

Product Brief

AURIX™ – TC297T/TC298T/TC299T

Performance meets safety

AURIX™ is Infineon's brand new family of microcontrollers serving exactly the needs of the automotive industry in terms of performance and safety. Its innovative multicore architecture, based on up to three independent 32-bit TriCore™ CPUs, has been designed to meet the highest safety standards while increasing the performance at the same time.

Using the AURIX™ platform, automotive developers will be able to control powertrain, body, safety and ADAS applications with one single MCU platform. Developments using AURIX™ will require less effort to achieve the ASIL-D standard than with a classical lock-step architecture.

Customers are now able to cut down their MCU safety development significantly. By the same token, a performance surplus of 50 percent up to 100 percent allows for more functionality and offers a sufficient resource buffer for future requirements, keeping the power consumption on the single-core microcontroller level.

Leading edge performance

- › Three high performance 32-bit super-scalar TriCore™ V1.6.1 CPUs running up to 300 MHz in the full automotive temperature range
- › Dedicated closely coupled memory areas per core
- › Innovative general timer module, additional redundant diverse GPT1 timer unit

System benefits

- › Diverse lockstep architecture to reduced development effort for ISO 26262 systems
- › High integration for reduced complexity and significant cost savings
- › Delta-sigma analog-to-digital converters for fast and accurate measurements
- › Innovative single supply concept leads for low power consumption and low cost external supply
- › Scalable package family
- › Dedicated emulation device chip (ED) for multicore debugging, tracing and calibration
- › Hot package options for extended temperature

Main features

Features TC29xT

- › Triple TriCore™ with up to 300 MHz
- › TriCore™ DSP functionality
- › Up to 8 MB flash w/ECC protection
- › 128 KB EEPROM at 500 k cycles
- › Up to 728 KB RAM w/ECC protection
- › 128x DMA channels
- › Delta-sigma ADC converter (10x channels)
- › 12-bit ADC converter (84x channels)
- › Powerful Generic Timer Module (GTM)
- › SENT, PSI5, PSI5S sensor interfaces
- › Ethernet 100 Mbit
- › FlexRay, CAN, LIN, SPI including data rate enhanced CAN FD
- › Programmable HSM (Hardware Security Module)
- › Single voltage supply 5 V or 3.3 V
- › LFBGA-292 package
- › LBGA-416 package
- › LFBGA-516 package

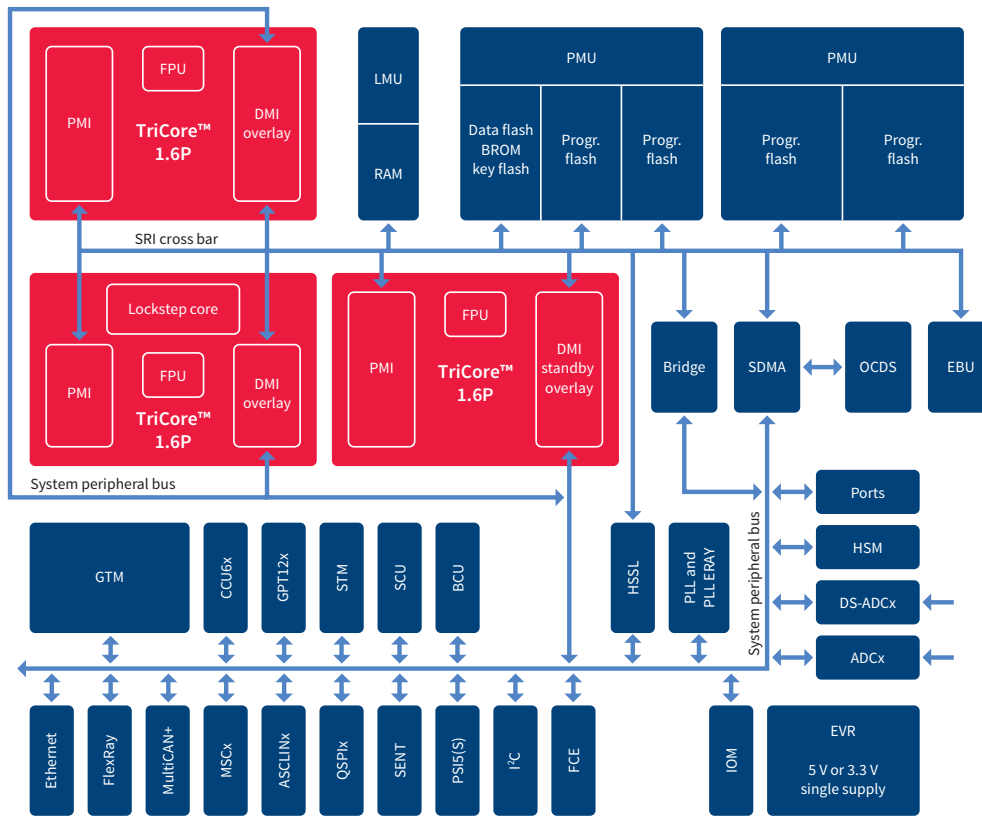
Most innovative safety

- › 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



Product summary

Type	eFlash [MB]	Data flash [KB]	Frequency [MHz]	SRAM [KB]	Package	Temp. range [°C]
SAK-TC299T-128F300S	8	128 ¹⁾	300	728	LFBGA-516	-40 ... +125 ²⁾
SAK-TC298T-128F300L	8	128 ¹⁾	300	728	LBGA-416	-40 ... +125 ²⁾
SAK-TC297T-128F300S	8	128 ¹⁾	300	728	LFBGA-292	-40 ... +125 ²⁾
SAK-TC299T-96F300S	6	128 ¹⁾	300	728	LFBGA-516	-40 ... +125 ²⁾
SAK-TC298T-96F300L	6	128 ¹⁾	300	728	LBGA-416	-40 ... +125 ²⁾
SAK-TC297T-96F300S	6	128 ¹⁾	300	728	LFBGA-292	-40 ... +125 ²⁾

1) EEPROM emulation (up to 60 k w/e cycles)

2) Hot package options with T_j = 150°C are available on request

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