

Features

- 4 Bi-directional Channels ESD protection
- Typically Used at High Speed Ports
- Low operating voltage: 1.5V
- Low Channel Input Capacitance of 0.13pF
Typical for I/Os (Typ)
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 15\text{kV}$
Contact discharge: $\pm 12\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- Totally Lead-Free & Fully RoHS Compliant
- Halogen and Antimony Free. "Green" Device

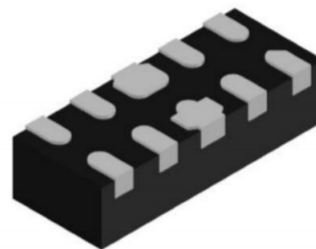
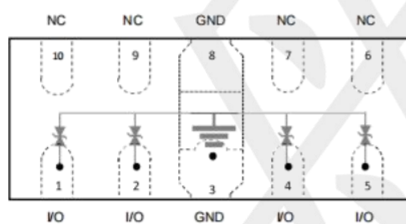
Mechanical Characteristics

- 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



Marking:1SN4

DFN2510-10

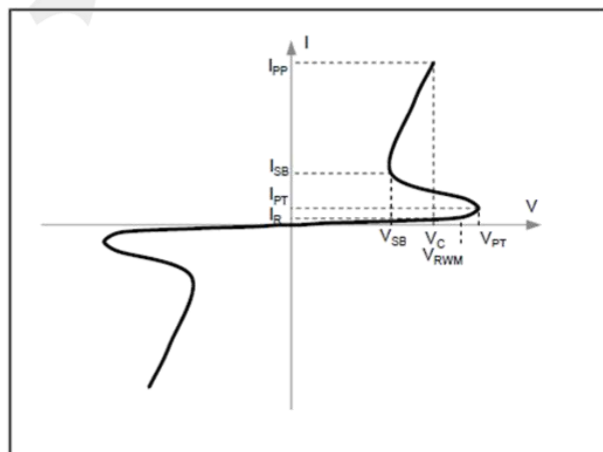
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	13	W
IEC 61000-4-2 Spec Current at 60 ns (A)	Ipp	4.5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±15 ±12	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	--	--	1.5	V	
Breakdown Voltage	VBR	3	--	--	V	IT= 0.1mA
Reverse Leakage Current	IR	--	--	0.1	uA	VRWM=1.5V
Clamping Voltage	VC	--	1.85	--	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	3.2	--	V	Ipp=4A(8x 20us pulse)
Junction Capacitance	CJ	--	0.25	0.35	pF	VR = 0V, f = 1MHz, Any vO pin to GND
Junction Capacitance	CJ	--	0.13	--	pF	VR = 0V, f = 1MHz, Between any I/O pin

Symbol	Definition
Ipp	Peak Pulse Current
VC	Clamping Voltage
VRWM	Reverse Working Voltage
IR	Reverse Leakage Current
VBR	Breakdown Voltage
IT	Test Current
VPT	Punch-Through Voltage
IPT	Punch-Through Current



Characteristic Curves

Fig.1 - Dynamic resistance with positive clamping voltage

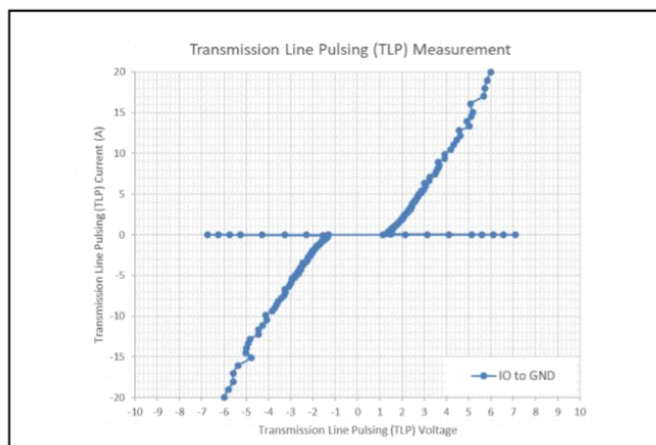


Fig.2 - Typical Variation of C_{IN} vs. V_{IN}

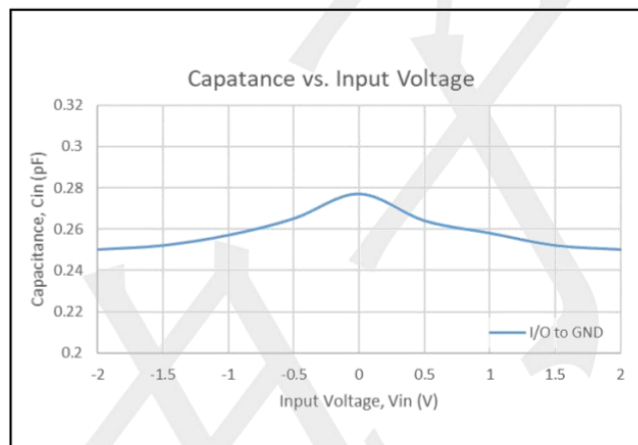


Fig.3 – Insertion loss

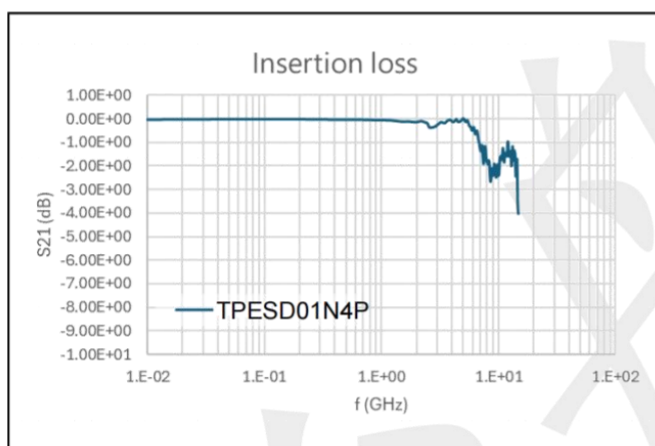


Fig.4 – IEC61000-4-5 Surge 8/20 us

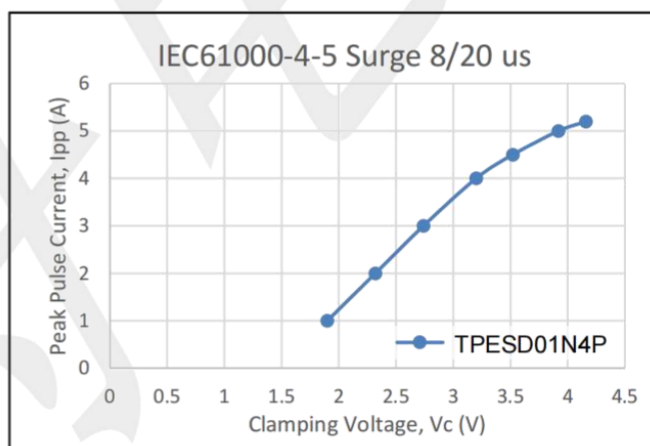
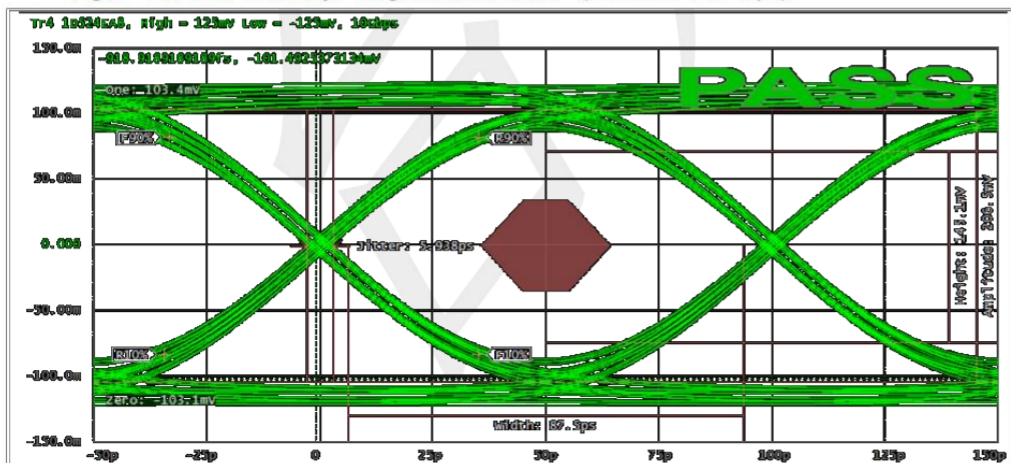
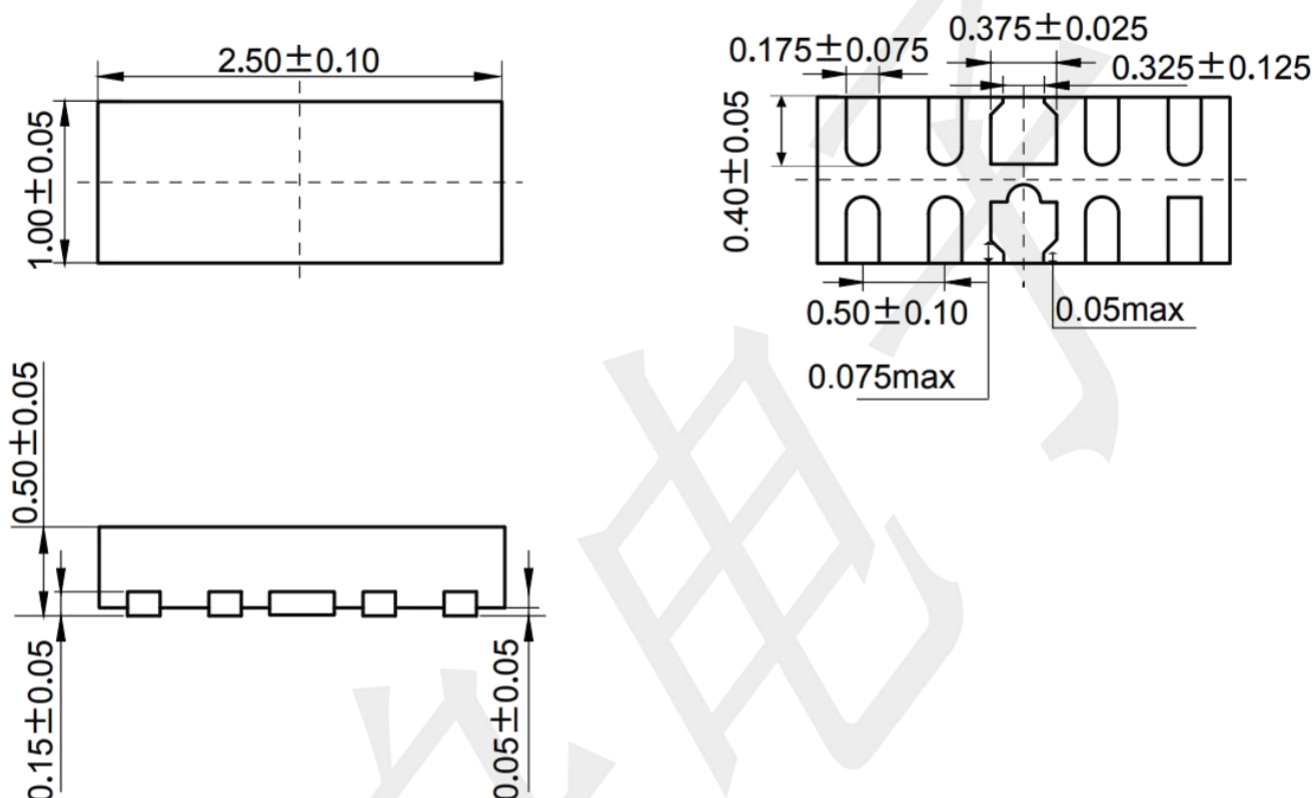


Fig.5 – USB 3.1 Gen 2 Eye Diagram with Device (Data rate : 10Gbps)



Package Outline Dimensions (unit: mm)

DFN2510-10



Mounting Pad Layout (unit: mm)

