

#### Analog Peripherals 10-Bit ADC

## ±1 LSB INL; no missing codes

- Programmable throughput up to 200 ksps
- Up to 17 external inputs; programmable as single-ended or differential
- Built-in temperature sensor (±3 °C)

# Two Comparators

#### Internal Voltage Reference: 2.4 V POR/Brown-out Detector

# USB Function Controller

- USB specification 2.0 compliant
- Full-speed (12 Mbps) or low-speed (1.5 Mbps) operation
- Integrated clock recovery; no external crystal required for either fullspeed or low-speed operation
- Supports eight flexible endpoints
- Dedicated 1 kB USB buffer memory
- Integrated transceiver; no external resistors required

#### **On-Chip Debug**

- On-chip debug circuitry facilitates full speed, non-intrusive in-system debug (no emulator required)
- Provides breakpoints, single stepping
- Inspect/modify memory, registers, and USB memory
- Superior performance to emulation systems using ICE-chips, target pods, and sockets

## Temperature Range: -40 to +85 °C

#### High-Speed 8051 µC Core

- Pipelined instruction architecture; executes 70% of instructions in 1 or 2 system clocks

8051F346

- Up to 25 MIPS throughput with 25 MHz Clock
- Expanded interrupt handler

#### Memory

- 4352 bytes data RAM (256 + 4 kB)
- 64 kB Flash; in-system programmable in 512-byte sectors (512 bytes are reserved)

### **Digital Peripherals**

- 25 port I/O; all are 5 V tolerant
- Hardware SMBus™ (I<sup>2</sup>C<sup>™</sup> compatible), SPI<sup>™</sup>, and UART serial ports available concurrently
- 4 general-purpose 16-bit counter/timers
- Programmable 16-bit counter array with 5 capture/compare modules
  Clock Sources

## **Clock Sources**

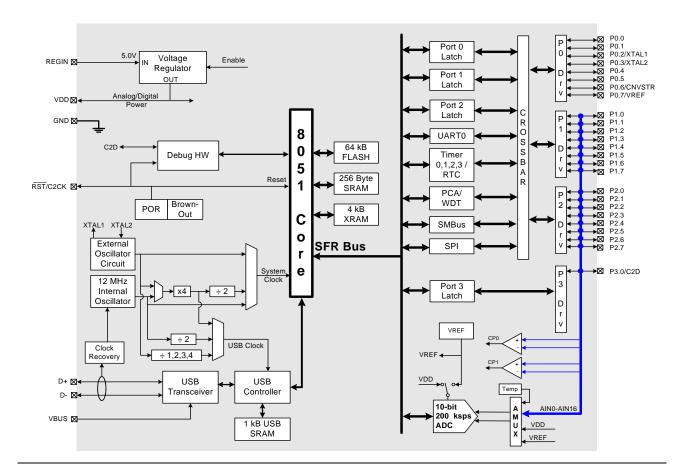
- Internal oscillator: 0.25% accuracy with clock recovery enabled; supports all USB and UART modes
- External oscillator: Crystal, RC, C, or Clock
- On-chip clock multiplier: up to 48 MHz

#### Voltage Regulator

- On-chip voltage regulator supports USB bus-powered operation
- Regulator bypass mode supports USB self-powered operation

#### Operating Voltage: 2.7 to 5.25 V Ordering Part Number

- C8051F346-GQ, 32-Pin LQFP, 9x9 mm<sup>2</sup>
- C8051F346-GM, 32-Pin QFN, 5x5 mm<sup>2</sup>



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