

### Analog Peripherals

#### Two Comparators

- Programmable hysteresis and response time
- Configurable to generate interrupts or reset
- Low current (<0.5  $\mu$ A)

#### POR/Brown-Out Detector

### On-Chip Debug

- On-chip debug circuitry facilitates full speed, non-intrusive in-system debug (no emulator required)
- Provides breakpoints, single stepping, watchpoints
- Inspect/modify memory, registers, and stack

Superior performance to emulation systems using ICE-chips, target pods, and sockets

### Supply Voltage: 2.7 to 3.6 V

- Typical operating current: 5 mA at 25 MHz
- Typical: 11  $\mu$ A at 32 kHz
- Target stop mode current: <0.1  $\mu$ A

### Temperature Range: -40 to +85 °C

### High-Speed 8051 $\mu$ C Core

- Pipelined instruction architecture; executes 70% of instructions in 1 or 2 system clocks
- Up to 25 MIPS throughput with 25 MHz system clock
- Expanded interrupt handler

### Memory

- 1280 bytes data RAM (1024 + 256)
- 16 kB Flash; in-system programmable in 512-byte sectors (512 bytes are reserved)

### Digital Peripherals

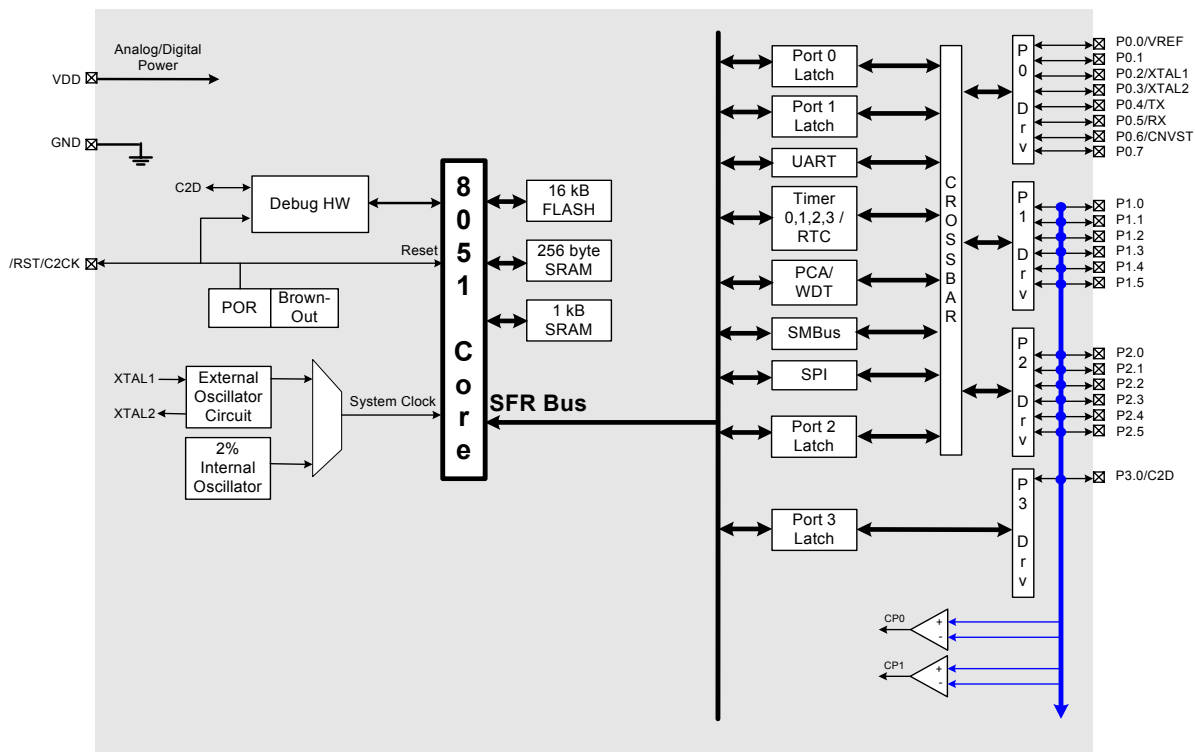
- 21 port I/O; all are 5 V tolerant
- 1 Enhanced Hardware SMBus™ (I2C™ compatible) and UART serial port
- Programmable 16-bit counter/timer array with three capture/compare modules, WDT
- 5 general-purpose 16-bit counter/timers
- Dedicated watchdog timer; bidirectional reset
- Real-time clock mode for maximum power saving

### Clock Sources

- Internal oscillator: 24.5 MHz, 2% accuracy supports UART operation
- External oscillator: Crystal, RC, C, or Clock (1 or 2 pin modes)
- Can switch between clock sources on-the-fly

### Package

- 24-pin QFN (lead-free package)

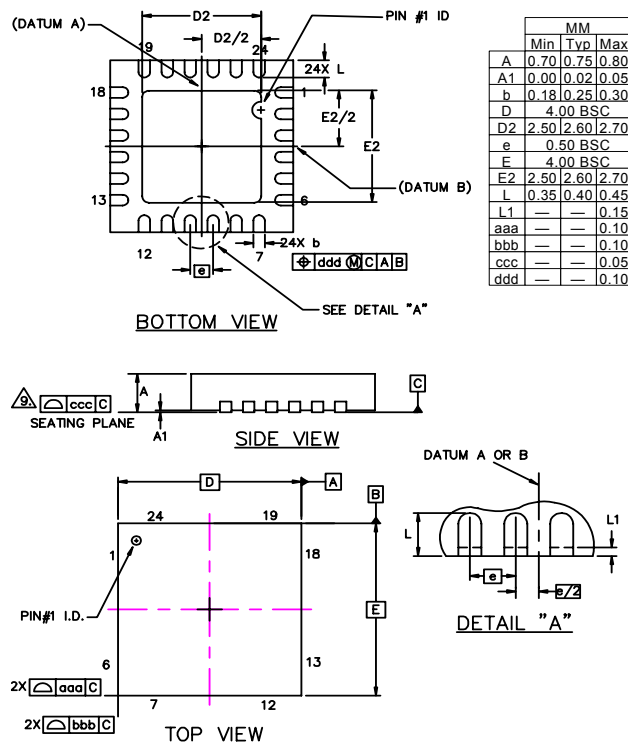


## Selected Electrical Specifications

( $T_A = -40$  to  $+85$  °C,  $V_{DD} = 2.7$  V unless otherwise specified)

Parameter	Conditions	Min	Typ	Max	Units
<b>Global Characteristics</b>					
Supply Voltage		2.7	—	3.6	V
Supply Current	Clock = 25 MHz	—	6.4	—	mA
	Clock = 1 MHz	—	0.36	—	mA
	Clock = 32 kHz; $V_{DD}$ Monitor Disabled	—	9	—	μA
Supply Current (shutdown)	Oscillator off; $V_{DD}$ Monitor Enabled	—	10	—	μA
	Oscillator off; $V_{DD}$ Monitor Disabled	—	<0.1	—	μA
Clock Frequency Range		DC	—	25	MHz
<b>Internal Oscillator</b>					
Frequency		24.0	24.5	25	MHz

## Package Information



## C8051F310DK Development Kit

