

MACRONIX

e·MMC™ Solution

As a leader in the non-volatile memory market, Macronix has launched a family of e·MMC™ memory to meet the needs of high capacity storage and high reliability applications. This memory offering from Macronix is made possible by combining years of experience in the design and management of Flash memory with its advanced in-house NAND Flash fabrication technologies.

With profound experience in embedded solutions, Macronix is able to develop the optimized management firmware to provide a longer product lifespan with robust data integrity. This managed Flash solution optimizes memory mapping, bad block management, wear-leveling, and error correction techniques to fulfill the higher reliability demands required by designers. To face the challenges of demanding application environments, Macronix's e·MMC™ memory can help designers increase system availability and reduce maintenance efforts.

Macronix integrates its 2D & 3D NAND Flash and controller in a BGA package with a standard interface to the host system. The e·MMC™ memory is ideal for various applications, such as digital TV, set-top boxes, infotainment, industrial and networking applications. It is also available in the 11x10mm BGA package for wearable applications.

Key Features

- JEDEC e·MMC™ 5.1 Standard Interface
  - ✓ Bus Width x1/x4/x8
  - ✓ High Speed (SDR, DDR), HS200 and HS400 Modes
  - ✓ Max. Throughput 400MB/s
- Operation Voltage Range
  - ✓ VCC: 2.7 to 3.6V
  - ✓ VCCQ: 2.7 to 3.6V/1.7 to 1.95V
- Consumer Temperature Grade (-25°C to +85°C)
- Industrial Temperature Grade (-40°C to +85°C)
- Automotive Temperature Grade (-40°C to +105°C)
- Support Advanced Features of e·MMC™ 5.1 Standard
  - ✓ Command Queuing, Device Health Report, Production State Awareness, Field Firmware Update, Sleep Notification, Secure Write Protection
  - ✓ Considering the special properties of embedded systems, Macronix delivers the e·MMC™ memory to meet the customers' requirements.
- Density: 2GB to 32GB
- Intelligent Firmware/Algorithm Design
  - ✓ Wear-Leveling Enhancement, Lifespan Extension, Advanced Health Monitoring, Fast Boot Option
- Robust Data Integrity
- Proactive Power Loss Protection
- Longevity Support
- BGA Package (11.5x13mm, 11x10mm)

MXIC

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- In-House Design
- 3’rd Party supplier

- In-House Technology
- Design & Manufacture



MXIC e·MMC™ Solution

Density	Part Number	e·MMC Version	Packages		NAND Technology
			11.5x13mm 153-FBGA	11x10mm 153-FBGA	
e·MMC Memory C-Grade (-25°C to 85°C)					
32GB	MX52LT32A31	5.1	●		3D
16GB	MX52LT16B31	5.1	●		
8GB	MX52LT08D31	5.1	●		
	MX52LM08A11	5.1	●		2D
4GB	MX52LM04A11	5.1	●		
2GB	MX52LM02B11	5.1	●		
e·MMC Memory I-Grade (-40°C to 85°C)					
8GB	MX52LM08C31	5.1	●		3D
	MX52LM08A11	5.1	●	●	2D
4GB	MX52LM04A11	5.1	●	●	
2GB	MX52LM02B11	5.1		●	
	MX52LM02B12	5.1		●	
e·MMC Memory R-Grade (-40°C to 105°C)					
8GB	MX52LM08A11	5.1	●		2D
4GB	MX52LM04A11	5.1	●		

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