# S12 MagniV Mixed-Signal MCUs S12ZVMB Family

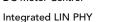
Integrated solution for reversible DC motor control applications with H-Bridge

#### **Features**

DC Motor Control

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 cotrol 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		

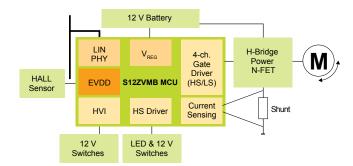
# **Sample Part Numbers**

Part Number	Flash	Temp Range	Package	Available	Test Coverage
P912ZVMBA64F0MLF	64 KB	-40 °C to 125 °C	48 LQFP	Now	3-Temp
P912ZVMBA64F0WLF	64 KB	-40 °C to 150 °C	48 LQFP	Now	3-Temp
P912ZVMBA64F0MLH	64 KB	-40 °C to 125 °C	64 LQFP	Now	3-Temp

## **Product Block Diagram**

	LIN-PHY	,	Pierce Osc.		Temp Sense	10-Bit LADC	
GPIO	SCI 1 SCI 0		RCosc. +/-1.3% PLL Cu		Current Sen	urrent Sense (Op-Amp)	
	SPI		S12Z 32 MHz Bus		2 HS Drivers		
	BDM BDC	WU Win Wdog	48-64 KB Flash (ECC)		GDU 4-ch. MOS-FET-Predriver		
	4ch + 4ch 16-bit TIM		512 B EEPROM	4 KB RAM	Charge Pump		
	6-ch. PMF (PWM)	PTU	(ECC)	(ECC)	V <sub>REG</sub> 70 mA (170 mA with	VSUP Sense	
	1x EVDD		3 HV Inputs		ext. ballast)		

# **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