Infineon Technologies - TC222L16F133FABKXUMA1 Datasheet

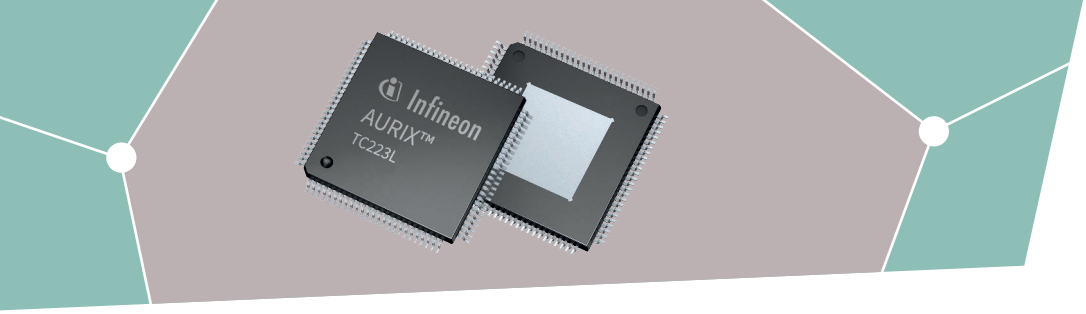
Welcome to E-XFL.COM

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, FlexRay, LINbus, QSPI
Peripherals	DMA, WDT
Number of I/O	59
Program Memory Size	1MB (1M x 8)
Program Memory Type	FLASH
EEPROM Size	128K x 8
RAM Size	96K x 8
Voltage - Supply (Vcc/Vdd)	3.3V
Data Converters	A/D 14x12b
Oscillator Type	External
Operating Temperature	-40°C ~ 125°C (TA)
Mounting Type	Surface Mount
Package / Case	80-TQFP Exposed Pad
Supplier Device Package	PG-TQFP-80-7
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/tc222l16f133fabkxuma1



Product Brief

TC22xL(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 TC22xL(S)

- TriCore™ with 133 MHz
- TriCore™ DSP functionality
- Up to 1 MB flash w/ECC protection
- 96 KB EEPROM at 125 k cycles
- Up to 96 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-144 package
- TQFP-100 package
- TQFP-80 package

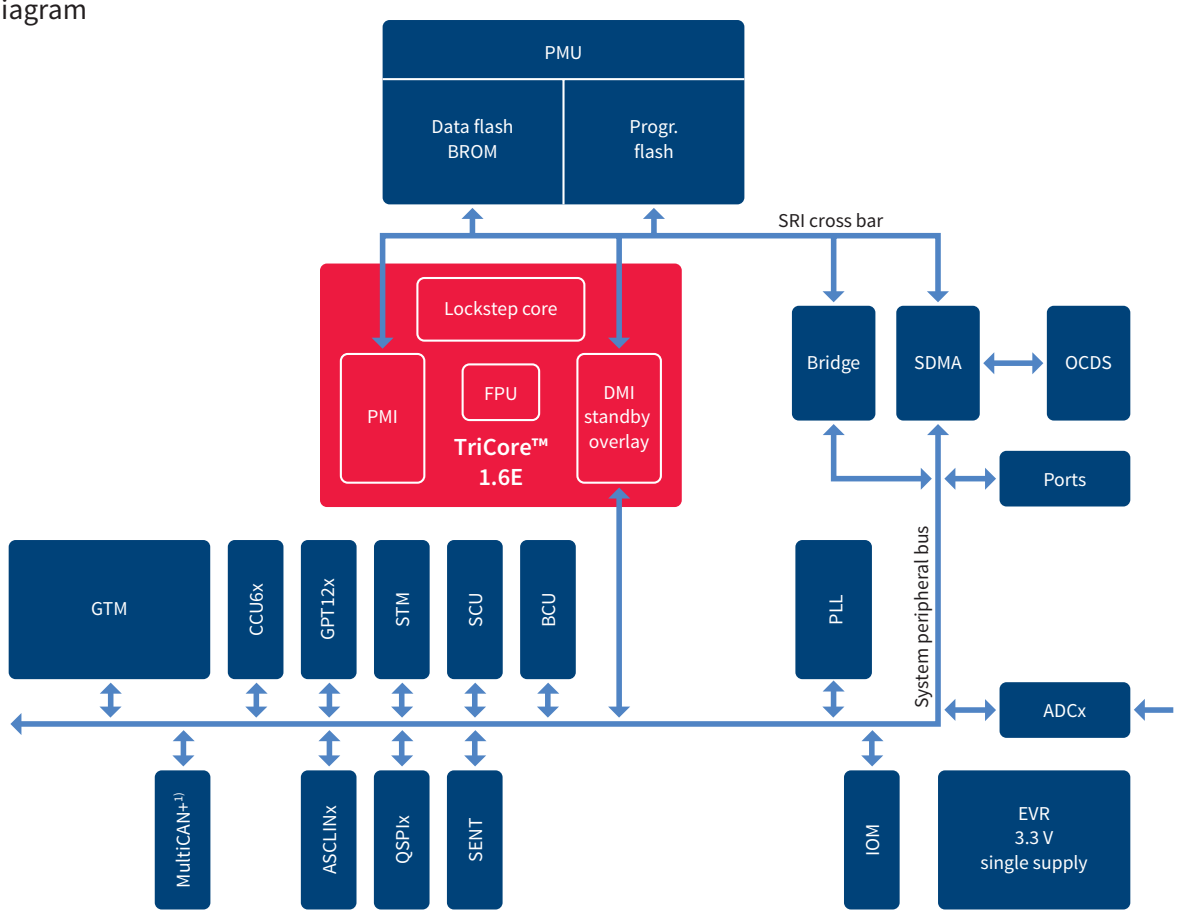
Most innovative safety

- 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

TC22xL(S) – 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-TC224L(S)-16F133F	1	96[1)]	133	96	TQFP-144	-40 … +125[2)]
SAK-TC223L(S)-16F133F	1	96[1)]	133	96	TQFP-100	-40 … +125[2)]
SAK-TC222L(S)-16F133F	1	96	133	96	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

Published by
Infineon Technologies AG
81726 Munich, Germany

Order Number: B158-I0305-V1-7600-EU-EC-P
Date: 08 / 2016