

Small Footprint 8-bit Microcontrollers

MC9S08QG

Designed to reduce overall system costs. Brings many advantages of high-end 8-bit MCUs to low-end.

- > 4 KB or 8 KB flash
- > Up to 512 bytes RAM
- > Multiple low-power options
- > On-chip ICE
- > 8-ch., 10-bit ADC
- > Analog comparator
- > SCI, SPI, I²C
- > 2-ch., 16-bit timer
- > Internal/external oscillator
- > LVI and COP
- > Up to 13 GPIO

Packages Supported

- > 8-pin PDIP
- > 8-pin SOIC-NB
- > 8-pin DFN
- > 16-pin PDIP
- > 16-pin QFN
- > 16-pin TSSOP

Applications

- > Power and size-sensitive applications
 - Wireless communications
 - Handheld devices
 - Small appliances
- Simple Media Access Controller (SMAC)-based applications
- Secure boot coprocessors
- Security systems
- Toys

MC9S08QD

Pin-compatible device to MC9RS08KA and MC9S08QG families provides a high level of system integration and low power consumption in a small package.

- > Up to 4 KB flash
- > Up to 256 bytes RAM
- > High-performance 2.7V to 5.5V device
- > 4-channel, 10-bit ADC
- > 4 GPIO
- > ICS

Packages Supported

- > 8-pin SOIC
- > 8-pin PDIP

Applications

- > DC cooling fan applications
 - Computers
 - Low power supplies
- > Digital Capacitive Discharge Ignition (CDI) for motor cycles
- > Industrial compressors
- > Camera zoom control
- > Walkie talkies
- > Battery chargers
- > Portable TVs
- > Small and large appliances
 - Toasters
 - Low end microwave
- > Treadmills
- > Vacuum cleaners
- > Industrial control
- > Watchdog coprocessors
- > Security systems
- > AC voltage line monitor

MC9RS08KA

Cost-effective RS08 core with simple implementation and ease of integration to reduce design cycles.

- > 1 KB/2 KB flash
- > 63 bytes RAM
- > 10 MHz RS08 CPU 1.8V to 5.5V
- > ICS
- > BDC
- > Analog comparator
- > KBI
- > LVI and COP

Packages Supported

- > 6-pin DFN
- > 8-pin SOIC-NB
- > 8-pin PDIP

Applications

- > High-brightness LED
- > Lighting systems control
- > Toys
- > Small handheld devices
- > Space-constrained applications
- > Small appliances
- > AC line voltage monitoring
- > Simple logic replacement
- > Analog driver replacement
- > ASIC replacement

MC908QY/QT

Cost-effective, small-package with a wide variety of derivatives.

- > 1.5 KB to 8 KB flash
- > 128 to 256 bytes RAM
- > "QY"—extra GPIO
- > "QT"—smaller footprint

Packages Supported

- > 8-pin DFN
- > 8-pin PDIP
- > 8-pin SOIC
- > 16-pin PDIP
- > 16-pin SOIC
- > 16-pin TSSOP

Applications

- > Discrete replacement
- > Appliances
- > Control systems
- > Battery chargers
- > Home and industrial security
- > Toys

Low Pin-Count Packaging

 <p>6-pin DFN 3 mm x 3 mm body</p>	 <p>8-pin DFN 4 mm x 4 mm body</p>
 <p>8-pin SOIC-NB 3.8 mm x 4.8 mm body 50 mil/1.27 mm pitch</p>	 <p>8-pin SOIC 5.3 mm x 7.5 mm body 50 mil/1.27 mm pitch</p>
 <p>16-pin QFN 5 mm x 5 mm body .5 mm pitch</p>	 <p>16-pin SOIC 10.35 mm x 7.5 mm body 50 mil/1.27 mm pitch</p>
 <p>16-pin TSSOP 5.0 mm x 4.4 mm body 50 mil/1.27 mm pitch</p>	 <p>20-pin SOIC 12.8 mm x 7.5 mm body 50 mil/1.27 mm pitch</p>

MC908QB

High on-chip integration, small package 5V operation.

- > 4 KB or 8 KB flash
- > Up to 256 bytes RAM
- > 3V to 5V operation
- > ESCI, SPI
- > 10-ch., 10-bit ADC
- > 4-ch., 16-bit timer

Packages Supported

- > 16-pin PDIP
- > 16-pin SOIC
- > 16-pin TSSOP

Applications

- > Fire detectors
- > Security systems
- > Battery chargers
- > Analog control replacement
- > ASIC and discrete replacement
- > Motion control
- > Small appliances
- > Toys

8-bit Development Tools



Demonstration Boards (DEMO)

Demonstration boards are cost-effective development tools that allow users to program and debug application code with basic I/O functions and peripherals. Designers save on design time and costs with these demo boards targeted at specific HC(S)08/RS08 MCUs. CodeWarrior® Development Studio for HC(S)08/RS08, Special Edition is included along with the board.



MON08 Multilink (USBMULTILINK08E)

The MON08 Multilink is a cost-effective development tool for all HC08 MCUs, and provides in-circuit debugging and programming through the standard MON08 serial debug/breakpoint interface. CodeWarrior Development Studio for HC(S)08/RS08, Special Edition is included along with the MON08 Multilink.



BDM Multilink (USBMULTILINKBDME)

The BDM Multilink is a cost-effective development tool for RS08, HCS08 and HCS12 MCUs, and provides real-time, in-circuit flash programming, emulation and debugging through the BDM interface. CodeWarrior Development Studio for RS08, HC(S)08 and HC(S)12, Special Edition is included along with the BDM Multilink.



Evaluation Boards (EVB)

Evaluation boards allow users to program and debug advance application code with expanded I/O functions and peripherals. HC(S)08 EVBs may include advance features including zero insertion force (ZIF) sockets, LCDs and large prototype areas. CodeWarrior Development Studio for RS08, HC(S)08 and HC(S)12, Special Edition is included along with the board.



Freescale Semiconductor's In-Circuit Emulator (FSICE)

The Freescale Semiconductor in-circuit emulator (FSICE) is a high-performance emulator system for HC08 MCUs. In addition to incorporating the debug features of traditional emulators, the FSICE system adds advanced features such as USBMULTILINK08E cable for in-circuit flash programming, Ethernet interface for remote debugging and a real-time bus analyzer. The kit consists of the FSICE base station, the corresponding MCU emulator module (EM), all the cables and adapters needed, and CodeWarrior Development Studio for HC(S)08/RS08, Special Edition.



Cyclone Pro (CYCLONEPROE)

Cyclone Pro provides all the capabilities of the USBMULTILINKBDME and USBMULTILINK08E plus USB/Ethernet serial interfaces. In addition, the Cyclone Pro has the ability to function as a stand-alone programmer with push buttons and LEDs to control operations. Cyclone Pro is the universal debugging and real-time emulation tool for all RS08, HC(S)08, and HC(S)12 MCUs. CodeWarrior Development Studio for HC(S)08/RS08 and HC(S)12, Special Edition is included along with Cyclone Pro.



CodeWarrior® Development Studio for HC(S)08/RS08 Special Edition

CodeWarrior Development Studio is a comprehensive special edition toolset for fast and easy MCU development. This tool suite provides the capabilities required by every engineer in the development cycle to exploit the capabilities of the RS08 and HC(S)08 architecture. Some of the features include: project manager for up to 32 files, full-chip simulation, flash programming and Processor Expert™ technology, which provides automatic C-code generation for most HC(S)08 on-chip peripherals.

No Cost Online Sample Program

Need to get your project moving quickly? Our easy-to-use global program allows you to order samples from our website to test in your designs before you buy. We offer these samples, including shipping, handling and any applicable taxes, at no additional cost to you. www.freescale.com/8bit

Freescale Buy Direct

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Environmentally Preferred Products

Freescale's Lead (Pb)-free Packaging Initiative

As of July 1, 2006, all of Freescale's new and existing 8-bit products are in Pb-free packaging, committing ourselves to meeting or exceeding all legislative requirements for environmentally friendly packaging, including the European Union's Reduction of Hazardous Substances (RoHs) and Waste of Electrical and Electronic Equipment (WEEE) directives, as well as other Pb-free and Halogen-free initiatives.

www.freescale.com/pbfree

Learn More: For more information about Freescale 8-bit products, please visit www.freescale.com/8bit.

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