

TouLlen Micro SD Card

Rev. A.21

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1. Features

Flash memory card capacity support 64MB/128MB/256MB/
512MB/1GB Compliant SDA Specification Ver. 1.0.

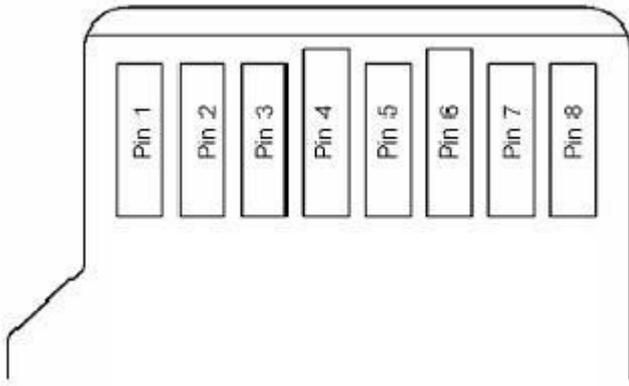
On card error correction Variable clock rate: 0~50MHz

Voltage range: Operating : 2.7~3.6V

Low power consumption: automatic power down and automatic wake up, smart Power management, Accompanied with micro SD to SD card adapter can be used in SD card socket.

Dimension : 11.0 mm (W) x 15.0 mm (L) x 1.0 mm (H)

2. Pin Definition



Pin No.	SD Mode			SPI Mode		
	Name	Type	Description	Name	Type	Description
1	Dat2	I/O/PP	DataLine[Bit2]	RSV		Reserved
2	CD/DAT3	I/O/PP	CardDetect/ DataLine[Bit3]	CS	I	Chip Select
3	CMD	PP	Command/Response	DI	I	DataIn
4	VDD	S	Supply voltage	VDD	S	Supply voltage
5	CLK	I	Clock	SCLK	I	Clock
6	VSS	S	Supply voltage ground	VSS	S	Supply voltage ground
7	DAT0	I/O/PP	DataLine[Bit0]	DO	O/PP	Data Out
8	DAT1	I/O/PP	DataLine[Bit1]	RSV		Reserved

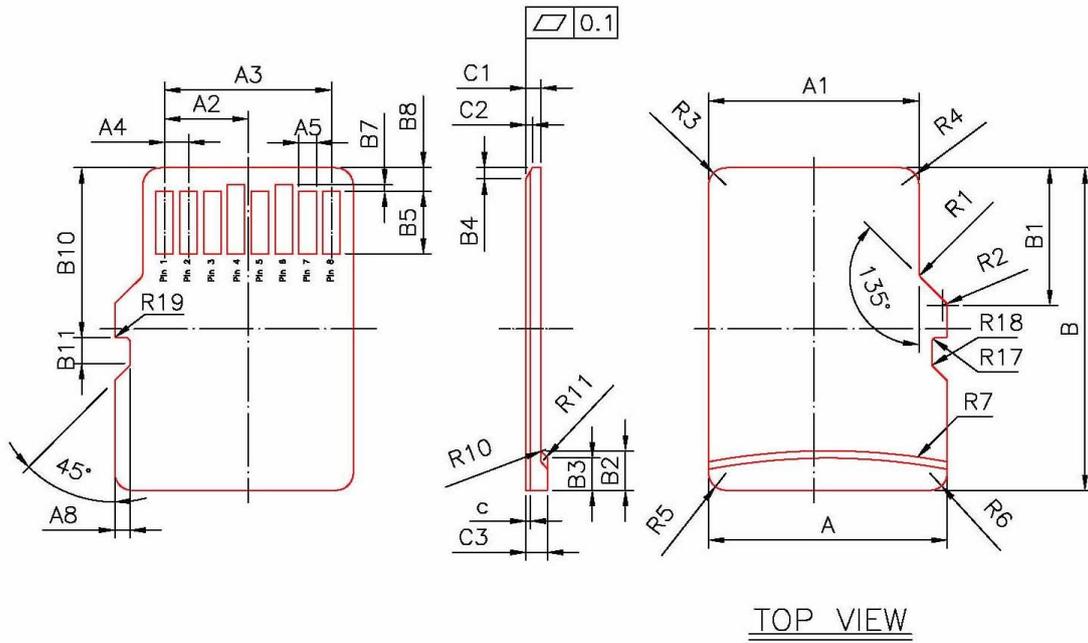
S:power supply;I:input;O:output;PP:I/O using push-pull drivers.

The extended DAT lines (DAT1-DAT3) are input on power on. They start to operate as DAT lines after SET_BUS-WIDTH command. The Host shall keep it's own DAT1-DAT3 lines in input mode, as well, they are not used. It is defined so, in order to keep compatibility to Multi Media Cards.

After power on this line is input with 50k ohm pull-up (can be used for card detection or SPI mode selection).

3. Physical Specification

3.1. Figure : Mechanical Dimensions



3.2. Table: microSD Package Dimensions

Symbol	Dimension in mm			Dimension in inch		
	MIN	NOM	MAX	MIN	NOM	MAX
A	10.90	11.00	11.10	0.429	0.433	0.437
A1	9.60	9.70	9.80	0.378	0.382	0.386
A2	----	3.85	----	----	0.152	----
A3	7.60	7.70	7.80	0.299	0.303	0.307
A4	----	1.10	----	----	0.043	----
A5	0.75	0.80	0.85	0.030	0.031	0.033
A8	0.60	0.70	0.80	0.024	0.028	0.031
B	14.90	15.00	15.10	0.587	0.591	0.594
B1	6.30	6.40	6.50	0.248	0.252	0.256
B2	1.64	1.84	2.04	0.065	0.072	0.080
B3	1.30	1.50	1.70	0.051	0.059	0.067
B4	0.42	0.52	0.62	0.017	0.020	0.024
B5	2.80	2.90	3.00	0.110	0.114	0.118
B7	0.20	0.30	0.40	0.008	0.012	0.016
B8	1.00	1.10	1.20	0.039	0.043	0.047
B10	7.80	7.90	8.00	0.307	0.311	0.315
B11	1.10	1.20	1.30	0.043	0.047	0.051
c	0.17	0.21	0.25	0.007	0.008	0.010
C1	0.60	0.70	0.80	0.024	0.028	0.031
C2	0.20	0.30	0.40	0.008	0.012	0.016
C3	0.90	1.00	1.10	0.035	0.039	0.043
R1	0.20	0.40	0.60	0.008	0.016	0.024
R2	0.20	0.40	0.60	0.008	0.016	0.024
R3	0.70	0.80	0.90	0.028	0.031	0.035
R4	0.70	0.80	0.90	0.028	0.031	0.035
R5	0.70	0.80	0.90	0.028	0.031	0.035
R6	0.70	0.80	0.90	0.028	0.031	0.035
R7	29.50	30.00	30.50	1.161	1.181	1.201
R10	----	0.20	----	----	0.008	----
R11	----	0.20	----	----	0.008	----
R17	0.10	0.20	0.30	0.004	0.008	0.012
R18	0.20	0.40	0.60	0.008	0.016	0.024
R19	0.05	----	0.20	0.002	----	0.008

3.3. Reliability and Durability

Temperature	Operation: -25°C/85°C (Target Spec) Storage: -40°C (168h)/85°C (500h)
Moisture and corrosion	Operation: 25°C/95% rel. humidity Storage : 40°C/93% rel. hum./500h
Durability	5,000 mating cycles
Bending	10N
Torque	0.10N.m or +/-2.5 deg
Drop test	1.5m free fall
UV light exposure	UV: 254nm, 15Ws/cm ² according to ISO 7816-1
Visual inspection shape and form	No warpage; no mold slim; complete form; no cavities; surface smoothness <= -0.1mm/cm ² within contour; no cracks; no pollution (oil, dust, etc.)