

Freescale Semiconductor, Inc.

# Motorola's ColdFire® MCF5206e Integrated Microprocessor

The MCF5206e integrated microprocessor combines a Version 2 ColdFire core with several peripheral functions such as a DRAM controller, timers, parallel and serial interfaces, and system integration. This device is an enhanced version of the ColdFire MCF5206 microprocessor.

The enhancements made to the MCF5206e are increased 4 Kbyte I-cache and 8 KByte SRAM, increased frequency and the introduction of a Multiply Accumulate (MAC) unit, hardware divide, and two-channels of DMA. The MCF5206e processor provides a cost-effective solution delivering 50 Dhrystone 2.1 MIPS at a frequency of 54MHz.

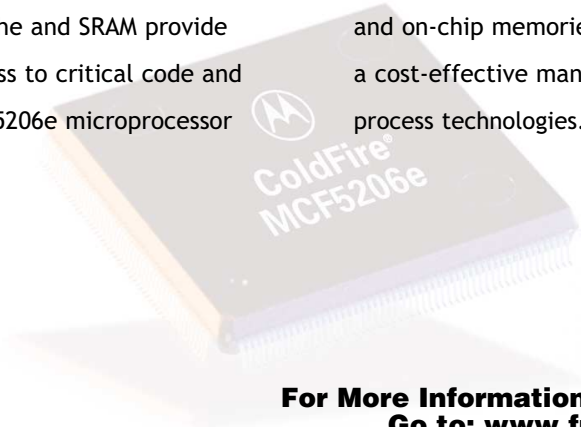
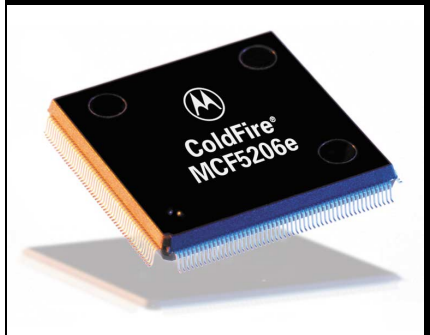
## High System Performance

Designed for embedded control applications, the MCF5206e Version 2 core delivers enhanced performance while maintaining low system costs. The addition of a MAC module and hardware divide to the core increases performance of complex arithmetic functions normally used in DSP applications. To speed program execution, the on-chip instruction cache and SRAM provide one-cycle access to critical code and data. The MCF5206e microprocessor

greatly reduces the time required for system design and implementation by packaging common system functions on chip and providing glueless interfaces to 8-bit, 16-bit and 32bit DRAM, SRAM and I/O devices. The MCF5206e offers a progressive roadmap for 68K users offering more than six times the performance of the MC68340 with a similar peripheral set and fifteen times the performance of the MC68306. These performance levels are combined with an enhanced level of integration over the 683xx family, at a fraction of the price. The package, pinout and integration mix of the MCF5206e creates a pin-compatible upgrade path with almost three times the performance for current MCF5206 designs.

## Integrated Peripherals

To speed system design and reduce system cost, the MCF5206e offers a rich array of memory and peripheral integration that has been well received in the market place. Features common to many embedded applications, such as DMAs, Timers, a DRAM controller, UART, and on-chip memories are integrated in a cost-effective manner using advanced process technologies.



**For More Information On This Product,  
Go to: [www.freescale.com](http://www.freescale.com)**

**MOTOROLA**  
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#### Contact Information:

Motorola offers user's manuals, product briefs and application notes for all of its ColdFire microprocessors. In addition, local support is also provided for these products.

This information can be found at  
<http://www.motorola.com/ColdFire>

For all other inquiries about Motorola products, please contact the Motorola Customer Response Center at:

800-521-6274 or

<http://www.motorola.com/semiconductors>

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### Fast Time to Market

The MCF5206e builds on and extends the successful 68K family by providing a compatible path for 68K and ColdFire microprocessor customers in which development tools, software and programmer's familiarity are quickly leveraged. In fact, customers moving from 68K to ColdFire microprocessors can use code translation and emulation tools, free of charge, subject to a licensing agreement, to facilitate modifying and reusing 68K assembly code.

By delivering on the development roadmap for the 100% synthesizable ColdFire family Motorola provides room to grow and powerful new capabilities to designers eager to create new classes of electronic products, while leveraging their previous investments.

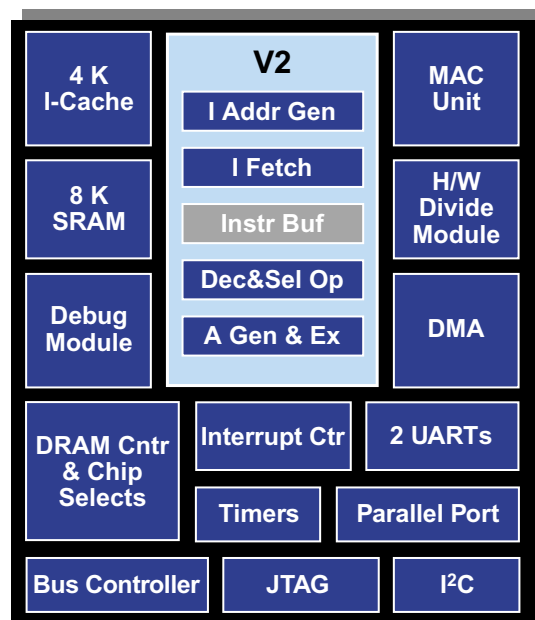
### Features

- Version 2 ColdFire® Core.
- Multiply-Accumulate Module and Hardware Divide Unit.
- 4 KByte Direct-Mapped Instruction Cache.
- 8 KByte On-Chip SRAM.
- DRAM Controller, supports EDO and page mode DRAMs.
- 2-channel DMA Controller.
- Two Universal Synchronous/Asynchronous Receiver/Transmitters (UART).
- Dual 16-Bit General-Purpose Multimode Timers.
- I<sup>2</sup>C®-Compatible Bus

- System Debug Support.
- Fully Static 3.3V Operation with 5V tolerant inputs.
- 160 Pin QFP Package - Pin-compatible with MCF5206.
- 8-bit general-purpose parallel I/O port.

### Product Specifications

- 50 Dhrystone 2.1 MIPS at 54 MHz.
- 0°-70°C operating temperature.
- -40°-85°C operating temperature (40MHz).
- Implemented in 0.35µm, TLM.
- 3.3-V supply/5.0-V tolerant I/O.
- 208-pin plastic QFP package.
- Available at 40MHz and 54MHz.



For More Information On This Product,  
 System Interface  
 Go to: [www.freescale.com](http://www.freescale.com)



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