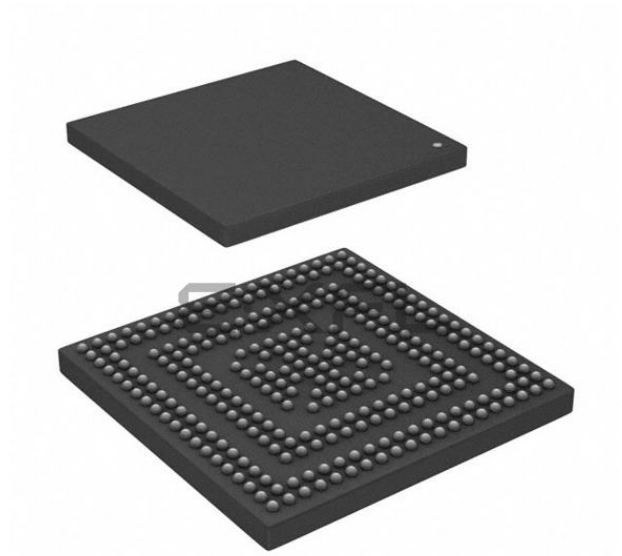
Infineon Technologies - TC297TY128F300SBBKXUMA1 Datasheet



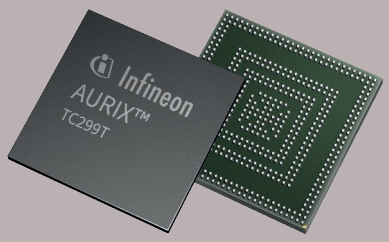
Welcome to E-XFL.COM

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 Tri-Core
Speed	300MHz
Connectivity	ASC, CANbus, Ethernet, FlexRay, HSSL, I²C, LINbus, MSC, PSI5, QSPI, SENT
Peripherals	DMA, WDT
Number of I/O	263
Program Memory Size	8MB (8M x 8)
Program Memory Type	FLASH
EEPROM Size	384K x 8
RAM Size	2.75M x 8
Voltage - Supply (Vcc/Vdd)	3.3V, 5V
Data Converters	A/D 60x12b, 10 x Sigma-Delta
Oscillator Type	External
Operating Temperature	-40°C ~ 125°C (TA)
Mounting Type	Surface Mount
Package / Case	292-LFBGA
Supplier Device Package	PG-LFBGA-292-6
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/tc297ty128f300sbbkxuma1



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 beens 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 lockstep 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

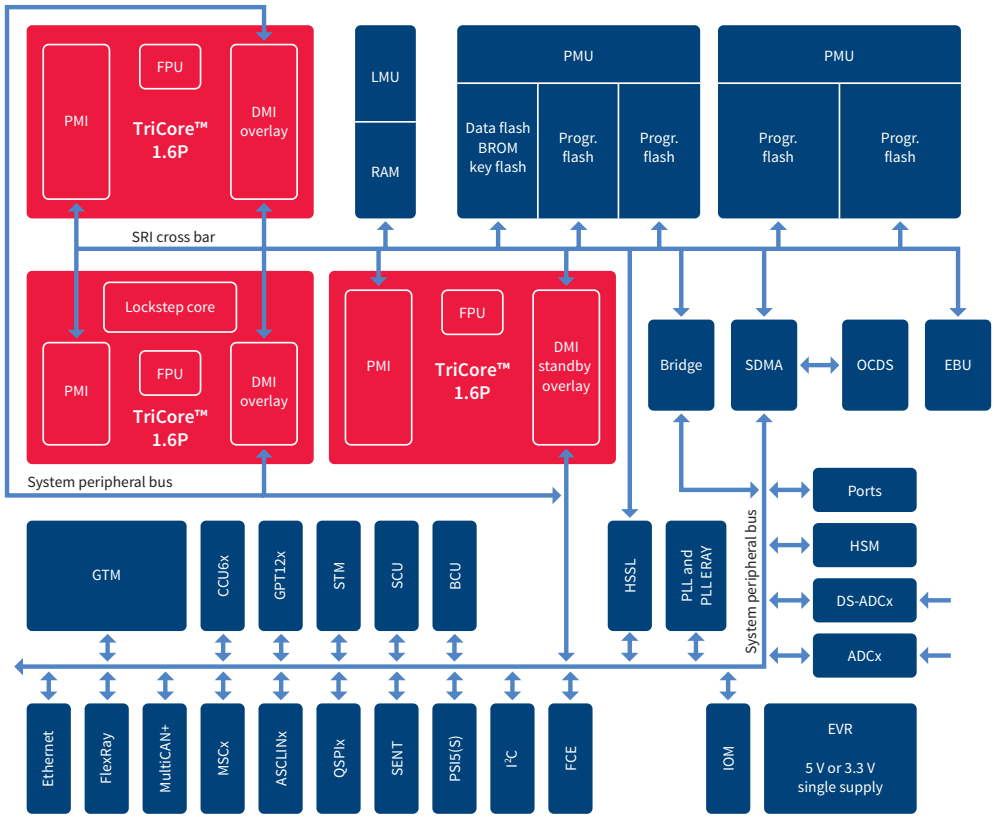
- Diverse lockstep core with clock delay
- Redundant and diverse timer modules (GTM, CCU6, GPT12)
- Access permission system
- Safety management unit
- Safe DMA
- I/O, clock, voltage monitor
- ISO 26262 compliance to support safety requirements up to ASIL-D
- AUTOSAR V3.2 and V4.x

PRO SIL™

AURIX™ – TC297T/TC298T/TC299T

Performance meets safety

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_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.

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-I0309-V1-7600-EU-EC-P
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