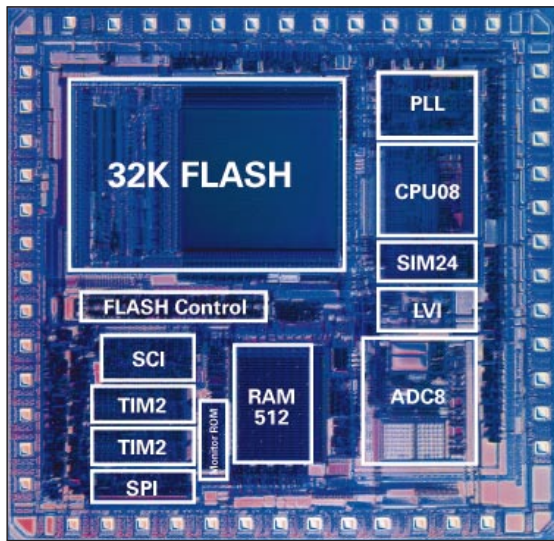# 68HC9○8GP32

The Motorola 68HC908GP32 provides designers with a highly integrated 8-bit FLASH microcontroller (MCU) solution. The 68HC908GP32 builds on the success of the 68HC05 family by offering a code compatible migration path to higher performance FLASH MCUs.

Features

- 32,256 bytes of in-system programmable FLASH memory
- FLASHwire technology – a single wire interface for in-circuit programming which does not require high voltage for entry
- 10,000 program/erase cycles
- FLASH programming as fast as 2 msec for a 64 byte block
- FLASH memory security features
- 512 bytes of user RAM
- High-performance 68HC08 CPU core
  - Code compatible with 68HC05
  - 8.0 MHz internal operating frequency at 5.0 V

- Peripheral modules
  - Computer Operating Properly (COP) watchdog
  - SCI asynchronous serial communications port
    - Full duplex operation
    - 32 programmable baud rates
    - Interrupt driven operation
    - 8-bit or 9-bit character length
  - SPI synchronous serial communications port
    - Full duplex operation with master and slave modes
    - Up to 4 MHz master, and 8 MHz slave mode frequencies
  - 8-channel 8-bit analog-to-digital-converter
  - Dual 16-bit two-channel timers with input capture, output compare, and PWM modes
  - Timebase module with eight user selectable periodic real-time interrupts
    - Auto wake-up out of stop capability
- Memory-mapped I/O registers
- 33 bi-directional input/output (I/O) lines, including:
  - 10 mA sink/source capability on all I/O pins
  - 15 mA sink capability on five I/O pins
  - Software programmable pullups on all I/O pins
  - Keyboard scan with selectable interrupts on eight I/O pins
- Internal pullups to V_{DD} on RESET and IRQ pins for reduced system cost
- Vectored interrupts
  - Selectable sensitivity on external interrupt (edge- and level-sensitive or edge-sensitive only)
  - External interrupt mask bit and acknowledge bit
- Illegal address reset

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68HC908GP32

- Illegal opcode reset
- Low Voltage Inhibit with selectable trip points
- Clock options
  - 32 KHz crystal compatible oscillator and on-chip PLL
  - External clock
- Bi-directional RESET pin
- Power-saving Stop and Wait modes
- 40-pin DIP, 42-pin SDIP, and 44-pin QFP packages
- Pin compatible with the 68HC908GP20
- V_{DD}/V_{SS} pins adjacent for easy bypass capacitor connection
- Hyper-text linked on-line databook:
  - MC68HC908GP32/H
- Cost effective, full-featured development tools that support programming, in-circuit debug, simulation, and in-circuit emulation

Application Notes

- AN-HK-32/H In-circuit Programming of FLASH Memory in the 68HC908GP32
- AN-HK-31/H Using the MC68HC908GP32 in place of MC68HC908GP20
- AN1222/D Arithmetic Waveform Synthesis with 68HC05/68HC08 MCUs
- AN1221/D Hamming Error Control Coding Techniques with the HC08 MCU
- AN1219/D M68HC08 Integer Math Routines
- AN1218/D HC05 to HC08 Optimization
- More MCU application notes available on our website

Comprehensive Development Support

Broad third party software and hardware support – see our web site at **http://www.mcu.motsps.com**

EASY TO ORDER KITS		RESALE*
M68ICS08GP	GPxx programmer/in-circuit debug kit	$295
KITMMEVS08GP	Cost effective real-time in-circuit emulator kit	$1450
KITMMDS08GP	High performance real-time in-circuit emulator kit	$3950

INDIVIDUAL DEVELOPMENT TOOL COMPONENTS		RESALE*
M68MMDS0508	High performance emulator	$2950
M68MMPFB0508	MMEVS Platform Board	$395
M68EML08GP32	Emulation module daughter board	$495
M68CBL05B	Low noise flex-cable	$120
M68CBL05C	Low noise flex-cable	$120
M68TB08GP32P40	40-pin DIP target head adapter	$175
M68TB08GP32B42	42-pin SDIP target head adapter	$175
M68TC08GP32FB44	44-pin QFP target head adapter	$175
M68TQS044SAG1	44-pin TQ socket with guides	$50
M68TQP044SAM01	44-pin TQPACK	$70

*All prices are manufacturer's suggested resale for North America.

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