

## Reliability Summary Report

Product Type: 128GB eMMC

Capacity	Part Number
128GB	KTMDGP3CTI01

## 1. Product Information

Product No.	Dimensions	Package	JEDEC Standard
KTMDGP3CTI01	11.5 x 13.0 x 1.0mm	153 ball FBGA	eMMC v5.1

## 2. Test Summary

Product Test Result				
<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL				
	Test Items	Test Results		Notes
1	Performance	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	
2	Electrical Performance	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	
3	Reliability	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	

### 3. Performance

#### 3.1. Performance

Capacity	HS400 Performance			
	Seq. Read (MB/s)	Seq. Write (MB/s)	Random Read 4KB (IOPS)	Random Write 4KB (IOPS)
128 GB	330	140	16000	6500

Capacity	HS200 Performance			
	Seq. Read (MB/s)	Seq. Write (MB/s)	Random Read 4KB (IOPS)	Random Write 4KB (IOPS)
128 GB	190	115	10000	4300

Capacity	DDR52 Performance			
	Seq. Read (MB/s)	Seq. Write (MB/s)	Random Read 4KB (IOPS)	Random Write 4KB (IOPS)
128 GB	95	65	8200	4600

1. Performance measured based on the internal tool.
2. Write Cache is on.

## 4. Electrical Performance

### 4.1. Power Consumption

Condition <sup>(1)</sup>		ICC/ICCQ (Typical)	Units
		128GB (native)	
Write	DDR52	85/75	mA
	HS200	105/85	mA
	HS400	110/85	mA
Read	DDR52	50/110	mA
	HS200	95/120	mA
	HS400	125/170	mA
Sleep		130	μA
Standby		30/170	μA

(1) Bus in x8 I/O mode; 25°C; VCCQ = 1.8 V in HS200 and HS400. Measurements done as maximum RMS current consumption over 100 milliseconds.

## 5. Reliability

Test Item	Test Reference	Sample Size	Test Result
Pre-condition Test (PC)	JEDEC/ JESD22 A113	366	Pass
High Acceleration Stress Test (HAST with bias)	JEDEC/ JESD22 A110	135	Pass
Temperature Cycling Test (TCT)	JEDEC/ JESD22 A104	231	Pass
High Temperature Storage Life Test (HTSL)	JEDEC/ JESD22 A103	45	Pass
Solderability (SD)	JESD22-B102	5	Pass
Physical Dimension (PD)	JEDEC/ JESD22-B100	5	Pass
Wire Bond Shear (WBS)	JEDEC/ JESD22-B116	150 bonds	Pass
Wire Bond Pull (WBP)	MIL-STD-883G, Method 2011.7	150 bonds	Pass
Solder Ball Shear (SBS)	JEDEC/ JESD22-B117	150 balls	Pass

Test Item	Test Reference	Sample Size	Test Result
High Temperature Operating Life Test (HTOL)	JEDEC/ JESD22 A108	240	Pass
Early Life Failure Rate Test (ELFR)	JEDEC/ JESD22 A108	1000	Pass
ESD Test (Human-Body Model, HBM)	JEDEC/ JS-001	3	Pass
ESD Test (Charged Device Model, CDM)	JEDEC/ JS-002	3	Pass
Latch Up	JEDEC/ JESD78	6	Pass