

# SPC5, ST10, Stellar

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# Automotive Microcontrollers

## Overview

ST offers a wide portfolio of **microcontrollers for automotive applications**, including the 32-bit SPC5 family built on Power Architecture® technology, the 8-bit STM8A family as well as 16-bit ST10 legacy MCUs. STMicroelectronics has recently announced Stellar, our latest high performance 32-bit automotive microcontroller family based on the ARM R52 multi-core, with **innovative embedded Phase Change Memory (ePCM)** and built in our 28nm FD-SOI technology.

ST's wide offer of single- and multi-core MCUs features a scalable solution, addressing from cost-sensitive to highly-advanced automotive applications thanks to hardware and software compatibility. The portfolio supports not only the latest automotive transformation areas such as electro-mobility, gateway and ADAS applications, but also brings innovation to existing applications, such as body, powertrain, chassis and safety.

ST automotive MCUs are **automotive grade** and will stay in production for at least ten or fifteen years starting from their date of introduction. These products take part in ST's longevity commitment program, which assures, on selected parts, continuity and stability of supply for ST customers, especially those that design applications requiring long-term product availability.



### Stellar 32-bit Automotive MCUs

Real-time and safety-enhanced performance designed for software-defined vehicles and e-mobility



### 32-bit Power Architecture MCUs

General Purpose and Performance MCUs with an extensive hardware and software ecosystem



### 8-bit MCUs

Broad portfolio for cost effective automotive applications



### ST10 - 16-bit Legacy MCUs

# SPC5 32-bit Automotive MCUs

## Overview

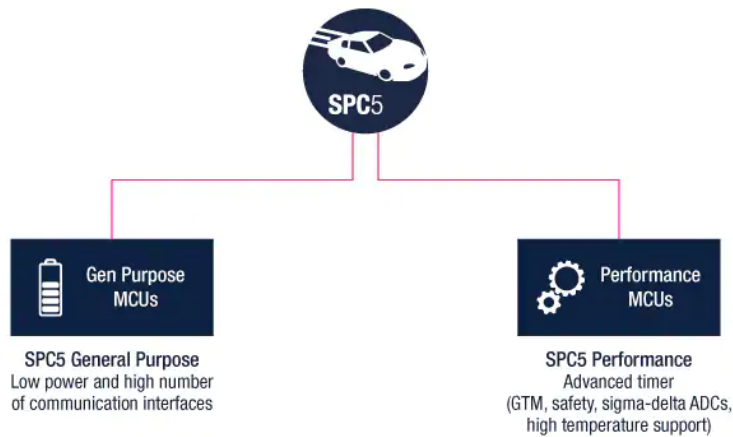
The SPC5 family of 32-bit Automotive Microcontrollers is designed to accommodate a wide range of automotive applications ranging from Gateways, Electro Mobility, and ADAS to Engine and Transmission control, Body, Chassis and Safety.

Based on a Power PC Architecture, SPC5 microcontrollers provide up to 3 cores operating at up to **200 MHz** and with a **165 °C junction** temperature.

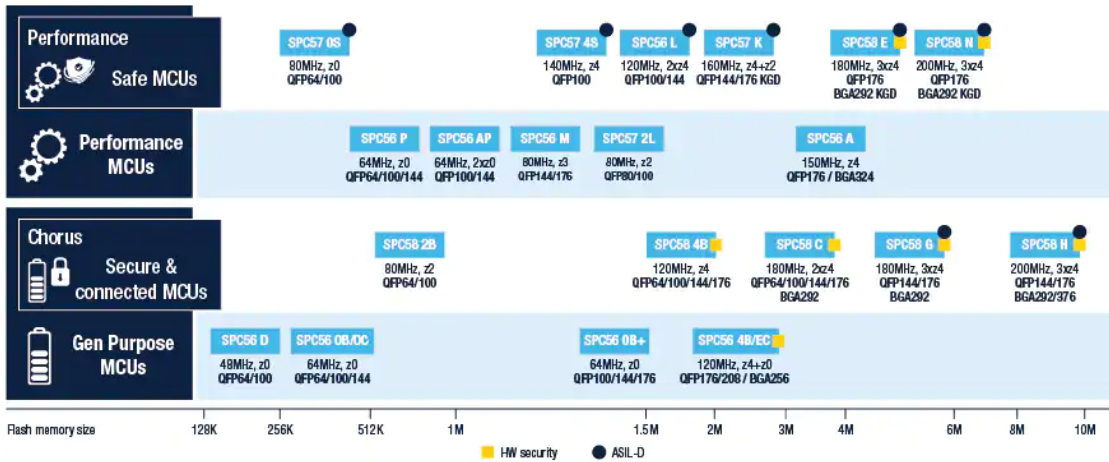
Designed to comply with Automotive **AEC-Q100** standards, SPC5 microcontrollers deliver:

- **Longevity:** 15 years guaranteed, extended to 20 years for SPC56 family
- **Safety:** Up to ASIL-D
- **Security:** Secure key storage with hardware acceleration (HSM), Evita and SHE compliant.
- **Operating temperature:** full operation guaranteed from -40 to 165 °C (T<sub>J</sub>)
- **Data integrity:** up to 10 Mbytes of Flash memory with ECC, 250 Kcycles endurance and high-temperature data retention
- **Communication:** CAN-FD, Ethernet, LIN, DSPI, and FlexRay.

The SPC5 family consists of two sub-families:



SPC5 General Purpose and Performance sub families offer a wide range of product options that target application-specific needs, as well as different safety and security levels.



### Development Ecosystem



**Hardware Tools**  
For product evaluation and development

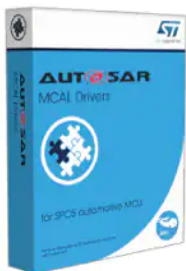


**SPC5 Studio**  
Development environment



**Software Tools**  
Including startup examples and more...

### Software Products



**Autosar**



**Safety Pack**



**Security Pack**

### Evaluation Kits and Reference Designs



**SPC5 Motor Control Tool Kit**



**Small Engines:  
Electronic Fuel Injection**



**USB Type-C™ Power Delivery**

Automotive Microcontrollers/SPCS 32-bit Automotive MCUs

| General Description  | Core  | CPU Clock Frequency (MHz) max | Package               | Flash Size (KB) (Prog) | Flash Size (KB) (Data) | RAM Size (KB) | Serial Interface                             | Other timer functions                                   | Timed I/Os                                | A/D Channels spec | A/D Resolution    | Other Functions                                | Cryptography | Number of I/O Ports nom | Supply Voltage (V) min | Supply Voltage (V) max | Operating Temperature (°C) min | Operating Temperature (°C) max | APU | MPU       | DMA | Software architecture | Superset Compatibility |
|--|-------|-------------------------------|-----------------------|------------------------|------------------------|---------------|--|---|---|-------------------|-------------------|--|--------------|-------------------------|------------------------|------------------------|--------------------------------|--------------------------------|-----|-----------|-----|-----------------------|------------------------|
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 48,64                         | LQFP 100 14x14x1.4 mm | 256                    | 64                     | 24            | 1xI2C,2xFlexCAN,3xDSP1,3xLINFlex             | 1x32-bit SWT,4x32-bit STM,6x32-bit PIT,RTC/API (32-bit) | 28ch eMIOS (16-bit)                       | 28                | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 79                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | -   | -                     | SPCS60BS0L3            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 144 20x20x1.4 mm | 256                    | 64                     | 24            | 1xI2C,2xFlexCAN,3xDSP1,3xLINFlex             | 1x32-bit SWT,4x32-bit STM,6x32-bit PIT,RTC/API (32-bit) | 56ch eMIOS (16-bit)                       | 36                | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 123                     | 3                      | 5.5                    | -40                            | 125                            | VLE | 8-region  | -   | -                     | SPCS60BS0L5            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 64 10x10x1.4 mm  | 512                    | 64                     | 32            | 1xI2C,2xDSP1,3xFlexCAN,4xLINFlex             | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 12ch eMIOS (16-bit)                       | 12                | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 45                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | -   | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 48,64                         | LQFP 100 14x14x1.4 mm | 512                    | 64                     | 32            | 1xI2C,3xDSP1,3xFlexCAN,4xLINFlex             | 1x32-bit SWT,4x32-bit STM,6x32-bit PIT,RTC/API (32-bit) | 28ch eMIOS (16-bit)                       | 28                | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 79                      | 3                      | 5.5                    | -40                            | 125                            | VLE | 8-region  | -   | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 144 20x20x1.4 mm | 512                    | 64                     | 32            | 1xI2C,3xDSP1,3xFlexCAN,4xLINFlex             | 1x32-bit SWT,4x32-bit STM,6x32-bit PIT,RTC/API (32-bit) | 56ch eMIOS (16-bit)                       | 36                | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 123                     | 3                      | 5.5                    | -40                            | 125                            | VLE | 8-region  | -   | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 100 14x14x1.4 mm | 768                    | 64                     | 64            | 1xI2C,3xDSP1,4xLINFlex,6xFlexCAN             | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 37ch eMIOS (16-bit)                       | 31                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 77                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | 16  | -                     | SPCS60B60L3            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 144 20x20x1.4 mm | 768                    | 64                     | 64            | 1xI2C,3xDSP1,6xFlexCAN,8xLINFlex             | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 39                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 121                     | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | 16  | -                     | SPCS60B64L5            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 100 14x14x1.4 mm | 1024                   | 64                     | 80            | 1xI2C,3xDSP1,4xLINFlex,6xFlexCAN             | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 37ch eMIOS (16-bit)                       | 31                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 77                      | 3                      | 5.5                    | -40                            | 125                            | VLE | 8-region  | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 144 20x20x1.4 mm | 1024                   | 64                     | 80            | 1xI2C,3xDSP1,6xFlexCAN,8xLINFlex             | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 39                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 121                     | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | 16  | -                     | SPCS60B64L5            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 176 24x24x1.4 mm | 1024                   | 64                     | 80            | 10xLINFlex,1xI2C,6xDSP1,6xFlexCAN            | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 53                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 149                     | 3                      | 5.5                    | -40                            | 105                            | VLE | 8-region  | 16  | -                     | SPCS60B64L7            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 100 14x14x1.4 mm | 1536                   | 64                     | 96            | 1 x I2C,3 x DSP1,4 x LINFlex,6 x FlexCAN     | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 37ch eMIOS (16-bit)                       | -                 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | CSE          | 77                      | 3                      | 5.5                    | -40                            | 105                            | VLE | 8-region  | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 144 20x20x1.4 mm | 1536                   | 64                     | 96            | 1xI2C,3xDSP1,6xFlexCAN,8xLINFlex             | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 39                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 121                     | 3                      | 5.5                    | -40                            | 125                            | VLE | 8-region  | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 176 24x24x1.4 mm | 1536                   | 64                     | 96            | 10xLINFlex,1xI2C,6xDSP1,6xFlexCAN            | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 56                | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                     | -            | 149                     | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 64 10x10x1.4 mm  | 512                    | 64                     | 48            | 1xI2C,2xDSP1,4xLINFlex,5xFlexCAN             | 1x32-bit SWT,4x32-bit STM,6x32-bit PIT,RTC/API (32-bit) | 12ch eMIOS (16-bit)                       | 8                 | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 45                      | 3                      | 5.5                    | -40                            | 105                            | VLE | 8-region  | -   | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 64                            | LQFP 100 14x14x1.4 mm | 512                    | 64                     | 48            | 1xI2C,3xDSP1,4xLINFlex,6xFlexCAN             | 1x32-bit SWT,4x32-bit STM,6x32-bit PIT,RTC/API (32-bit) | 28ch eMIOS (16-bit)                       | 28                | 1x10-bit          | 32KHz OSC,CTU,Standby Mode                     | -            | 79                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 8-region  | -   | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 48                            | LQFP 64 10x10x1.4 mm  | 64                     | 128                    | 12            | 1xFlexCAN,2xDSP1,3xLINFlex                   | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM,RTC/API (32-bit) | 14ch eMIOS (16-bit)                       | 16                | 1x12-bit          | CTU,Standby Mode                               | -            | 45                      | 3                      | 5.5                    | -40                            | 105                            | VLE | -         | 16  | -                     | SPCS60D40L1            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 48                            | LQFP 100 14x14x1.4 mm | 128                    | 64                     | 12            | 1xFlexCAN,2xDSP1,3xLINFlex                   | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM,RTC/API (32-bit) | 28ch eMIOS (16-bit)                       | 33                | 1x12-bit          | CTU,Standby Mode                               | -            | 79                      | 3                      | 5.5                    | -40                            | 105                            | VLE | -         | 16  | -                     | SPCS60D40L3            |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 48                            | LQFP 64 10x10x1.4 mm  | 256                    | 64                     | 16            | 1xFlexCAN,2xDSP1,3xLINFlex                   | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM,RTC/API (32-bit) | 14ch eMIOS (16-bit)                       | 16                | 1x12-bit          | CTU,Standby Mode                               | -            | 45                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d | 48                            | LQFP 100 14x14x1.4 mm | 256                    | 64                     | 16            | 1xFlexCAN,2xDSP1,3xLINFlex                   | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM,RTC/API (32-bit) | 28ch eMIOS (16-bit)                       | 33                | 1x12-bit          | CTU,Standby Mode                               | -            | 79                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 64 10x10x1.4 mm  | 192                    | 64                     | 12            | 1xFlexCAN,2xDSP1,2xLINFlex                   | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 6ch eTimer (16-bit),8ch FlexPWM (16-bit)  | 12                | 1x10-bit          | CRC unit,CTU,Fault Collection Unit             | -            | 37                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | SPCS60P40L1            |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 64 10x10x1.4 mm  | 256                    | 64                     | 20            | 2 x DSP1,2 x FlexCAN,2 x LINFlex             | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 6ch eTimer (16-bit),8ch FlexPWM (16-bit)  | 12                | 1x10-bit          | CRC unit,CTU,Fault Collection Unit             | -            | 37                      | 3                      | 5.5                    | -40                            | 125                            | VLE | -         | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 100 14x14x1.4 mm | 256                    | 64                     | 20            | 2 x FlexCAN,2 x LINFlex,3 x DSP1             | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 6ch eTimer (16-bit),8ch FlexPWM (16-bit)  | 16                | 1x10-bit          | CRC unit,CTU,Fault Collection Unit             | -            | 64                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 100 14x14x1.4 mm | 384                    | 64                     | 36            | 1 x FlexRay,2 x FlexCAN,2 x LINFlex,4 x DSP1 | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit),8ch FlexPWM (16-bit) | 16                | 2x10-bit          | CRC unit,CTU,Fault Collection Unit             | -            | 67                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | SPCS60P50L3            |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 100 14x14x1.4 mm | 512                    | 64                     | 40            | 1xFlexRay,2xFlexCAN,2xLINFlex,4xDSP1         | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit),8ch FlexPWM (16-bit) | 16                | 2x10-bit          | CRC unit,CTU,Fault Collection Unit             | -            | 67                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 144 20x20x1.4 mm | 512                    | 64                     | 40            | 1xFlexRay,2xFlexCAN,2xLINFlex,4xDSP1         | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit),8ch FlexPWM (16-bit) | 26                | 2x10-bit          | CRC unit,CTU,Fault Collection Unit             | -            | 106                     | 3                      | 5.5                    | -40                            | 105,125                        | VLE | -         | 16  | -                     | Superset               |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 100 14x14x1.4 mm | 768                    | 64                     | 64            | 1 x FlexRay,2 x LINFlex,3 x FlexCAN,5 x DSP1 | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit)                      | 16                | 1x10-bit          | CTU,Dual CRC,Fault Collection and Control Unit | -            | 65                      | 3                      | 5.5                    | -40                            | 105                            | VLE | 16-region | 16  | -                     | SPCS6AP60L3            |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 144 20x20x1.4 mm | 768                    | 64                     | 64            | 1 x FlexRay,2 x LINFlex,3 x FlexCAN,5 x DSP1 | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit)                      | 26                | 1x10-bit          | CTU,Dual CRC,Fault Collection and Control Unit | -            | 106                     | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 16-region | 16  | -                     | SPCS6AP60L5            |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 100 14x14x1.4 mm | 1024                   | 64                     | 80            | 1 x FlexRay,2 x LINFlex,3 x FlexCAN,5 x DSP1 | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit)                      | 16                | 1x10-bit          | CTU,Dual CRC,Fault Collection and Control Unit | -            | 65                      | 3                      | 5.5                    | -40                            | 105,125                        | VLE | 16-region | 16  | -                     | SPCS6AP60L3            |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d | 64                            | LQFP 144 20x20x1.4 mm | 1024                   | 64                     | 80            | 1xFlexRay,2xLINFlex,3xFlexCAN,5xDSP1         | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit)                      | 26                | 1x10-bit          | CTU,Dual CRC,Fault Collection and Control Unit | -            | 106                     | 3                      | 5.5                    | -40                            | 125                            | VLE | 16-region | 16  | -                     | SPCS6AP60L5            |

|  |                |         |                       |      |    |     |   |   |   |    |                   |  |         |     |     |     |     |         |                         |             |    |         |             |
|--|----------------|---------|-----------------------|------|----|-----|---|---|---|----|-------------------|--|---------|-----|-----|-----|-----|---------|-------------------------|-------------|----|---------|-------------|
| 32-bit Power Architecture MCU for Automotive Powertrain Applications         | e200d3         | 64,80   | LQFP 144 20x20x1.4 mm | 1024 | -  | 64  | 2 x DSP1,2 x FlexCAN,2 x eSCI                       | 1x32-bit SWT,4x32-bit STM,5x32-bit PIT                  | 16ch eMIOS (24-bit),32ch eTPU (24-bit)    | 32 | 2x12-bit          | Cal. Bus,Dec. filter,T sensor                            | -       | 105 | 4.5 | 5.5 | -40 | 125     | MMU,SPE,VLE             | -           | 32 | Autosar | SPC563M64L7 |
| 32-bit Power Architecture MCU for Automotive Powertrain Applications         | e200d3         | 80      | LQFP 144 20x20x1.4 mm | 1536 | -  | 94  | 2 x DSP1,2 x FlexCAN,2 x eSCI                       | 1x32-bit SWT,4x32-bit STM,5x32-bit PIT                  | 16ch eMIOS (24-bit),32ch eTPU (24-bit)    | 32 | 2x12-bit          | Cal. Bus,Dec. filter,T sensor                            | -       | 105 | 4.5 | 5.5 | -40 | 125     | MMU,SPE,VLE             | -           | 32 | Autosar | Superset    |
| 32-bit Power Architecture MCU for Automotive Powertrain Applications         | e200d3         | 64,80   | LQFP 176 24x24x1.4 mm | 1536 | -  | 94  | 2 x DSP1,2 x FlexCAN,2 x eSCI                       | 1x32-bit SWT,4x32-bit STM,5x32-bit PIT                  | 16ch eMIOS (24-bit),32ch eTPU (24-bit)    | 34 | 2x12-bit          | Cal. Bus,Dec. filter,T sensor                            | -       | 114 | 4.5 | 5.5 | -40 | 125     | MMU,SPE,VLE             | -           | 32 | Autosar | Superset    |
| 32-bit Power Architecture MCU for Automotive Powertrain Applications         | e200d4d        | 120,150 | LQFP 176 24x24x1.4 mm | 2048 | -  | 128 | 1 x FlexRay,3 x DSP1,3 x FlexCAN,3 x eSCI           | 1x32-bit SWT,4x32-bit STM,5x32-bit PIT                  | 24ch eMIOS (24-bit),32ch eTPU (24-bit)    | 34 | 2x12-bit          | CRIC unit,Cal. Bus,Dec. filter,T sensor                  | -       | 150 | 4.5 | 5.5 | -40 | 125     | 8KB I-cache,MMU,SPE,VLE | 16-region   | 64 | Autosar | Superset    |
| 32-bit Power Architecture MCU for Automotive Powertrain Applications         | e200d4d        | 150     | PBGA 324 23x23x1.82   | 4096 | -  | 192 | 1 x FlexRay,3 x DSP1,3 x FlexCAN,3 x eSCI           | 1x32-bit SWT,4x32-bit STM,5x32-bit PIT                  | 24ch eMIOS (24-bit),32ch eTPU (24-bit)    | 40 | 2x12-bit          | CRIC unit,Cal. Bus,Dec. filter,T sensor                  | -       | 190 | 4.5 | 5.5 | -40 | 125     | 8KB I-cache,MMU,SPE,VLE | 16-region   | 64 | Autosar | Superset    |
| 32-bit Power Architecture MCU for Automotive Powertrain Applications         | e200d4d        | 120,150 | LQFP 176 24x24x1.4 mm | 4096 | -  | 192 | 1 x FlexRay,3 x DSP1,3 x FlexCAN,3 x eSCI           | 1x32-bit SWT,4x32-bit STM,5x32-bit PIT                  | 24ch eMIOS (24-bit),32ch eTPU (24-bit)    | 34 | 2x12-bit          | CRIC unit,Cal. Bus,Dec. filter,T sensor                  | -       | 118 | 4.5 | 5.5 | -40 | 125     | 8KB I-cache,MMU,SPE,VLE | 16-region   | 64 | Autosar | Superset    |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d4d        | 120     | LQFP 176 24x24x1.4 mm | 1536 | 64 | 128 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1          | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 51 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                               | CSE,SHE | 147 | 3   | 5.5 | -40 | 125     | MMU,SPE,VLE             | 16-region   | 32 | -       | SPC560B64L7 |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d4d        | 120     | LQFP 208 28x28x1.4 mm | 1536 | 64 | 128 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1          | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 62 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                               | CSE,SHE | 177 | 3   | 5.5 | -40 | 125     | MMU,SPE,VLE             | 16-region   | 32 | -       | SPC564B74L8 |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d4d        | 120     | LQFP 176 24x24x1.4 mm | 2048 | 64 | 160 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1          | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 56 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                               | CSE,SHE | 147 | 3   | 5.5 | -40 | 105     | VLE                     | 16-region   | 16 | -       | SPC564B74L7 |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d4d        | 120     | LQFP 176 24x24x1.4 mm | 3072 | 64 | 192 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1          | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 56 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode                               | CSE,SHE | 147 | 3   | 5.5 | -40 | 105     | VLE                     | 16-region   | 32 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d4d        | 120     | LQFP 100 14x14x1.4 mm | 768  | -  | 96  | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 11 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 57  | 3   | 3.6 | -40 | 105,125 | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E60L3  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d4d        | 120     | LQFP 144 20x20x1.4 mm | 768  | -  | 96  | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 22 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 96  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E60L5  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d4d        | 120     | LQFP 100 14x14x1.4 mm | 1024 | -  | 128 | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 11 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 57  | 3   | 3.6 | -40 | 105     | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E60L3  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d4d        | 120     | LQFP 144 20x20x1.4 mm | 1024 | -  | 128 | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 22 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 96  | 3   | 3.6 | -40 | 105,125 | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E60L5  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d4d        | 120     | LQFP 100 14x14x1.4 mm | 2048 | -  | 192 | 1 x FlexRay,2 x LINFlex,3 x DSP1,3 x FlexCAN        | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 11 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 57  | 3   | 3.6 | -40 | 105,125 | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E70L3  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d4d        | 120     | LQFP 144 20x20x1.4 mm | 2048 | -  | 192 | 1 x FlexRay,2 x LINFlex,3 x DSP1,3 x FlexCAN        | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 22 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 96  | 3   | 3.6 | -40 | 105     | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E70L5  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d0    | 64      | LQFP 100 14x14x1.4 mm | 1024 | 64 | 80  | 1xFlexRay,2xLINFlex,3xFlexCAN,5xDSP1                | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit)                      | 16 | 1x10-bit          | CTU,Dual CRC,Fault Collection and Control Unit           | -       | 65  | 3   | 5.5 | -40 | 105     | VLE                     | 16-region   | 16 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d0    | 64      | LQFP 144 20x20x1.4 mm | 1024 | 64 | 80  | 1xFlexRay,2xLINFlex,3xFlexCAN,5xDSP1                | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 12ch eTimer (16-bit)                      | 26 | 1x10-bit          | CTU,Dual CRC,Fault Collection and Control Unit           | -       | 106 | 3   | 5.5 | -40 | 125     | VLE                     | 16-region   | 16 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d0,e200d4d | 120     | LQFP 176 24x24x1.4 mm | 1536 | 64 | 192 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1,Ethernet | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 51 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,OP e200d0,Standby Mode                     | CSE,SHE | 147 | 3   | 5.5 | -40 | 105     | MMU,SPE,VLE             | 16-region   | 32 | -       | SPC56E74L7  |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d0,e200d4d | 120     | LQFP 176 24x24x1.4 mm | 2048 | 64 | 256 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1,Ethernet | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 51 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,OP e200d0,Standby Mode                     | CSE,SHE | 147 | 3   | 5.5 | -40 | 125     | MMU,SPE,VLE             | 16-region   | 32 | -       | SPC56E74L7  |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d0,e200d4d | 120     | LQFP 176 24x24x1.4 mm | 3072 | 64 | 256 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1,Ethernet | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 51 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,OP e200d0,Standby Mode                     | CSE,SHE | 147 | 3   | 5.5 | -40 | 125     | MMU,SPE,VLE             | 16-region   | 32 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications   | e200d0,e200d4d | 120     | LQFP 208 28x28x1.4 mm | 3072 | 64 | 256 | 10xLINFlex,1xFlexRay,1x2C,6xFlexCAN,8xDSP1,Ethernet | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit)                       | 62 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,OP e200d0,Standby Mode                     | CSE,SHE | 177 | 3   | 5.5 | -40 | 125     | MMU,SPE,VLE             | 16-region   | 32 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d4d   | 120     | LQFP 100 14x14x1.4 mm | 768  | -  | 96  | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 11 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 57  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E60L3  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d4d   | 120     | LQFP 144 20x20x1.4 mm | 768  | -  | 96  | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 22 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 96  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | SPC56E60L5  |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d4d   | 120     | LQFP 100 14x14x1.4 mm | 1024 | -  | 128 | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 11 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 57  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d4d   | 120     | LQFP 144 20x20x1.4 mm | 1024 | -  | 128 | 1xFlexRay,2xFlexCAN,2xLIN Flex,3xDSP1               | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 22 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 96  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d4d   | 120     | LQFP 100 14x14x1.4 mm | 2048 | -  | 192 | 1 x FlexRay,2 x LINFlex,3 x DSP1,3 x FlexCAN        | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 11 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 57  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | Dual e200d4d   | 120     | LQFP 144 20x20x1.4 mm | 2048 | -  | 192 | 1 x FlexRay,2 x LINFlex,3 x DSP1,3 x FlexCAN        | 2x32-bit SWT,4x32-bit PIT,8x32-bit STM                  | 18ch eTimer (16-bit),8ch FlexPWM (16-bit) | 22 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit          | -       | 96  | 3   | 3.6 | -40 | 125     | MMU,SPE,VLE             | 2x16-region | 16 | -       | Superset    |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d0         | 80      | TQFP 64 10x10x1.0     | 256  | 32 | 32  | 1 x FlexCAN,2 x LINFlex,3 x DSP1                    | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 4x6ch eTimer (16-bit)                     | 10 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit,T sensor | -       | 43  | 3   | 5.5 | -40 | 125     | VLE                     | 8-region    | 16 | -       | -           |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications | e200d0         | 80      | TQFP 64 10x10x1.0     | 512  | 32 | 48  | 2 x FlexCAN,2 x LINFlex,3 x DSP1                    | 1x32-bit SWT,4x32-bit PIT,4x32-bit STM                  | 4x6ch eTimer (16-bit)                     | 10 | 2x12-bit          | CRIC unit,CTU,Fault Collection and Control Unit,T sensor | -       | 43  | 3   | 5.5 | -40 | 125     | VLE                     | 8-region    | 16 | -       | -           |

|   |              |        |  |      |     |     |  |  |                            |    |                    |   |     |     |     |     |     |         |                                       |           |    |         |          |
|---|--------------|--------|--|------|-----|-----|--|--|----------------------------|----|--------------------|---|-----|-----|-----|-----|-----|---------|---------------------------------------|-----------|----|---------|----------|
| 32-bit Power Architecture MCU for Automotive Powertrain Applications                      | e2002        | 80     | TQFP 100 14x14x1.0                                   | 1536 | 32  | 64  | 2 x CAN, 2 x DSPI, 3 x LINFlex, Ethernet   | 1x32-bit SWT, 1x64-bit PIT, 2x32-bit SWT, 4x32-bit PIT     | GTM (16 IC, 56 OC, 24-bit) | 24 | 3x12-bit           | Cal. Bus, Dec. filter, T sensor   | -   | 83  | 4.5 | 5.5 | -40 | 105     | 1x LSP, VLE                           | 12-region | 16 | -       | Superset |
| 32-bit Power Architecture MCU for Automotive Powertrain Applications                      | e2002z       | 80     | TQFP-EP 80L 10X10X1.0 EXPADDOWN                      | 1536 | 32  | 64  | 2 x CAN, 2 x DSPI, 3 x LINFlex, Ethernet   | 1x32-bit SWT, 1x64-bit PIT, 2x32-bit SWT, 4x32-bit PIT     | GTM (16 IC, 56 OC, 24-bit) | 19 | 3x12-bit           | Cal. Bus, Dec. filter, T sensor   | -   | 63  | 4.5 | 5.5 | -40 | 105     | 1x LSP, VLE                           | 12-region | 16 | -       | Superset |
| 32-bit Power Architecture MCU for Automotive Applications                                 | e200z4       | 160    | TQFP 144 20x20x1.0                                   | 2560 | 64  | 176 | 1 x FlexRay, 1 x I2C, 1 x TT-CAN, 2 x FD-MCAN, 5 x DSPI, 5 x LINFlexD, Ethernet, I2C | 1x64-bit PIT, 2x32-bit STM, 3x32-bit SWT, 6x32-bit PIT     | GTM (24 IC, 64 OC, 24-bit) | 38 | 5x12-bit           | Cal. Bus, Dual CRC, Fault Collection and Control Unit, IOP e200z2, T sensor         | -   | 117 | 4.5 | 5.5 | -40 | 125     | 2KB D-cache                           | 20-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive Applications                                 | e200z4       | 160    | LQFP 176 24x24x1.4                                   | 2560 | 64  | 176 | 1 x FlexRay, 1 x I2C, 1 x TT-CAN, 2 x FD-MCAN, 5 x DSPI, 5 x LINFlexD, Ethernet      | 1x64-bit PIT, 2x32-bit STM, 3x32-bit SWT, 6x32-bit PIT     | GTM (24 IC, 64 OC, 24-bit) | 48 | 5x12-bit           | Cal. Bus, Dual CRC, Fault Collection and Control Unit, T sensor                     | -   | 149 | 4.5 | 5.5 | -40 | 125     | 1x LSP, 2KB D-cache, 4KB I-cache, VLE | 20-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications              | Dual e200z4d | 140    | TQFP 100 14x14x1.0                                   | 1024 | 64  | 96  | 2 x LINFlex, 4 x DSPI  | 1x32-bit SWT, 4x32-bit PIT, 4x32-bit STM                   | -                          | 18 | 8x12-bit           | CRC unit, CTU, Fault Collection and Control Unit, FlexRay, T sensor                 | -   | -   | -   | -   | -40 | 125     | 1x LSP, 8KB I-cache, VLE              | 16-region | 16 | Autosar | -        |
| 32-bit Power Architecture MCU for Automotive Chassis and Safety Applications              | Dual e200z4d | 140    | TQFP 100 14x14x1.0                                   | 1536 | 64  | 128 | 2 x LINFlex, 4 x DSPI  | 1x32-bit SWT, 4x32-bit PIT, 4x32-bit STM                   | -                          | 18 | 8x12-bit           | CRC unit, CTU, Fault Collection and Control Unit, FlexRay, T sensor                 | -   | -   | -   | -   | -40 | 125     | 1x LSP, 8KB I-cache, VLE              | 16-region | 16 | Autosar | -        |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z2       | 48,80  | TQFP 64 10x10x1.0                                    | 512  | 64  | 64  | 4 x DSPI, 5 x LINFlexD, 6 x FlexCAN, I2C   | -  | 28ch eMIOS (16-bit)        | 32 | 10 or 12-bit       | CRC unit, CTU, RTC, Standby Mode  | -   | 80  | 3   | 5.5 | -40 | 105     | VLE                                   | 16-region | 16 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z2       | 80     | TQFP 100 14x14x1.0                                   | 512  | 64  | 64  | 4 x DSPI, 5 x LINFlexD, 6 x FlexCAN, I2C   | -  | 28ch eMIOS (16-bit)        | 32 | 10 or 12-bit       | CRC unit, CTU, RTC, Standby Mode  | -   | 80  | 3   | 5.5 | -40 | 105     | VLE                                   | 16-region | 16 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z2       | 64,80  | TQFP 64 10x10x1.0                                    | 768  | 64  | 64  | 4 x DSPI, 5 x LINFlexD, 6 x FlexCAN, I2C   | -  | 28ch eMIOS (16-bit)        | 32 | 10 or 12-bit       | CRC unit, CTU, RTC, Standby Mode  | -   | 80  | 3   | 5.5 | -40 | 105     | VLE                                   | 16-region | 16 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z2       | 64,80  | TQFP 100 14x14x1.0                                   | 768  | 64  | 64  | 4 x DSPI, 5 x LINFlexD, 6 x FlexCAN, I2C   | -  | 28ch eMIOS (16-bit)        | 32 | 10 or 12-bit       | CRC unit, CTU, RTC, Standby Mode  | -   | 80  | 3   | 5.5 | -40 | 105,125 | VLE                                   | 16-region | 16 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z2       | 80     | TQFP 64 10x10x1.0                                    | 1024 | 64  | 64  | 4 x DSPI, 5 x LINFlexD, 6 x FlexCAN, I2C   | -  | 28ch eMIOS (16-bit)        | 32 | 10 or 12-bit       | CRC unit, CTU, RTC, Standby Mode  | -   | 80  | 3   | 5.5 | -40 | 105,125 | VLE                                   | 16-region | 16 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z2       | 80     | TQFP 100 14x14x1.0                                   | 1024 | 64  | 96  | 4 x DSPI, 5 x LINFlexD, 6 x FlexCAN, I2C   | -  | 28ch eMIOS (16-bit)        | 32 | 10 or 12-bit       | CRC unit, CTU, RTC, Standby Mode  | -   | 80  | 3   | 5.5 | -40 | 125     | VLE                                   | -         | 16 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120    | TQFP 64 10x10x1.0                                    | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 44  | 3   | 5.5 | -40 | 105     | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 64     | TQFP 100 14x14x1.0                                   | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 88  | 3   | 5.5 | -40 | 105     | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120,80 | TQFP 144 20x20x1.0, TQFP 144 20x20x1.0 1.0 ExpadDown | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 124 | 3   | 5.5 | -40 | 105     | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120    | TQFP 64 10x10x1.0                                    | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 44  | 3   | 5.5 | -40 | 125     | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120,80 | TQFP 100 14x14x1.0                                   | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 88  | 3   | 5.5 | -40 | 105,125 | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120    | LQFP 176 24x24x1.4                                   | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 154 | 3   | 5.5 | -40 | 105     | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120    | TQFP 64 10x10x1.0                                    | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 44  | 3   | 5.5 | -40 | 105,125 | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120,80 | TQFP 100 14x14x1.0                                   | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 88  | 3   | 5.5 | -40 | 105,125 | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120,80 | TQFP 144 20x20x1.0                                   | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 124 | 3   | 5.5 | -40 | 105,125 | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 120    | LQFP 176 24x24x1.4                                   | 2048 | 64  | 192 | 10 x LINFlex, 7 x DSPI, 8 x FD-MCAN, Ethernet, MAC, I2C                              | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 64 | 1x10-bit, 3x12-bit | CRC unit, CTU, Fault Collection and Control Unit, Standby Mode                      | HSM | 154 | 3   | 5.5 | -40 | 105,125 | 2KB D-cache, 8KB I-cache, FPU, VLE    | 16-region | 32 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 180    | TQFP 100 14x14x1.0                                   | 2000 | 128 | 256 | 1 x FlexRay, 8 x DSPI, 8 x FD-MCAN, 8 x LINFlex, Ethernet, MAC, I2C                  | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 95 | 1x10-bit, 5x12-bit | 32KHz OSC, CTU, Dual CRC, Fault Collection and Control Unit, Standby Mode, T sensor | HSM | 78  | 3   | 5.5 | -40 | -       | 1x LSP, 2x FPU                        | Yes       | 64 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | e200z4d      | 180    | LQFP 176 24x24x1.4                                   | 2000 | 128 | 256 | 1 x FlexRay, 8 x DSPI, 8 x FD-MCAN, 8 x LINFlex, Ethernet, MAC, I2C                  | 2x32-bit SWT, 4x32-bit STM, 8x32-bit PIT, RTC/API (32-bit) | 64ch eMIOS (16-bit)        | 95 | 1x10-bit, 5x12-bit | 32KHz OSC, CTU, Dual CRC, Fault Collection and Control Unit, Standby Mode, T sensor | HSM | 154 | 3   | 5.5 | -40 | -       | 1x LSP, 2x FPU                        | Yes       | 64 | Autosar | Superset |





|  |         |     |                       |      |     |     |   |   |                     |    |                   |  |         |     |   |     |     |     |             |           |    |         |          |
|--|---------|-----|-----------------------|------|-----|-----|---|---|---------------------|----|-------------------|--|---------|-----|---|-----|-----|-----|-------------|-----------|----|---------|----------|
| 32-bit Power Architecture MCU for High Performance Applications            | e200d4d | 200 | LQFP 176 24x24x1.4    | 6064 | 256 | 512 | 7 x DSP1,8 x LINFlex                        | 1x64-bit PIT,4x32-bit SWT,8x32-bit PIT                  | -                   | 82 | 5x12-bit          | Cal. Bus,Dual CRC,Ethernet,Fault Collection and Control Unit,FlexRay,Standby Mode,T sensor | HSM     | -   | - | -   | -40 | -   | 1x LSP      | -         | 96 | Autosar | Superset |
| 32-bit Power Architecture MCU for Automotive Body and Gateway Applications | e200d4d | 120 | LQFP 208 28x28x1.4 mm | 3072 | 64  | 192 | 10xLINFlex,1xFlexRay,1xI2C,6xFlexCAN,8xDSP1 | 1x32-bit SWT,4x32-bit STM,8x32-bit PIT,RTC/API (32-bit) | 64ch eMIOS (16-bit) | 62 | 1x10-bit,1x12-bit | 32KHz OSC,CTU,Standby Mode   | CSE,SHE | 177 | 3 | 5.5 | -40 | 125 | MMU,SPE,VLE | 16-region | 32 | -       | Superset |

## ST10 16-bit Automotive MCUs

### Overview

ST's ST10 microcontroller family offers a wide range of devices for use in automotive applications. The family integrates scalable single-voltage embedded Flash, from 128 to 832 Kbytes. Processed in 0.18  $\mu\text{m}$  CMOS technology, it offers full 5 V capability and an internal on-chip voltage regulator.

- High-performance ST10 core with DSP unit
- Extensive software and tools
- Large choice of peripherals and interfaces, same peripheral set across the ST10 family
- Single 5 V power supply
- High-quality embedded Flash (data retention 20 years at 55 °C)

**Automotive Microcontrollers/ST10 16-bit Automotive MCUs**

| Part Number | Package            | Core | Flash Size (kB) (Prog) | Other timer functions     | A/D Converter | I/Os (High Current) | Operating Temperature (°C) min | Operating Temperature (°C) max |
|-------------|--------------------|------|------------------------|---------------------------|---------------|---------------------|--------------------------------|--------------------------------|
| ST10F272E   | PQFP 144 28x28x3.4 | ST10 | 256                    | 5x16-bit GPT,IWDG,PWM,RTC | 24 x 10-bit   | 95                  | -40                            | 125                            |
| ST10F276E   | PQFP 144 28x28x3.4 | ST10 | 832                    | 5x16-bit GPT,IWDG,RTC     | 24 x 10-bit   | 95                  | -40                            | 125                            |

# Stellar 32-bit Automotive MCUs

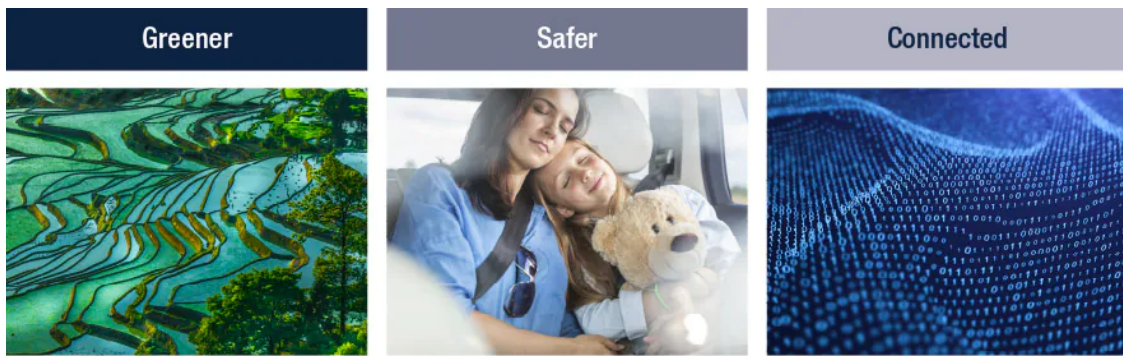
## Overview

Mobility is becoming greener, safer, and more connected. It is reshaping the Automotive industry and redefining our in-vehicle lives. Electrified vehicles, self-driving cars and new services provide more safety, added security and enhanced user experience. However, we need to change the way the functions are designed and updated, and find ways to simplify systems that continue to increase in complexity.



### Stellar: the ST platform for software-defined vehicles

The transition to **software-defined vehicles (SDVs)** is taking the lead. Based on features and functions which are enabled by software, the hardware lifecycle is separate from the software which is seamlessly integrated in the vehicle in the form of self-contained applications.



Today's vehicles are turning into **software platforms** consisting of native and over-the-air downloaded applications.

**Software-defined vehicles** allow automakers to continuously:

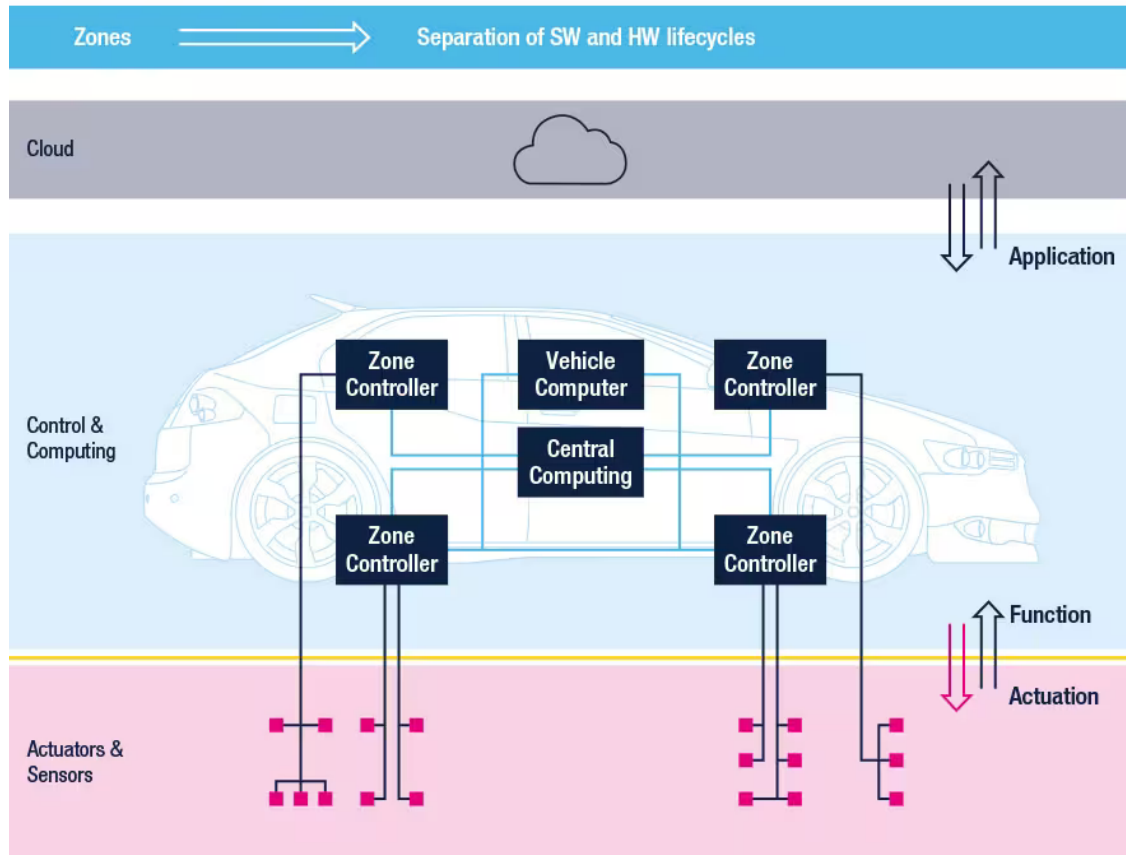
- improve functions
- update security and safety features
- offer innovative new services

**Electric vehicles (EV)** will be the first to undergo this transformation. Upgradability is critical for augmenting EV power efficiency, gaining extra driving range and improving performance.

Traditional electronic/electrical (E/E) architectures are reaching the limits of their capacity to support this software-driven approach. Many electronic control units (ECUs) are based on different and proprietary core technologies, with low-bandwidth connectivity. Heterogenous in-vehicle networks are preventing the implementation of scalable, flexible, and upgradable vehicles.

# SOFTWARE-DEFINED VEHICLE

## Lead transformation towards lean & smart architecture



New vehicle architectures require **open hardware platforms**, offering high real-time computing efficiency with easily upgradable devices. They are able to handle massive dataflows while observing stringent security guidelines and functional safety requirements.

ST's Arm®-based Stellar platform reduces the complexity of new vehicle architectures and their electrification. ST's Stellar automotive microcontrollers address the requirements of modern vehicle nodes. These range from application management and high data-stream control to efficient actuation and power conversion subsystems.

### The Stellar 32-bit MCU family

#### Stellar integration MCUs

Our Stellar MCUs meet the evolving needs for more powerful applications and centralized ECUs at the domain or zone level.

Stellar integration MCUs can:

- safely run several critical real-time functions
- support the aggregation and dispatching of growing data streams
- ensure efficient energy management
- secure over-the-air software updates for managing vehicle lifecycles and deploying new and improved services

Stellar integration automotive MCUs are ready to meet the requirements of digital transformation . They deliver enhanced motor control interfaces and an advanced generic timer module (GTM). This allows combining several power converters into a single control unit for the optimized management of vehicle dynamics.

We offer different series of integration MCUs for different applications:

- **Stellar P** integration MCUs for motion control

- **Stellar G** integration MCUs for Gateway and body

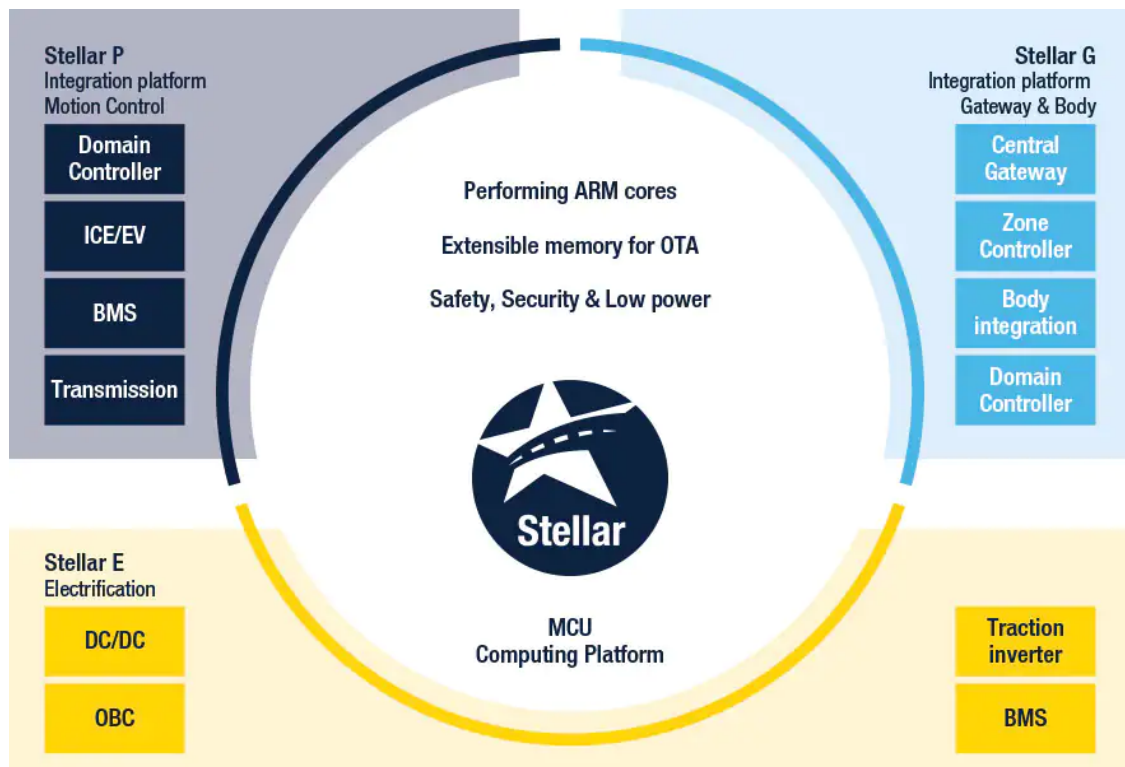
### Stellar actuation MCUs

The **Stellar E** series automotive MCUs are tailored for electrification solutions and guarantee efficient actuation of **power conversion and e-drivetrain applications**. The series is supported by a common ecosystem for fast time-to-market.

- **Stellar E** electrification MCUs are the ideal SiC/GaN companion chips for digital control enhancement. They deliver efficient OTA updates and upgrades while supporting the most stringent automotive standards in a single device.

### ST's Stellar platform benefits

The innovative design of each Stellar MCU series takes advantage of the efficiency of Arm®-based high-performance, multicore architectures. They guarantee real-time responsiveness and a rigorous approach to functional safety, while accelerating customer innovation and time-to-market through a comprehensive ecosystem.



Stellar Arm®-based microcontrollers now deliver a complete, software-upgradable value chain for advanced vehicle architectures. They offer efficient, reliable, and robust management of applications ranging from the control of vehicle dynamics to actuation solutions.

**Automotive Microcontrollers / Stellar 32-bit Automotive MCUs/Stellar Actuation MCUs**

| Part Number | General Description  | Core          | CPU Clock Frequency (MHz) max | APU            | Package            | Internal Flash Size nom | RAM Size (kB) | Timed I/Os           | A/D Resolution | D/A Converters (12-bit) typ | Comparator | Software architecture |
|-------------|--|---------------|-------------------------------|----------------|--------------------|-------------------------|---------------|----------------------|----------------|-----------------------------|------------|-----------------------|
| SR5E1E3     | SR5 E1 line of Stellar electrification MCUs, 32-bit Arm Cortex M7 automotive MCU 2x cores, 2 MB Flash, rich analog, high-resolution timer, HSM, ASIL-D | Arm Cortex-M7 | 300                           | 2x FPU, CORDIC | TQFP 100 14x14x1.0 | 2080                    | 488           | 2xAdv Timer, 2xHRTIM | 5x12-bit       | 10                          | 8          | Autosar               |
| SR5E1E7     | SR5 E1 line of Stellar electrification MCUs, 32-bit Arm Cortex-M7 automotive MCU 2x cores, 2 MB Flash, rich analog, high-resolution timer, HSM, ASIL-D | Arm Cortex-M7 | 300                           | 2x FPU, CORDIC | LQFP 176 24x24x1.4 | 2080                    | 488           | 2xAdv Timer, 2xHRTIM | 5x12-bit       | 10                          | 8          | Autosar               |

**Automotive Microcontrollers / Stellar 32-bit Automotive MCUs/Stellar Integration MCUs**

| Part Number | General Description   | Core            | CPU Clock Frequency (MHz) max | Package                 | RAM Size (kB) | Operating Temperature (°C) min | Operating Temperature (°C) max | Software architecture | PCM Size   |             |           |
|-------------|---|-----------------|-------------------------------|-------------------------|---------------|--------------------------------|--------------------------------|-----------------------|------------|-------------|-----------|
|             |   |                 |                               |                         |               |                                |                                |                       | Progr (kB) | OTA X2 (kB) | Data (kB) |
| SR6G7C4     | Stellar SR6 G7 line, 32-bit Arm® Cortex®-R52+ automotive integration MCU 6x Cortex®-R52+ cores, 20.5 MB NVM (2x 19.5 MB "OTA X2") 8.9 MB RAM, with embedded virtualization, safety and security | Arm Cortex-R52+ | 400                           | FPBGA 292 17x17x0.8     | 8400          | -40                            | 105                            | Autosar               | 20992      | 39936       | 640       |
| SR6G7C6     | Stellar SR6 G7 line, 32-bit Arm® Cortex®-R52+ automotive integration MCU 6x Cortex®-R52+ cores, 20.5 MB NVM (2x 19.5 MB "OTA X2") 8.9 MB RAM, with embedded virtualization, safety and security | Arm Cortex-R52+ | 400                           | FPBGA 476 21.3X21.3X1.8 | 8400          | -40                            | 105                            | Autosar               | 20992      | 39936       | 640       |
| SR6P6C4     | Stellar SR6 P6 line, 32-bit Arm® Cortex®-R52+ automotive integration MCU 6x Cortex®-R52+ cores, 16 MB NVM (2x 15.5 MB "OTA X2") 2.3 MB RAM, with embedded virtualization, safety and security   | Arm Cortex-R52+ | 400                           | FPBGA 292 17x17x0.8     | 2304          | -40                            | 125                            | Autosar               | 16384      | 31744       | 640       |
| SR6P6C8     | Stellar SR6 P6 line, 32-bit Arm® Cortex®-R52+ automotive integration MCU 6x Cortex®-R52+ cores, 16 MB NVM (2x 15.5 MB "OTA X2") 2.3 MB RAM, with embedded virtualization, safety and security   | Arm Cortex-R52+ | 400                           | FPBGA 516 25x25x0.8     | 2304          | -40                            | 125                            | Autosar               | 16384      | 31744       | 640       |
| SR6P7C4     | Stellar SR6 P7 line, 32-bit Arm® Cortex®-R52+ automotive integration MCU 6x Cortex®-R52+ cores, 20 MB NVM (2x 19.5 MB "OTA X2") 8.2 MB RAM, with embedded virtualization, safety and security   | Arm Cortex-R52+ | 400                           | FPBGA 292 17x17x0.8     | 8400          | -40                            | 125                            | Autosar               | 20480      | 39936       | 640       |
| SR6P7C8     | Stellar SR6 P7 line, 32-bit Arm® Cortex®-R52+ automotive integration MCU 6x Cortex®-R52+ cores, 20 MB NVM (2x 19.5 MB "OTA X2") 8.2 MB RAM, with embedded virtualization, safety and security   | Arm Cortex-R52+ | 400                           | FPBGA 516 25x25x0.8     | 8400          | -40                            | 125                            | Autosar               | 20480      | 39936       | 640       |



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