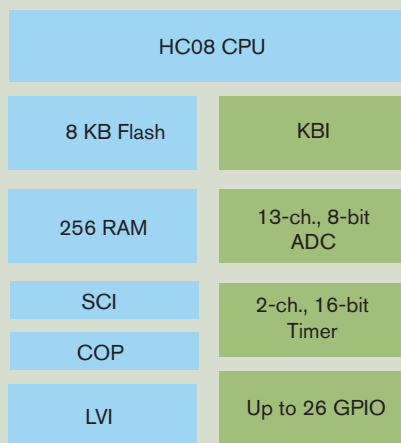


68HC908JK8/JL8

Target Applications

- > Appliances
- > Security systems
- > Microwave applications
- > Satellite receivers
- > Automotive body electronics
- > Sensors and flow measurement devices
- > Industrial compressor (HVAC)
- > Instrument control panels
- > HVAC blowers and fans

The 68HC908JL8 and the 68HC908JK8 use a 68HC08 CPU core and provide cost-effective, reprogrammable Flash with an integrated analog-to-digital converter (ADC). This family also includes multiple clock options, two 16-bit timer channels, low-voltage inhibit (LVI) and a watchdog timer.



Features

Benefits

High-Performance 68HC08 CPU Core

- > 8 MHz bus operation at 5V operation for 125 nsec minimum instruction cycle time
- > 4 MHz bus operation at 3V for 250 nsec minimum instruction cycle time
- > Efficient instruction set including multiply and divide
- > 16 flexible addressing modes including stack relative with 16-bit stack pointer
- > Fully static low-voltage, low-power design with wait and stop modes

- > Object code compatible with the 68HC05
- > Easy to learn and use architecture
- > C-optimized architecture provides compact code

Integrated Second-Generation Flash Memory

- > In-application reprogrammable
- > Extremely fast programming, encoding 64 bytes in as fast as 2 msec
- > Flash programming across the 68HC08's full operating supply voltage with no extra programming voltage
- > 10K write/erase cycles minimum over temperature
- > Flexible block protection and security

- > Cost-effective programming changes and field software upgrades via in-application programmability and reprogrammability
- > Reduces production programming costs through ultra-fast programming
- > Allows reprogrammable battery-powered applications
- > Byte-writable for data as well as program memory
- > Protects code from unauthorized reading and guards against unintentional erasing/writing of user-programmable segments of code

8-bit Analog-to-Digital Converter

- > Up to 13 channels
- > Single conversion in 17 μ sec

- > Fast, easy conversion from analog inputs, such as temperature, pressure and fluid levels to digital values for CPU processing

Multiple Clock Options

- > Crystal, ceramic or RC oscillator
- > External clock

- > Flexible clock options optimize timing accuracy with system cost

Two Programmable 16-bit Timer Channels

- > 125 nsec resolution at 8 MHz bus
- > Free-running counter or modular arithmetic up-counter

- > Each channel independently programmable for input capture, output compare or unbuffered PWM
- > Pairing timer channels provides a buffered PWM function

Computer Operating Properly (COP) Watchdog Timer

- > Provides system protection

Serial Communications Interface

- > UART asynchronous communications system
- > Flexible baud rate generator
- > Double buffered transmit and receive
- > Optional hardware parity checking and generation

- > Asynchronous communication between the MCU and a terminal, computer or a network of microcontrollers

Features

Benefits

Selectable Trip Point Low-Voltage Inhibit

- > Improves reliability by resetting the MCU when voltage drops below trip point
- > Two trip points allow optimum operation in both 5V and 3V nominal systems
- > Integration reduces system cost

Up to 26 Bidirectional Input/Output (I/O) Lines

- > 25 mA sink capability on two I/O pins
- > Keyboard scan with selectable interrupts on seven I/O pins
- > Software programmable pullups on nine I/O pins
- > High-current capable I/O allows direct drive of LED and other circuits to eliminate external drivers and reduce system costs
- > Keyboard scan with programmable pullups eliminate external glue logic when interfacing to simple keypads

Part Number

Description

Easy-to-Order Development Tool Kits

M68ICS08JLJK	JL and JK programmer/in-circuit debug kit
KITMMEVS08JL	Cost-effective real-time in-circuit emulator kit
KITMMDS08JL	High-performance real-time in-circuit emulator kit
M68EML08JKL	Emulation module for the JL and JK HC08 Family
USBMULTILINK08	Universal HC08 in-circuit Flash programmer and debugger, USB host interface
M68CYCLONEPRO	HC08/HCS08/HC12/HCS12 stand-alone Flash programmer or in-circuit emulator, debugger, Flash programmer; USB, serial or Ethernet interface options
CDCWHC08/D	CodeWarrior™ Development Studio for HC08 v3—IDE with Processor Expert™ auto-code generator, full-chip simulation, assembler, linker and C compiler (code size limited, compiler upgrades available)

Application Notes and Engineering Bulletins

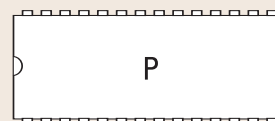
- > EB367/D In-Circuit Programming of 68HC908JL/JK
- > AN1218/D 68HC05 to 68HC08 Optimization
- > AN1831/D Using MC68HC908 On-Chip Flash Programming Routines
- > AN1837/D Nonvolatile Memory Technology Review
- > AN2093/D Creating Efficient C Code for the MC68HC08
- > AN1752/D Data Structures for 8-bit MCUs
- > AN1219/D M68HC08 Integer Math Routines
- > AN1705/D Noise Reduction Techniques for MCU-Based Systems
- > AN1259/D System Design and Layout Techniques for Noise Reduction in MCU-Based Systems
- > AN1263/D Designing for Electromagnetic Compatibility with Single-Chip Microcontrollers
- > AN1050/D Designing for Electromagnetic Compatibility (EMC) with HCMOS Microcontrollers
- > AN1705/D Noise Reduction Techniques for Microcontroller-Based Systems
- > AN2158/D Designing with the MC68HC908JL/JK Microcontroller Family

And many more—see our Web site at www.motorola.com/mcu

PACKAGE OPTIONS

Part Number	Package	OCS	Temperature Range
MC68HC908JL8CP	28 DIP	XTAL	-40°C to +85°C
MC68HC908JL8CDW	28 SOIC	XTAL	-40°C to +85°C
MC68HC908JL8CFA	32 LQFP	XTAL	-40°C to +85°C
MC68HC908JL8MP	28 DIP	XTAL	-40°C to +125°C
MC68HC908JL8MDW	28 SOIC	XTAL	-40°C to +125°C
MC68HC908JL8MFA	32 LQFP	XTAL	-40°C to +125°C
MC68HRC908JL8CP	28 DIP	RC	-40°C to +85°C
MC68HRC908JL8CDW	28 SOIC	RC	-40°C to +85°C
MC68HRC908JL8CFA	32 LQFP	RC	-40°C to +85°C
MC68HRC908JL8MP	28 DIP	RC	-40°C to +125°C
MC68HRC908JL8MDW	28 SOIC	RC	-40°C to +125°C
MC68HRC908JL8MFA	32 LQFP	RC	-40°C to +125°C
MC68HC908JK8CP	20 DIP	XTAL	-40°C to +85°C
MC68HC908JK8CDW	20 SOIC	XTAL	-40°C to +85°C
MC68HC908JK8MP	20 DIP	XTAL	-40°C to +125°C
MC68HC908JK8MDW	20 SOIC	XTAL	-40°C to +125°C
MC68HRC908JK8CP	20 DIP	RC	-40°C to +85°C
MC68HRC908JK8CDW	20 SOIC	RC	-40°C to +85°C
MC68HRC908JK8MP	20 DIP	RC	-40°C to +125°C
MC68HRC908JK8MDW	20 SOIC	RC	-40°C to +125°C

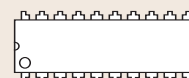
28-Pin DIP



28-Lead SOIC



28-Pin Plastic DIP



32-Lead LQFP



20-Lead SOIC



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REV 1

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