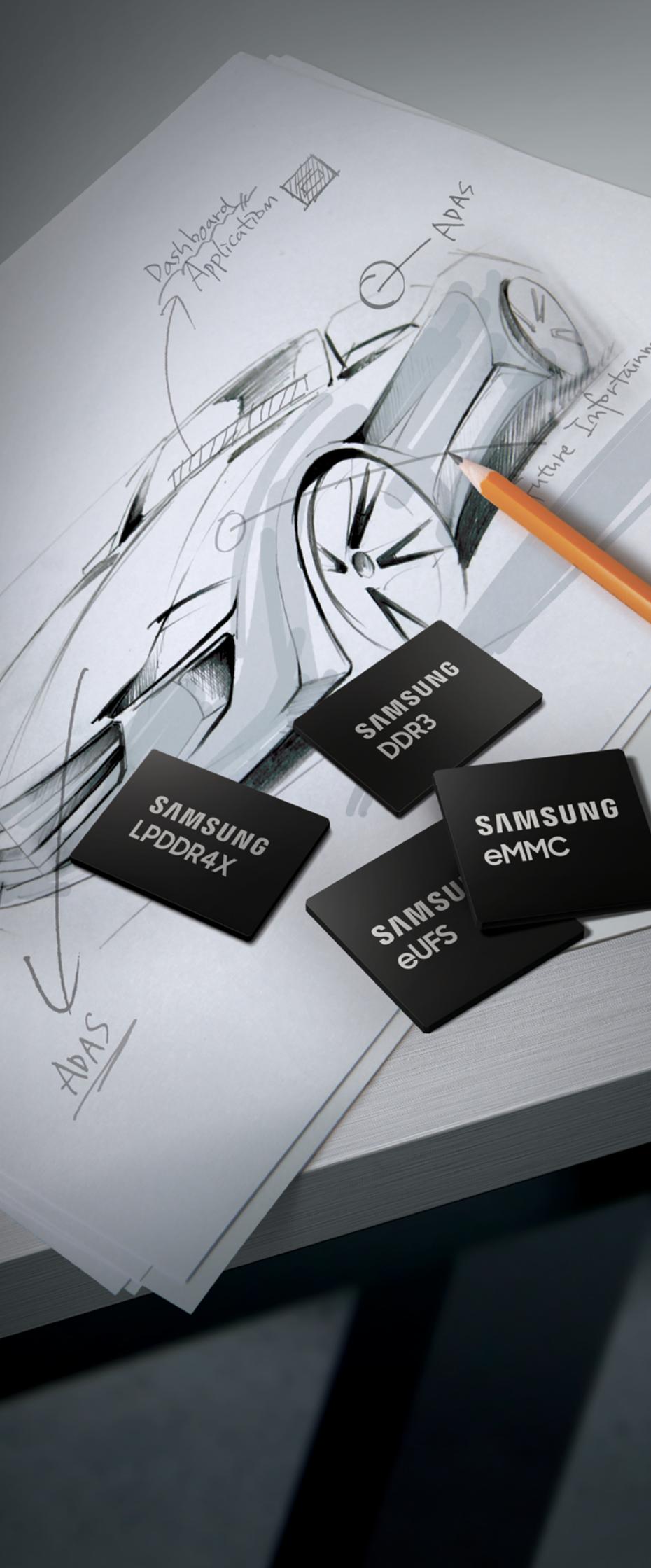


Samsung Memory Solutions for Automotive

Reliable memory solutions for next-level business and driving experience

Brochure



SAMSUNG

Samsung's advanced memory solutions for automotive applications

Advanced memory leads the way to optimized performance

With Samsung's wide selection of DRAM and Flash memory, you can build optimized systems with absolute confidence. Samsung's memory provides exceptional speed and ample capacity with outstanding energy efficiency.

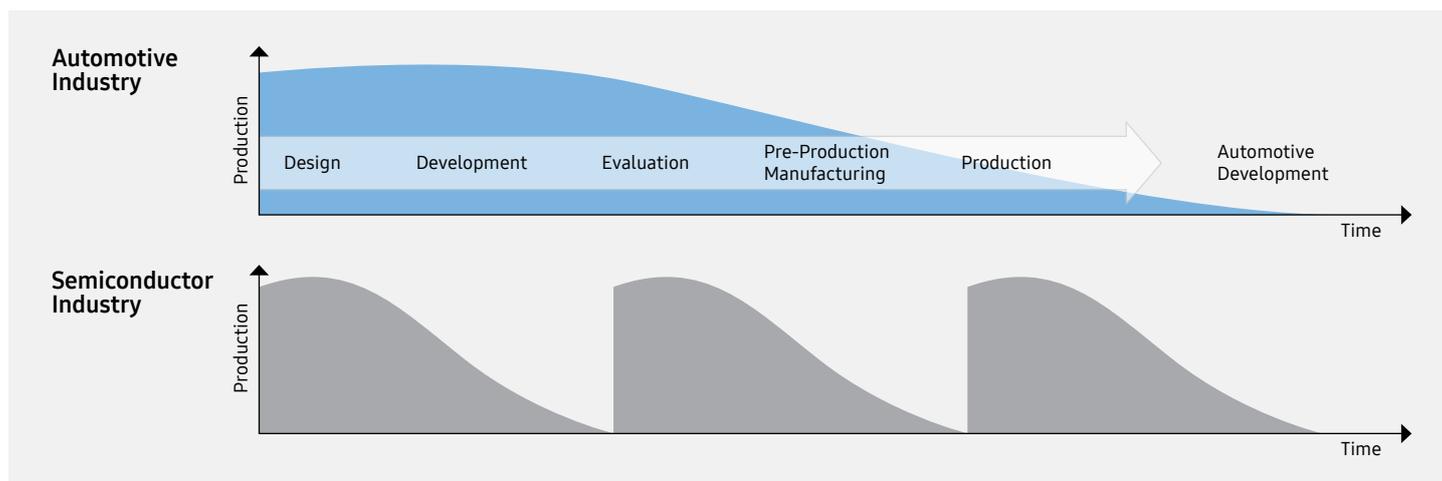
Maintain uptime with reliability and control

A small data error can result in minor inconvenience at best or unsafe driving conditions at worst. With Samsung DRAM and flash memory, system performance is robust and stable even in extreme high and low temperatures. To keep your automotive systems reliable, NAND's Error Correction Code (ECC) engine detects and corrects data errors. In addition, Samsung utilizes the Zero Defect guidelines recommended by the Automotive Electronics Council (AEC) to deliver product integrity you can trust.

Longevity matching automotive life cycles

Samsung provides extended support to enable sufficient safety testing and defect resolution that meets the needs of the market, through dedicated manufacturing lines for its automotive memory products. This means safe and continual product supply and sustained support for device users.

Product development and manufacturing lifecycles



Comprehensive portfolio for enhanced connected cars

As the connected car market grows, electronics play an increasingly important role in the automotive industry. Consumers are demanding an increasing variety of intelligent features, and the challenge for OEMs is to deliver impeccable service and enhanced customer experience in a timely manner while reducing costs.

Samsung offers a wide range of products for connected cars, satisfying diverse demands of the market with reduced compatibility issues and customization concerns. Furthermore, Samsung provides dedicated technical support to effectively speed up the time to market for automotive manufacturers. Our memory portfolio spans DDR2/3, LPDDR4/4x and eMMC/UFS that are all compliant with AEC-Q100 grade 2/3.

Leading the industry with a complete product portfolio

As a dedicated leader in the semiconductor industry, Samsung offers an enormous range of products. Samsung represents a single point of contact for almost all memory components, maximizing work efficiency and minimizing failure response time, making us your ideal partner to design future innovations.

Samsung's advanced memory solutions for automotive applications

Samsung automotive DRAM Memory

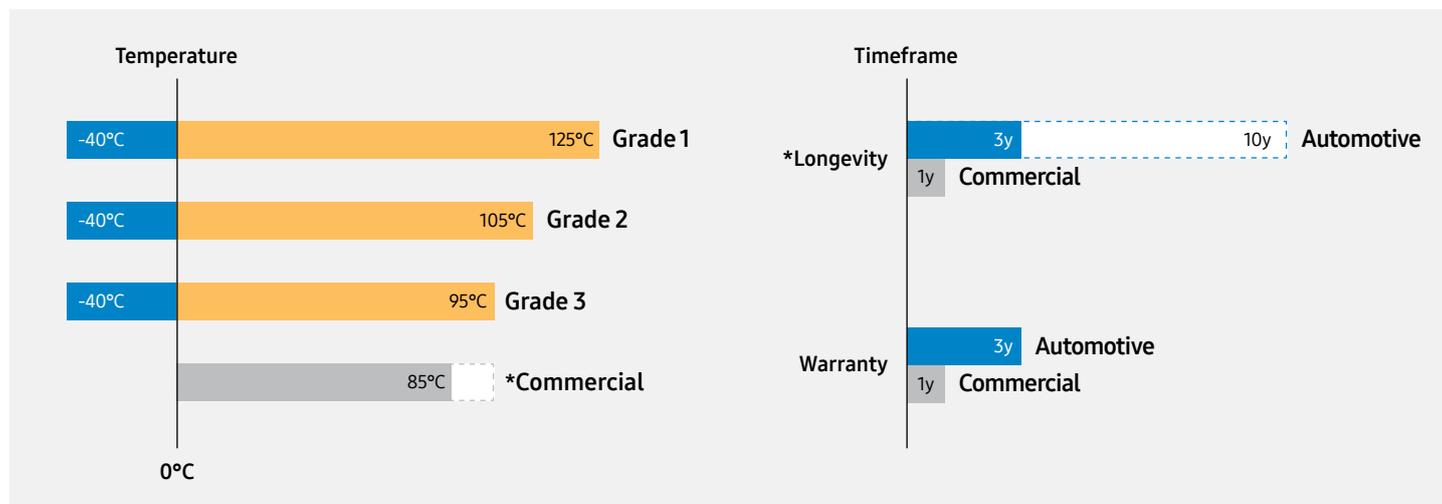
The ideal dream of using electronics to improve driver experiences can quickly turn into a nightmare when ECU-related components fail. Samsung follows the standards of AEC-Q100 to enhance reliability. Our automotive DRAM products' advanced ECC and single-digit PPM provides improved quality and safety while driving.

To provide the reliable high quality automotive memory solutions on the market, we are actively engaged in the automotive memory business and are committed to supporting AEC-Q100 compliant products and an automotive-friendly business model, maintaining a long-term supply as well as a two-year Product Change Notification (PCN) rule.

Supporting required automotive grade industry standards

Memory	Type	Org	Density	PKG
LPDDR4X	Grade 1, 2, 3	x32	32 Gb/24 Gb/16 Gb/12 Gb/8 Gb	200 FBGA
LPDDR4	Grade 1, 2, 3	x32	32 Gb/24 Gb/16 Gb/12 Gb/8 Gb/4 Gb	200 FBGA
DDR3	Grade 2, 3	x16	4 Gb/2 Gb/1 Gb	96 FBGA
DDR2	Grade 2, 3	x16	1 Gb/512 Mb	84 FBGA

DRAM Products



- Meet AEC-Q100
- Automotive Screening
- Automotive specialized Burn-in/Test
- Wide voltage range (1.35V - 1.5V) for DDR3 Low Power (IDD6/2P) for DDR3

* Tc of DDR2 and DDR3 can reach 95°C under certain conditions, please refer to product datasheet

* Min. longevity for 3 years per die shrink / Target longevity for 10 years from introduction of the family

Samsung's advanced memory solutions for automotive applications

Samsung automotive Flash Memory

It's Samsung's highest priority to supply high quality hardware for automotive applications. The longevity of our hardware is best displayed by our long-term support with dedicated manufacturing lines to ensure optimum performance and total cost of ownership.

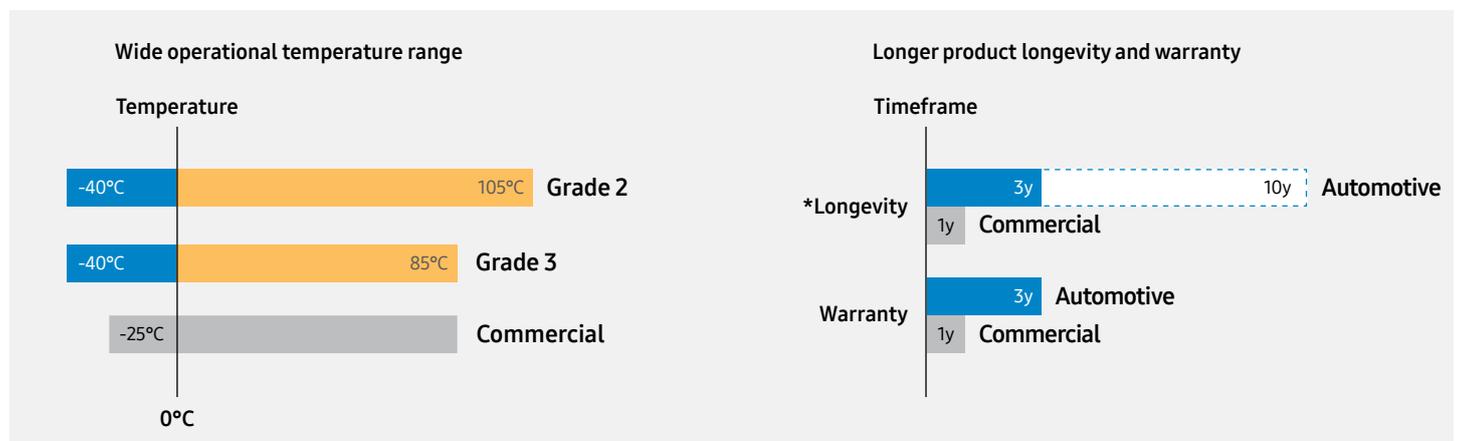
Samsung automotive grade Flash memory components are essential when more robust and rugged digital storage options are required to ensure repeatable and reliable operation. They are built to endure severe operating environments such as extreme cold and hot temperatures, continuous vibration, high shock impact, and many more factors, which distinguish them from their consumer grade cousins.

Supporting required automotive grade industry standards

Memory	Type	Org	Density	PKG
UFS	Grade 2, 3	G3 x 2L	256GB / 128GB / 64GB / 32GB	153 FBGA
eMMC	Grade 2, 3	x8	128GB / 64GB / 32GB/16GB / 8GB	153 FBGA

Tomorrow's cars will feature a smarter ride with virtually no traffic jams or driving accidents, in which the car anticipates the driver's needs. To build these more connected and intuitive cars, auto manufacturers need safety-focused, intelligent and innovative memory products. Samsung automotive Flash Memory delivers high reliability, extensive product and technical support to keep pace with the long auto production life cycle and a broad portfolio for enhanced customization and compatibility.

NAND Flash Solutions (UFS / eMMC)



- Meet AEC-Q100
- Automotive Screening
- In-house controller and firmware
- Automotive specialised Test

* Min. longevity for 3 years per die shrink / Target longevity for 10 years from introduction of the family

For more information

For more information about the Samsung Automotive Memory, visit www.samsung.com/semiconductor.

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions. For the latest news, please visit the Samsung Newsroom at <http://news.samsung.com>.

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