**FEATURES**

**Highlights**

<table>
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<th>Program Memory</th>
<th>Data Memory</th>
<th>I/O</th>
<th>A/D Channel</th>
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<td>1024</td>
<td>68</td>
<td>13</td>
<td>4</td>
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**High-Performance RISC-like CPU**
- Only 35 single word instructions to learn
- All single cycle instructions (200 ns) except for program branches which are two-cycle
- Operating speed:
  - DC to 20 MHz clock input
  - DC to 200 ns instruction cycle
- 1024 x 14 on-chip EPROM program memory
- 68 x 8 general purpose registers (SRAM)
- Interrupt capability
- Eight levels deep hardware stack
- Direct, indirect and relative addressing modes

**Peripheral Features**
- 13 I/O pins with individual direction control
- High current sink/source for direct LED drive
- 8-bit A/D converter with four input channels
  - 16 μs conversion time/channel
- TMRO: 8-bit timer/counter with 8-bit programmable prescaler

**Special Microcontroller Features**
- Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Brown-out protection
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Programmable code protection
- Power saving SLEEP mode
- Selectable oscillator options
- Serial in-system programming (via two pins)

**PACKAGE TYPES**

**PDIP, SOIC, Windowed CERDIP**

**SSOP**

**CMOS Technology**
- Low-power, high-speed CMOS EPROM technology
- Fully static design
- Wide operating voltage range
  - (3.0 V to 6.0 V)
- Commercial, Industrial and Automotive Temperature Ranges
- Low-power consumption
  - <2.0 mA @ 5.0 V, 4 MHz
  - 15 μA typical @ 3.0 V, 32 kHz
  - <1.0 μA typical standby current @ 3.0 V