

MM908E625

Integrated Quad Half H-Bridge with Power Supply, Embedded MCU and LIN Serial Communication

Applications

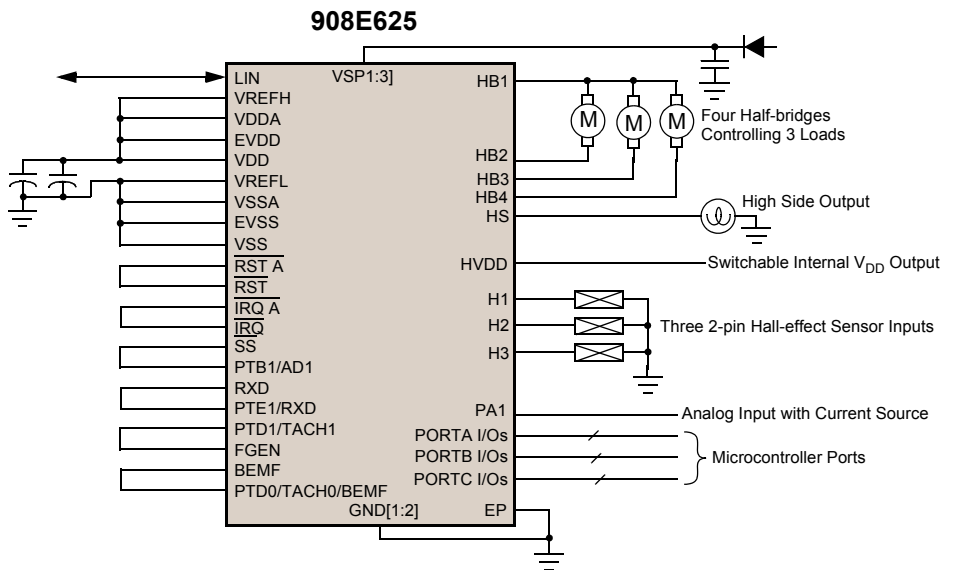
- Automotive Systems
- DC Motor and Actuator Control in Boats, RVs, and Marine Systems
- DC Motor Control in Industrial and Robotic Systems
- Appliance and White Goods Electrical Actuators
- Powered Machine and Hand Tools
- Antenna Rotors and Dish Positioning Systems
- LED and Incandescent Lamps

Overview

The 908E625 is an integrated single package solution, including a high performance HC08 microcontroller with a SMARTMOS analog control IC. The HC08 includes flash memory, a timer, enhanced serial communications interface (ESCI), an analog-to-digital converter (ADC), internal serial peripheral interface (SPI), and an internal clock generator (ICG) module. The analog control die provides fully protected H-Bridge/high side outputs, voltage regulator, autonomous watchdog with cyclic wake-up, and local interconnect network (LIN) physical layer.

The single package solution, together with LIN, provides optimal application performance adjustments and space saving PCB design. It is well-suited for the control of automotive mirror, door lock, and light leveling applications.

MM908E625 Simplified Application Diagram



Performance	Typical Values
Outputs	4 HB, 1 HS
$R_{DS(ON)}$ @ 25 °C	
H-Bridge	425 mW
High Side Switch ¹	600 mW
Operating Voltage	8.0 to 18 V
Peak Current	5.0 A per HB
ESD, HBM	± 3000 V
Ambient Operating Temperature	-40 °C ≤ T _A ≤ 85 °C
Junction Operating Temperature	-40 °C ≤ T _J ≤ 125 °C

Features

- High-performance M68HC908EY16 core
- 16 KB of on-chip flash memory & 512 B of RAM
- Internal clock generation module
- Two 16-bit, two-channel timers
- 10-bit ADC
- Three 2-pin Hall effect sensor input ports
- One analog input with switchable current source
- Four low $R_{DS(ON)}$ half-bridge outputs
- One low $R_{DS(ON)}$ high side output
- 13 microcontroller I/Os
- Additional devices available for comparison in the Analog Product Selector Guide SG1002 and Automotive Product Selector Guide SG187

Customer Benefits

- Integrate microcontroller and analog features in the same package solution
- Provide a full LIN node solution
- Reduced space resulting in enhanced reliability
- Internal protection features provide full protection for output stages (with status reporting)
- Economical and autonomous multi-function solution with few external components
- Easy control of DC as well as stepper motor
- Low-power mode flexibility and wake-up options

Questions

- Are you using a LIN communication system?
- Do you need a single package solution integrating a HC08 microcontroller, a LIN node, and motor drivers?
- Do you have to minimize the size of your PCB application?
- Do you need to control high-current motors?
- Do you need to reduce system cost?

Ordering Information

Device	Temperature Range	Package
MM908E625ACPEK/R2	-40 to 85°C	54 SOICW-EP

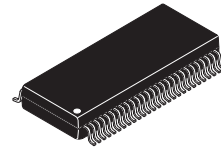
Evaluation Board

KIT908E625DWBEVB	Evaluation Board. Contact sales for kit availability.
------------------	---

Documentation

MM908E625	Data sheet order number
SG1002	Analog Product Selector Guide
SG 187	Automotive Product Selector Guide

54 SOICW-EP



EK SUFFIX
98ARL10519D

Learn More: For current information about Freescale products, please visit www.freescale.com.