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#### What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "<u>Embedded -</u> <u>Microcontrollers</u>"

#### Details

| 2010                       |  |
|----------------------------|--|
| Product Status             | Active   |
| Core Processor             | PIC  |
| Core Size                  | 8-Bit  |
| Speed                      | 32MHz  |
| Connectivity               | I <sup>2</sup> C, LINbus, SPI, UART/USART                                  |
| Peripherals                | Brown-out Detect/Reset, POR, PSMC, PWM, WDT                                |
| Number of I/O              | 24   |
| Program Memory Size        | 7KB (4K x 14)  |
| Program Memory Type        | FLASH  |
| EEPROM Size                | 256 x 8  |
| RAM Size                   | 512 x 8  |
| Voltage - Supply (Vcc/Vdd) | 2.3V ~ 5.5V  |
| Data Converters            | A/D 11x12b; D/A 1x8b   |
| Oscillator Type            | Internal   |
| Operating Temperature      | -40°C ~ 85°C (TA)  |
| Mounting Type              | Surface Mount  |
| Package / Case             | 28-SSOP (0.209", 5.30mm Width)   |
| Supplier Device Package    | 28-SSOP  |
| Purchase URL               | https://www.e-xfl.com/product-detail/microchip-technology/pic16f1783t-i-ss |
|                            |  |

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### 28-Pin 8-Bit Advanced Analog Flash Microcontroller Product Brief

#### High-Performance RISC CPU:

- Only 49 Instructions
- Operating Speed:
  - DC 32 MHz clock input
  - DC 125 ns instruction cycle
- Interrupt Capability with Automatic Context Saving
- 16-Level Deep Hardware Stack with optional Overflow/Underflow Reset
- Direct, Indirect and Relative Addressing modes:
- Two full 16-bit File Select Registers (FSRs)
- FSRs can read program and data memory

#### Extreme Low-Power (XLP) Management:

- Standby Current (PIC16LF1782/1783):
  - 50 nA @ 1.8V, typical
- Watchdog Timer Current (PIC16LF1782/1783):
  500 nA @ 1.8V, typical
- Timer1 (32.768 kHz Real-Time Clock) Oscillator Current (PIC16LF1782/1783):
  - 500 nA @ 1.8V, typical
- Operating Current (PIC16LF1782/1783):
   4 μA @ 32 kHz, 1.8V, typical
- Operating Current (PIC16LF1782/1783):
  - 150 μA @ 1 MHz, 1.8V, typical

#### **Memory Features:**

- Up to 4 KW Flash Program Memory:
  - Self-programmable under software control
  - Programmable code protection
  - Programmable write protection
- 256 Bytes of Data EEPROM
- Up to 512 Bytes of RAM

#### **High-Performance PWM Controller:**

- Two Programmable Switch Mode Controller (PSMC) modules:
  - Digital and/or analog feedback control of PWM frequency and pulse begin/end times
  - 16-bit Period, Duty Cycle and Phase
  - 16 ns clock resolution
  - Supports single PWM, complimentary, pushpull and three-phase modes of operation
  - Dead-band control with 8-bit counter
  - Auto-shutdown and restart
  - Leading and falling edge blanking
  - Burst mode

#### **Analog Peripheral Features:**

- Analog-to-Digital Converter (ADC):
  - Fully differential 12-bit converter
  - 100 ksps conversion rate
  - 11 single-ended channels
  - 5 differential channels
  - Positive and negative reference selection
- 8-bit Digital-to-Analog Converter (DAC):
  - Output available externally
  - Positive and negative reference selection
  - Internal connections to comparators, op amps, Fixed Voltage Reference (FVR) and ADC
- Three High-Speed Comparators:
  - 30 ns response time
  - Rail-to-rail inputs
  - Software selectable hysteresis
  - Internal connection to op amps, FVR and DAC
- Two Operational Amplifiers:
  - Rail-to-rail inputs/outputs
  - High/Low selectable Gain Bandwidth Product
  - Internal connection to DAC and FVR
- Fixed Voltage Reference (FVR):
  - 1.024V, 2.048V and 4.096V output levels
  - Internal connection to ADC, Comparators and DAC

#### **Digital Peripheral Features:**

- Timer0: 8-Bit Timer/Counter with 8-Bit Programmable Prescaler
- Enhanced Timer1:
  - 16-bit timer/counter with prescaler
  - External Gate Input mode
  - Dedicated low-power 32 kHz oscillator driver
- Timer2: 8-bit timer/counter with 8-bit period register, prescaler and postscaler
- Two Capture/Compare/PWM modules (CCP):
  - 16-bit Capture, maximum resolution 12.5 ns
  - 16-bit Compare, max resolution 31.25 ns
  - 10-bit PWM, max frequency 32 kHz
- Master Synchronous Serial Port (SSP) with SPI and I<sup>2</sup>C<sup>™</sup> with:
  - 7-bit address masking
  - SMBus/PMBus™ compatibility
- Enhanced Universal Synchronous Asynchronous Receiver Transmitter (EUSART):
  - RS-232, RS-485 and LIN compatible
  - Auto-baud detect
  - Auto-wake-up on start

#### **Oscillator Features:**

- Operate up to 32 MHz from Precision Internal Oscillator:
  - Factory calibrated to ±1%, typical
  - Software selectable frequency range from 32 MHz to 31 kHz
- 31 kHz Low-Power Internal Oscillator
- 32.768 kHz Timer1 Oscillator:
  - available as system clockLow power RTC
- External Oscillator Block with:
  - 4 crystal/resonator modes up to 32 MHz using 4x PLL
- 3 external clock modes up to 32 MHz
- 4x Phase-Locked Loop (PLL)
- Fail-Safe Clock Monitor:
  - Detect and recover from external oscillator failure
- Two-Speed Start-up:
- Minimize latency between code execution and external oscillator start-up

#### I/O Features:

- Up to 24 I/O Pins and 1 Input-only Pin:
  - High current sink/source for LED drivers
  - Individually programmable interrupt-onchange pins
  - Individually programmable weak pull-ups
  - Individual input level selection
  - Slew rate control on selected output pins
  - Open drain outputs on selected output pins

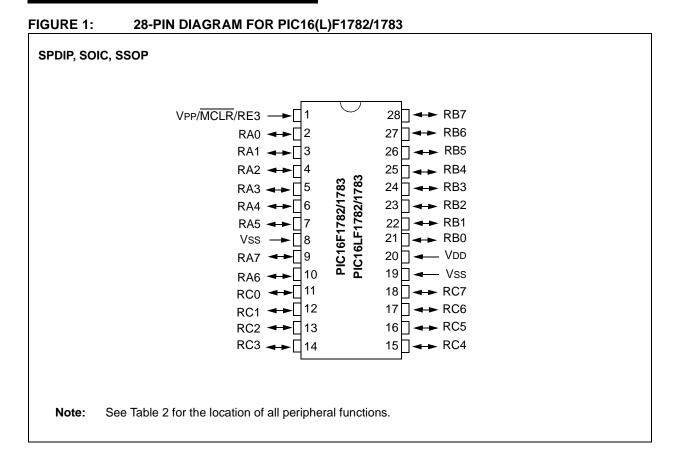
#### **General Microcontroller Features:**

- Power-Saving Sleep mode
- Power-on Reset (POR)
- Power-up Timer (PWRT)
- Oscillator Start-up Timer (OST)
- Brown-out Reset (BOR) with Selectable Trip Point
- Extended Watchdog Timer (WDT)
- In-Circuit Serial Programming<sup>™</sup> (ICSP<sup>™</sup>)
- In-Circuit Debug (ICD)
- Enhanced Low-Voltage Programming (LVP)
- Operating Voltage Range:
  - 1.8V to 3.6V (PIC16LF1782/1783)
  - 2.3V to 5.5V (PIC16F1782/1783)

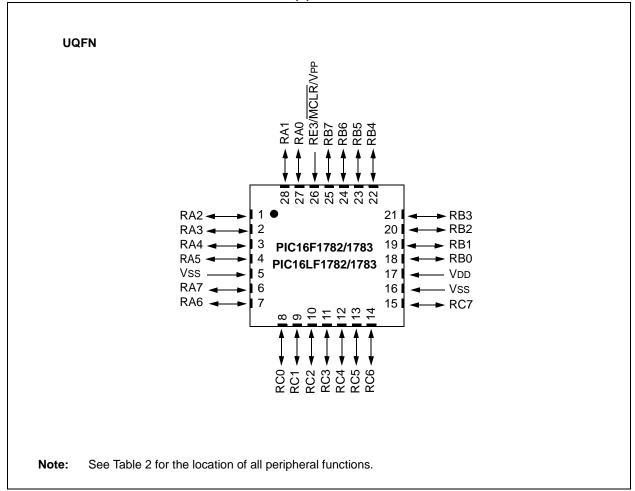
| Device      | Program Memory<br>Flash<br>(words) | Data EEPROM<br>(bytes) | SRAM<br>(bytes) | I/OS | 12-bit A/D (ch) | Comparators | Operational<br>Amplifiers | 8-bit DAC | Timers<br>8/16-bit | Programmable Switch<br>Mode Controllers<br>(PSMC) | ССР | EUSART | MSSP<br>(I <sup>2</sup> C™/SPI) |  |
|-------------|------------------------------------|------------------------|-----------------|------|-----------------|-------------|---------------------------|-----------|--------------------|---|-----|--------|---------------------------------|--|
| PIC16F1782  | 2048                               | 256                    | 256             | 25   | 11              | 3           | 2                         | 1         | 2/1                | 2   | 2   | 1      | 1                               |  |
| PIC16LF1782 | 2048                               | 256                    | 256             | 25   | 11              | 3           | 2                         | 1         | 2/1                | 2   | 2   | 1      | 1                               |  |
| PIC16F1783  | 4096                               | 256                    | 512             | 25   | 11              | 3           | 2                         | 1         | 2/1                | 2   | 2   | 1      | 1                               |  |
| PIC16LF1783 | 4096                               | 256                    | 512             | 25   | 11              | 3           | 2                         | 1         | 2/1                | 2   | 2   | 1      | 1                               |  |

#### TABLE 1: PIC16(L)F1782/1783 FAMILY TYPES

**Note:** Pin details are subject to change.







| No.         No. <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th> (</th> <th><u>(</u>-)</th> <th>02/11/00)</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>  |     |                          |            |     |                       |            |                      | (                     | <u>(</u> -) | 02/11/00)            |                     |  |  |           |         |                |
|---|-----|--------------------------|------------|-----|-----------------------|------------|----------------------|-----------------------|-------------|----------------------|---------------------|--|--|-----------|---------|----------------|
| RA1         3         28         AN1-<br>AN1         C2IN1-<br>C2IN1-<br>C2IN1-<br>C3IN1-         OPATOUT<br>C2IN1-<br>C3IN1-                 IOC         Y            RA2         4         1         AN2-<br>NA2-         CIIN1-<br>C2IN1-<br>C2IN1-<br>C3IN1-          DAC10UT1<br>DAC1VREP            IOC         Y            RA3         5         2         AN3-<br>VREF40         CIIN1+<br>C2IN1-          DAC1VREP            IOC         Y            RA4         6         3          C1OUT         OPATIN+            IOC         Y            RA5         7         4         AN4+         C2OUT10             IOC         Y         OSC22           RA5         7         4         AN4+         C2OUT10              IOC         Y         OSC22           RA7         8         6         -         VREF40   | 0/I | 28-Pin SPDIP, SOIC, SSOP | 28-Pin QFN | ADC | Reference             | Comparator | Operation Amplifiers | 8-bit DAC             | Timers      | PSMC                 | ССР                 | EUSART                                 | dSSM                                     | Interrupt | dn-IIn4 | Basic          |
| RA2         AN1-         CCIN1-<br>CSIN1-         DACTOUTS                                10C         Y            RA3         5         2         AN3-<br>AN3-         VREF-0         CIUIT          DACTVREF            10C         Y            RA5         7         4         AN4-<br>AN4-          COUTO         OPATIN          TOCKI           ICC         Y            RA6         10         7         4         AN4+          COUTO         OPATIN            ICC         Y          CLUIN         RA3         S   | RA0 | 2                        | 27         |     | _                     | C2IN0-     | _                    | _                     |             | _                    | —                   |  | —  | IOC       | Y       | _              |
| ANZ-         C2100+<br>C31N0+         DAC1VREF-         Image: Case of the case                         | RA1 | 3                        | 28         |     | _                     | C2IN1-     | OPA1OUT              | _                     |             | -                    |                     | -                                      |  | IOC       | Y       | _              |
| RAM         6         3         -         C         OPA11N         -         TOCKI         - <t< td=""><td>RA2</td><td>4</td><td>1</td><td></td><td>VREF-</td><td>C2IN0+</td><td>_</td><td>DAC1OUT1<br/>DAC1VREF-</td><td>_</td><td>_</td><td>—</td><td>_</td><td>—</td><td>IOC</td><td>Y</td><td>—</td></t<>   | RA2 | 4                        | 1          |     | VREF-                 | C2IN0+     | _                    | DAC1OUT1<br>DAC1VREF- | _           | _                    | —                   | _                                      | —  | IOC       | Y       | —              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  |     |                          |            |     | V <sub>REF+</sub> (1) |            |                      | DAC1VREF+             |             |                      | _                   |  | _  |           |         | —              |
| RA6         10         7         -         -         C20UT <sup>(1)</sup> -         <   | RA4 | 6                        | 3          | —   |                       |            |                      | _                     | T0CKI       | _                    | —                   |  | —  |           |         |                |
| RA7         9         6         —         Merf <sup>(1)</sup> —         —         —         PSMC1CLK<br>PSMC2CLK         —         —         ICC VI<br>OSCI1<br>PSMC2CLK         —         —         ICC VI<br>PSMC2CLK         Y         OSCI1<br>OSCI1<br>PSMC2IN         CCPI <sup>(0)</sup> —         —         ICC VI<br>PSMC2IN         Y         —         INT/<br>PSMC2IN         Y         —         INT/<br>OSCI1<br>PSMC2IN         Y         —         INT/<br>PSMC2IN         Y         —         INT/<br>OSCI1<br>PSMC2IN         Y         —         INT/<br>PSMC2IN         Y         —         INT/<br>PSMC2IN         Y         —         INT/<br>OSCI1<br>PSMC2IN         Y         …         INT/<br>PSMC2IN         Y         …         INT/<br>PSMC2IN         Y         … <t< td=""><td></td><td></td><td></td><td></td><td>_</td><td></td><td>OPA1IN-</td><td>_</td><td>_</td><td>_</td><td>_</td><td>_</td><td>SS</td><td></td><td></td><td>_</td></t<>  |     |                          |            |     | _                     |            | OPA1IN-              | _                     | _           | _                    | _                   | _                                      | SS                                       |           |         | _              |
| RB0         21         18         AN12+<br>AN12+         -         CLKN           RB0         21         18         AN12+<br>AN10+         -         C2IN1+         -         -         PSMC1IN<br>PSMC2IN         CCP1 <sup>(1)</sup> -         -         INT/<br>PSMC2IN         Y         -           RB1         22         19         AN10+<br>AN10+         -         C1IN3-<br>C2IN3-<br>C3IN3-         OPA2UT         -         -         -         -         -         -         IOC         Y         -           RB2         23         20         AN8+         -         -         OPA2IN+         -         -         -         -         -         -         IOC         Y         CLKR           RB3         24         21         AN8+         -         -         OPA2IN+         -         -         -         -         -         IOC         Y         -           RB4         25         22         AN11+         -         C3IN1+         -         -         -         -         -         -         IOC         Y         -           RB5         26         23         AN13+         -         C3OUT         -         -         TO  |     |                          |            |     | -                     | C2OUT'''   | _                    | -                     | _           | _                    | —                   |  | —  |           |         | CLKOUT         |
| RBI         22         19         AN12-<br>AN10-<br>AN10-<br>C2103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3103-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C3102-<br>C4104   <  | RA7 | 9                        | 6          |     | VREF+ <sup>(1)</sup>  | _          | -                    | _                     | _           | PSMC1CLK<br>PSMC2CLK | —                   |  | _  | IOC       |         | OSC1/<br>CLKIN |
| Image: Normal and the | RB0 | 21                       | 18         |     | —                     | C2IN1+     | _                    | _                     |             |                      | CCP1 <sup>(1)</sup> |  | —  |           | Y       | —              |
| RB3         24         21         AN9+<br>AN9+         C (1M2-<br>C3IN2+<br>C3IN2+         OPA2IN+<br>C3IN2+<br>C3IN2+         -         -         -         CCP2(1)         -         -         IOC         Y         -           RB4         25         22         AN11+<br>AN11+         -         C3IN1+         -         -         -         -         -         -         IOC         Y         -           RB5         26         23         AN13+<br>AN13-         -         C3OUT         -         -         -         -         -         SD0(1)         IOC         Y         -           RB6         27         24         -         -         -         -         -         -         TX(1)         SD1(1)         IOC         Y         ICSPCLK           RB7         28         25         -         -         -         -         DAC1OUT2         -         -         RX(1)         SCK(1)         IOC         Y         ICSPCLK           RC0         11         8         -         -         -         -         T10S0         PSMC1B         CCP2(1)         -         IOC         Y         -           RC1         12         9         -<   | RB1 | 22                       | 19         |     | —                     | C2IN3-     | OPA2OUT              | _                     |             | -                    |                     | -                                      |  | IOC       | Y       | _              |
| AN9-         C2IN2-<br>C3IN2-<br>C3IN2-<br>C3IN2+         C2IN2-<br>C3IN2+<br>C3IN2+         C2IN2-<br>C3IN2+         C2IN2+         C3IN1+         -         C         CINC         Y         -           RB5         26         23         AN13+         -         C3OUT         -         -         T1G         -         -         SD(f)         IOC         Y         -           RB6         27         24         -         -         -         -         -         T1G         -         -         SD(f)         IOC         Y         ICSPDLK           RB7         28         25         -         -         -         DAC10UT2         -         -         RX(f)         SC(f)         IOC         Y         ICSPDLK           RC0         11         8         -         -         -         T1OSI         PSMC18         CCP2(f)         -         -         IOC         Y         -           RC1         12         9         -         -  | RB2 | 23                       | 20         |     | —                     | —          | OPA2IN-              | —                     | -           | —                    | —                   | _                                      | —  | IOC       | Y       | CLKR           |
| AN11-         An11- <th< td=""><td>RB3</td><td>24</td><td>21</td><td></td><td>—</td><td>C2IN2-</td><td>OPA2IN+</td><td>_</td><td> </td><td>_</td><td>CCP2<sup>(1)</sup></td><td>_</td><td> </td><td>IOC</td><td>Y</td><td>—</td></th<>  | RB3 | 24                       | 21         |     | —                     | C2IN2-     | OPA2IN+              | _                     |             | _                    | CCP2 <sup>(1)</sup> | _                                      |  | IOC       | Y       | —              |
| RB6         27         24         —         —         —         —         —         —         —         TX(1)         SD(1)         IOC         Y         ICSPCLK           RB7         28         25         —         —         —         —         —         —         —         —         TX(1)         SD(1)         IOC         Y         ICSPCLK           RB7         28         25         —         —         —         —         DAC10UT2         —         —         RX(1)         SC(1)         IOC         Y         ICSPCLK           RC0         11         8         —         —         —         —         DAC10UT2         —         —         RX(1)         SC(1)         IOC         Y         ICSPDAT           RC1         12         9         —         —         —         —         T1OSI         PSMC18         CCP2(1)         —         —         IOC         Y         —           RC2         13         10         —         —         —         —         TOSI         PSMC10         CCP1(1)         —         —         IOC         Y         —           RC3         14         11 <td>RB4</td> <td>25</td> <td>22</td> <td></td> <td>—</td> <td>C3IN1+</td> <td>_</td> <td>—</td> <td>_</td> <td>-</td> <td>—</td> <td>_</td> <td>—</td> <td>IOC</td> <td>Y</td> <td>—</td>  | RB4 | 25                       | 22         |     | —                     | C3IN1+     | _                    | —                     | _           | -                    | —                   | _                                      | —  | IOC       | Y       | —              |
| RB7         28         25            DAC1OUT2           RX(1)         SCK(1)         IOC         Y         ICSPDAT           RC0         11         8            RC0         PSMC1A           RC1         SCK(1)         IOC         Y         ICSPDAT           RC1         12         9            RC1         CCP2(1)           IOC         Y            RC2         13         10            PSMC1C         CCP2(1)           IOC         Y            RC3         14         11             PSMC1D           IOC         Y            RC3         14         11             PSMC1D           IOC         Y            RC4         15         12         -            PSMC1F           SD(1)         IO   | RB5 | 26                       | 23         |     | —                     | C3OUT      |                      |                       | T1G         |                      | —                   |  |  | IOC       | Y       | —              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | RB6 | 27                       | 24         |     | _                     | _          |                      |                       |             |                      | _                   | CK <sup>(1)</sup>                      | SDA <sup>(1)</sup>                       | IOC       | Y       |                |
| RC1       12       9          T1CKI         IOC       Y          RC2       13       10           T1OSI       PSMC1B       CCP2 <sup>(1)</sup> IOC       Y          RC2       13       10            PSMC1C       CCP1 <sup>(1)</sup> IOC       Y          RC3       14       11           PSMC1D         IOC       Y          RC4       15       12           PSMC1E         SDI <sup>(1)</sup> IOC       Y          RC4       15       12           PSMC1E         SDI <sup>(1)</sup> IOC       Y          RC5       16       13           PSMC1F         SDI <sup>(1)</sup> IOC       Y          RC6       17       14  |     |                          | 25         | —   | —                     | —          | _                    | DAC1OUT2              | _           | _                    | —                   | RX <sup>(1)</sup><br>DT <sup>(1)</sup> | SCK <sup>(1)</sup><br>SCL <sup>(1)</sup> |           |         | ICSPDAT        |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | RC0 | 11                       | 8          | —   | —                     | —          | —                    | _                     | T1CKI       | PSMC1A               | —                   | _                                      | —  | IOC       |         | —              |
| RC3       14       11       -       -       -       -       -       PSMC1D       -       -       SCK <sup>(1)</sup> SCL <sup>(1)</sup> IOC       Y       -         RC4       15       12       -       -       -       -       -       PSMC1D       -       -       SCK <sup>(1)</sup> SCL <sup>(1)</sup> IOC       Y       -         RC4       15       12       -       -       -       -       -       PSMC1E       -       -       SDI <sup>(1)</sup> SDA <sup>(1)</sup> IOC       Y       -         RC5       16       13       -       -       -       -       PSMC1F       -       -       SDI <sup>(1)</sup> SDA <sup>(1)</sup> IOC       Y       -         RC6       17       14       -       -       -       -       PSMC2A       -       TX <sup>(1)</sup> SDA <sup>(1)</sup> -       IOC       Y       -         RC7       18       15       -       -       -       -       -       PSMC2B       -       RX <sup>(1)</sup> SDC       Y       -         RE3       1       26       -       -       -       -       -       -       -       -       VDD       VPP         VDD       20       1  | RC1 | 12                       | 9          | —   | —                     | —          |                      | _                     | T1OSI       | PSMC1B               |                     |  | —  | IOC       | Y       | —              |
| RC4       15       12            PSMC1E         SCL <sup>(1)</sup> IOC       Y          RC5       16       13           PSMC1F         SDI <sup>(1)</sup> IOC       Y          RC6       17       14           PSMC2A        TX <sup>(1)</sup> IOC       Y          RC6       17       14           PSMC2A        TX <sup>(1)</sup> IOC       Y          RC7       18       15            PSMC2B        RX <sup>(1)</sup> IOC       Y          RE3       1       26              VDD       VDD       20       17            VDD       VDD       VDD       16         VDD       VDD       VDD       VDD       VDD       <  | RC2 | 13                       | 10         | —   | —                     | —          | _                    | _                     | —           | PSMC1C               | CCP1 <sup>(1)</sup> | —                                      |  | IOC       | Y       | —              |
| RC5       16       13       -       -       -       -       -       PSMC1F       -       -       SDA <sup>(1)</sup> IOC       Y       -         RC6       17       14       -       -       -       -       -       PSMC2A       -       TX <sup>(1)</sup> -       IOC       Y       -         RC6       17       14       -       -       -       -       PSMC2A       -       TX <sup>(1)</sup> -       IOC       Y       -         RC7       18       15       -       -       -       -       -       PSMC2B       -       RX <sup>(1)</sup> -       IOC       Y       -         RE3       1       26       -       -       -       -       -       -       -       -       VPP         VDD       20       17       -       -       -       -       -       -       -       -       VDD         VSS       8, 5, -       -       -       -       -       -       -       -       -       VSS         19       16       -       -       -       -       -       -       VSS       S       -       -<  |     |                          |            | _   | _                     | _          | —                    | —                     | _           |                      |                     | _                                      | SCL <sup>(1)</sup>                       |           |         | —              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  |     |                          |            | —   | —                     | —          | —                    | _                     | _           |                      | —                   | —                                      | SDA <sup>(1)</sup>                       |           |         | —              |
| RC7       18       15       -       -       -       -       -       -       PSMC2B       -       RX <sup>(1)</sup><br>DT <sup>(1)</sup> -       IOC       Y       -         RE3       1       26       -       -       -       -       -       -       PSMC2B       -       RX <sup>(1)</sup><br>DT <sup>(1)</sup> -       IOC       Y       -         RE3       1       26       -       -       -       -       -       -       -       IOC       Y       MCLR/<br>VPP         VDD       20       17       -       -       -       -       -       -       -       VDD         VSS       8, 5, -       -       -       -       -       -       -       -       VDD         Vss       8, 5, -       -       -       -       -       -       -       -       VSs  | RC5 | 16                       | 13         | —   | —                     | —          |                      | _                     |             | PSMC1F               | —                   |  | SDO <sup>(1)</sup>                       | IOC       | Y       | —              |
| RE3       1       26       -       -       -       -       -       -       -       -       IOC       Y       MCLR/<br>VPP         VDD       20       17       -       -       -       -       -       -       -       VDD         VSS       8, 5, 19       16       -       -       -       -       -       -       -       VSS   |     |                          |            | —   | —                     | —          | —                    | —                     | —           |                      | _                   | CK <sup>(1)</sup>                      | _  |           |         | —              |
| VDD         20         17         -         -         -         -         -         -         -         VDD         VDD         20         17         -         -         -         -         -         -         VDD         -         -         -         VDD         -         -         -         VDD         -         -         -         -         VDD         -         -         -         -         VDD         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         VDD         -         -         -         -         -         -         - <td></td> <td></td> <td></td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>_</td> <td>_</td> <td>PSMC2B</td> <td>—</td> <td>DT<sup>(1)</sup></td> <td></td> <td></td> <td></td> <td></td>  |     |                          |            | —   | —                     | —          | —                    | _                     | _           | PSMC2B               | —                   | DT <sup>(1)</sup>                      |  |           |         |                |
| Vss 8, 5, Vss   |     |                          |            | _   | _                     | _          | _                    | _                     | _           | _                    | _                   | _                                      | _  | IOC       | Y       | VPP            |
|   |     |                          |            | —   | —                     | —          | —                    | _                     | —           | _                    | _                   | —                                      | _  | —         | —       |                |
| Note 1. Dis functions can be applicated to one of two pin logations via poftware  |     | 19                       | 16         |     | —                     | _          | _                    | _                     |             | —                    | —                   | —                                      | —  | —         | _       | Vss            |

TABLE 2: 28-PIN ALLOCATION TABLE (PIC16(L)F1782/1783)

**Note 1:** Pin functions can be assigned to one of two pin locations via software.

NOTES:

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