



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com





Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China






S12 MagniV Mixed-Signal MCUs S12ZVM Family

Integrated solution for 3-phase BLDC motor control applications

Features

-  3-Phase Motor Control
-  Integrated LIN Phy
-  Integrated CAN Phy
-  V_{REG} for 12 V Supply

-  6-ch. MOSFET Gate Driver
-  Ultra-reliable Industrial
-  AEC-Q100 Grade0
(150 °C Ta / 175 °C Tj)

Product One-Sheet

Get Sample

Data Sheet

Tools

System in a package—Highly integrated solution ideal for 3-Phase motors

High performance—S12Z performance supports field-oriented control (FOC) for maximum energy efficiency/lowest audible noise

Scalable—CAN-, LIN-, and HV-PWM-PHY options with memory up to 256 KB

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 or CAN, 6 channel motor control MOSFET gate pre-drivers

Enablement—Supported by comprehensive hardware and software solution

S12ZVM Specifications

Core	S12Z; 50 MHz bus	Gate Driver	6-ch. motor control FET driver
12 V V _{REG}	70 mA (boost option to 140 mA)	PWM	–6-ch. motor control PWM –Additional 4-ch., 16-bit PWM
Flash	16–256 KB	PTU	Triggering ADC & PWM
RAM	2–32 KB	ADC	2 ADCs, 1+3 to 8+8 ch., 12-bit
EEPROM	128 B–1 KB	OpAmp	2 x for current sensing
PHY	CAN, LIN or PWM	EVDD	1-ch. 5 V/ 20 mA (source)
SCI/SPI	Up to 2/1	Op Range	3.5 V–20 V
HVI	Up to 1	Timer	4-ch., 16-bit

Orderable Sample Part Numbers

Part Number	Flash	Temp Range	Package
S912ZVMC12F1MKH	128 KB	-40 °C to 125 °C	64 LQFP-EP
S912ZVMC12F1WKH	128 KB	-40 °C to 150 °C	64 LQFP-EP
S912ZVML12F1WKH	128 KB	-40 °C to 150 °C	64 LQFP-EP
S912ZVML12F1MKH	128 KB	-40 °C to 125 °C	64 LQFP-EP
S912ZVML31F1WKH	32 KB	-40 °C to 150 °C	64 LQFP-EP
S912ZVML31F1WKF	32 KB	-40 °C to 150 °C	48 LQFP-EP
S912ZVMC25F1WKK	256 KB	-40 °C to 150 °C	80 LQFP-EP

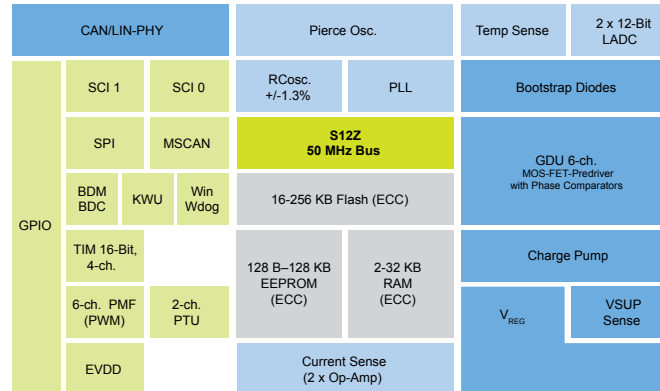
*Limited Sample-availability for 256 KB version with CAN-PHY. Contact your local sales

www.NXP.com/S12ZVM

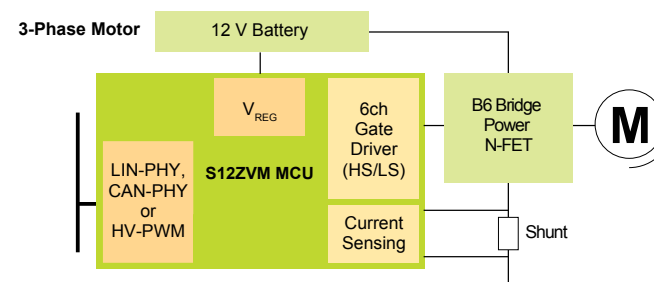
NXP, the NXP logo, CodeWarrior and MagniV are trademarks of NXP B.V. All other product or service names are the property of their respective owners. © 2016 NXP B.V.

Document Number: S12ZVMFS REV 5

Product Block Diagram



Application Example Block Diagram



Success Stories

- ▶ Engine cooling fans
- ▶ Fuel pumps
- ▶ Water pumps
- ▶ HVAC blower
- ▶ Superchargers

Target Applications

- ▶ Engine cooling fan/HVAC blower
- ▶ Oil/Fuel/Water pumps
- ▶ Compressors
- ▶ Turbo/Supercharger
- ▶ Wipers

Enablement Tools

- ▶ Evaluation boards/hardware
 - S12ZVML12EVBLIN
 - S12ZVMC12EVBCAN
 - S12ZVM32EVB
 - S12ZVML-MINIBRD
 - S12ZVMC256EVB
- ▶ Software Tools
 - Motor Control Development Toolbox
 - Automotive Math and Motorcontrol Libraries
 - FreeMASTER Run-Time Debugging Tool
 - MCAT Motorcontrol Algorithm Parameter Tuning
- ▶ Reference Solutions
 - BLDC: MTRCKTSBNZVM128
 - PMSM: MTRCKTSPNZVM128
- ▶ Compiler/Debugger
 - CodeWarrior® IDE
 - Cosmic IDE
- ▶ LIN Stack

