S12 MagniV® Mixed-Signal MCUs
S12VR Family

Integrated Solution for Relay Driver (e.g., Windowlift/Sunroof)

Features

Relay Driver

VREG for 12 V Supply

Integrated LIN Phy

Ultra-Reliable Industrial

Product One-Sheet

[Get Sample] [Data Sheet] [Tools]

System in a package—Highly integrated part ideal for space constrained relay driven DC motors on LIN Bus

Low system cost—Direct connection with battery, integrated LIN Phy, LS & HS drivers and EVDD reduce system, qualification and manufacturing cost.

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

Enablement—Supported by comprehensive hardware and software solution, which reduces development costs and time-to-market

S12VR Specifications

Flash	16-64 KB	LS/HS Driver	2 / Up to 2
RAM	2 KB	V_{REG}	70 mA at 12 V
EEPROM	128–512 B	EVDD	1-ch. 5 V/20 mA
Core	S12, 25 Mhz	SCI/SPI	Up to 2/1
ADC	10-bit, 10-ch.	Packages	32 LQFP, 48 LQFP
HVI	4	Timer/PWM	4-ch.,16-bit/4-ch.,16-bit
LIN Phy	1	Op Range	5.5 V–18 V

Part Numbers

Part Number	Temp Range	Package
S9S12VR64AF0MLF	-40 to 125 °C	48 LQFP
S9S12VR64AF0MLC	-40 to 125 °C	32 LQFP
S9S12VR32F0MLC	-40 to 125 °C	32 LQFP

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Product Block Diagram

Core	High Voltage Analog	Memories	System
S12 25 MHz	12 V V_{REG}	Flash (ECC) 16–64 KB	CPMU
	LIN Phy		IPLL
DBG	2 x LS Drivers	EEPROM (ECC) 128–512 B	IRC
	up to 2 HS Drivers		XOSCLCP
BDC	4 x HVI	SRAM 2 KB	WDOG
	V_{BAT} Sense		

Analog	Timers	Comm. Interfaces	HMI
10-bit ADC	4-ch., 16-bit	1 x LIN Phy	GPIO
1 x EVDD	8-ch., 8-bit	Up to 2 x SCI	KWU
	API	Up to 1 x SPI	IRQ
	RTI		
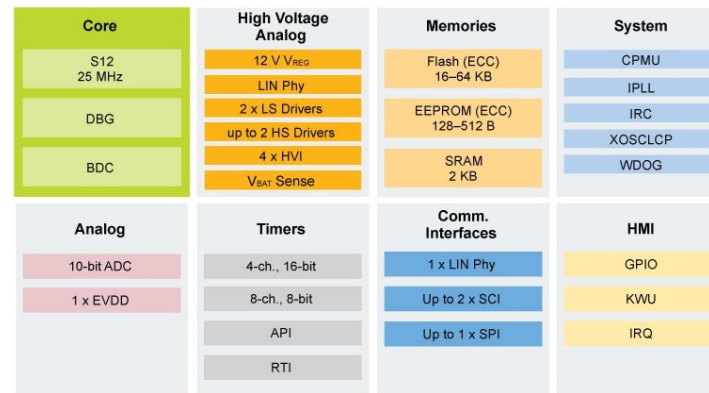
Application Example Block Diagram
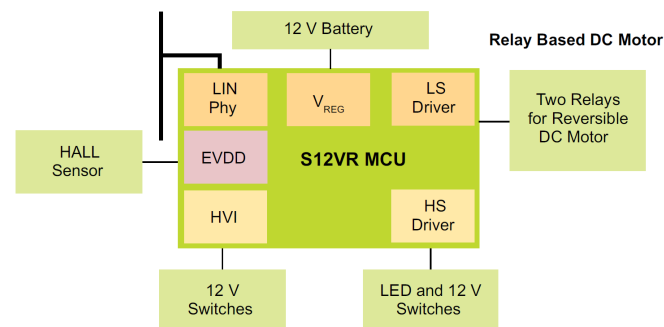
Success Stories

- Anti-pinch window lift and sunroof
- Power lift gate
- Seat heating
- Small LIN node

Target Applications

- Anti-pinch window lift
- Sunroof
- Automatic doors
- Power lift gate
- Seat adjustment
- Seat heating
- Small LIN node

Enablement Tools

- Evaluation boards/hardware
  - S12VR64EVB
  - S12VR32EVB
  - DEVKIT-S12ZVR64
- Reference solutions
  - Anti-pinch window lift reference design
- Compiler/Debugger
  - CodeWarrior® IDE
  - Cosmic IDE
- LIN stack