

# MM908E621

## Integrated Quad Half-bridge and Triple High Side with Embedded MCU and LIN for High End Mirror

### Applications

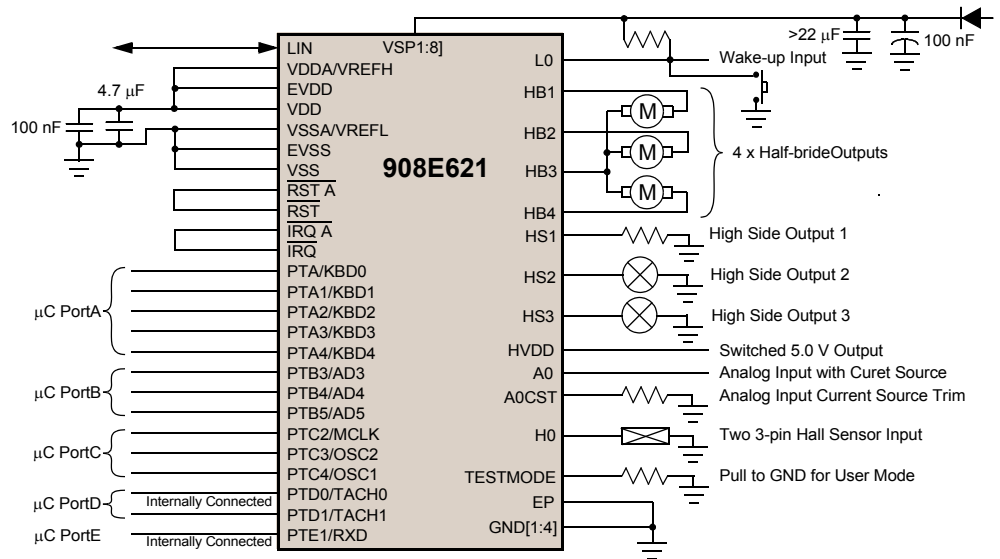
- Automotive
- Robotics
- Small DC Motor Control
- Lamp / LED Control
- Marine Systems

### Overview

The 908E621 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), a 10 bit analog-to-digital converter (ADC), internal serial peripheral interface (SPI), and an internal clock generator module (ICG). The analog control die provides four half-bridge and three high side outputs with diagnostic functions, a Hall effect sensor input, analog inputs, voltage regulator, window watchdog, 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 end mirrors.

### MM908E621 Simplified Application Diagram



Performance	Typical Values
Outputs	4xHB / 3xHS
$R_{DS(ON)}$ @ 25 °C	
HB1/HB2 and HB3/HB4	750 mW and 275 mW
HS1 and HS2/HS3	185 mW and 440 mW
Operating Voltage	7.5 to 20 V
ESD	± 2000 V
Ambient Operating Temp	-40 °C ≤ T <sub>A</sub> ≤ 85 °C
Junction Operating Temp	-40 °C ≤ T <sub>J</sub> ≤ 125 °C

## Features

- High performance M68HC908EY16 core
- 16 KB of on-chip flash memory, 512 B of RAM
- Internal clock generator module (ICG)
- Two 16-bit, two-channel timers
- 10-bit analog-to-digital converter (ADC)
- LIN physical layer interface
- Autonomous MCU watchdog / MCU supervision
- One analog input with switchable current source
- Four low RDS(ON) half-bridge outputs
- Three low RDS(ON) high side outputs
- Wake-up input
- One 2 or 3-pin Hall effect sensor input
- 12 microcontroller I/Os
- Additional devices available for comparison in 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 DC motors, Lamps/LED
- 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 low-power modes and wake-up options
- One wake-up input for system use

## 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 DC motors, LED/ Lamps?
- Do you need to reduce system cost?

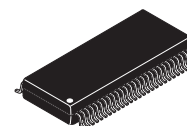
## Ordering Information

Device	Temperature Range	Package
MM908E621ACPEK/R2	-40 to 85°C	54 SOICW-EP

## Documentation

MM908E621	Data sheet order number
SG1002	Analog Product Selector Guide
SG 187	Automotive Product Selector Guide

## 54 SOICW-EP



EK (Pb-Free)  
98ASA10712D

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