

## **Analog Peripherals**

- Two comparators
- Programmable hysteresis
- Configurable to generate interrupts or reset
- V<sub>DD</sub> Monitor and Brown-out Detector

## On-Chip JTAG Debug

- On-chip emulation circuitry facilitates full-speed, non-intrusive, in-circuit emulation
- Supports breakpoints, single stepping, watchpoints, inspect/modify memory, and registers
- Superior performance to emulation systems using ICE-chips, target pods, and sockets
- Fully compliant with IEEE 1149.1 specification

#### Supply Voltage: 2.7 to 3.6 V

- Typical operating current: 9 mA at 25 MHz
- Typical stop mode current: <0.1 µA

#### Temperature Range: -40 to +85 °C

### High-Speed 8051 µC 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; up to 21 interrupt sources

#### Memory

- 256 bytes data RAM
- 8 kB Flash; in-system programmable in 512 byte sectors (512 bytes are reserved)

### **Digital Peripherals**

- 22 port I/O; all are 5 V tolerant
- Hardware SPI™ and UART serial ports available concurrently
- 3 general-purpose 16-bit counter/timers
- Dedicated watchdog timer; bidirectional reset

#### **Clock Sources**

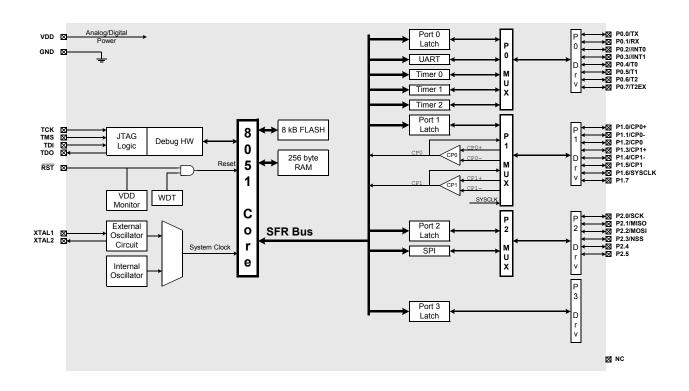
- Internal programmable oscillator: 2–16 MHz
- External oscillator: Crystal, RC, C, or Clock
- Can switch between clock sources on-the-fly

### Package

- 32-pin LQFP (standard lead and lead-free packages)

#### **Part Ordering Numbers**

- Lead-free package: C8051F231-GQ
- Standard package: C8051F231





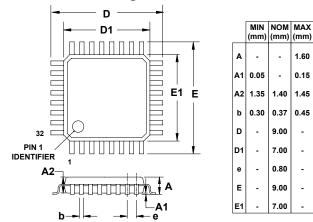
25 MIPS, 8 kB Flash, 32-Pin Mixed-Signal MCU

# **Selected Electrical Specifications**

(T<sub>A</sub> = -40 to +85 C°, V<sub>DD</sub> = 2.7 V unless otherwise specified unless otherwise specified)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
GLOBAL CHARACTERISTICS					
Supply Voltage		2.7		3.6	V
Supply Current (CPU	Clock = 25 MHz		9		mA
active)	Clock = 1 MHz		0.4		mA
-	Clock = 32 kHz; V <sub>DD</sub> Monitor Disabled		11		μA
Supply Current	Oscillator not running; V <sub>DD</sub> Monitor		10		μA
(shutdown)	Enabled				
	Oscillator not running; V <sub>DD</sub> Monitor		0.1		μA
	Disabled				
Clock Frequency Range		DC		25	MHz
COMPARATORS					
Supply Current	(each comparator)		1.5		μA
Response Time	(CP+) – (CP-) = 100 mV		4.0		μs

# **Package Information**



# C8051F226DK Development Kit



1.60

0.15

1.45

0.45

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