

## Micro SD Datasheet for 4GB Class 4

### Micro SD 4GB Specification

#### Solution 1:

<i>Technical Data</i>	
<b>Available capacity</b>	4GB
<b>Standard</b>	Micro SD
<b>Max. transfer</b>	read: up to 10-12 MB/s write: from 3-4 MB/s
<b>Dimensions</b>	15 x 11 x 1 mm
<b>Weight</b>	0,33 g
<b>Controller</b>	SMI
<b>Flash</b>	Toshiba/Hynix
<b>Manufacturer</b>	MRT
<b>Operating temp</b>	0 do +60°C (recommended)
<b>File system</b>	FAT
<b>Warranty</b>	3 Years

1 gigabyte (GB) = 1 billion bytes. Some capacity not available for data storage

### Current Consumption

Standby current: 250uA (Maximum value)

Standby current: 120uA (average value)

Operating current: 150mA (Maximum value)

Operating current: 80mA (average value)

\*Test condition: GL828 card reader (Voltage 3.3V), Fluke289c multi-meter.

### Electrical Characteristics

#### DC Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Voltage	VCCA <sub>H</sub>	2.7	3.3	3.6	V
Operating Temperature		-25		85	°C
Storage Temperature		-40		90	°C
All Input Leakage Current		-10		10	uA
All Output Leakage Current		-10		10	uA

**Table : General DC Characteristics**

Parameter Symbol	Min	Typ	Max	Unit	Remark	
Pull-up Resistance for CMD Signal	RCMD	10		100	KΩ	To prevent bus floating
Pull-up Resistance for DAT[3:0] Signals	RCMD	10		100	KΩ	To prevent bus floating
Card Capacitance for Each Signal Pin	CCARD			10	pF	
Pull-up Resistance Inside Card(DAT[3])	RDAT3	10		90	KΩ	May be used for card detection

**Table : Bus Operating Conditions-Signal Line's Load**

Parameter Symbol	Min	Max	Unit	Condition
Output High Voltage	VOH	VCC I/O1 -0.2	V	IOH=-100uA
Output Low Voltage	VOL	0.3	V	IOL= 2mA

**Table : Open-Drain Mode Bus Signal Level**

The input levels are identical with the push-pull mode bus signal levels.

Note: 1.VCC I/O = I/O buffer power.

### Operational Environment

Parameter	Range	
Temperature	Operating	-25 ~ 70°C
	Non-Operating	-40 ~ -25°C and 70 ~ 85°C
Humidity	Operating	25% to 85%, non-condensing
Durability	insertion/removal cycles	10,000
Data Retention		10 years

**Table 4. Physical Dimension Specifications (Unit in mm)**

Type Measurement	
Length	15mm +/- 0.1mm(B)
Width	11mm +/- 0.1mm(A)
Thickness	1.0mm +/- 0.1mm(C)
	0.7mm +/- 0.1mm(C1)
Weight	0.33 gram Max

