# S12 MagniV S12ZVL

# **Smallest Integrated LIN Slave MCU**

### **Features**



Operates from car battery



Ultra-reliable industrial



Integrated LIN transceiver



### Product One-Sheet

Get Sample

Data Sheet

Tools

System in a Package – Highly integrated part ideal for space constrained applications such as actuators, sensors, LIN nodes, etc.

Low System Cost - Direct connection with battery, integrated LIN Phy, EVDD and NGPIOs reduce system, qualification and manufacturing cost.

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

**Enablement** – Supported by comprehensive hardware and software system (free low-level drivers to enterprise 3rd party tools) which reduces development costs and time to market.

# **S12ZVL Specifications**

Flash EEPROM	8–128 KB, 2 KB	Timer/ PWM	6 ch. + 2 ch. 16-bit/ 8 ch. 16-bit
RAM	8 KB	12 V VREG	12 V/70 mA, 170 mA with external ballast
Core	S12Z	EVDD	1 ch. 5 V/20 mA (source)
Speed	32 MHz	NGPIO	3 ch. 5 V/25 mA (sink)
ADC	10 ch. 12-bit	SCI/SPI/I <sup>2</sup> C	2/1/1
HVI	1	Packages	32LQFP, 32QFN, 48LQFP
LIN Phy	1	Op Range	5.5 V–18 V
Amb Temp	Up to 150° C		

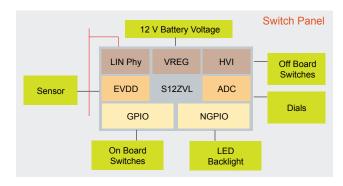
## **Part Numbers**

32LQFP	32QFN-EP	48LQFP	
S912ZVLA12F0MLC	S912ZVLA12F0MFM	S912ZVLA12F0MLF	
S912ZVLA96F0MLC	S912ZVLA96F0MFM	S912ZVLA96F0MLF	
S912ZVLA64F0MLC	S912ZVLA64F0MFM	S912ZVLA64F0MLF	
S9S12ZVL32F0MLC	S9S12ZVLS3F0MFM	S9S12ZVL32F0MLF	
S9S12ZVL16F0MLC	S9S12ZVLS1F0MFM	S9S12ZVL16F0MLF	
S9S12ZVL8F0MLC	S9S12ZVLS8F0MFM	S9S12ZVL8F0MLF	
		S912ZVLA12F0WLF	
		S9S12ZVL32F0WLF	

# **Block Diagram**

Core	High Voltage Analog	Memories	System
S12Z	12 V VREG	Flash (ECC) 128 KB	CPMU
32 MHz Bus	LIN Physical Layer		IPLL
DBG		EEPROM (ECC) 2 KB	IRC
	High Voltage		XOSCLCP
BDC	Input	SRAM (ECC)	
	VSUP Sense	8 KB	
Analog	Timers	Comm. Interfaces	HMI
12-bit ADC	6 ch. TIM0	1x LIN Phy	GPIO
1x EVDD	2 ch. TIM1	2x SCI	KWU
3x NGPIO	API	1x IIC	IRQ
Temp Sense	RTI	1x SPI	
ACMP			
	PWM	1x MSCAN	
8-bit DAC			

# Switch Panel



# Product Longevity



### Success Stories

- LIN-based user-interface in Europe and Asia
- LIN-based immobilizer receiver in US
- LIN-based mirror control in Europe
- LIN-based airquality sensor in Europe

# **Target Applications**

- LIN nodes
- LIN switch panel/user interface
- LIN actuators, sensors
- HVAC
- Lighting controls
- Ambient lighting
- Seat positioning
- Ultrasonic sensors

### **Enablement Tools**

### Evaluation boards/hardware

- TRK-S12ZVL
- DEVKIT-ZVL128
- DFVKIT-S127VI

#### Reference solutions

- Ultrasonic distance measurement
- LIN RGB LED

CodeWarrior, Cosmic

LIN drivers



## www.NXP.com/S12ZVL