

## 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

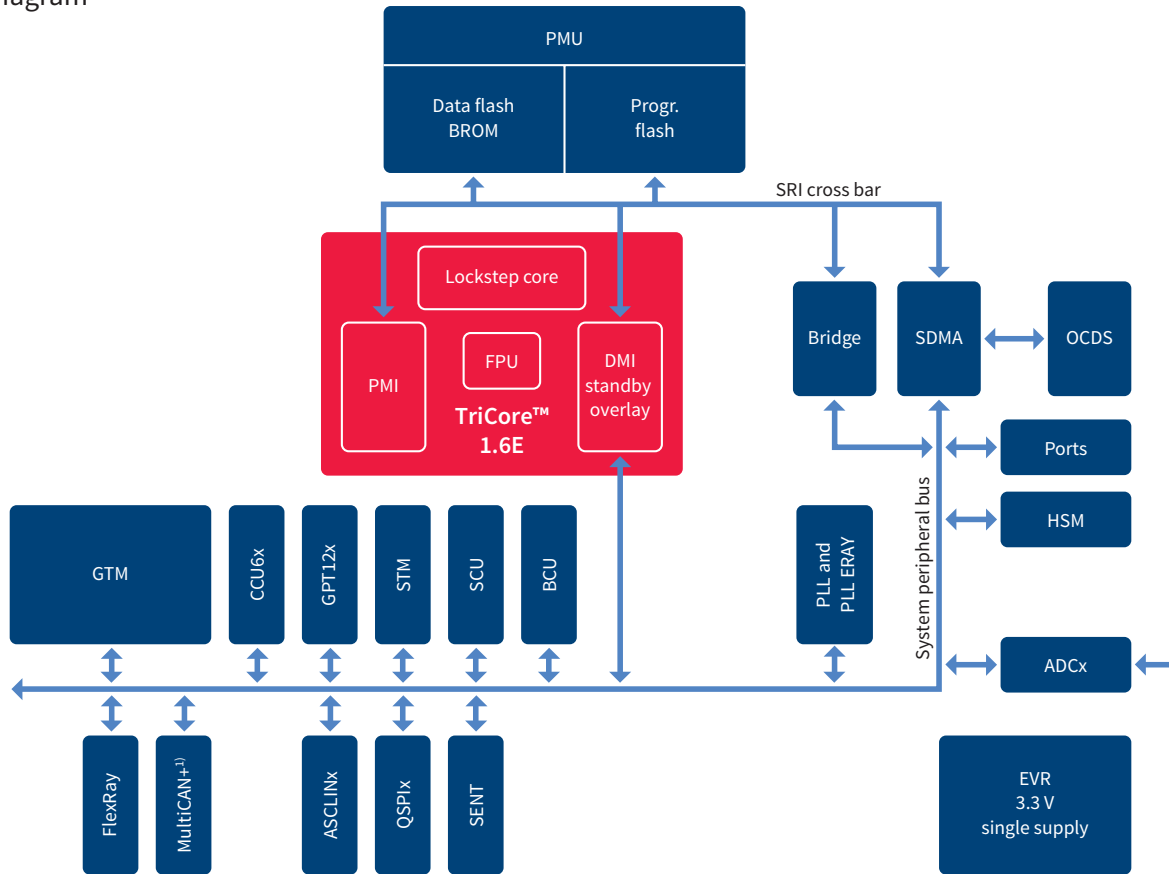
#### Most innovative safety

- › 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 <sup>1)</sup>	200	192	TQFP-144	-40 ... +125 <sup>2)</sup>
SAK-TC233L-32F200F	2	128 <sup>1)</sup>	200	192	TQFP-100	-40 ... +125 <sup>2)</sup>
SAK-TC237L-32F200F	2	128	200	192	LFPGA-292	-40 ... +125 <sup>2)</sup>

1) EEPROM emulation (up to 125 k w/e cycles)

2) Hot package options with T<sub>s</sub> = 150°C are available on request

Published by  
Infineon Technologies AG  
81726 Munich, Germany

© 2019 Infineon Technologies AG.  
All Rights Reserved.

### Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

### Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office ([www.infineon.com](http://www.infineon.com)).

### Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.

Order Number: B158-I0306-V1-7600-EU-EC-P  
Date: 03 / 2019

单击下面可查看定价，库存，交付和生命周期等信息

[>>Infineon\(英飞凌\)](#)