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TPRCLAMP0503N

Low Capactitance TVS Diode

www.sot23.com.tw

Features

- Line Capacitancee: 0.3pF(IO to IO)
- Ultra low leakage: nA level
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±20kV
    - Contact discharge: ±15kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 4A (8/20 μs)
- RoHS Compliant

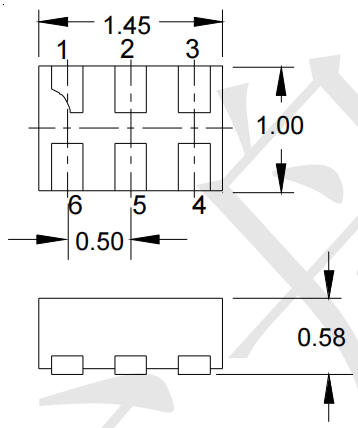
Mechanical Characteristics

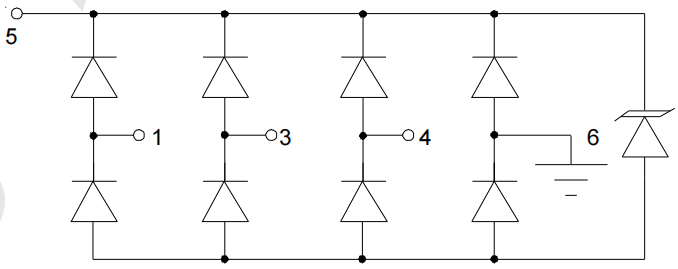
- Package: DFN1510-6
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Shipping Qty :3000pcs/7Inch Tape & Reel

Applications

- USB OTG
- MMC Port
- Serial ATA
- Video Port
- SIM Port

Dimensions and Pin Configuration





Marking: 0503N

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20μs)	IPP	4	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±25 ±20	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	Any I/O pin to ground
Breakdown Voltage	VBR	7	8	9.5	V	IT = 1mA, any I/O pin to ground
Reverse Leakage Current	I_R			0.1	μA	VRWM = 5V, any I/O pin to ground
Clamping Voltage	VC			9	V	IPP = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	VC			16	V	IPP = 4A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	CJ		0.3	0.4	pF	VR = 0V, f = 1MHz, between I/O pins
Junction Capacitance	CJ			0.8	pF	VR = 0V, f = 1MHz, any I/O pin to ground

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig1. 8/20μs Pulse Waveform

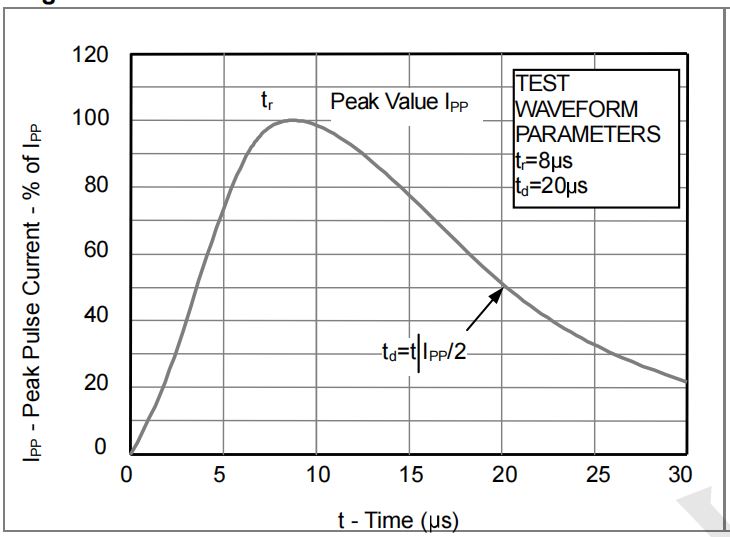


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

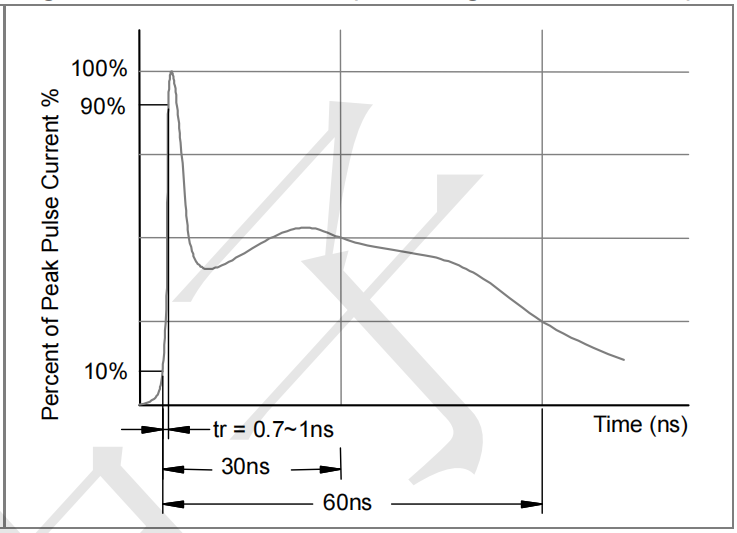
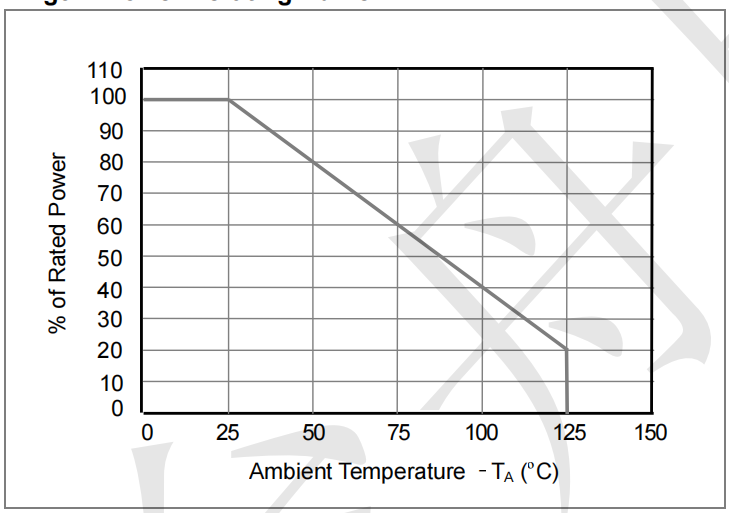
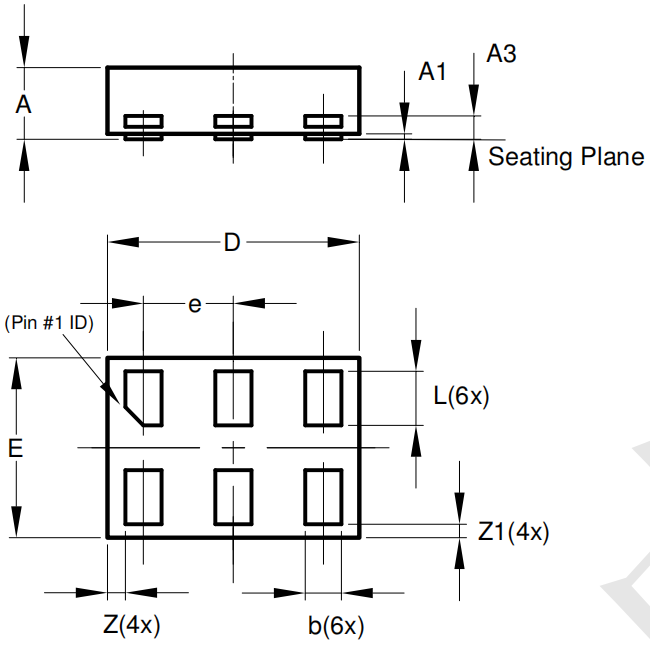


Fig3. Power Derating Curve

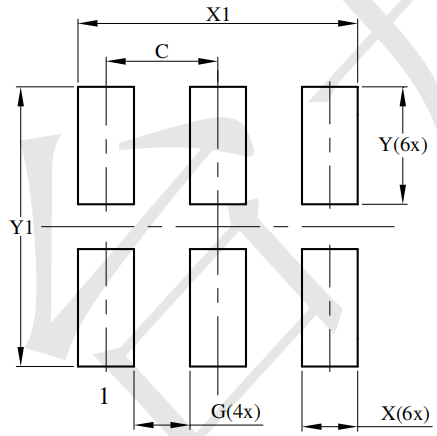


DFN1510-6(1.45x1) Package Outline Drawing



X2-DFN1410-6			
Dim	Min	Max	Typ
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.15	0.25	0.20
D	1.35	1.45	1.40
E	0.95	1.05	1.00
e	—	—	0.50
L	0.25	0.35	0.30
Z	—	—	0.10
Z1	0.045	0.105	0.075
All Dimensions in mm			

Suggested Land Pattern



Dimensions	Value (in mm)
C	0.500
G	0.250
X	0.250
X1	1.250
Y	0.525
Y1	1.250