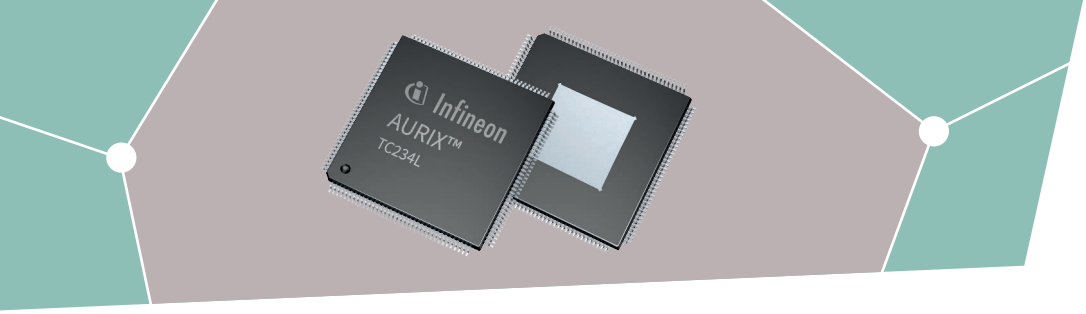


Product Brief

TC23xL – AURIX™ family

Enabling safety applications

AURIX™ is Infineon's brand new family of microcontrollers serving the needs of all safety critical automotive applications. It is based on a new generation TriCore™ cores, ranging from single core devices, up to microcontrollers with 3 independent CPUs.

Additional lockstep cores provide excellent fault detection and fast reaction times for ASIL-D safety systems.

The scalability in terms of performance, memory and packages within the AURIX™ family allows for a common safety case across the different devices, allowing single applications to be hosted on the smaller devices, but also allows multiple applications to be hosted in parallel on the larger devices without the need to modify software architecture or safety strategies.

Features

- Diverse lockstep architecture to reduce development effort for ASIL-D systems
- High integration for reduced complexity and significant cost savings
- Innovative single supply concept for best-in-class power consumption and cost savings in external supply
- Scalability in terms of performance, packages, memory and peripherals for flexibility across platform concepts
- Latest connectivity CAN FD (flexible data rate)
- Hardware security module to meet latest EVITA standard
- Scalable safety from QM to ASIL-D
- Hot package options for extended temperature range

Main features

Features TC23xL

- TriCore™ with 200 MHz
- TriCore™ DSP functionality
- Up to 2 MB flash w/ECC protection
- 128 KB EEPROM at 125 k cycles
- Up to 192 KB RAM w/ECC protection
- 16x DMA channels
- 24x 12-bit SAR ADC converter
- Powerful Generic Timer Module (GTM)
- 4x SENT sensor interfaces
- State of the art connectivity: 2x FlexRay, 2x LIN, 4x QSPI, 6x CAN including data rate enhanced CAN FD
- Programmable HSM (Hardware Security Module)
- Wake-up timer
- Single voltage supply 3.3 V
- TQFP-144 package
- TQFP-100 package
- LFBGA-292

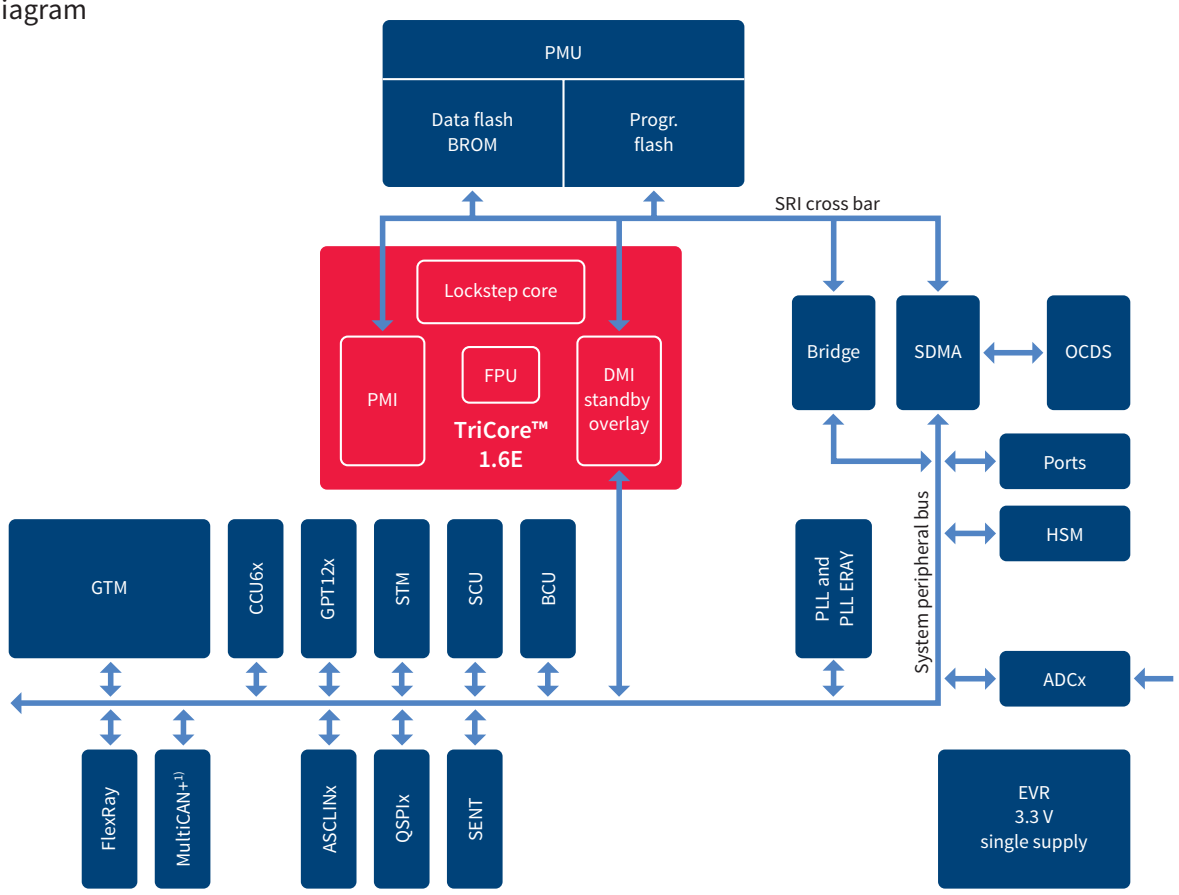
Most innovative safety

- Diverse lockstep core with clock delay
- Redundant and diverse timer modules (GTM, CCU6, GPT12)
- Access permission system
- Safety management unit
- Safe DMA
- I/O, clock, voltage monitor
- ISO 26262 compliance to support safety requirements up to ASIL-D
- AUTOSAR V3.2 and V4.x

TC23xL – AURIX™ family

Enabling safety applications

Block diagram



1) MultiCAN+ including data rate enhanced CAN FD

Product summary

Type	eFlash [MB]	Data flash [KB]	Frequency [MHz]	SRAM [KB]	Package	Temp. range [°C]
SAK-TC234L-32F200F	2	128[1)]	200	192	TQFP-144	-40 … +125[2)]
SAK-TC233L-32F200F	2	128[1)]	200	192	TQFP-100	-40 … +125[2)]
SAK-TC237L-32F200F	2	128	200	192	LFBGA-292	-40 … +125[2)]

1) EEPROM emulation (up to 125 k w/e cycles)
2) Hot package options with T_a = 150°C are available on request

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