

Features

- 4 Uni-directional Channels ESD protection
- Typically Used at High Speed Ports
- Low operating voltage: 3.3V
- Low Channel Input Capacitance of 0.4pF
Typical for I/Os (Typ)
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- Totally Lead-Free & Fully RoHS Compliant
- Halogen and Antimony Free. "Green" Device

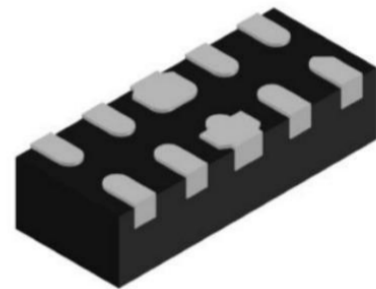
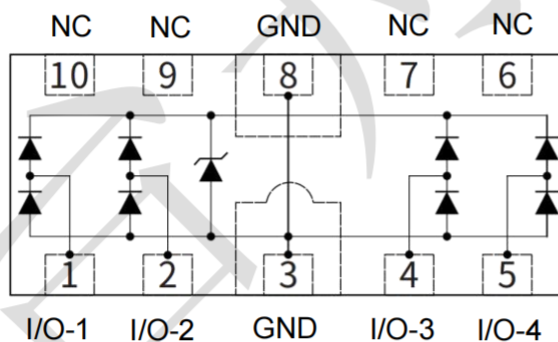
Mechanical Characteristics

- Package: DFN2510-10
- 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



DFN2510-10

TPESD4USB3U-TBSX

4-Lines Uni-directional Channels ESD protection

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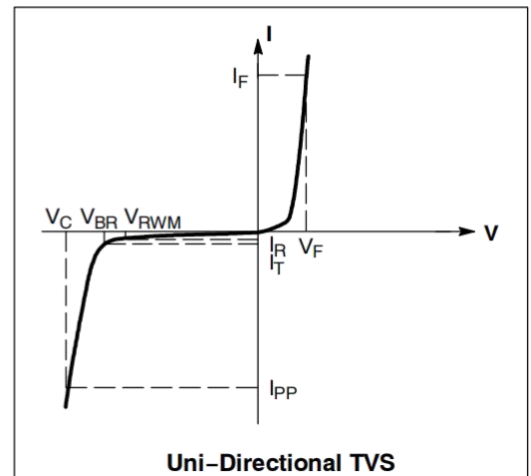
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	80	W
IEC 61000-4-2 Spec Current at 60 ns (A)	Ipp	8	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	--	--	3.3	V	
Breakdown Voltage	VBR	6	--	9.5	V	IT= 1mA
Reverse Leakage Current	IR	--	--	1	uA	VRWM=3.3V
Clamping Voltage	VC	--	5.5	7	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	8.5	10.5	V	Ipp=8A(8x 20us pulse)
Junction Capacitance	CJ	--	0.4	0.65	pF	VR = 0V, f = 1MHz, Any I/O pin to GND
Junction Capacitance	CJ	--	0.2	--	pF	VR = 0V, f = 1MHz, Between any I/O pin

Symbol	Parameter
Ipp	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ Ipp
VRWM	Working Peak Reverse Voltage
IR	Maximum Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IF	Forward Current
VF	Forward Voltage @ IF
Ppk	Peak Power Dissipation
C	Capacitance @ VR = 0 and f = 1.0 MHz



Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

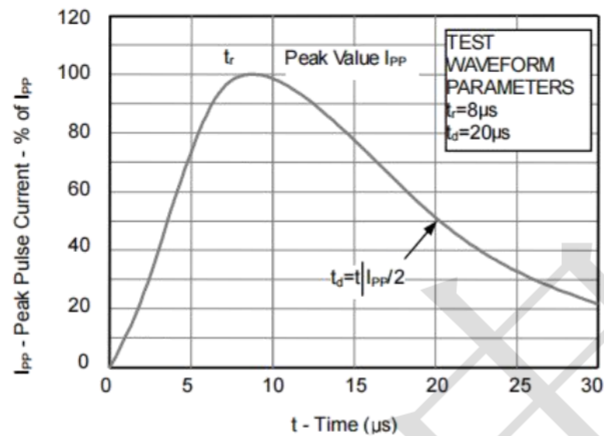


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

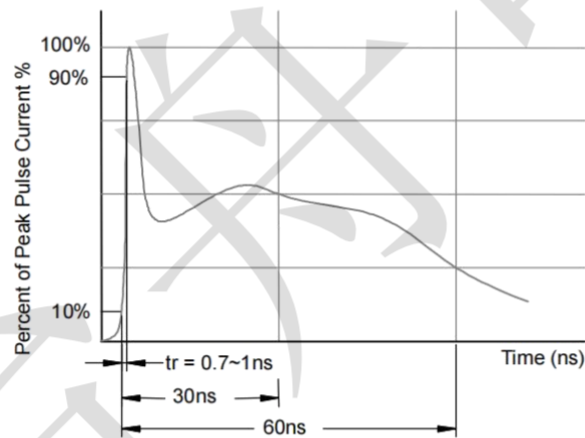
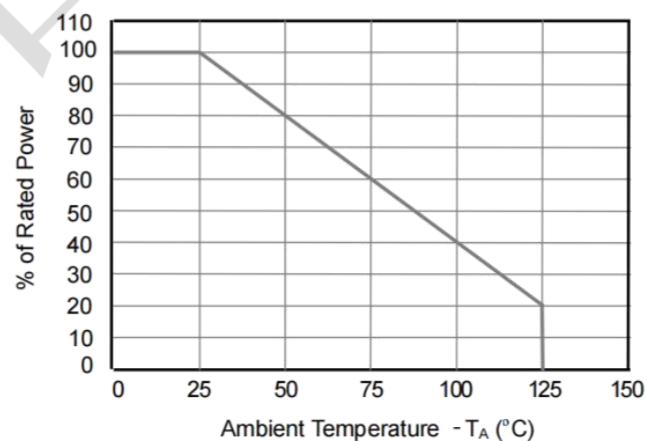
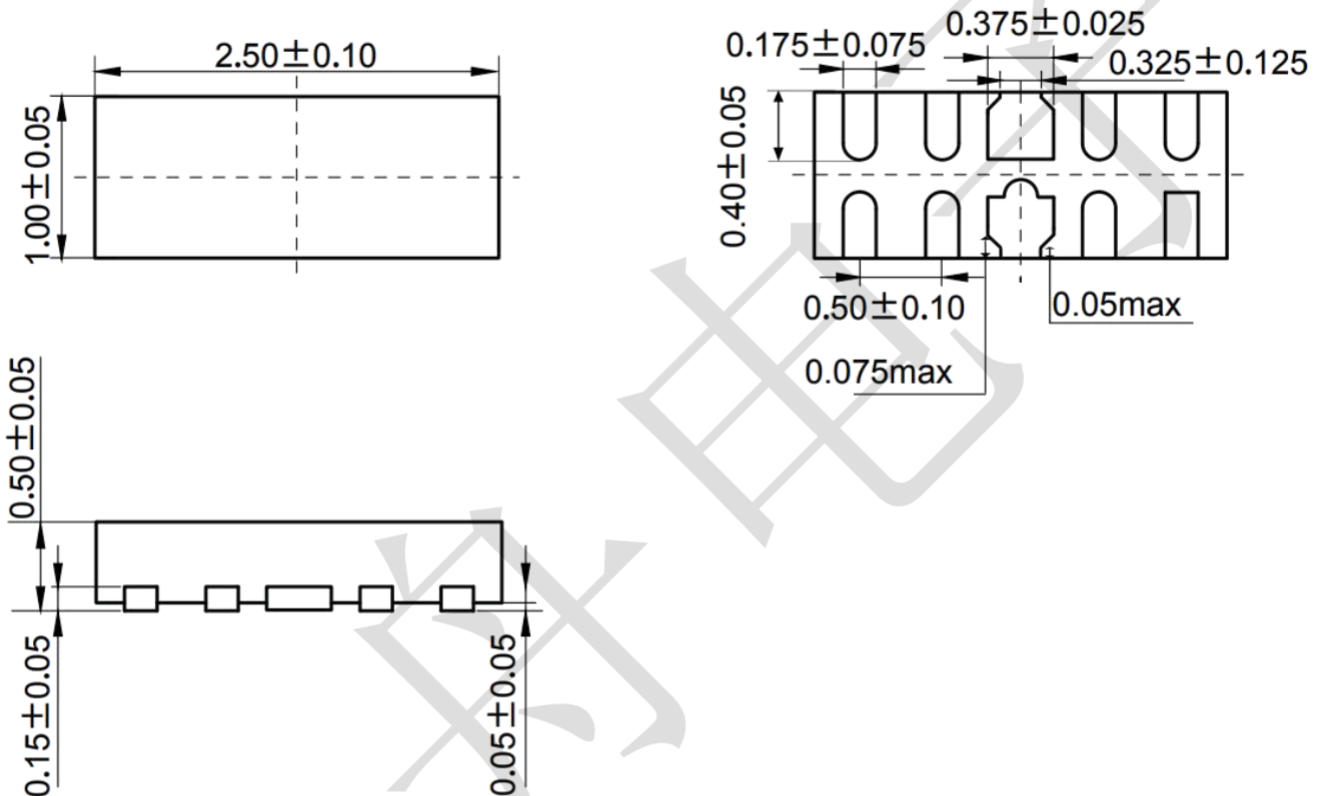


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

DFN2510-10



Mounting Pad Layout (unit: mm)

