MM908E622

Integrated Quad Half-bridge, Triple High Side and EC Glass Driver with Embedded MCU and LIN
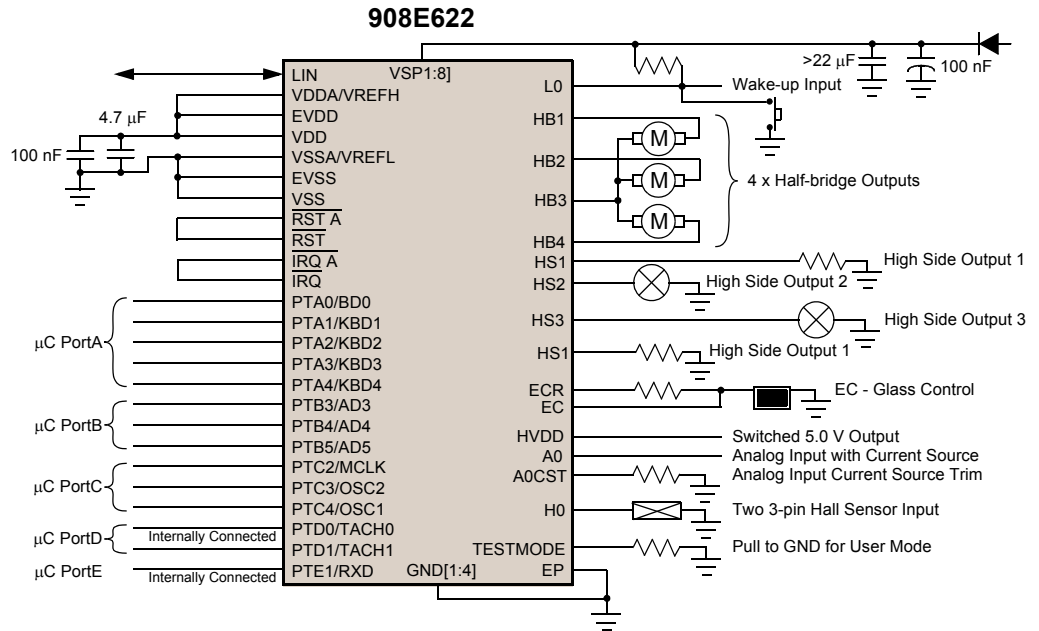
Applications

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

Overview

The MM908E622 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 four half-bridge and three high side outputs with diagnostic functions, an EC glass driver circuit, 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.

MM908E622 Simplified Application Diagram

Performance	Typical Values
Outputs	4xHB / 3xHS / 1xEC
$R_{DS(ON)}$ @ 25 °C	
HB1/HB2 and HB3/HB4	750 mΩ and 275 mΩ
HS1 and HS2/HS3	185 mΩ and 440 mΩ
Operating Voltage	7.5 to 20.0 V
ESD	± 2000 V
Ambient Operating Temperature	-40 °C $\leq T_A \leq$ 85 °C
Junction Operating Temperature	-40 °C $\leq T_J \leq$ 125 °C

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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 $R_{DS(ON)}$ half-bridge outputs
- Three low $R_{DS(ON)}$ high side outputs
- EC glass driver circuitry
- Wake-up Input
- One 2 or 3-pin Hall effect sensor input
- 12 microcontroller I/Os
- 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 DC motors, lamps/LED and Electrochrom
- 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, EC glass?
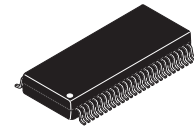- Do you need to reduce system cost

Ordering Information		
Device	**Temperature Range**	**Package**
MM908E622ACPEK/R2	-40 to 85 °C	54 SOICW-EP
Documentation		
MM908E622	Data sheet order number	
SG1002	Analog Product Selector Guide	
SG 187	Automotive Product Selector Guide	

54 SOICW-EP

EK SUFFIX
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