S12 MagniV Mixed Signal MCUs
S12VR Family

Integrated solution for Relay Driver (eg. Windowlift/sunroof)

Features

- Relay Driver
- Integrated LIN Phy
- Vreg for 12V Supply
- 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 – Operating straight from car battery, integrated LIN phy, LS & HS drivers, HVI's for 12 V switch interfaces, EVDD for sensor supply 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.
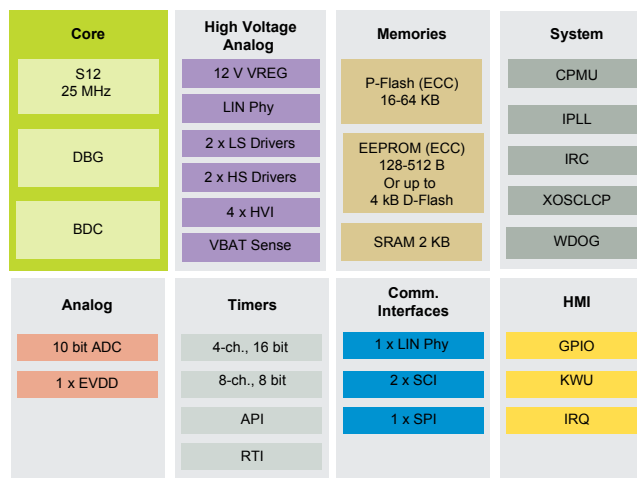
S12VR Specifications

Flash	16-64 KB	LS Driver	2 (for driving relays)
RAM	2-6 KB	HS Driver	1–2
EEPROM	128–512 B EE or 2-4 kB D-Flash	12V VREG	70 mA at 12 V
Core	S12	EVDD	1ch 5 V/20 mA (source)
Speed	25 Mhz	SCI/SPI	Up to 2/1
ADC	10 bit 10 channel	Packages	32 LQFP, 48 LQFP
HVI	4–6	Timer/PWM	4-ch. 16 bit/4-ch. 16 bit
LIN Phy	1	Op Range	5.5 V–18 V

Orderable Sample Part Numbers (superset)

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
S9S12VRP64F0MLF	-40 to 125 °C	48 LQFP

www.nxp.com/S12VR

Product Block Diagram

Core	High Voltage Analog	Memories	System
S12 25 MHz	12 V VREG	P-Flash (ECC) 16-64 KB	CPMU
	LIN Phy		IPLL
DBG	2 x LS Drivers	EEPROM (ECC) 128-512 B Or up to 4 kB D-Flash	IRC
	2 x HS Drivers		XOSCLCP
BDC	4 x HVI	SRAM 2 KB	WDOG
	VBAT 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	2 x SCI	KWU
	API	1 x SPI	IRQ
	RTI		

Application Example Block Diagram

Relay Based DC Motor
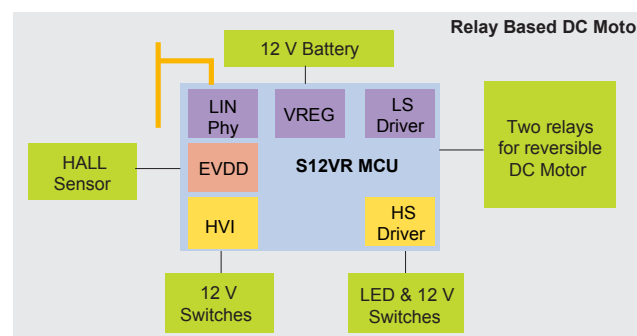
Success Stories

- Anti Pinch Window-Lift and Sunroof Worldwide
- Power Lift Gate in Americas
- Seat Heating in China
- Small LIN node in Asia

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-S12VRP
- Reference Solutions
  – Anti-Pinch Window Lift Reference Design
- Compiler / Debugger
  – CodeWarrior
  – Cosmic
- LIN Stack

Mouser Electronics

Authorized Distributor

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[NXP](#):

  S9S12VR48F2CLC   S9S12VR48F2CLF   S9S12VR48F2VLC   S9S12VR48F2VLF   S9S12VR64F2CLC

S9S12VR64F2CLF   S9S12VR64F2VLC   S9S12VR64F2VLF   S9S12VR48F2CLCR   S9S12VR48AF0VLF

S9S12VR48F2VLFR   S9S12VR48F2VLCR   S9S12VR48F2CLFR   S9S12VR64AF0VLF   S9S12VR64AF0CLC

S9S12VR64AF0VLC   S9S12VR64AF0CLF   S9S12VR48AF0CLF   S9S12VR48AF0CLFR   S9S12VR48AF0VLCR

S9S12VR48AF0VLC   S9S12VR48AF0VLFR   S9S12VR48AF0CLC   S9S12VR48AF0CLCR   S9S12VR16F0VLC

S9S12VR32F0VLCR   S9S12VR16F0MLC   S9S12VR16F0CLC   S9S12VRP64F0MLF   S9S12VR16F0CLCR

S9S12VR32F0CLC   S9S12VR32F0VLC   S9S12VR48AF0MLCR   S9S12VR32F0CLCR   S9S12VR64AF0MLCR

S9S12VR48AF0MLC   S9S12VR32F0MLC   S9S12VR16F0VLCR   S9S12VRP64F0VLF   S9S12VR16F0MLCR

S9S12VR32F0MLCR   S9S12VR64AF0MLFR   S9S12VR64AF0MLF   S9S12VR48AF0MLFR   S9S12VR48AF0MLF

S9S12VR64AF0MLC   S9S12VRP64F0MLFR   S9S12VR48AACLC   S9S12VR48AACLCR   S9S12VR48AACLF

S9S12VR48AACLFR   S9S12VR48AAMLC   S9S12VR48AAMLCR   S9S12VR48AAMLF   S9S12VR48AAMLFR

S9S12VR48AAVLC   S9S12VR48AAVLCR   S9S12VR48AAVLF   S9S12VR48AAVLFR   S9S12VR64AACLC

S9S12VR64AACLF   S9S12VR64AAMLC   S9S12VR64AAMLCR   S9S12VR64AAMLF   S9S12VR64AAMLFR

S9S12VR64AAVLC   S9S12VR64AAVLF