

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

Analog Peripherals

Two comparators

- Programmable hysteresis
- Configurable to generate interrupts or reset

V_{DD} 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: $<0.1 \mu A$

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

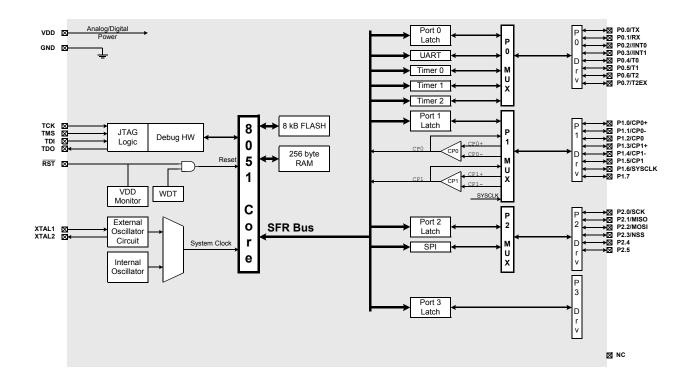
Package

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

Part Ordering Numbers

- Lead-free package: C8051F231-GQ

- Standard package: C8051F231



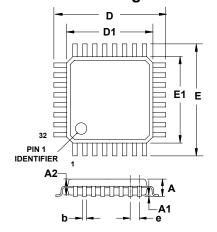


Selected Electrical Specifications

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

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 _{DD} Monitor Disabled		11		μA	
Supply Current	Oscillator not running; V _{DD} Monitor		10		μA	
(shutdown)	Enabled					
	Oscillator not running; V _{DD} 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



	MIN		MAX
	(mm)	(mm)	(mm)
A	-	-	1.60
A1	0.05	-	0.15
A2	1.35	1.40	1.45
b	0.30	0.37	0.45
D	-	9.00	-
D1	-	7.00	-
е	-	0.80	-
E	-	9.00	-
E1	-	7.00	-

C8051F226DK Development Kit

