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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



MC68HC908AZ60A MC68HC908AS60A MC68HC908AZ60E

Data Sheet

*M68HC08
Microcontrollers*

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Data Sheet

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Chapter 1

General Description

1.1 Introduction

The MC68HC908AS60A, MC68HC908AZ60A, and MC68HC908AZ60E are members of the low-cost, high-performance M68HC08 Family of 8-bit microcontroller units (MCUs). All MCUs in the family use the enhanced M68HC08 central processor unit (CPU08) and are available with a variety of modules, memory sizes and types, and package types.

These parts are designed to emulate the MC68HC08ASxx and MC68HC08AZxx automotive families and may offer extra features which are not available on those devices. It is the user's responsibility to ensure compatibility between the features used on the MC68HC908AS60A, MC68HC908AZ60A, and MC68HC908AZ60E and those which are available on the device which will ultimately be used in the application.

For detailed information regarding the MC68HC908AZ60E refer to [Appendix B MC68HC908AZ60E](#).

1.2 Features

Features of the MC68HC908AS60A and MC68HC908AZ60A include:

- High-Performance M68HC08 Architecture
- Fully Upward-Compatible Object Code with M6805, M146805, and M68HC05 Families
- 8.4 MHz Internal Bus Frequency
- 60 Kbytes of FLASH Electrically Erasable Read-Only Memory (FLASH)
- FLASH Data Security
- 1 Kbyte of On-Chip Electrically Erasable Programmable Read-Only Memory with Security Option (EEPROM)
- 2 Kbyte of On-Chip RAM
- Clock Generator Module (CGM)
- Serial Peripheral Interface Module (SPI)
- Serial Communications Interface Module (SCI)
- 8-Bit, 15-Channel Analog-to-Digital Converter (ADC-15)
- 16-Bit, 6-Channel Timer Interface Module (TIMA-6)
- Programmable Interrupt Timer (PIT)
- System Protection Features
 - Computer Operating Properly (COP) with Optional Reset
 - Low-Voltage Detection with Optional Reset
 - Illegal Opcode Detection with Optional Reset
 - Illegal Address Detection with Optional Reset
- Low-Power Design (Fully Static with Stop and Wait Modes)

General Description

- Master Reset Pin and Power-On Reset
- 16-Bit, 2-Channel Timer Interface Module (TIMB) (AZ only)
- 5-Bit Keyboard Interrupt Module (64-Pin QFP only)
- MSCAN Controller Implements CAN 2.0b Protocol as Defined in BOSCH Specification September 1991 (AZ only)
- SAE J1850 Byte Data Link Controller Digital Module (AS only)

Features of the CPU08 include:

- Enhanced HC05 Programming Model
- Extensive Loop Control Functions
- 16 Addressing Modes (Eight More Than the HC05)
- 16-Bit Index Register and Stack Pointer
- Memory-to-Memory Data Transfers
- Fast 8×8 Multiply Instruction
- Fast 16/8 Divide Instruction
- Binary-Coded Decimal (BCD) Instructions
- Optimization for Controller Applications
- C Language Support

1.3 MCU Block Diagram

[Figure 1-1](#) shows the structure of the MC68HC908AZ60A.

[Figure 1-2](#) shows the structure of the MC68HC908AS60A.

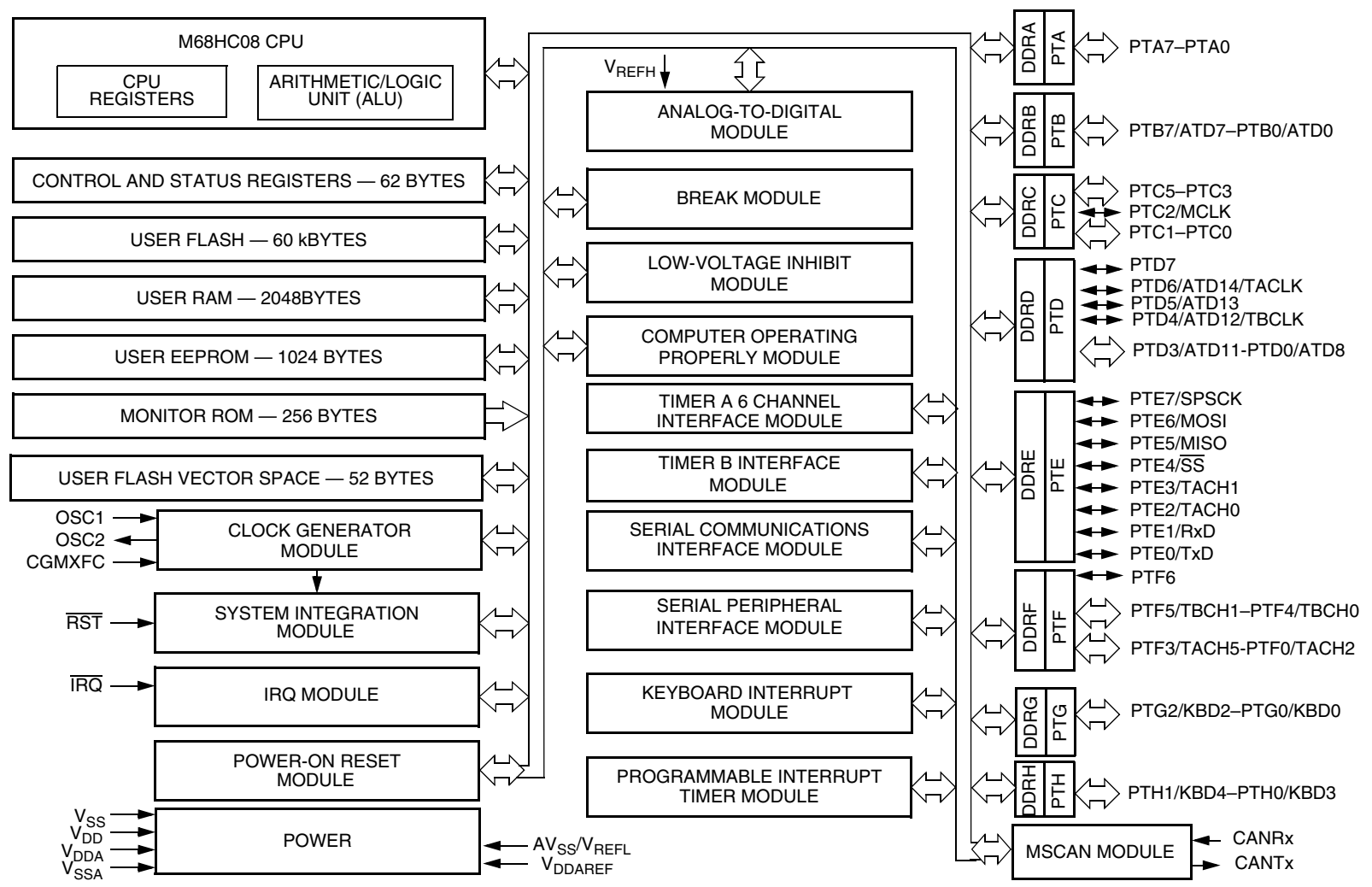
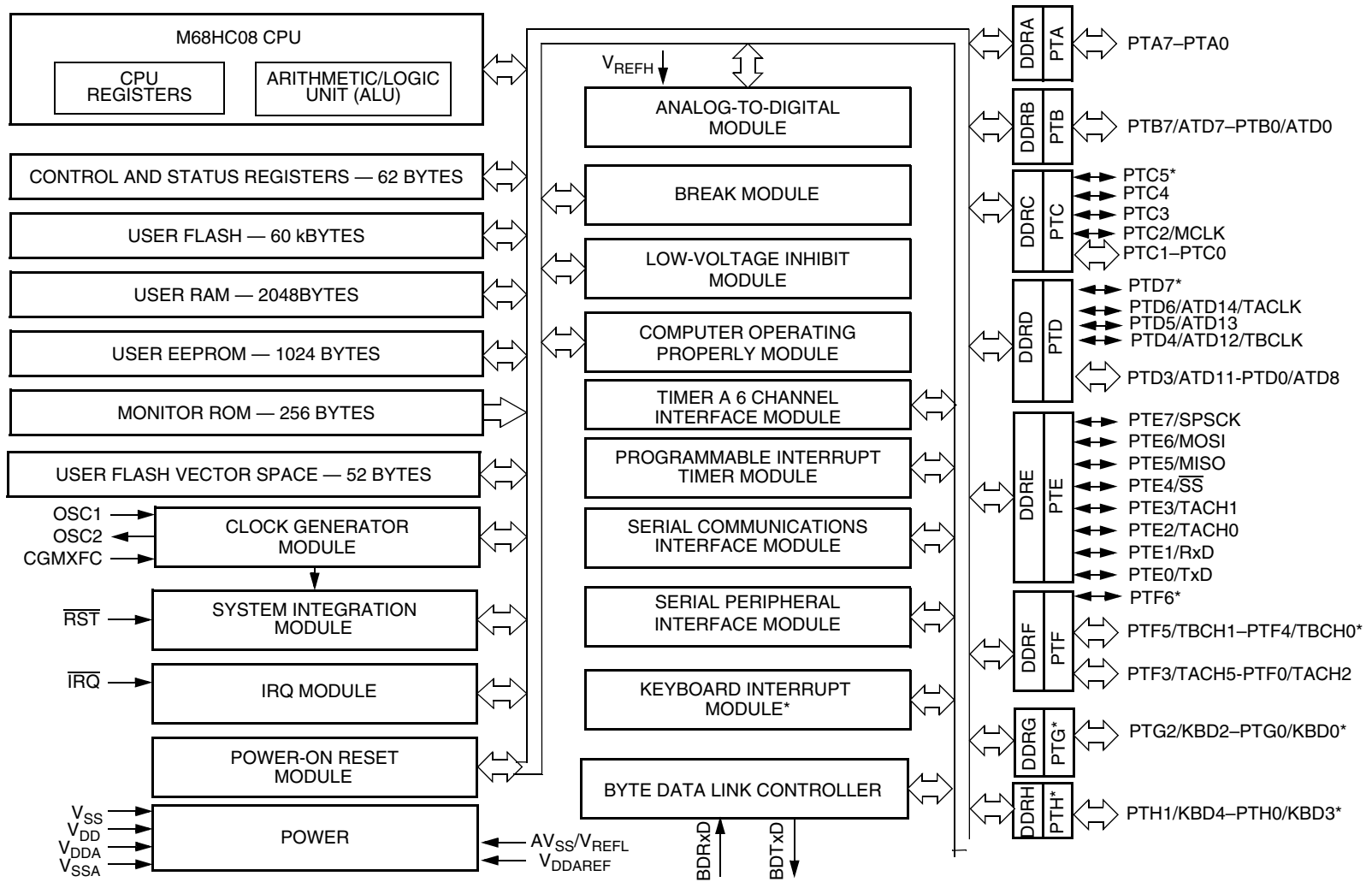


Figure 1-1. MCU Block Diagram for the MC68HC908AZ60A (64-Pin QFP)



* = Feature only available on the 64-pin QFP MC68HC908AS60A

Figure 1-2. MCU Block Diagram for the MC68HC908AS60A (64-Pin QFP and 52-Pin PLCC)



1.4 Pin Assignments

Figure 1-3 shows the MC68HC908AZ60A pin assignments.

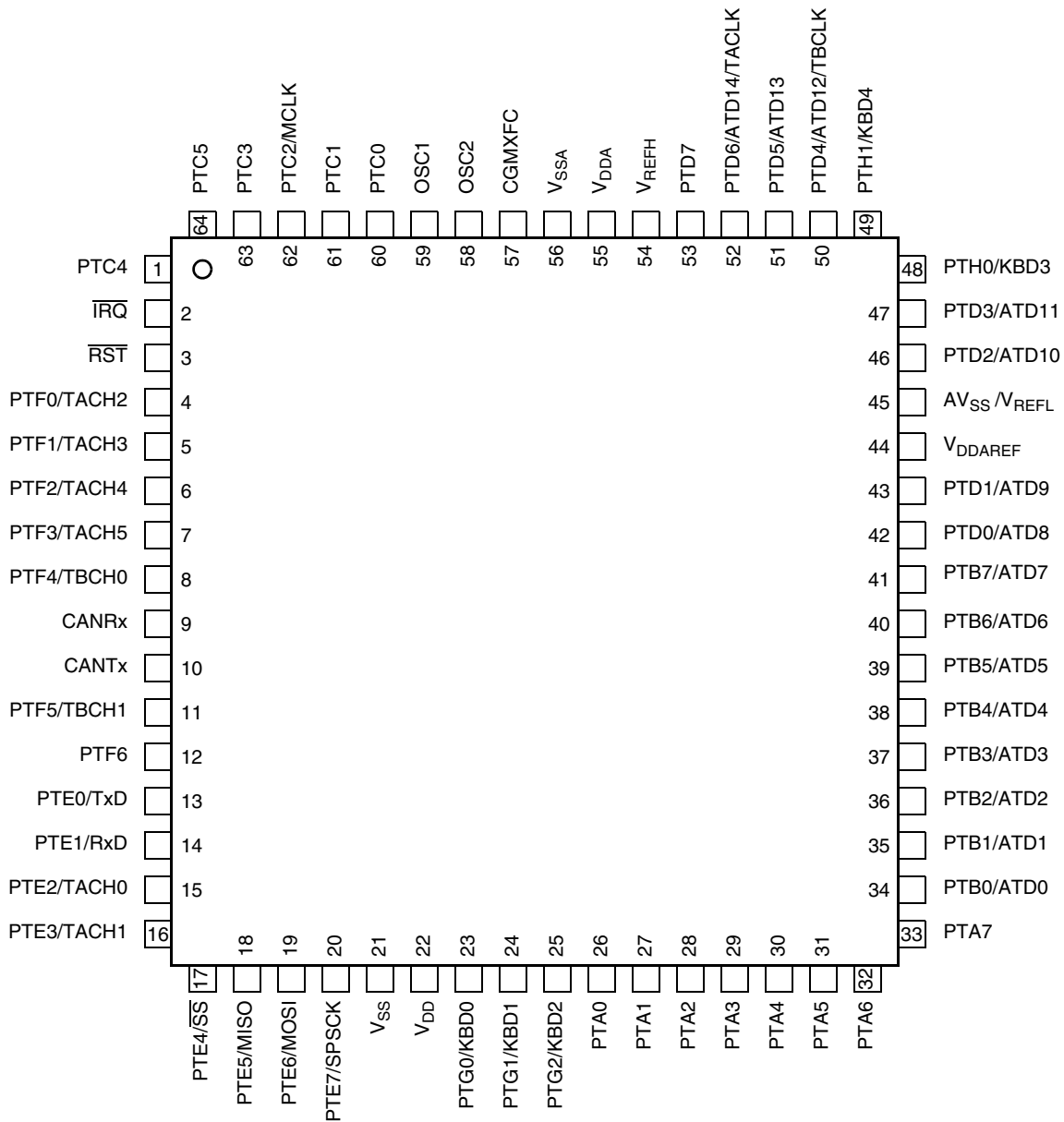


Figure 1-3. MC68HC908AZ60A (64-Pin QFP)