







**THE DATASHEET OF  
S912ZVMBA4F0VLFR**



# S12 MagniV Mixed-Signal MCUs S12ZVMB Family

Integrated solution for reversible DC motor control applications with H-Bridge

## Features

-  DC Motor Control
-  Integrated LIN PHY
-  V<sub>REG</sub> for 12 V Supply
-  4-ch. MOSFET Gate driver
-  Ultra-reliable Industrial
-  AEC-Q100 Grade0 (150 °C Ta / 175 °C Tj)

## Product One-Pager

**System in a Package**—Highly integrated solution ideal for mechatronic approach to DC motors controlled by LIN or PWM command

**Scalable**—48/64 pin, up to 64 KB flash, up to 150 °C Ta

**High reliability**—High immunity to EMI and ESD stresses, LIN 2.x compliant with +/- 8 kV ESD capability

**Low system cost**—Operating straight from car battery, integrated PHY for LIN, 4-channel motor control MOSFET gate pre-drivers and op-amp for current sensing

**Enablement**—Supported by comprehensive hardware and software solution

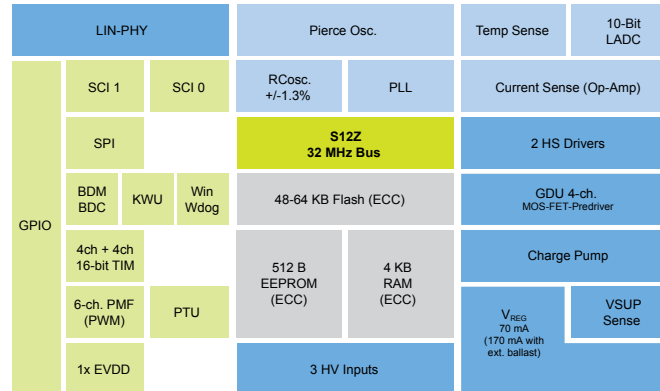
## S12ZVMB Specifications

|         |                             |             |                                  |
|---------|-----------------------------|-------------|----------------------------------|
| Core    | S12Z; 32 MHz bus            | HS-Driver   | 2-ch. 12 V                       |
| Flash   | 48-64 KB                    | Gate Driver | 4-ch. FET Gate driver            |
| RAM     | 4 KB                        | PWM         | 6-ch. motor control PWM          |
| EEPROM  | 512 B                       | PTU         | Triggering ADC & PWM             |
| Phy     | LIN                         | ADC         | 5-9 ch, 10 bit                   |
| SCI/SPI | 2/1                         | OpAmp       | 1 x for current sensing          |
| HVI     | 3                           | EVDD        | 1-ch. 5 V / 20 mA (source)       |
| Timer   | 4ch + 4ch 16-bit            | 12V VREG    | 70 mA (170 mA with ext. ballast) |
| Temp    | Up to 150 °C Ta / 175 °C Tj | Op Range    | 7 V–20 V                         |

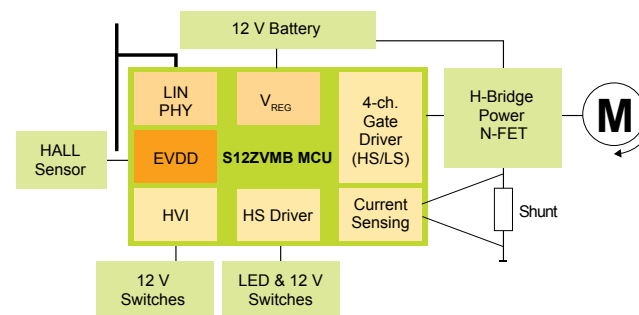
## Sample Part Numbers

| Part Number       | Flash | Temp Range       | Package | Available | Test Coverage |
|-------------------|-------|------------------|---------|-----------|---------------|
| P912ZVMB A64F0MLF | 64 KB | -40 °C to 125 °C | 48 LQFP | Now       | 3-Temp        |
| P912ZVMB A64F0WLF | 64 KB | -40 °C to 150 °C | 48 LQFP | Now       | 3-Temp        |
| P912ZVMB A64F0MLH | 64 KB | -40 °C to 125 °C | 64 LQFP | Now       | 3-Temp        |

## Product Block Diagram



## Application Example Block Diagram



## Target Applications

- ▶ Anti-Pinch window lift
- ▶ Sunroof
- ▶ Automatic doors
- ▶ Power lift gate
- ▶ Seat adjustment
- ▶ Valves (powertrain)
- ▶ Seat belt pretensioner

## Enablement Tools

- ▶ Evaluation Board
  - X-S12ZVMBEVB
- ▶ Compiler/Debugger
  - CodeWarrior® IDE
  - Cosmic IDE
- ▶ LIN Stack

## Availability

Samples & tools available in limited quantity. Please contact local sales representative



[www.NXP.com/S12ZVMB](http://www.NXP.com/S12ZVMB)

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