



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!



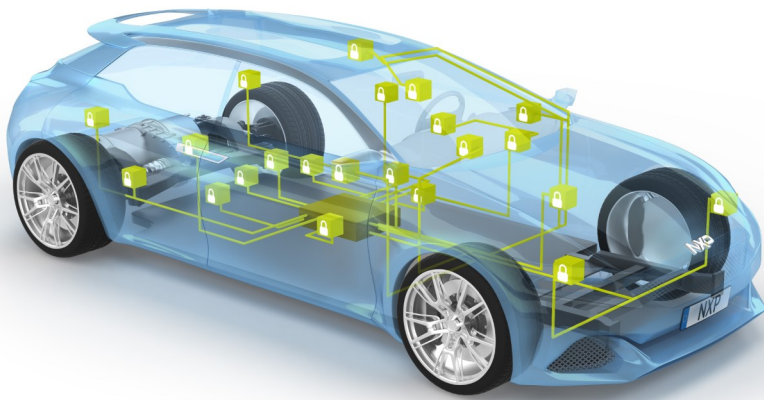
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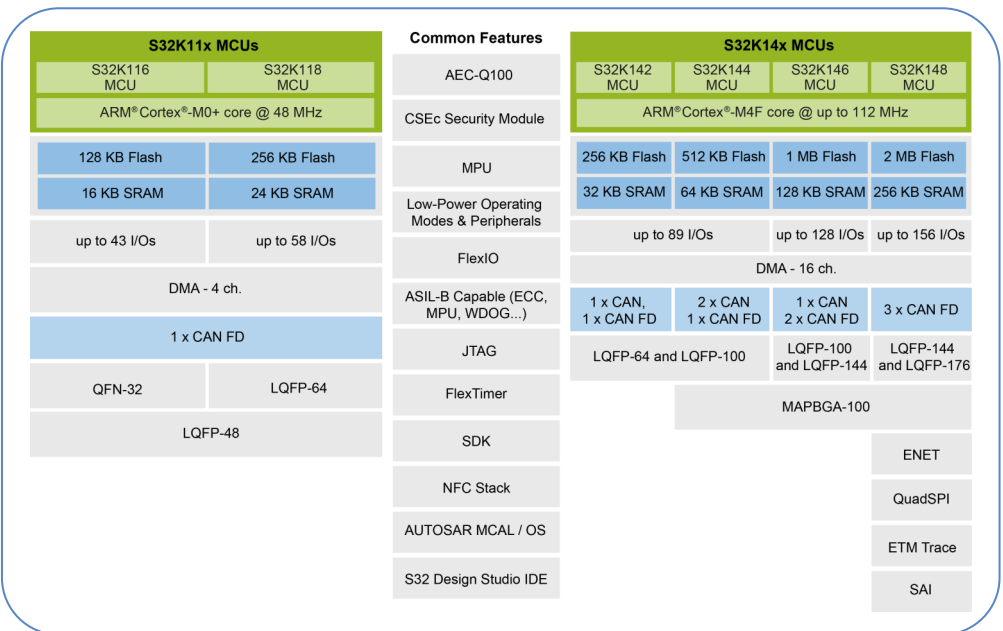
S32K1 Microcontrollers Family for General Purpose Automotive Applications

Automotive MCUs based on ARM Cortex-M technology with security, safety, low-power and full automotive grade software

The S32K1 family of 32-bit automotive AEC-Q100 qualified MCUs combines a breakthrough suite of automotive grade tools and software with a scalable family of ARM® Cortex®-M based MCUs built on future-proof features. S32K1 MCUs are included in NXP's Product Longevity Program which guarantees a minimum of 15 years assured supply.

- ▶ Maximize reuse – 6 hardware & software compatible MCU families from 128 KB to 2 MB, 32 – 176 pin, AEC-Q100 qualified up to 125 °C (Ta)
- ▶ Future proof features – ARM Cortex-M4F / M0+ cores, ISO CAN FD, CSEc hardware security (SHE compliant), ASIL-B functional safety, ultra-low power
- ▶ Minimize software complexity – S32 Design Studio IDE, Automotive Grade Software Development Kit (SDK), third party ecosystem support

S32K1 MCU FAMILY BLOCK DIAGRAM



www.nxp.com/S32K



TARGET APPLICATIONS

- ▶ Body control
- ▶ Climate control (HVAC)
- ▶ Windows/door/sun-roof
- ▶ Exhaust gas after-treatment
- ▶ PMSM/BLDC motor control
- ▶ Powertrain companion chip
- ▶ Passive safety
- ▶ Park assistance
- ▶ Immobilizer
- ▶ Touch sensing
- ▶ Motorcycle CDI/EFI
- ▶ Battery Management
- ▶ Pump/fan controller
- ▶ Airbag
- ▶ Infotainment connection module
- ▶ Gateway
- ▶ General purpose automotive
- ▶ Industrial automation and sensing
- ▶ Avionics
- ▶ Medical

S32K1 MCU FAMILY SPECIFICATIONS

Cores	ARM Cortex-M4 w/ FPU ARM Cortex-M0+	Speed	64/80/112 MHz 48/64 MHz
Flash & RAM	Up to 2 MB with ECC Up to 256 KB with ECC	EEPROM	FlexMemory – fast, high w/e endurance, variable size/cycles
Connectivity	ISO CAN-FD (up to 8 Mbps w/ 64 byte msg), IEEE1588 ENET, FlexIO, UART, SPI, IIC, SAI	Low-Power	Multi RUN/WAIT/STOP modes & IRC combinations, LP Timers/Serial Communications/ Analog, 90nm TFS flash technology
Safety	ISO26262 ASIL-B, ECC on Flash & RAM, MPU, CRC, Core Self Test Libs.	Security	CSEc (Crypto. Services Engine - compressed) – SHE compliant, AES-128, uniqueID, secure boot
Temp	-40 to 125 °C (Ta) Grade 1, AEC-Q100, 2.7-5.5 V	Packages	32 QFN, 48/64/100/144/176 LQFP, 100 MAPBGA

Part number	Core / Freq.	Flash / RAM (KB)	Features	Package	Availability (Samples / Production)
PS32K144UAT0VLHA	ARM Cortex-M4, 112MHz	512KB / 64KB	CAN-FD, FlexIO, CSEc Security, Max RAM	64 LQFP	March 2017 / June 2017
PS32K144UAT0VLLA				100 LQFP	March 2017 / June 2017
PS32K144UAT0VMHA				100 MBGA	June 2017 / Sept 2017

DEVELOPMENT TOOLS

- ▶ S32 Design Studio IDE
 - Free of charge, zero code limit, Eclipse based, supports GCC & 3rd party compilers
 - Compatible with AMMCLIB (Advanced Math & Motor Control Library)

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- ▶ NXP S32K Software Development Kit (SDK)
 - Free of charge, Automotive grade, production ready
 - MISRA & SPICE Level 3 compliant low-level drivers for all MCU peripherals
 - FreeRTOS operating system
- ▶ Evaluation Board S32K144EVB-Q100
 - Arduino™ UNO footprint-compatible with plug-in shield board support
 - SBC UJA1169, LIN PHY TJA1027
 - Easy access to all the MCU I/O pins for prototyping
 - On-chip connectivity for CAN, LIN, UART/SCI
 - Flexible power supply options - microUSB or external 12 V power supply

PARTNERS

- ▶ ARM
- ▶ Keil®
- ▶ IAR Systems
- ▶ Green Hills®
- ▶ Wind River
- ▶ ARCCORE
- ▶ AUTOSAR
- ▶ Cosmic Software
- ▶ Vector
- ▶ Elektorbit
- ▶ MathWorks®
- ▶ FreeRTOS



S32K144EVB EVALUATION BOARD

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