

CMOS single-chip 8-bit microcontrollers

87C51FA/87C51FB

DESCRIPTION

The 87C51FA and 87C51FB Single-Chip 8-Bit Microcontrollers are manufactured in an advanced CMOS process and are derivatives of the 80C51 microcontroller family. The 87C51FA/FB has the same instruction set as the 80C51.

This device provides architectural enhancements that make it applicable in a variety of applications for general control systems. The 87C51FA contains $8k \times 8$ memory, and the 87C51FB contains $16k \times 8$ memory. They both contain a volatile 256×8 read/write data memory, four 8-bit I/O ports, three 16-bit timer/event counters, a Programmable Counter Array (PCA), a multi-source, two-priority-level, nested interrupt structure, an enhanced UART and on-chip oscillator and timing circuits. For systems that require extra capability, the 87C51FA/FB can be expanded using standard TTL compatible memories and logic.

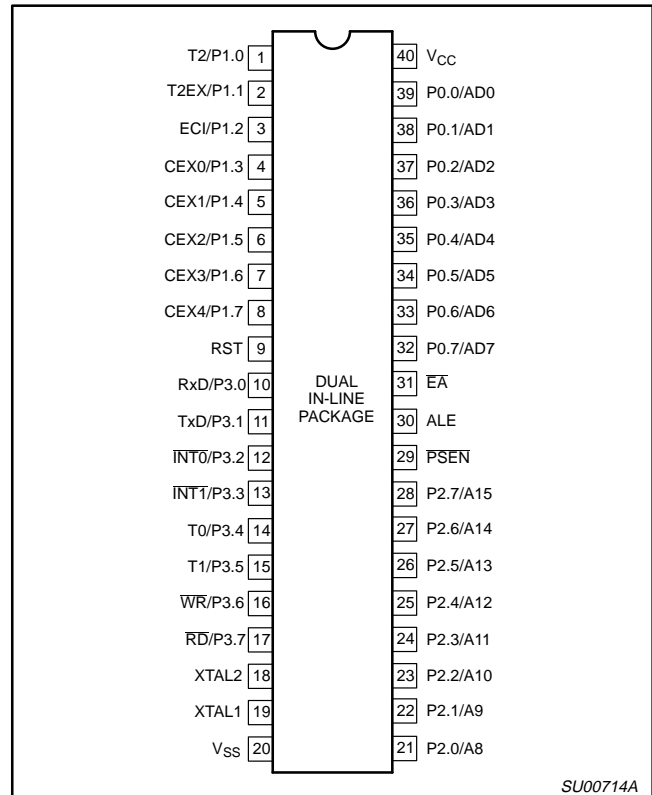
Its added features make it an even more powerful microcontroller for applications that require pulse width modulation, high-speed I/O and up/down counting capabilities such as motor control. It also has a more versatile serial channel that facilitates multiprocessor communications.

See 83C51FA/83C51FB/83C51FC/80C51FA datasheet for ROM and ROMless devices.

FEATURES

- 80C51 central processing unit
- 87C51FA: $8k \times 8$ EPROM
87C51FB: $16k \times 8$ EPROM
 - expandable externally to 64k bytes
 - Quick Pulse programming algorithm
 - Two level program security system
- 256×8 RAM, expandable externally to 64k bytes
- Three 16-bit timer/counters
 - T2 is an up/down counter
- Programmable Counter Array (PCA)
 - High speed output
 - Capture/compare
 - Pulse Width Modulator
 - Watchdog Timer
- Four 8-bit I/O ports
- Full-duplex enhanced UART
 - Framing error detection
 - Automatic address recognition
- Power control modes
 - Idle mode
 - Power-down mode
- Once (On Circuit Emulation) Mode
- Five package styles
- OTP package available

PIN CONFIGURATIONS



SU00714A