







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_{REG} 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

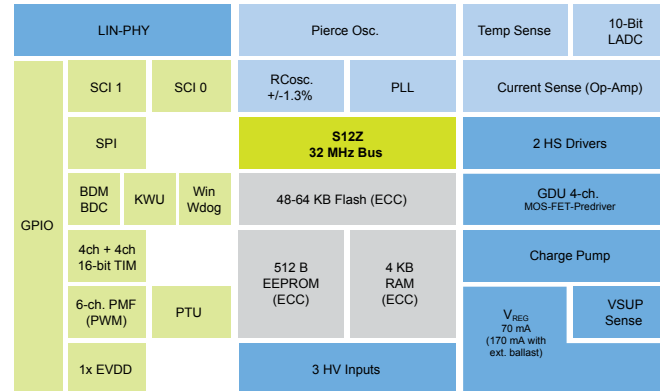
S12ZVMB Specifications

| | | | |
|---------|-----------------------------|-------------|----------------------------------|
| 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 |

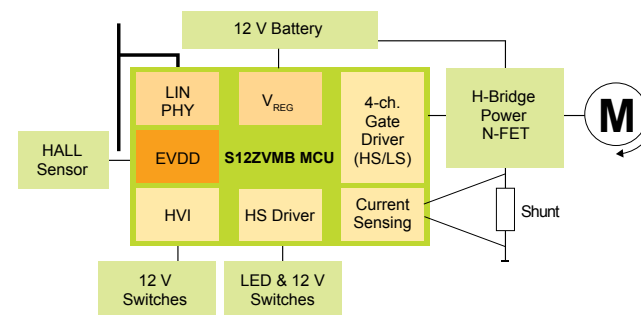
Sample Part Numbers

| 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

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