



# PIC18F1XK50

## 20-Pin High-Performance, Flash Microcontrollers with USB

### Universal Serial Bus Features:

- USB V2.0 Compliant SIE
- Low Speed (1.5 Mb/s) and Full Speed (12 Mb/s)
- Supports Control, Interrupt, Isochronous and Bulk Transfers
- Supports up to 16 Endpoints (8 bidirectional)
- 256-Byte Dual Port RAM (DPRAM) for USB
- On-Chip USB Transceiver

### Flexible Oscillator Structure:

- Four Crystal modes, including High-Precision PLL for USB
- Two External Clock modes, up to 48 MHz
  - EC Low, Medium, and High-Power modes
- Internal 31 kHz Oscillator
- HF-INTOSC 16 MHz
- Secondary Oscillator using Timer1 @ 32 kHz
- Fail-Safe Clock Monitor:
  - Allows for safe shutdown if any clock stops

### Peripheral Features:

- Three Programmable External Interrupts
- Seven Interrupt-on-Change (IOC) Configurable for Rising, Falling or Both Rising/Falling Edge Detection
- One Enhanced Capture/Compare/PWM (ECCP) module with Auto-Shutdown and PWM Steering
- Master Synchronous Serial Port (MSSP) module supporting SPI mode, and I<sup>2</sup>C™ mode with Address Mask Capability
- Enhanced Universal Synchronous Asynchronous Receiver Transmitter (EUSART) module:
  - Supports RS-485, RS-232 and LIN compatibility
  - Auto-wake-up on Start bit
  - Auto-Baud Detect

### Analog Features:

- 2 Analog Rail-to-Rail Comparator modules with:
  - Programmable rail-to-rail reference voltage (% of VDD) or 1.024V (nominal) band gap reference
  - Comparator inputs and outputs externally accessible
  - SR Latch mode
- 10-Bit, 9-Channel Analog-to-Digital (A/D) Converter module

### Special Microcontroller Features:

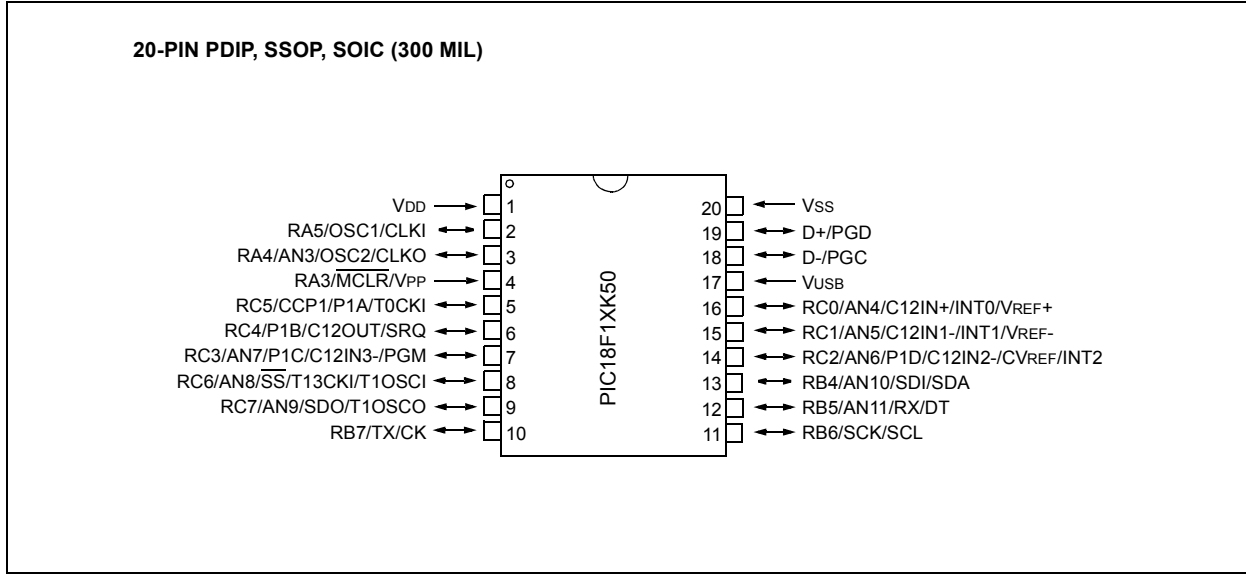
- Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Programmable Brown-out Reset (BOR)
  - Software enable feature
  - Configurable shutdown in Sleep
  - Low/high-power configurable
  - Four selectable trip points
- Self-Reprogrammable under Software Control
- Programmable Code Protection
- Single-Supply In-Circuit Serial Programming™ (ICSP™) via Two Pins
- Operating Voltage Range of 1.8V to 5.5V
- Priority Levels for Interrupts
- Low-Power, High-Speed CMOS Flash Technology

TABLE 1: DEVICE OVERVIEW

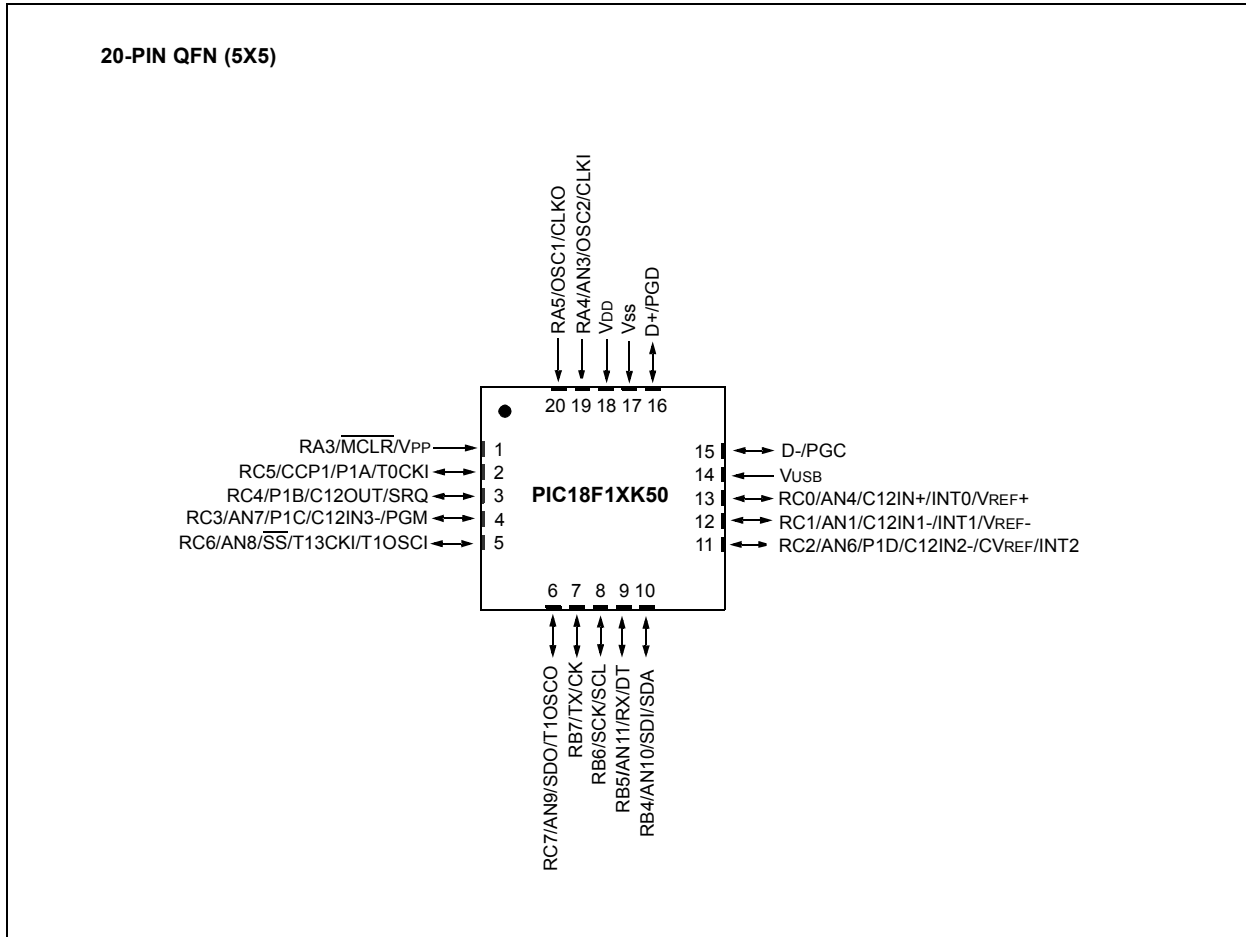
| Device      | Flash Program Memory (words) | SRAM (bytes) | DPRAM (bytes) | I/O | 10-Bit A/D (ch) | ECCP | MSSP | EUSART | Comparators | Timers (8/16-bit) | USB |
|-------------|------------------------------|--------------|---------------|-----|-----------------|------|------|--------|-------------|-------------------|-----|
| PIC18F13K50 | 4K                           | 256          | 256           | 15  | 9               | 1    | 1    | 1      | 2           | 1/3               | Yes |
| PIC18F14K50 | 8K                           | 512          | 256           | 15  | 9               | 1    | 1    | 1      | 2           | 1/3               | Yes |

# PIC18F1XK50

**FIGURE 1: PIC18F1XK50 20-PIN PDIP (300 MIL), SSOP AND SOIC**



**FIGURE 2: PIC18F1XK50 20-PIN QFN**



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