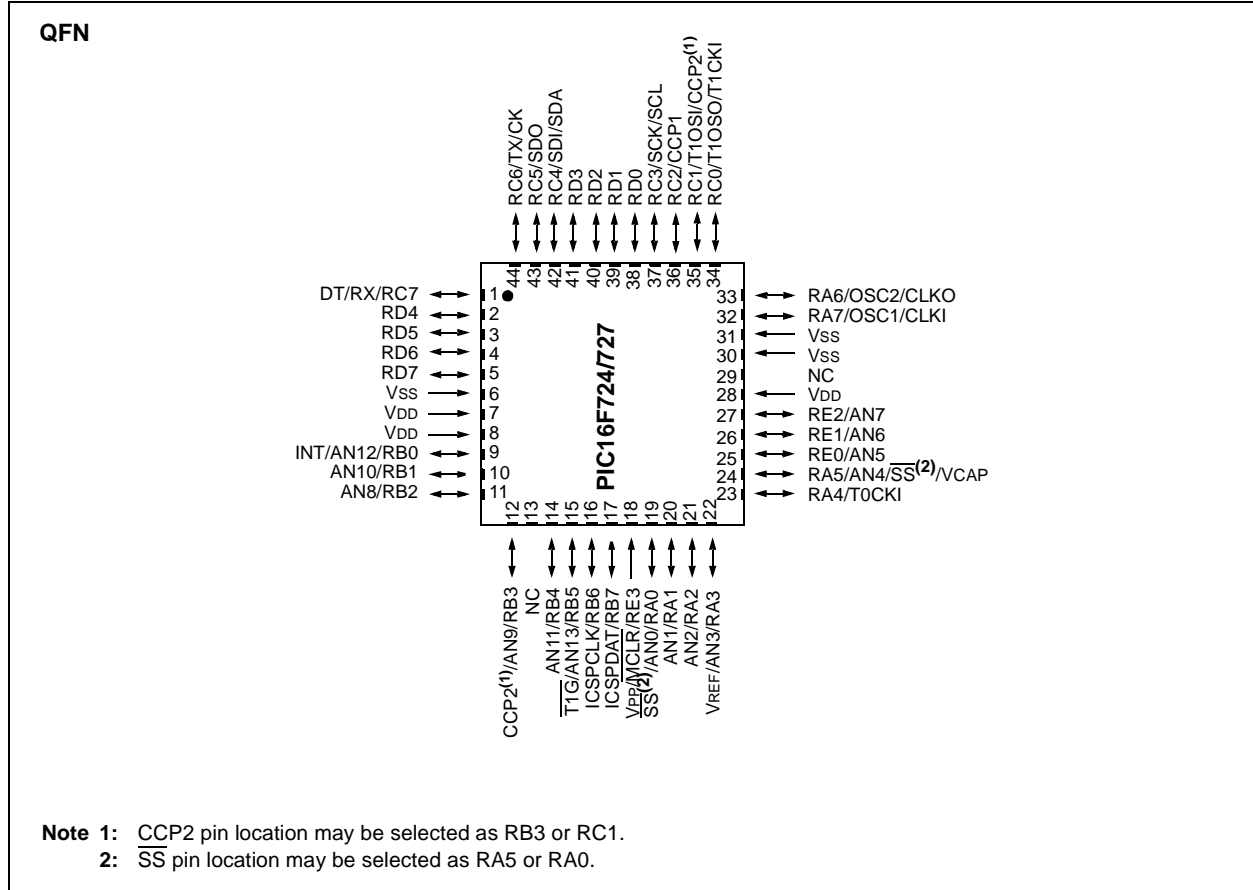
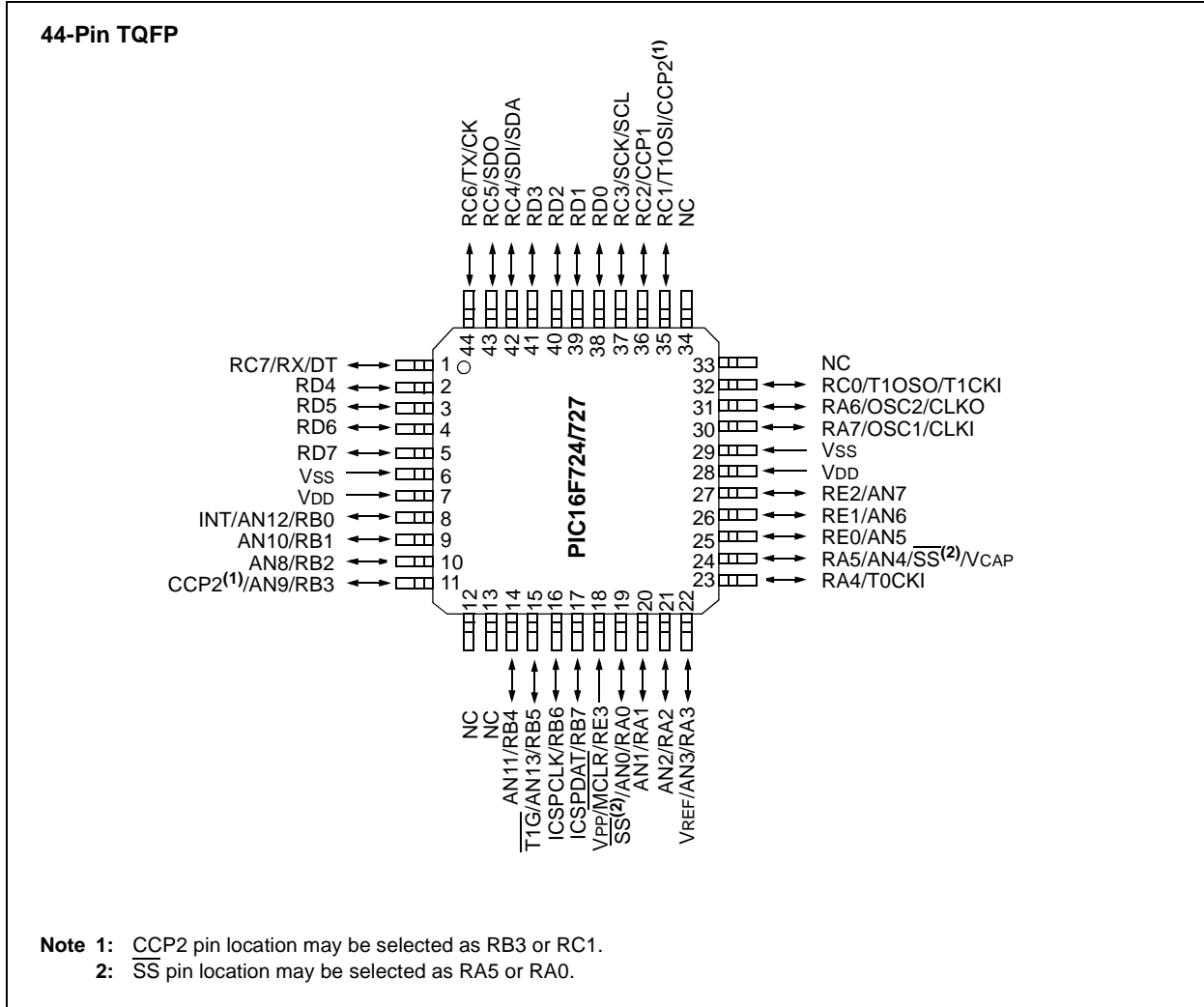


FIGURE 4: 44-PIN QFN (8X8 MM) PACKAGE DIAGRAM FOR PIC16F724/727



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FIGURE 5: 44-PIN TQFP PACKAGE DIAGRAM FOR PIC16F724/727



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