



Integrated Device Technology, Inc.

# 4-BIT CMOS MICROPROCESSOR SLICE

## ADVANCE INFORMATION IDT39C203 IDT39C203A

### MICROSLICE™ PRODUCT

#### FEATURES:

- Fast
  - IDT39C203 matches 29203 speeds
  - IDT39C203A 20% speed upgrade
- Low-power CMOS
  - Commercial — 60mA (max.)
  - Military — 70mA (max.)
- Pin-compatible, performance-enhanced functional replacement for the 29203
- Cascadable to 8, 12, 16, etc. bits
- Infinitely expandable register file
- Improved I/O capability
  - DA, DB and Y ports are bidirectional
- Performs BCD arithmetic
  - Features automatic BCD add, subtract and conversion between binary and BCD
- On-chip parity generation and sign extension logic
  - Provides parity across the entire ALU output and sign extension at any slice boundary
- On-chip normalization logic
  - Floating point mantissa and exponent easily developed using single microcycle per shift
- On-chip multiplication and division logic
- Two bidirectional data lines
- Packaged in 48-pin DIP and 52-pin LCC
- Military product available 100% screened to MIL-STD-883, Class B

#### DESCRIPTION:

The IDT39C203s are four-bit expandable, high-performance CMOS microprocessor slices. Along with the standard features associated with the IDT39C01s and IDT39C03s, the IDT39C203s also incorporate additional enhancements for arithmetic-oriented processors.

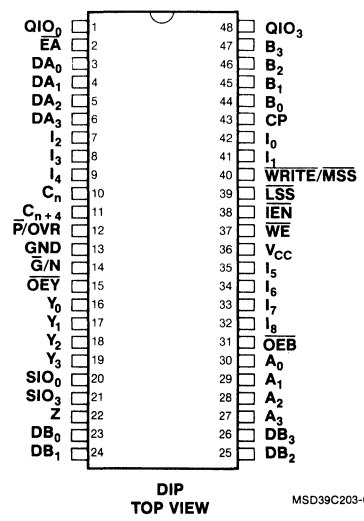
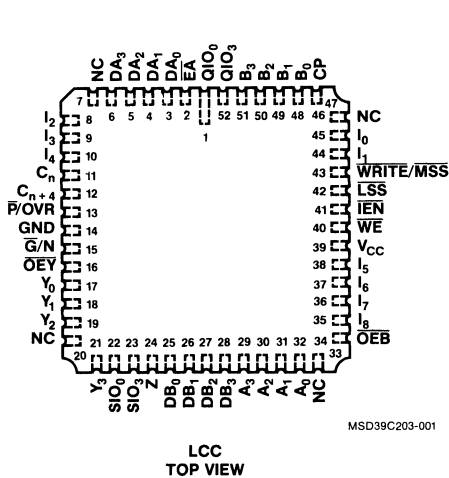
These extremely low-power yet high-speed three-port three-address architected microprocessors consist of a 16-word by 4-bit dual-port RAM with latches on both outputs, high-performance ALU and shifter, a flexible Q Register with shifter input, and nine-bit instruction decoder. Additionally, special instructions which allow the easy implementation of multiplication, division, normalization, BCD arithmetic and conversion are standard on the IDT39C203s. Both devices are easily expandable in 4-bit increments.

They are pin-compatible, functional replacements for all versions of the 29203. The fastest version, the IDT39C203A, is a 20% speed upgrade from the normal 29203 device. The IDT39C203 meets the 29203 speeds.

The IDT39C203s are fabricated using CEMOS™, a single-poly, double metal CMOS technology designed for high-performance and high-reliability. Military product is 100% screened to MIL-STD-883, Class B, making them ideally suited to military temperature applications.

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#### PIN CONFIGURATIONS



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#### MILITARY AND COMMERCIAL TEMPERATURE RANGES

JULY 1986

FUNCTIONAL BLOCK DIAGRAM

