TPESD4USB5B-TBSX

4-Lines Bi-directional Channels ESD protection

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Features

- 4 Bi-directional Channels ESD protection
- Typically Used at High Speed Ports
- Low operating voltage: 5V
- Low Channel Input Capacitance of 0.3pF(Typ)
  Typical for I/Os (Typ)
- –IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV

–IEC61000-4-4 (EFT) 40A (5/50ns)

- Totally Lead-Free & Fully RoHS Compliant
- Halogen and Antimony Free. “Green” Device

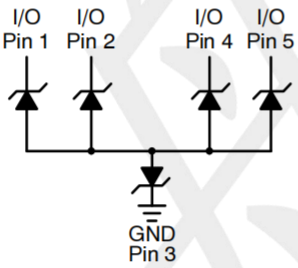
Mechanical Characteristics

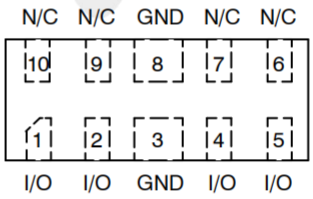
- Package: DFN2510-10L
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- USB 3.1 & 3.2 and MDDI ports
- PCI express and Serial SATA
- Ports Notebook Computers
- Tablets

Dimensions and Pin Configuration





DFN2510-10L

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

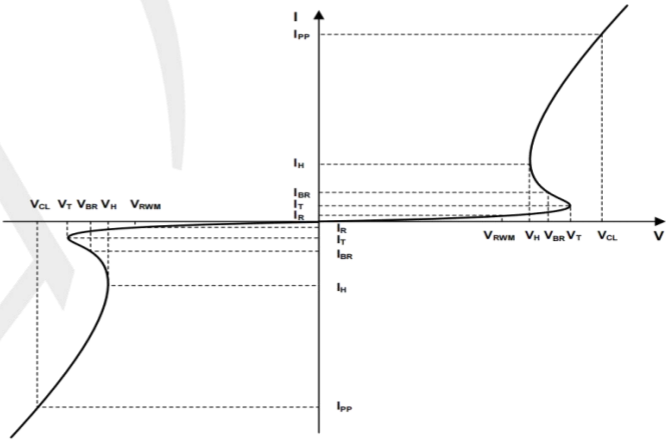
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	55	W
IEC 61000−4−2 Spec Current at 60 ns (A)	Ipp	6	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	KV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5	V	
Breakdown Voltage	VBR	5.8	--	9.5	V	IT= 1mA
Reverse Leakage Current	IR	--	--	200	nA	VRWM=5V
Clamping Voltage	VC	--	5.8	7.5	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	8.0	10	V	Ipp=5.5A(8x 20us pulse)
Junction Capacitance	CJ	--	0.3	0.4	pF	VR = 0V, f = 1MHz, Any vO pin to GND
Junction Capacitance	CJ	--	0.2	--	pF	VR = 0V, f = 1MHz, Between any I/O pin

Electrical Characteristics

Symbol	Parameter
V_{BR}	Reverse Breakdown Voltage
I_{BR}	Reverse Breakdown Current
V_{RWM}	Reverse Stand-off Voltage
I_R	Reverse Leakage Current
V_H	Holding Voltage
I_H	Holding Current
V_T	Trigger Voltage
I_T	Trigger Current
I_{PP}	Peak Pulse Current
V_{CL}	Clamping Voltage



Characteristic Curves

Fig1. 8/20μs Pulse Waveform

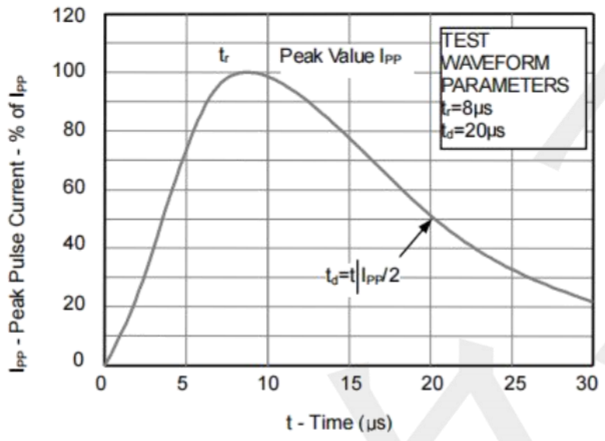


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

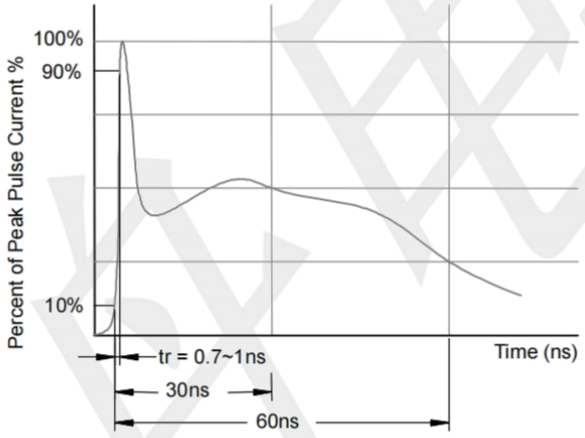
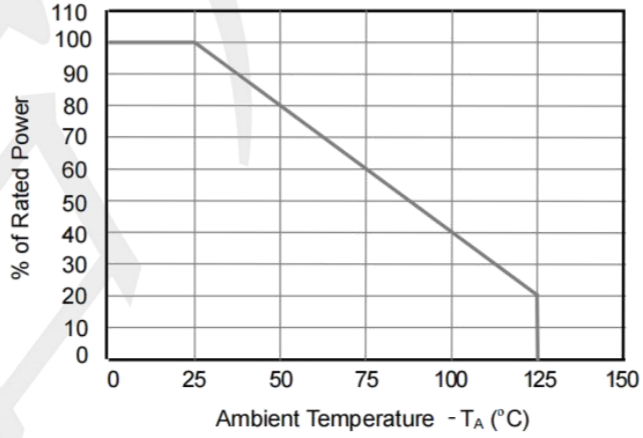
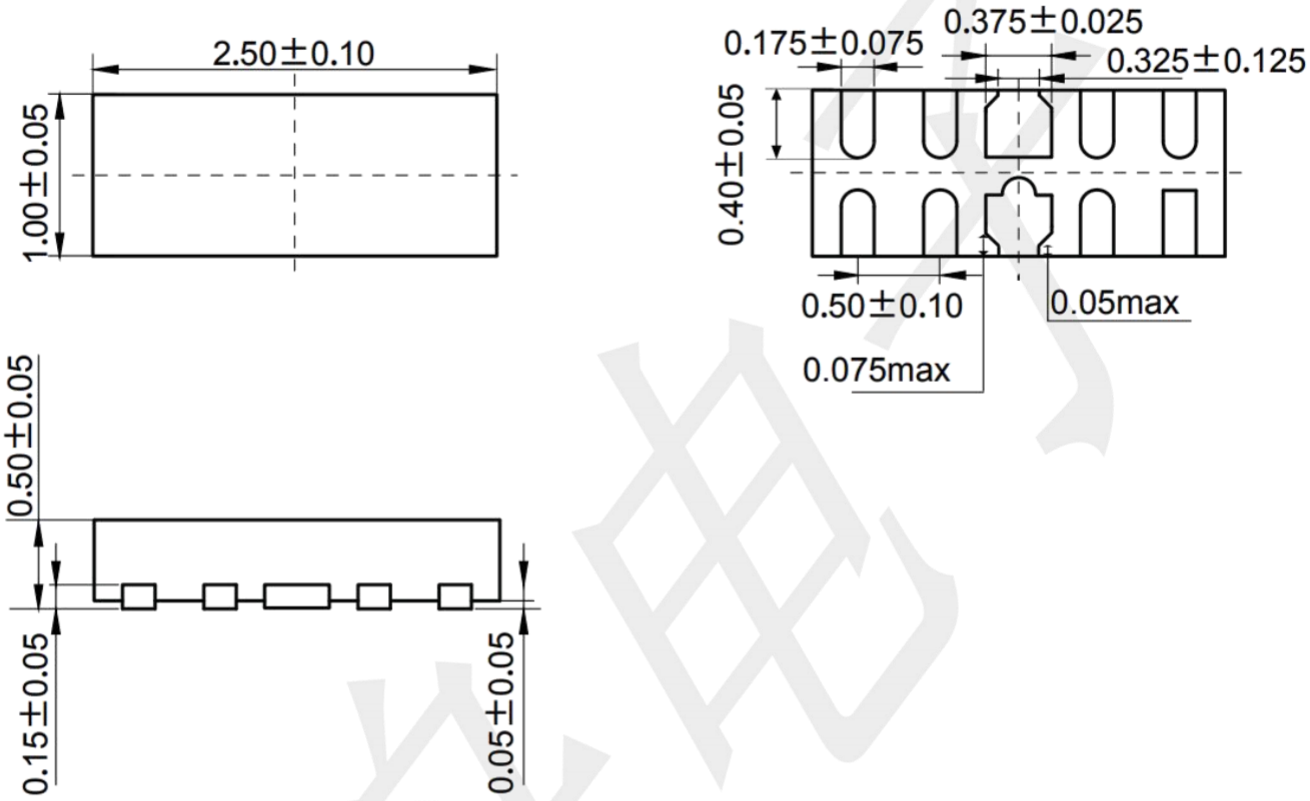


Fig3. Power Derating Curve

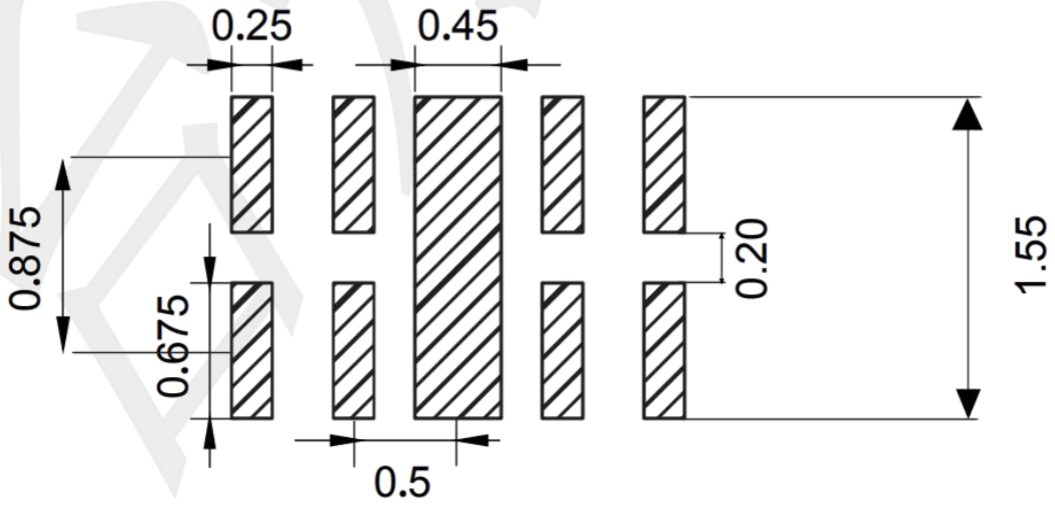


Package Outline Dimensions (unit: mm)

DFN2510-10L



Mounting Pad Layout (unit: mm)



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TECH PUBLIC:

QM3003J-TP SI3932DV TPADM809LAKSZ TPB05A40-323 BSN20W TPS7B6950DBVR-TP ESD5B5.0ST1G-P TPB1A30-123 TPFMMT493 TPWSB5557Z TPESD5311N TPS3809L30DBVR-TP LTH7 SN7002W TPDMG6602SVT TPESD0402G08V BV15C TPAPX809S-31SA TPGC12C-1 TPSPX3819M5-L-3-3 FDC6301N-TP TPD1213A-02SM TPZVN3320FTA TPZXMP3A13FTA FDMS7670AS-TP TPESD0504S6-A DDTA143ZCA DMP6350S IRFR2405TRPBF-TP TPADM809SAKSZ