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**GENERAL DESCRIPTION**

The DS80C390 is a fast 8051-compatible microprocessor with dual CAN 2.0B controllers. The redesigned processor core executes 8051 instructions up to 3X faster than the original for the same crystal speed. The DS80C390 supports a maximum crystal speed of 40MHz, resulting in apparent execution speeds of 100MHz (approximately 2.5X). An optional internal frequency multiplier allows the microprocessor to operate at full speed with a reduced crystal frequency, reducing EMI. A hardware math accelerator further increases the speed of 32-bit and 16-bit multiply and divide operations as well as high-speed shift, normalization, and accumulate functions.

The *High-Speed Microcontroller User's Guide* and *High-Speed Microcontroller User's Guide: DS80C390 Supplement* must be used in conjunction with this data sheet. Download both at: [www.maxim-ic.com/microcontrollers](http://www.maxim-ic.com/microcontrollers).

**APPLICATIONS**

- |                     |                           |
|---------------------|---------------------------|
| Industrial Controls | Agricultural Equipment    |
| Factory Automation  | Gaming Equipment          |
| Medical Equipment   | Heating, Ventilation, and |
| Automotive          | Air Conditioning          |

**FEATURES**

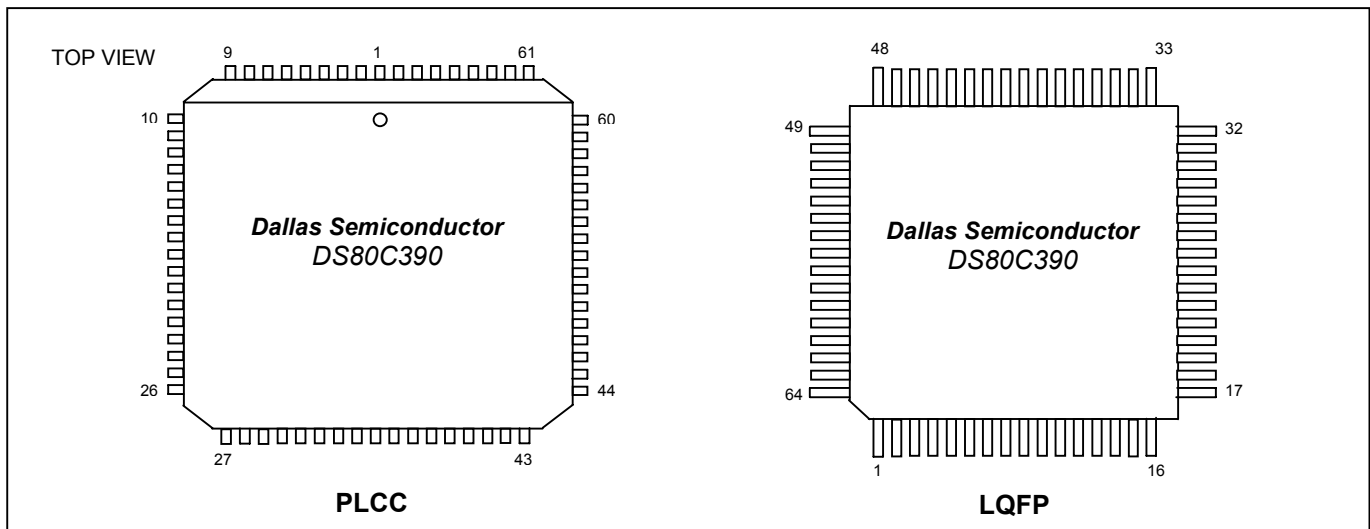
- 80C52 Compatible
- High-Speed Architecture
- 4kB Internal SRAM Usable as Program/Data/Stack Memory
- Enhanced Memory Architecture
- Two Full-Function CAN 2.0B Controllers
- Two Full-Duplex Hardware Serial Ports
- Programmable IrDA Clock
- High Integration Controller
- 16 Interrupt Sources with Six External
- Available in 64-Pin LQFP, 68-Pin PLCC

See page 29 for a complete list of features.

**ORDERING INFORMATION**

PART	TEMP RANGE	MAX CLOCK SPEED (MHz)	PIN-PACKAGE
DS80C390-QCR	0°C to +70°C	40	68 PLCC
DS80C390-QNR	-40°C to +85°C	40	68 PLCC
DS80C390-FCR	0°C to +70°C	40	64 LQFP
DS80C390-FNR	-40°C to +85°C	40	64 LQFP

**PIN CONFIGURATIONS**



**Note:** Some revisions of this device may incorporate deviations from published specifications known as errata. Multiple revisions of any device may be simultaneously available through various sales channels. For information about device errata, click here: [www.maxim-ic.com/errata](http://www.maxim-ic.com/errata).