



Datasheet

MicroSD Product Specification

Product Model: T7-8G



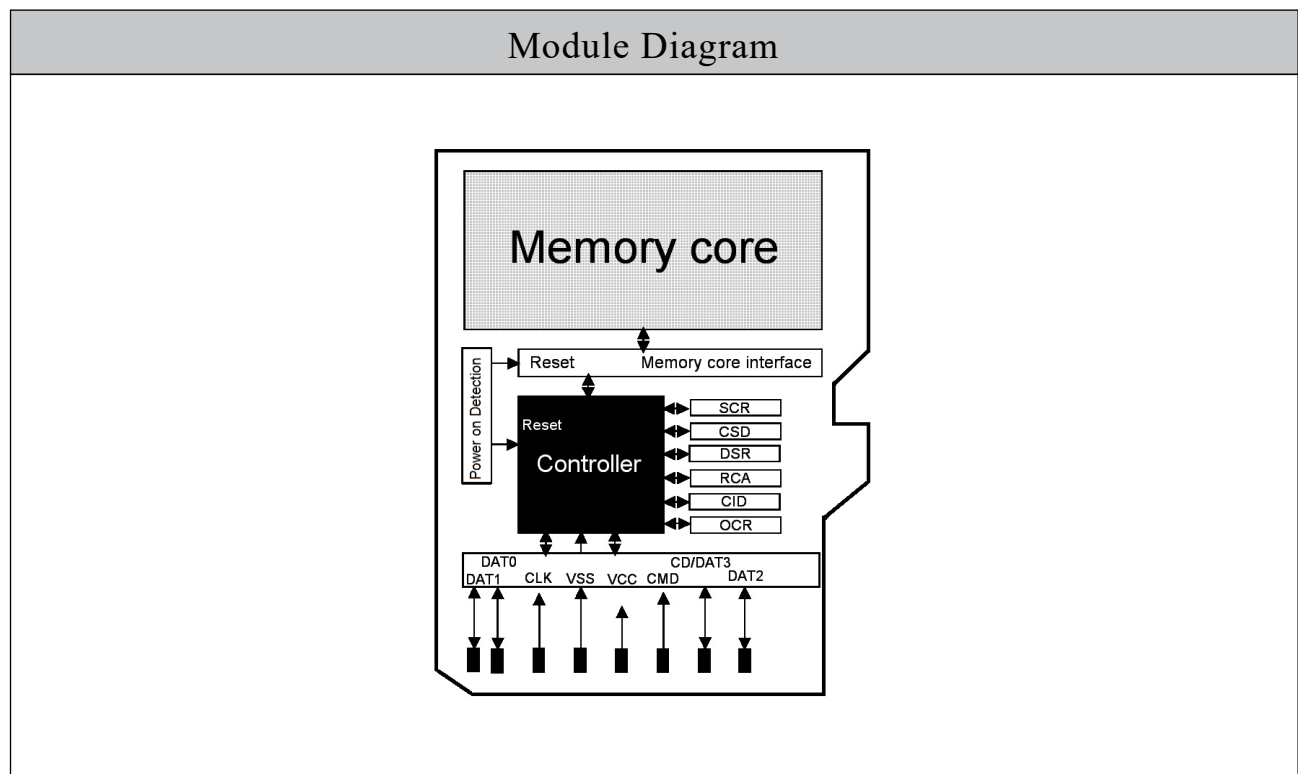


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1.0 Product Parameters

1-1.	Product Model	:	TF card
1-2.	Nominal capacity	:	8GB
1-3.	Type	:	MicroSD
1-4.	Particle category	:	SLC
1-5.	Size	:	15mm(L) x 11mm(W) x 1mm(H).
1-6.	Working Voltage	:	2.7~3.6V
1-7.	Speed	:	U1
1-8.	Operating Temperature	:	-40~ 85°C
1-9.	Storage temperature	:	-40 ~ 85°C

2.0 Module Block Diagram



3.0 Port Definition

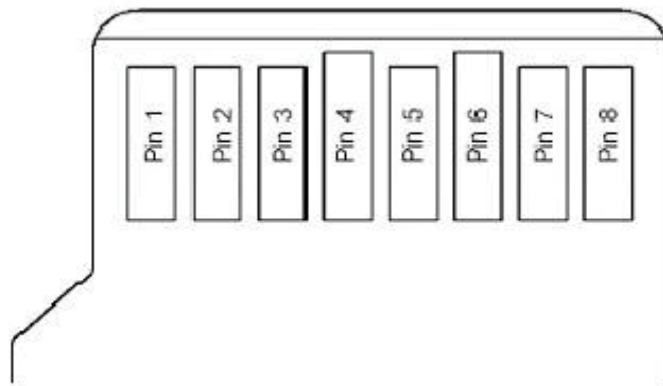


Figure: contact area

4.0 PIN Definition:

Pin No.	SDMode			SPIMode		
	Name	Type	Description	Name	Type	Description
1	DAT2	I/O/PP	Data Line [Bit 2]	RSV		Reserved
2	CD/DAT3	I/O/PP	Card Detect/ Data Line [Bit 3]	CS	I	Chip Select
3	CMD	PP	Command/Response	DI	I	Data In
4	V _{DD}	S	Supply voltage	V _{DD}	S	Supply voltage
5	CLK	I	Clock	SCLK	I	Clock
6	V _{SS}	S	Supply voltage ground	V _{SS}	S	Supply voltage ground
7	DAT0	I/O/PP	Data Line [Bit 0]	DO	O/PP	Data Out
8	DAT1	I/O/PP	Data Line [Bit 1]	RSV		Reserved

5.0 Dimensional Block Diagram

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

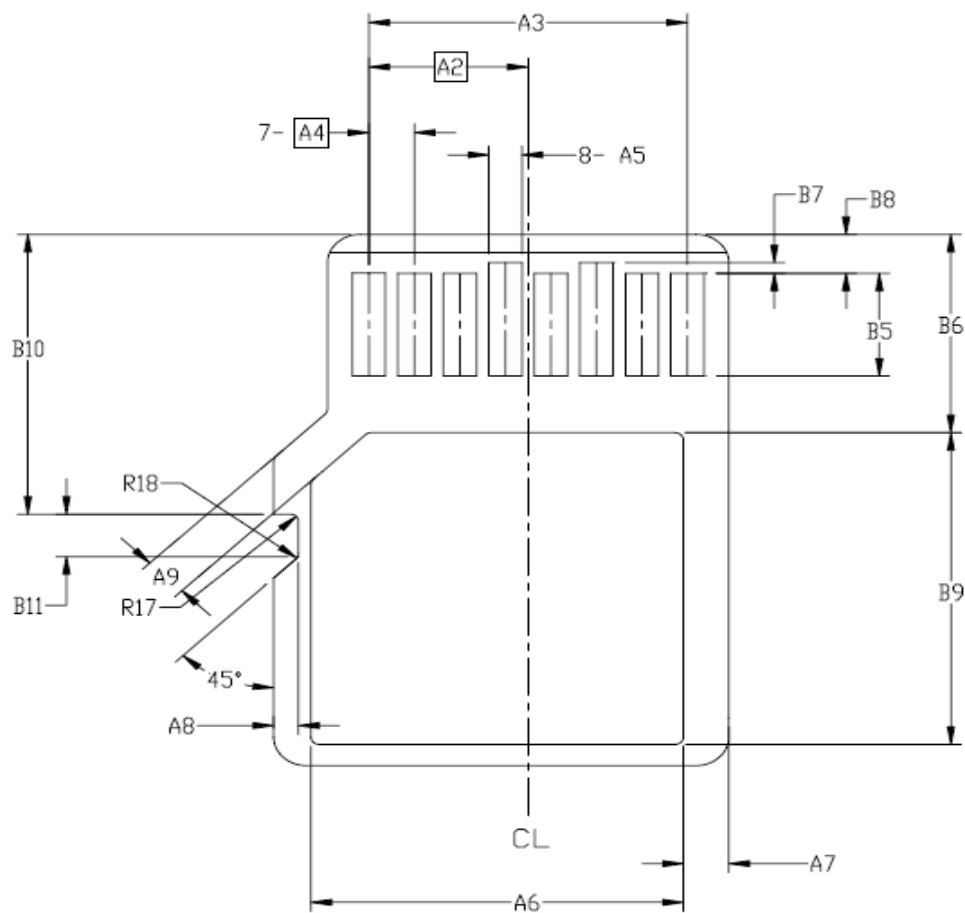


Figure E-1: Mechanical Description - Bottom View

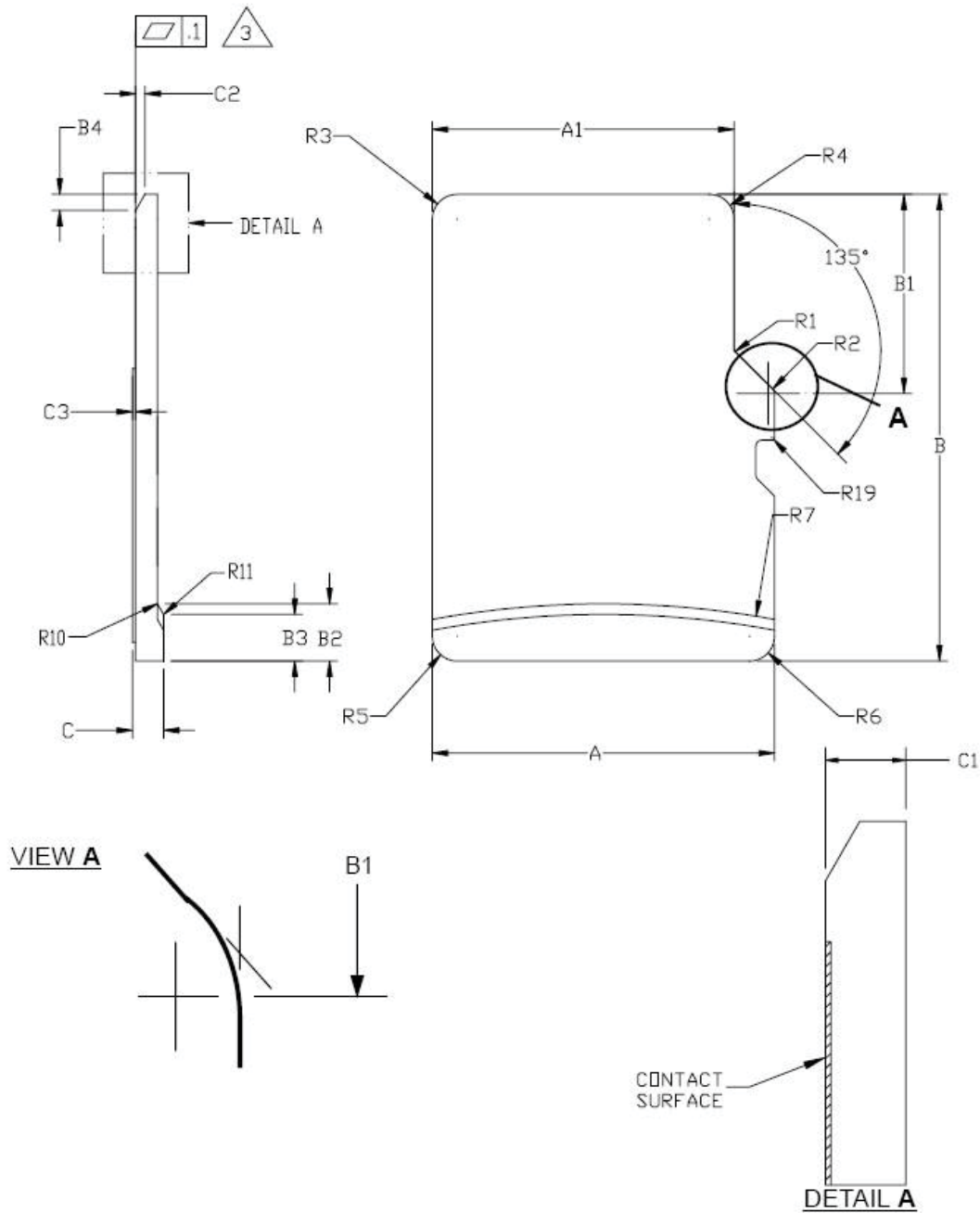


Figure E-1: Mechanical Description - Top View

6.0 Functional Testing

Test platform:

System: Windows10*64 Professional Edition
 CPU: Intel (R) Core i7-10700 @2.90GHz
 Memory: DDR4 8GB 2666MHz
 Mother board: ASUSB460M
 CrystalDiskMark 8.0.1*64

6.1 Speed test:

Model	Capacity	Write/Read Speed ¹	Category
Sample 8G	8GB	Up to 6/80 MB/s	SDCH

Note1:

Measurement based on VTE3100 & VTE4100 Test Metrix device, SW 3.2A software or up version; The card must be reformatted between each script test.

. Speed may vary due to host and device configuration.

. Test scripts:

- SD_Card(Spec3.0_High&Extended-Capacity_UHS-I and Non-UHS-I)_Compliance [rev32A]-B87.vte
- SD_Card (Spec2.0-3.0 High&Extended-Capacity_UHS-I) Performance-Speed (Multiple Block Sequential) [rev31M] - SDR104-With Background Data.vte
- SD_Card (Spec3.0-4.0 HC & XC -UHS-I) SD 3.0 Speed Class (Grade 1/3) [rev32A].vte
- SD [Spec 5.1_HC&XC_UHS-I] Speed Class (Grade 1) & VSC_6_10_30 [VTE4100, Rail_UHS-I+II] SK1 [5.2.0.2- 52B-A05].vte
- SD [Spec 5.1_HC&XC_UHS-I] A1/A2 Test - SDR50 (w CMD12_DB) [VTE4100, Rail_UHS-I+II] SK1 [5.2.0.1- 52A-A00].vte

· Maximum speed differs from the bus I/F speed. It varies depending upon the card performance. The average speed that a device writes to an SD memory card may vary depending upon the device and the operation it is performing. Normal and high-speed cards can also be used with UHS-I host devices, but the high performance enabled by a UHS-I host device can only be achieved with a UHS-I memory card.

Product Performance is based on VTE TestMetrix compliance Tool. Note that the performance measured by VTE TestMetrix does not represent real performance in various circumstances.

6.2 Reliability test

Item	Condition
Temperature	Operation: -40°C/85°C Storage: -40°C/85°C
Moisture and corrosion	Operation: 25°C/95% rel. humidity Storage: 40°C/93% rel. hum./500h
Durability	10,000 insertion/removal cycles
Bending	10[N] Center 200[mm/minute] 60[sec]
Torque	0.10Nm, +/-2.5 deg.max.
Drop test	1.5m free fall
Electrostatic Discharge (ESD)	IEC 61000-4-2 contact discharge: +/- 2[kV] and +/- 4[kV] 150[pF],330[Ohm] air discharge: up to +/- 15[kV]
X-ray Exposure	ISO7816-1 0.1Gy of medium-energy radiation (70keV to 140keV, cumulative dose per year) to both sides of the card.

6.3 Voltage parameter

Parameter	Symbol	Min	Max	Unit	Remark
Supply Voltage	V_{DD}	2.7	3.6	V	
Output High Voltage	V_{OH}	$0.75 \cdot V_{DD}$		V	$I_{OH}=2mA$ $V_{DD_{min}}$
Output Low Voltage	V_{OL}		$0.125 \cdot V_{DD}$	V	$I_{OL}=2mA$ $V_{DD_{min}}$
Input High Voltage	V_{IH}	$0.625 \cdot V_{DD}$	$V_{DD}+0.3$	V	
Input Low Voltage	V_{IL}	$V_{SS}-0.3$	$0.25 \cdot V_{DD}$	V	
Power Up Time			250	ms	From 0V to V_{DD}

6.4 Clock signal parameters:

Symbol	Min	Max	Unit	Remark
t_{CLK}	20	-	ns	50MHz (Max.), Between rising edge
t_{CR}, t_{CF}	-	$0.2 \cdot t_{CLK}$	ns	$t_{CR}, t_{CF} < 4.00ns(max.)$ at 50MHz, $C_{CARD}=10pF$
Clock Duty	45	55	%	