

SD Card Datasheet for 4GB Class 10

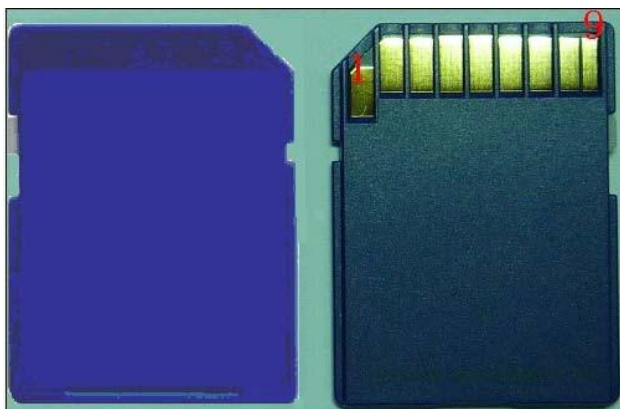
Specifications

Model	SD Card 4GB Class 10
Interface	SD2.0
Form Factor	SD
Controller	SMI
Flash	Toshiba/Intel/Micron
Sustained Read Performance (MB/sec)	Up to 20
Sustained Write Performance (MB/sec)	Up to 10
Manufacturer	MRT
Extended Operating Temperature (°C)	-40 ~ + 85
Storage Temperature (°C)	-40 ~ + 100
Shock	(Operating) 1,500G, 0.5ms
Vibration	Operating: 7.69(Grms), 20~2000(Hz)/random (comply with MIL-STD-810G) Non-operating: 4.02(Grms), 15~2000(Hz)/random (comply with MIL-STD-810G)
Operating Voltage	3.3 V $\pm$ 5%
Power Consumption	Active mode: 120 mA & Idle mode: 260 uA
Dimension (L x W x H)	32x24x2.1 (mm)
File system	FAT32

FEATURES SUMMARY

- Capacity: 4~32GB
- Compliant SD Specification V2.0.
- On card error correction.
- Voltage range for communication: 2.7~3.6V.
- Low power consumption:
Automatic power down and automatic wake up, smart power management.
- No external programming voltage required.
- Damage free powered card insertion and removal
- Mechanical Write Protection Switch
- Easy handling for the end user.
- Reliable electrical interconnection.
- Bearing textual information and image.
- In System Programming (ISP) function to update the firmware on demand.
- Noise-free operation.

Sample Picture



Front

Back

Table 1. Pin Assignment

Pin No	SD Mode			SPI Mode		
	Name	Type	Description	Name	Type	Description
1	Dat2	I/O/PP	Data Line [Bit 2]	RSV		Reserved
2	CD/DAT 3	I/O/PP 3	Card Detect / Data Line [Bit 3]	CS	I3	Chip Select
3	CMD	PP	Command/Response	DI	I	Data In

4	VSS	S	Supply voltage ground	VSS	S	Supply voltage ground
5	VDD	S	Supply voltage	VDD	S	Supply voltage
6	CLK	I	Clock	SCLK	I	Clock
7	VSS	S	Supply voltage ground	VSS	S	Supply voltage ground
8	DAT0	I/O/P P	Data Line [Bit 0]	DO	O/PP	Data Out
9	DAT1	I/O/P P	Data Line [Bit 1]	RSV		Reserved

S: power supply; I: input; O: output; PP: I/O using push-pull drivers

Current Consumption

Standby current: 250uA (Maximum value)
Standby current: 120uA (average value)
Operating current: 130mA (Maximum value)

Operating current: 60mA (average value)

*Test condition: GL828 card reader (Voltage 3.3V), Fluke187 multimeter.

Table 2. Operational Environment

Parameter	Range	
Temperature	Operating	0 ~ 70°C
	Non-Operating	-40 ~ 85°C
Humidity	Operating	25% to 85%, non-condensing
	Non-Operating	25% to 85%, non-condensing
Durability	Insertion/removal cycles	10,000
Data Retention		10 years

Table 3. Physical Dimension Specifications (Unit in mm)

Type	Measurement
Length	32.00mm ±0.10mm
Width	24.00mm ±0.10mm
Thickness	2.10mm ±0.15mm
Weight	Approx.2.0 gram

Mechanical form factor as follows: (Unit in mm)

