MM908E624

Integrated Triple High Side Switch with Embedded MCU and LIN Serial Communication for Relay Drivers

Applications

- Automotive
- Robotics
- DC Motor Control
- Relay Driver Applications
- Marine Systems

Overview

The 908E624 is an integrated single package solution that includes 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 module. The analog control die provides three high side outputs with diagnostic functions, voltage regulator, watchdog, current sense operational amplifier, 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 high-current motors applications using relays (e.g., window lifts, fans, and sun roofs).

MM908E624 Simplified Application Diagram
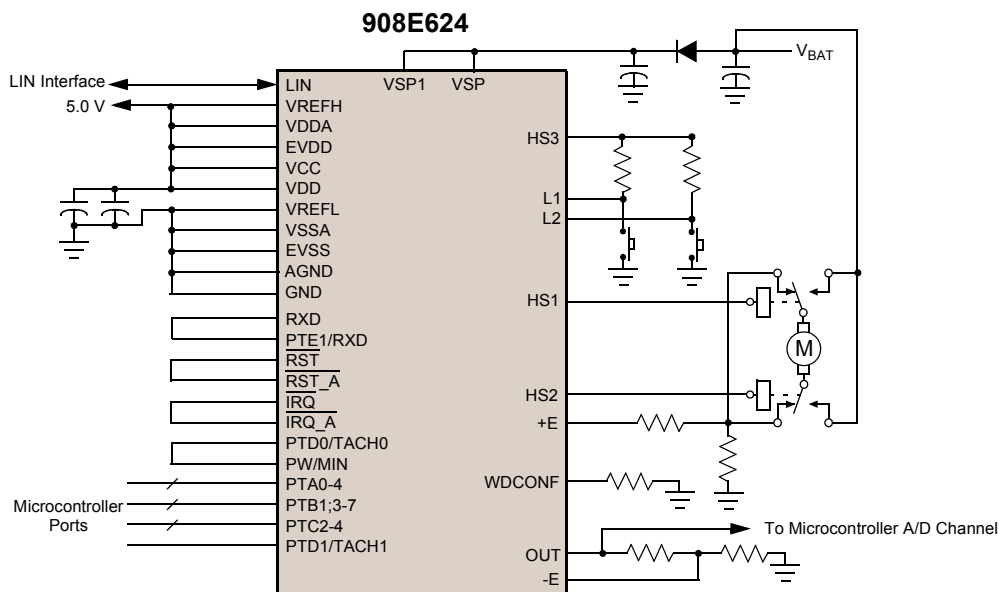
Performance	Typical Values
Outputs	3 HS
$R_{DS(ON)}$ @ 25 °C HS1 and HS2 HS3	2.5 W 7.0 W
Operating Voltage	7.5 V to 20.0 V
ESD	± 2000 V
Ambient Operating Temperature	-40 °C $\leq T_A \leq$ 125 °C
Junction Operating Temperature	-40 °C $\leq T_J \leq$ 125 °C

Features

- High-performance M68HC908EY16 core
- 16 KB of on-chip flash memory
- 512 B of RAM
- Internal clock generator module
- Two 16-bit, two-channel timers
- 10-bit ADC
- LIN physical layer interface
- Low drop voltage regulator
- Three high side outputs
- Two wake-up inputs
- Devices available for comparison are 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
- Easy control of high-current motors using relays and current recopy features
- 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
- Two wake-up inputs for system use
- 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
MM908E624ACPEW/R2	-40 to 85°C	54 SOICW
MM908E624AYPEW/R2	-40 to 125°C	

Evaluation Board	
KIT908E624DWBEVB	Evaluation Board. Contact sales for kit availability.

Documentation	
MM908E624	Data sheet order number
SG1002	Analog Product Selector Guide
SG 187	Automotive Product Selector Guide

54 SOICW
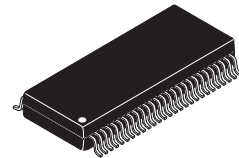
EW (Pb-FREE) SUFFIX
98ASA99294D

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

Document Number: MM908E624FS
REV 5.0