



# S32K1 Microcontrollers for Automotive General Purpose

## S32K1

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The S32K1 Family of 32-bit microcontrollers (MCUs) offers Arm® Cortex®-M-based MCUs, along with a basic cryptographic security engine. S32K1 Family offers scalability in memory and peripherals, ensuring high-performance and functional safety compliant with ISO 26262 up to ASIL B.

S32K1 Family is accompanied by a complete production-grade software ecosystem. S32K1 MCUs feature ultra-low-power operating modes and are supported by a comprehensive suite of production grade tools and software including an automotive-grade Software Development Kit (SDK) suitable for both AUTOSAR® and non-AUTOSAR applications.

S32K1 MCUs are available in various package types, including QFN, LQFP and MAPBGA, providing flexibility in integration and design.

# S32K1 Family Features Block Diagram

S32K116	S32K118	Common Features	S32K142	S32K144	S32K146	S32K148	S32K142W	S32K144W
Arm® Cortex®-M0+ @ 48 MHz		AEC-Q100, 5 V	Arm Cortex-M4F @ up to 112 MHz				Arm Cortex-M4F @ up to 80 MHz	
128 KB Flash	256 KB Flash	CSEc Security Module	256 KB Flash	512 KB Flash	1 MB Flash	2 MB Flash	256 KB Flash	512 KB Flash
16 KB SRAM	24 KB SRAM	Low Power Operating Modes and Peripherals	32 KB SRAM	64 KB SRAM	128 KB SRAM	256 KB SRAM	32 KB SRAM	64 KB SRAM
up to 42 I/Os	up to 58 I/Os	ASIL-B Capable: (ECC, MPU, CRC, W/DOGs)	up to 89 I/Os		up to 128 I/Os	up to 156 I/Os	up to 58 I/Os	
4 channel eDMA		LPUART, LPSPi, LPIIC, FlexIO	16 channel eDMA					
1x FlexCAN with 1x FD		FlexTimers, LP Timers, Prog. Delay Block	2x FlexCAN with 1x FD	3x FlexCAN with 1x FD	3x FlexCAN with 2x FD	3x FlexCAN with 3x FD	2x FlexCAN with 2x FD	
1x 13-ch., 12-bit ADC	1x 16-ch., 12-bit ADC	8-40 MHz Ext. Osc, 8/48 MHz Osc., 128 KHz LPO	2x 16-ch., 12-bit ADC		2x 24-ch., 12-bit ADC	2x 32-ch., 12-bit ADC	2x 16-ch., 12-bit ADC	
		*JTAG					IEEE® 158 ENE T	
		S32DS IDE, SDK					Quad SPI	
		AUTOSAR MCAL/OS					ETM Trace	
		Application SW					2x SAI	

■ S32K14x only

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