Infineon Technologies - TC214L8F133FABKXUMA1 Datasheet

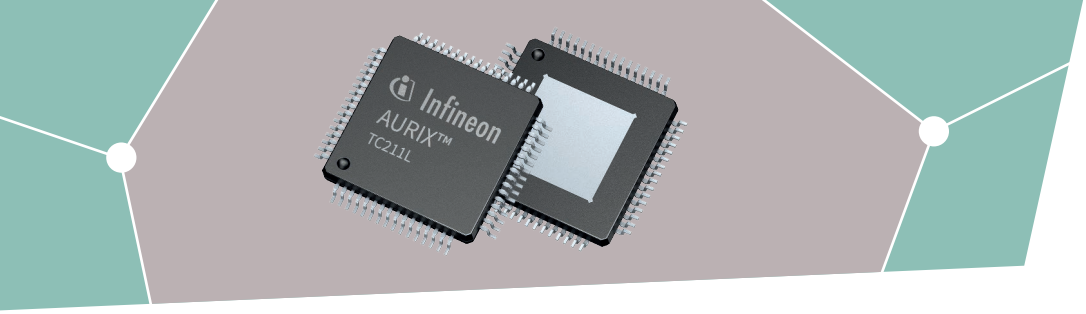
Welcome to E-XFL.COM

What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Obsolete
Core Processor	TriCore™
Core Size	32-Bit Single-Core
Speed	133MHz
Connectivity	CANbus, LINbus, QSPI
Peripherals	DMA, WDT
Number of I/O	120
Program Memory Size	512KB (512K x 8)
Program Memory Type	FLASH
EEPROM Size	64K x 8
RAM Size	56K x 8
Voltage - Supply (Vcc/Vdd)	3.3V
Data Converters	A/D 24x12b
Oscillator Type	External
Operating Temperature	-40°C ~ 125°C (TA)
Mounting Type	Surface Mount
Package / Case	144-LQFP Exposed Pad
Supplier Device Package	PG-TQFP-144-27
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/tc214l8f133fabkxuma1



Product Brief

TC21xL(S) – 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
- Available as single and lockstep core
- Latest connectivity CAN FD (flexible data rate)
- Scalable safety from QM to ASIL-D
- Hot package options for extended temperature range

Main features

Features TC21xL(S)

- TriCore™ with 133 MHz
- TriCore™ DSP functionality
- Up to 0.5 MB flash w/ECC protection
- 64 KB EEPROM at 125 k cycles
- Up to 56 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 LIN, 4x QSPI, 3x CAN including data rate enhanced CAN FD
- Wake-up timer
- Single voltage supply 3.3 V
- TQFP-100 package
- TQFP-80 package

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

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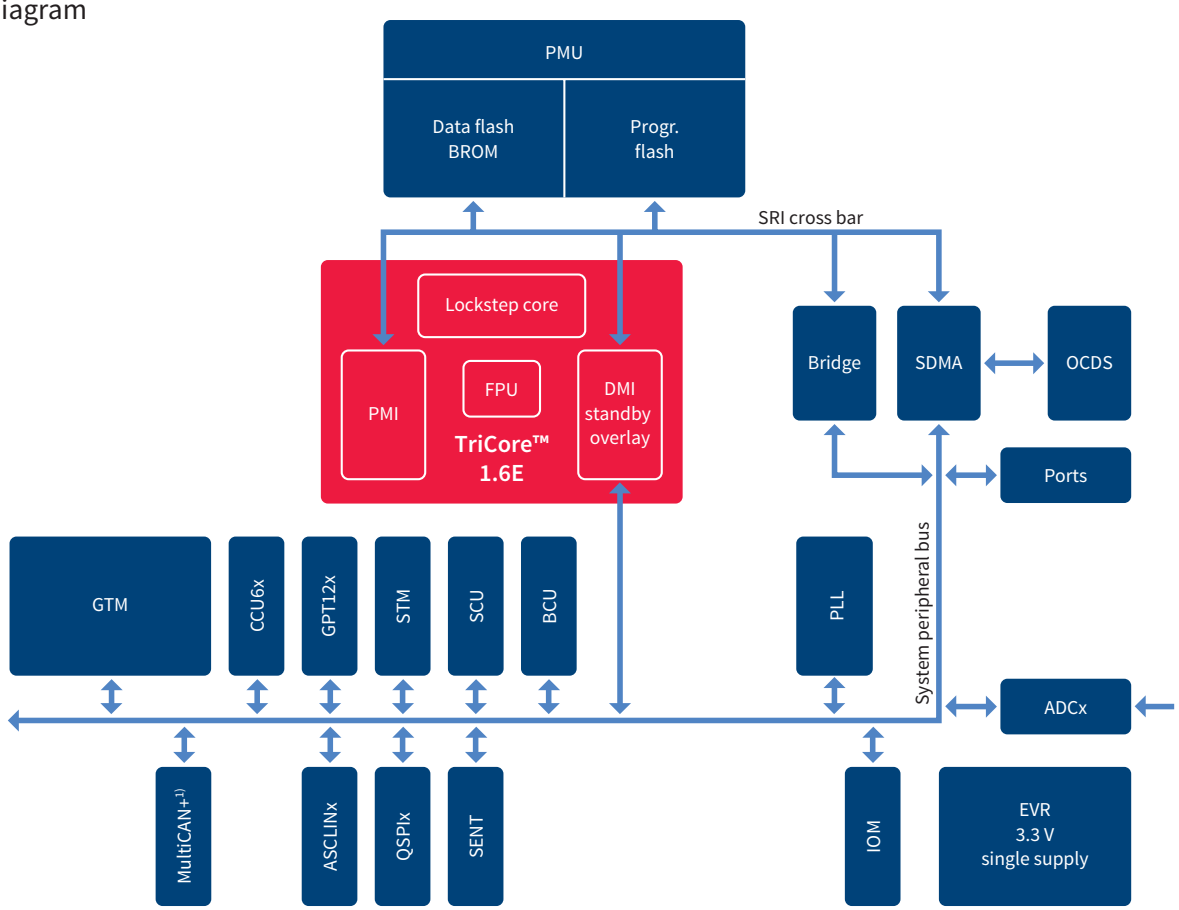
Block diagram



1) MultiCAN+ including data rate enhanced CAN FD

Product summary

Type	eFlash [KB]	Data flash [KB]	Frequency [MHz]	SRAM [KB]	Package	Temp. range [°C]
SAK-TC213L(S)-8F133F	512	64[1)]	133	56	TQFP-100	-40 … +125[2)]
SAK-TC212L(S)-8F133F	512	64[1)]	133	56	TQFP-80	-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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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).

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.

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