

eMMC



The rapid growth of embedded applications and handheld mobile devices with massive mobile data reading/writing/processing capabilities, fast response times and high reliability means highly integrated memory solutions are required. The ADATA eMMC embedded memory uses industry-standard controller and NAND Flash and complies with JEDEC specifications. Apart from minimizing the space required on handheld device PCBs, the high data access performance of up to R/W: 3000/200 IOPS provides handheld device operating system with the best solution for multi-core processing and efficient multi-tasking.

Key Features

- Complies with JEDEC eMMC 4.41/4.5 specifications
- Uses standard JEDEC 169 FBGA packaging
- Micro-integration solution to reduce circuit interconnections and boost performance
- Low power consumption



Target Applications

Advanced mobile devices, smart phones, tablet PCs, smart digital TVs, multimedia players, POS systems, in-vehicle infotainment and GPS systems

	Wide Temperature	Secure Erase	Wear Leveling	TRIM	Low Power Consumption
eMMC	●	●	●	●	●

● Supported



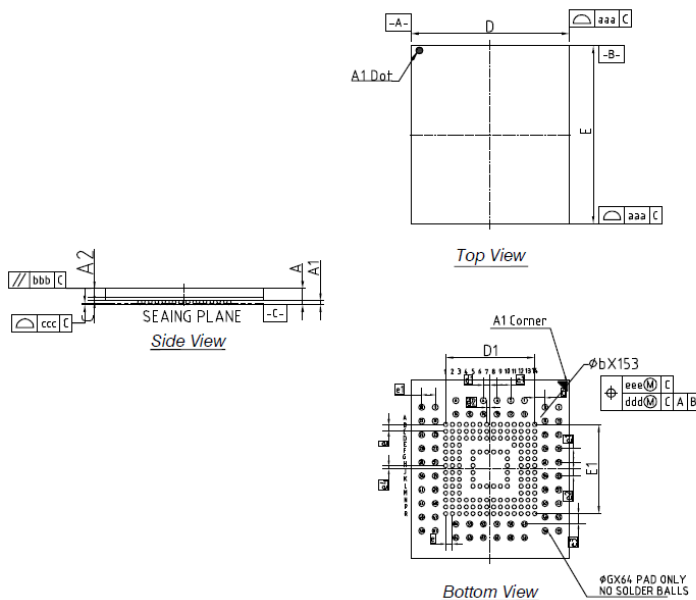
eMMC



Specifications

Model	eMCP
Interface	153/ 169 ball FBGA
JEDEC Standard	eMMC 4.5 / eMMC 5.0
Capacity	4GB-64GB
Flash Type	MLC
Operating Voltage	VCCQ 2.7~3.6; 1.7~1.95 VCC 2.7~3.6
Sequential Read (Max)	Up to 140 MB/s
Sequential Write (Max)	Up to 80 MB/s
Operating Temperatures	-25°C to 85°C
Storage Temperature	-40°C to 85°C
Power Consumption (Max)	0.13 W
Error Correction Code	40bit / 1KB (V4.41), 72bit/1KB (V4.5/V5.0)
Dimensions (L x W x H)	11.5x13x1.2(mm) , 12x16x1.2(mm), 14x18x1.2(mm)

Dimensions

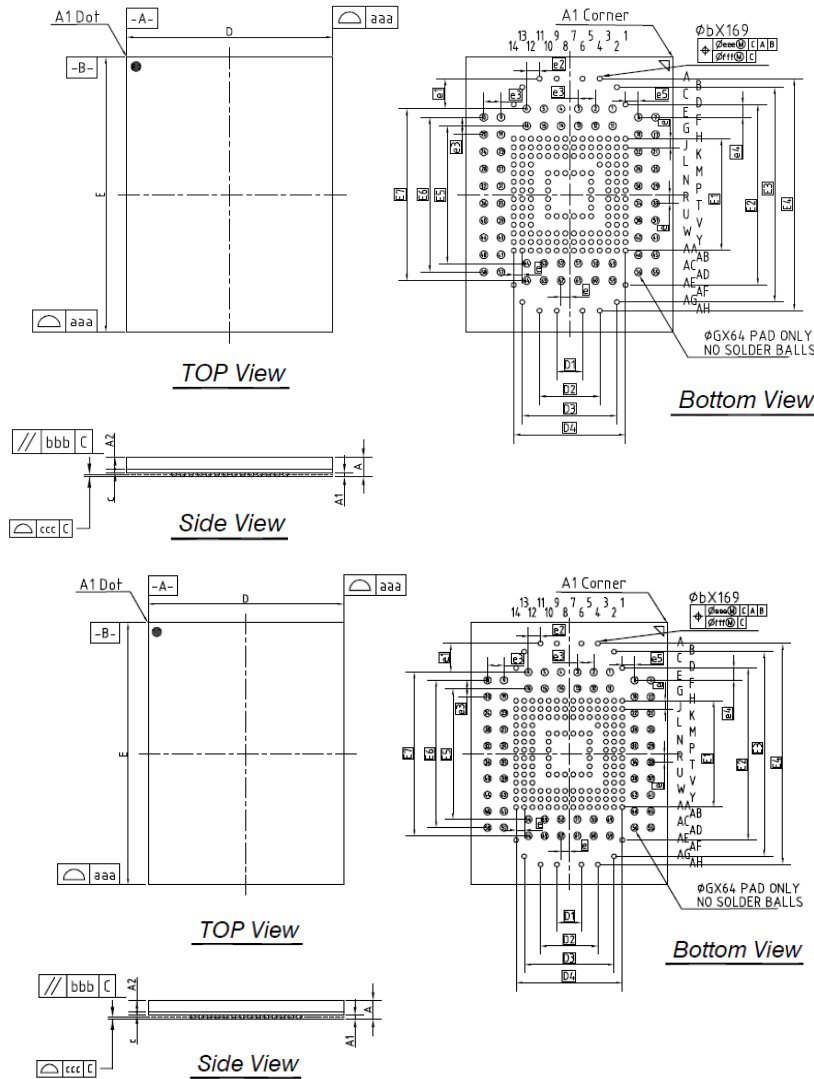


Symbol	Dimension in mm			Dimension in inch		
	Min	Nom	Max	Min	Nom	Max
A	0.83	0.92	1.00	---	---	0.051
A1	0.21	0.24	0.27	0.007	0.008	0.010
A2	0.4	0.42	0.43	0.027	0.028	0.028
B	0.22	0.26	0.30	0.010	0.012	0.013
ϕ b	0.25	0.30	0.35	0.010	0.012	0.014
ϕ G	0.40	0.45	0.50	0.016	0.018	0.020
D	11.40	11.50	11.60	0.449	0.453	0.457
D1	---	6.50	---	---	0.256	---
d	---	0.75	---	---	0.030	---
d1	---	0.50	---	---	0.020	---
d2	---	0.25	---	---	0.010	---
E	12.90	13.00	13.10	0.508	0.512	0.516
E1	---	6.50	---	---	0.256	---
e1	---	1.00	---	---	0.039	---
e2	---	0.50	---	---	0.020	---
e3	---	0.75	---	---	0.030	---
e4	---	0.25	---	---	0.010	---
e	0.50 BSC		0.020 BSC			
aaa	0.15			0.006		
bbb	0.20			0.008		
ccc	0.20			0.008		
ddd	0.15			0.006		
eee	0.1			0.004		
MD/ME	14/14		14/14			

NOTE: 1.CONTROLLING DIMENSION: MILLIMETER.
2.REFERANCE DOCUMENT:JEDEC MO-207 and MO-216

NOTE: CONTROLLING DIMENSION : MILLIMETER

eMMC



Symbol	Dimension in mm			Dimension in inch		
	Min	Norm	Max	Min	Norm	Max
A	---	1.00	---	---	0.039	---
A1	0.18	---	0.27	0.007	---	0.010
A2	0.40	0.42	0.43	0.015	0.016	0.016
c	0.22	0.26	0.30	0.008	0.010	0.011
D	11.90	12.00	12.1	0.469	0.472	0.476
E	15.9	16.00	16.10	0.626	0.630	0.634
D1	---	1.50	---	---	0.059	---
D2	---	3.50	---	---	0.138	---
D3	---	5.50	---	---	0.217	---
D4	---	6.50	---	---	0.256	---
E1	---	6.50	---	---	0.256	---
E2	---	10.50	---	---	0.413	---
E3	---	12.50	---	---	0.492	---
E4	---	13.50	---	---	0.531	---
E5	---	8.00	---	---	0.315	---
E6	---	9.00	---	---	0.354	---
E7	---	10.00	---	---	0.394	---
e	---	0.50	---	---	0.020	---
e1	---	1.75	---	---	0.069	---
e2	---	0.75	---	---	0.030	---
e3	---	1.00	---	---	0.039	---
e4	---	0.75	---	---	0.030	---
e5	---	0.75	---	---	0.030	---
φb	0.25	0.30	0.35	0.010	0.012	0.014
φG	0.40	0.45	0.50	0.016	0.018	0.020
aaa	0.15 BSC			0.006 BSC		
bbb	0.20 BSC			0.008 BSC		
ddd	0.20 BSC			0.008 BSC		
eee	0.15 BSC			0.006 BSC		
fff	0.10 BSC			0.004 BSC		
MD/ME	14/20			14/20		

NOTE:
 1. CONTROLLING DIMENSION: MILLIMETER.
 2. REFERENCE DOCUMENT: JEDEC MO-205

Symbol	Dimension in mm			Dimension in inch		
	Min	Norm	Max	Min	Norm	Max
A	---	1.00	---	---	0.039	---
A1	0.18	---	0.27	0.007	---	0.010
A2	0.40	0.42	0.43	0.015	0.016	0.016
c	0.22	0.26	0.30	0.008	0.010	0.011
D	11.90	12.00	12.1	0.469	0.472	0.476
E	15.9	16.00	16.10	0.626	0.630	0.634
D1	---	1.50	---	---	0.059	---
D2	---	3.50	---	---	0.138	---
D3	---	5.50	---	---	0.217	---
D4	---	6.50	---	---	0.256	---
E1	---	6.50	---	---	0.256	---
E2	---	10.50	---	---	0.413	---
E3	---	12.50	---	---	0.492	---
E4	---	13.50	---	---	0.531	---
E5	---	8.00	---	---	0.315	---
E6	---	9.00	---	---	0.354	---
E7	---	10.00	---	---	0.394	---
e	---	0.50	---	---	0.020	---
e1	---	1.75	---	---	0.069	---
e2	---	0.75	---	---	0.030	---
e3	---	1.00	---	---	0.039	---
e4	---	0.75	---	---	0.030	---
e5	---	0.75	---	---	0.030	---
φb	0.25	0.30	0.35	0.010	0.012	0.014
φG	0.40	0.45	0.50	0.016	0.018	0.020
aaa	0.15 BSC			0.006 BSC		
bbb	0.20 BSC			0.008 BSC		
ddd	0.20 BSC			0.008 BSC		
eee	0.15 BSC			0.006 BSC		
fff	0.10 BSC			0.004 BSC		
MD/ME	14/20			14/20		

NOTE:
 1. CONTROLLING DIMENSION: MILLIMETER.
 2. REFERENCE DOCUMENT: JEDEC MO-205

Ordering Information

Capacity	MLC 0°C to 70°C	MLC -40°C to 85°C
4GB	AE1FJ04GAK-000MDB	N/A
8GB	AE1FH08GAK-000MDA	N/A
8GB	AE1HP08GAK-000MAB(5.0)	AE1HP08GAK-000WAB(5.0)
16GB	AE1FM16GAK-000MAC	AE1FM16GAK-000WAC
16GB	AE1HQ16GAK-000MAB(5.0)	AE1HQ16GAK-000WAB(5.0)
32GB	AE1FM32GBK-000MAC	AE1FM32GBK-000WAC
32GB	AE1HQ32GBK-000MAB(5.0)	AE1HQ32GBK-000WAB(5.0)
64GB	AE1FM64GCK-000MBC	AE1FM64GCK-000WBC
64GB	AE1HQ64GCK-000MBC(5.0)	AE1HQ64GCK-000WBB(5.0)