



BGAE340 | eMMC | 153-ball/100-ball

SMART's BGAE340 eMMC is an embedded memory solution that combines 2D-MLC NAND Flash Memory, an embedded MMC (MultiMediaCard) controller, and advanced firmware in a small BGA (Ball Grid Array) package that provides a stable, yet cost effective high-density embedded storage.

SMART's BGAE340 eMMC is compliant to eMMC v5.1 specifications and is available in the standard JEDEC 0.5mm pitch, 153-ball BGA package, as well as 1.0mm pitch, 100-ball BGA package. eMMC can simplify system design because of the widely adopted JEDEC[®] eMMC standard interface in host system chipsets and operating system software driver support.



Features & Benefits

- Compliant to JEDEC v5.1 Standard
- Industrial Temp (-40°C to +85°C) & Wide Temp (-40°C to +105°C)
- Supports Write Protect and Secure Write Protection
- Supports eMMC Device Health Report

Applications

- Factory Automation
- IIoT
- Medical Devices
- Networking Appliances
- POS Terminals
- RFID Scanners
- Single-Board Computers
- Telecom Infrastructure

Product Family Overview

Form Factor	Capacity	Sequential Performance
BGAE340 (MLC)	8GB to 16GB	Up to 285MB/s Read Up to 94MB/s Write
BGAE340 (pSLC)	2GB to 4GB	Up to 250MB/s Read Up to 65MB/s Write

Specifications (BGAE340 MLC)

BGAE340 MLC 100-ball	
NAND Type	MLC
Performance	
Host Interface Rate (maximum)	eMMC v5.1 (HS400)
Capacities	8GB to 16GB
Sequential Read (maximum)	Up to 285MB/s
Sequential Write (maximum)	Up to 94MB/s
Random Read (maximum)	Up to 7290 IOPS
Random Write (maximum)	Up to 2387 IOPS
Reliability	
Endurance	16GB: 40 TBW
(Sequential Workload)	8GB: 20 TBW
Data Retention	10 years
Error Correction	BCH
Power	
Input Voltage	3.3V ± 10%
Environmental	
Operating Shock	1500 g half-sine, 0.5 msec, 1 shock along each axis, X, Y, Z in each direction
Operating Vibration	20G 80-2000Hz, 1.52mm 20-80Hz, 3 axis
Operating Temperature	Industrial: -40°C to +85°C Wide: -40°C to 105°C
Storage Temperature	-40°C to +85°C (for I-Temp) -40°C to +105°C (for W-Temp)
Physical	
Length	14 mm
Width	18 mm
Height	2.45 mm

Ordering Information (BGAE340 MLC)

Part Number	Density
BGAE340 MLC eMMC 100-ball	
Industrial Operating Temperature (-40°C to +85°C)	
SPQ8GH2AHI01	8GB
BGAE340 MLC eMMC 100-ball	
Wide Operating Temperature (-40°C to +105°C)	
SP9QAGH2AHW01	16GB
SP9Q8GH2AHW01	8GB

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Specifications (BGAE340 pSLC)

	BGAE340 pSLC 153-ball	BGAE340 pSLC 100-ball
NAND Type	pSLC	
Performance		
Host Interface Rate (maximum)	eMMC v5.1 (HS400)	
Capacities	2GB to 4GB	4GB
Sequential Read (maximum)	Up to 250MB/s	
Sequential Write (maximum)	Up to 65MB/s	
Random Read (maximum)	Up to 10000 IOPS	
Random Write (maximum)	Up to 2000 IOPS	
Reliability		
Endurance (Sequential Workload)	4GB: 100 TBW 2GB: 50 TBW	
Data Retention	10 years	
Error Correction	BCH	
Power		
Input Voltage	3.3V ± 10%	
Environmental		
Operating Shock	1500 g half-sine, 0.5 msec, 1 shock along each axis, X, Y, Z in each direction	
Operating Vibration	20G 80-2000Hz, 1.52mm 20-80Hz, 3 axis	
Operating Temperature	Industrial: -40°C to +85°C	
Storage Temperature	-40°C to +85°C	
Physical		
Length	11.5 mm	14 mm
Width	13 mm	18 mm
Height	1 mm	2.45 mm

Ordering Information (BGAE340 pSLC)

Part Number	Density
BGAE340 pSLC eMMC 153-ball Industrial Operating Temperature (-40°C to +85°C)	
SPM8GH2AH11	4GB
SP9M4GH1AH11	2GB
BGAE340 pSLC eMMC 100-ball Industrial Operating Temperature (-40°C to +85°C)	
SPQ8GH2AH11	4GB



For more information, please visit: www.smartm.com

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