C8051F531A
25 MIPS, 8 kB Flash, 12-Bit ADC, 20-Pin Automotive MCU

Analog Peripherals

12-Bit ADC, 5 V input signal; up to 16 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)
Programmable Comparator
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: C8051F530ADK

High-Speed 8051 µC Core
- Pipelined instruction architecture; executes 70% of instructions in one or two system clocks
- Up to 25 MIPS throughput

Memory
- 8 kB Flash; in-system programmable; flexible security features
- 256 bytes data RAM

Digital Peripherals
- Up to 16 digital I/O; all are 5 V push-pull
- SPI™ and UART serial ports available concurrently
- Programmable 16-bit counter array with three capture/compare modules
- Three general-purpose 16-bit counter/timers

Clock Sources
- Internal programmable 0.5% oscillator: Up to 25 MHz
- External oscillator: Crystal, RC, C, or CMOS Clock

Ordering Part Numbers
- C8051F531A-IT, 20-Pin TSSOP (RoHS-compliant), 6 x 6 mm^2
- C8051F531A-IM, 20-Pin QFN (RoHS-compliant), 4 x 4 mm^2