SiliconMotion

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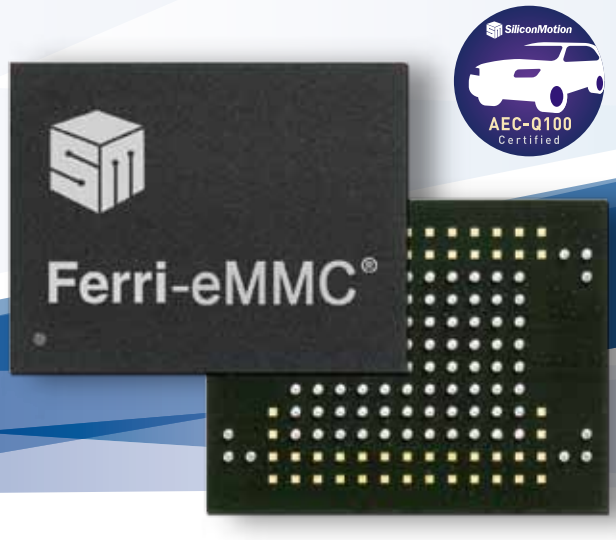
Ferri-eMMC®

Industrial / Automotive eMMC Memory



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Automotive eMMC Memory

Ferri-eMMC® is optimally designed for a wide range of embedded applications and is fully compliant to the JEDEC standards for eMMC* 4.5/5.0/5.1 protocols. Available in 100/153-ball BGA packages, Ferri-eMMC® eases PCB design and enables low-cost manufacturing.

Built with industry proven controllers and high quality NAND components, Ferri-eMMC® offers advanced NAND management features including error correction, bad block management and health monitoring – enabling the most highly reliable, non-volatile eMMC storage solution for today's cutting edge industrial, embedded and automotive applications. For automotive IVI applications, Ferri-eMMC® features industry leading low dppm, AEC-Q100 qualification, and product longevity support.

Applications

Embedded applications using HDD or raw NAND today can migrate to Ferri-eMMC® for higher performance and capacity options. Additionally, Ferri-eMMC® can be customized via firmware for specific features and applications.

As the world's leading NAND controller vendor, Silicon Motion builds its products to the highest quality and reliability standards – backed by uncompromise sales and technical support from design through post production. Silicon Motion's commitment to automotive and industrial quality is fully incorporated throughout the design, manufacturing and qualification phases of its Ferri-eMMC® products.

Why Ferri-eMMC®

Easy to adopt
- Easy PCB traces routing and layout with high PCB/SMT yield
- Excellent long-term reliability and good heat dissipation

Lower total cost of ownership
- Eliminate requalification cost from NAND generation change
- Cost saving with low density Ferri-eMMC®, HDD are typically > 160GB capacity
- Long product life cycle

Eliminate down time
- Supports self-monitoring, analysis and reporting health status
- Field programmable firmware update available

Customization available
- Configurable enhanced partition with content preload / protect
- Technical customization available

**eMMC: embedded MultiMediaCard*

Ferri-eMMC®

Features

High-Efficiency Error Correction
- Advanced Hardware BCH Error Correcting Code (ECC) Engine
- StaticDataRefresh™ and EarlyRetirement™ technologies ensure the data reliability

Advanced Global Wear Leveling to Enhance Reliability
- Even distribution of program / erase cycles across all NAND flash chips
- Maximizes the lifespan with low Write Amplification Index (WAI)

Robust Data Protection
- Advanced system level protection against unstable power
- Software / hardware write protect option
- Multiple user data security zones
- Software / hardware secure erase function
- PowerShield and DataPhoenix technologies prevent data corruption in case of sudden power lost

Automotive IVI compliance to the AEC-Q100 requirements

Part Number	SM661	SM667	SM662
Host Interface	eMMC 4.5	eMMC 4.5	eMMC 5.0 / eMMC 5.1
NAND	MLC	SLCmode™	eMMC5.0: SLCmode™
			eMMC5.1: TLC / SLCmode™
Density	4/8GB	2/4GB	eMMC5.1: 16~256GB TLC
Dimensions	14 x 18 x 1.4(mm)	14 x 18 x 1.4(mm)	14 x 18 x 1.4(mm)
	11.5 x 13 x 1.2(mm)	11.5 x 13 x 1.2(mm)	11.5 x 13 x 1.2(mm)
Package	100 / 153-ball BGA	100 / 153-ball BGA	100 / 153-ball BGA
Temperature Support	Commercial Temp (-25℃ to +85℃)	Commercial Temp (-25℃ to +85℃)	Commercial Temp (-25℃ to +85℃)
	Industrial Temp (-40℃ to +85℃)	Industrial Temp (-40℃ to +85℃)	Industrial Temp (-40℃ to +85℃)
	Automotive Grade (-40℃ to +85℃)	Automotive Grade (-40℃ to +85℃)	Automotive Grade (-40℃ to +85 / +105℃)
Green Product	RoHs compliant / Halogen free	RoHs compliant / Halogen free	RoHs compliant / Halogen free

For more information about Ferri-eMMC®, please go to www.siliconmotion.com or send e-mail to **ferri@siliconmotion.com**

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