C8051F565

50 MIPS, 16 kB Flash, 12-Bit ADC, 32-Pin Automotive MCU

Analog Peripherals

12-Bit ADC, 5 V input signal; up to 25 external inputs

- ±1 LSB INL; guaranteed monotonic
- Programmable throughput up to 200 ksps
- Data-dependent windowed interrupt generator
- Programmable gain maximizes input signal span

Built-in Temperature Sensor (±3 °C)

Two Comparators

Precision Internal Voltage Reference

V_{DD} Monitor/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, watch-points
- Inspect/modify memory, registers, and stack
- Superior performance to emulation systems using ICE-chips, target pods, and sockets

Temperature Range: –40 to +125 °C

Operating Voltage: 1.8 to 5.25 V

- Multiple power saving sleep and shutdown modes

Development Kit: C8051F560DK

High-Speed 8051 µC Core

- Pipelined instruction architecture; executes 70% of instructions in one or two system clocks
- Up to 50 MIPS throughput

Memory

- 16 kB Flash; in-system programmable; flexible security features
- 2304 bytes data RAM (256 + 2 kB)

CAN 2.0B

- 32 message objects

Digital Peripherals

- Up to 25 digital I/O; all are 5 V push-pull
- Hardware I^2C, SPI™, and UART serial ports available concurrently
- Programmable 16-bit counter array with six capture/compare modules
- Four general-purpose 16-bit counter/timers

Clock Sources

- Internal programmable ±0.5% oscillator: Up to 50 MHz
- External oscillator: Crystal, RC, C, or CMOS Clock

Ordering Part Numbers

- C8051F565-IM, 32-Pin QFN (RoHS-compliant), 5 x 5 mm^2
- C8051F565-IQ, 32-Pin QFP (RoHS-compliant), 9 x 9 mm^2