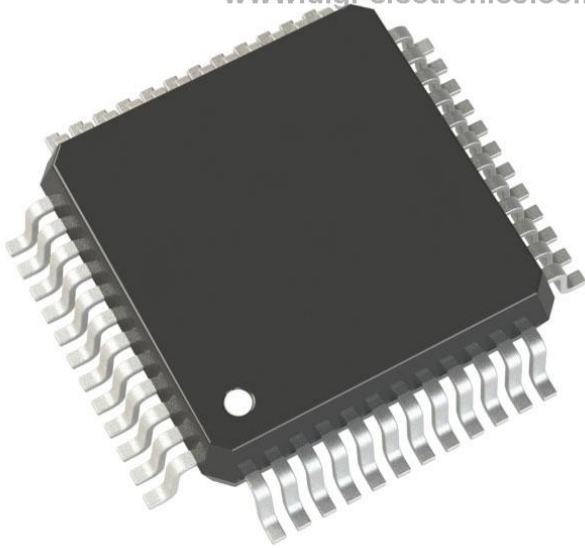


[www.digi-electronics.com](http://www.digi-electronics.com)



# C96F0MLF Datasheet

DiGi Electronics Part Number	S912ZVC96F0MLF-DG
Manufacturer	<a href="#">NXP USA Inc.</a>
Manufacturer Product Number	S912ZVC96F0MLF
Description	IC MCU 16BIT 96KB FLASH 48LQFP

<https://www.DiGi-Electronics.com>

**Detailed Description** S12Z S12 MagniV Microcontroller IC 16-Bit 32MHz 96KB (96K x 8) FLASH 48-LQFP (7x7)

This model S912ZVC96F0MLF is available at DiGi Electronics.

DiGi Electronics offers a global database of semiconductor and electronic component datasheets. We welcome your inquiries regarding pricing, lead time, or other product-related questions.

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Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

S912ZVC96F0MLF

Series:

S12 MagniV

DiGi-Electronics Programmable:

Not Verified

Core Size:

16-Bit

Connectivity:

CANbus, I2C, SCI, SPI

Number of I/O:

28

Program Memory Type:

FLASH

RAM Size:

8K x 8

Data Converters:

A/D 10x10b; D/A 1x8b

Operating Temperature:

-40°C ~ 125°C (TA)

Supplier Device Package:

48-LQFP (7x7)

Base Product Number:

Manufacturer:

NXP USA Inc.

Product Status:

Discontinued at Digi-Key

Core Processor:

S12Z

Speed:

32MHz

Peripherals:

DMA, POR, PWM, WDT

Program Memory Size:

96KB (96K x 8)

EEPROM Size:

2K x 8

Voltage - Supply (Vcc/Vdd):

3.5V ~ 40V

Oscillator Type:

Internal

Mounting Type:

Surface Mount

Package / Case:

48-LQFP



Product One-Sheet

# S12 MagniV S12ZVC

## Smallest Integrated CAN MCU

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

**Low System Cost** – Directly powered by battery. Integrated CAN phy, Vreg, high voltage pins, and op-amps reduce system, test, qualification and manufacturing cost.

**High Reliability** – High immunity to EMI and ESD stresses, CAN HS/LS compliant with +/- 8kV ESD capability.

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

## S12ZVC(A) Specifications

Flash	64-192 KB	12V VREG	12V/70mA, 170mA with ballast
RAM	4-12 KB	EVDD	1ch 5V/20mA (source)
EEPROM	1-2 KB	NGPIO	4ch 5V/25mA (sink)
Core	S12Z	ADC	10-16ch 10 bit (12 bit)
Speed	32 MHz	DAC	8 bit DAC with OpAmp
Op Range	5.5 V-18 V	Comparator	2# rail to rail
HVI	2	Timer	8ch/16B + 4ch/16B (16ns)
CAN Phy	1	PWM	4ch/16B + 4ch/16B (16ns)
Op range	5.5 V - 18 V	Comms	1MSCAN, 2 SCI, 2 SPI, 1 IIC, 1 SENT-Tx
Temp	150°C Ta	Packages	64-LQFP-EP, 48-LQFP

## Orderable Samples

Part Number	Temp Range	Package
S912ZVCA19F0MLF	-40°C to 125°C	48 LQFP
S912ZVCA19F0MKH	-40°C to 125°C	64 LQFP-EP
S912ZVCA19F0WKH	-40°C to 150°C	64 LQFP-EP

## Features



AEC-Q100 Grade 0  
Up to 150°C Ta



Fast 12 bit ADC, 2 Op Amps,  
high-res PWM/Timer



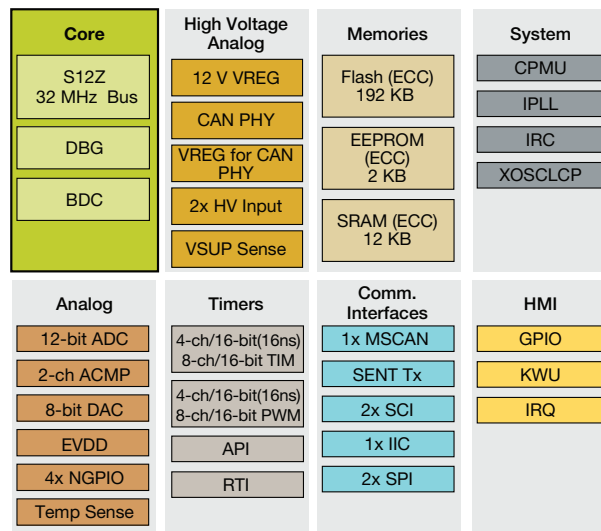
Integrated CAN transceiver



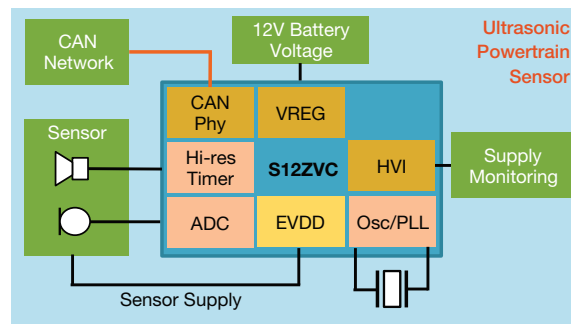
Ultra-reliable industrial

[Get Sample](#)[Data Sheet](#)[Tools](#)

## Block Diagram



## Ultrasonic Powertrain Sensor



## Success Stories

- CAN based sensors such as humidity, airmass, NOx, urea sensor
- HVAC Controllers
- Industrial CAN communication
- CAN connected motor control

## Target Applications

- CAN nodes
- CAN switch panel/user interface
- CAN actuators, sensors
- HVAC
- Lighting controls
- Seat positioning
- Seatbelt pretensioner
- Ultrasonic sensors
- Occupant detection
- Powertrain sensors (NOx)

## Enablement Tools

- Evaluation boards/hardware
  - VLG-MC9S12ZVC
- CodeWarrior, Cosmic
- LIN drivers

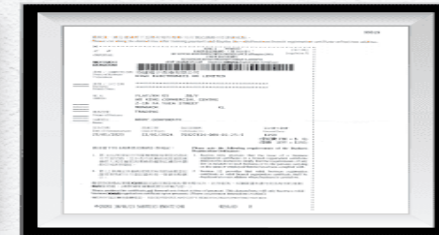
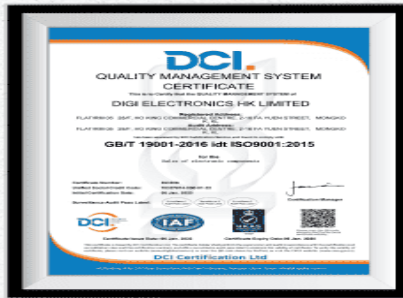


For more information, visit [freescale.com/S12ZVC](http://freescale.com/S12ZVC)

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