



Discription

CTLTVS5-4 TR PBFREE arrays are ultra low capacitance ESD protection devices designed to protect high speed data interfaces.

This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over voltage caused by ESD

(electrostatic discharge),CDE(Cable Discharge Events), and EFT(electrical fasttransients)The CTLTVS5-4 TR PBFREE

have a typical capacitance of only 0.30pF between I/O pins.

This allows it to be used on circuits operating in excess of 3GHz without signal attenuation. They may be used to meet the ESD immunity requirements of IEC 61000-4-2. while the

CTLTVS5-4 TR PBFREE will protect four lines. The

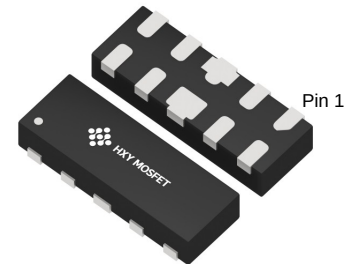
CTLTVS5-4 TR PBFREE is in a 10-pin DFN2510-10L

package. PCB layout by allowing the traces to run straight

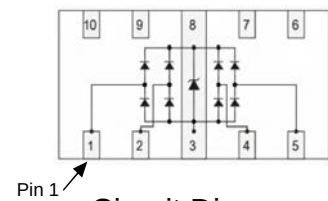
through the device. The combination of small size, low

capacitance,and high level of ESD protection makes them a

flexible solution for applications such as HDMI,Display Port™, MDDI, and eSATA interfaces.



DFN2510-10L



Circuit Diagram

Features

- ★ Protects 4 I/O Lines
- ★ Low Working Voltage: 5 V
- ★ Low Clamping Voltage <1 ns
- ★ Low Capacitance: 0.55pF(I/O to I/O)
- ★ Response time is typically
- ★ EC61000-4-2(ESD)±15 kV(air),±8 kV(contact)
- ★ IEC61000-4-5(Surge)4 A (I/O to GND)
- ★ Pb-Free, RoHS compliant

Applications

- ★ High Definition Multi-Midia Interface (HDMI)
- ★ Digital Visual Interface (DVI)
- ★ DisplayPort™ Interface
- ★ MDDI Ports
- ★ PCI Express
- ★ SATA and eSATA Interface
- ★ USB3.0 and USB2.0 up to 480Mb/s
- ★ IEEE1394 up to 3.2 Gb/s
- ★ Ethernet port:10/100/1000 Mb/s



Ordering Information

Product ID	Pack	Qty(PCS)
CTLTVS5-4 TR PBFREE	DFN2510-10L	3000

Absolute Ratings(Tamb = 25°C)

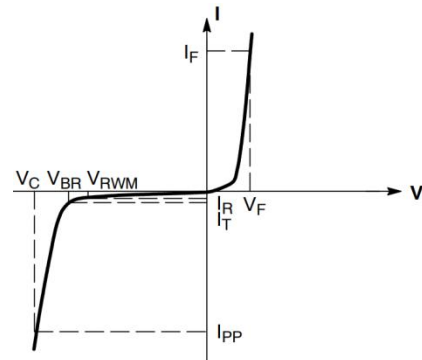
Paramete	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	150	W
ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact)	V _{ESD}	± 15 ± 8	KV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Electrical Characteristics (Ta= 25°C)

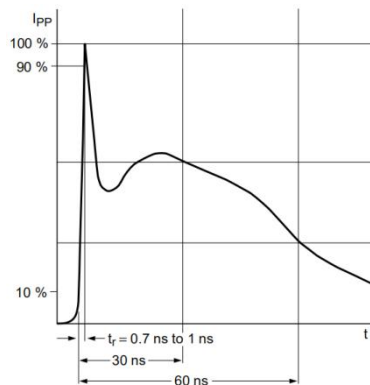
Paramete	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}	--	--	5	V	
Breakdown Voltage	V _{BR}	6.0	--	--	V	I _T =1mA
Leakage Current I _{Leak}	I _R	--	--	1.0	uA	V _{RWM} =5V
Clamping Voltage (I/O-GND)	V _C	--	8.5	22	V	I _{PP} =4A, T _p =8/20μs
JunctionCapacitance (I/O to GND)	C _J	--	0.5	0.7	pF	V _R =0V, f=1MHz
Junction Capacitance (I/O to I/O)	C _J	--	0.3	0.4	pF	V _R =0V, f=1MHz



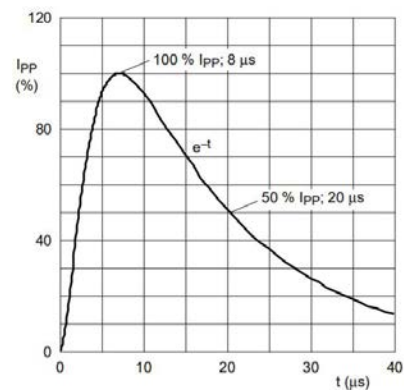
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Max. Capacitance @ $V_R = 0$ and $f = 1.0$ MHz



Typical Characteristics



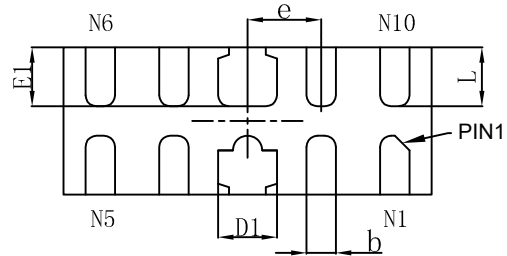
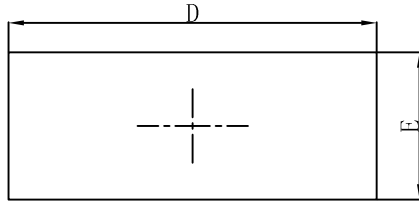
IEC61000-4-2 Waveform



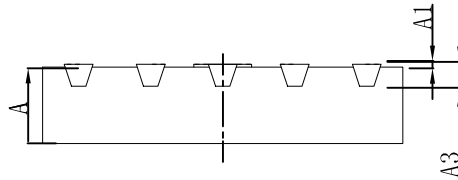
8/20 μ s Pulse Waveform



Outline And Dimensions



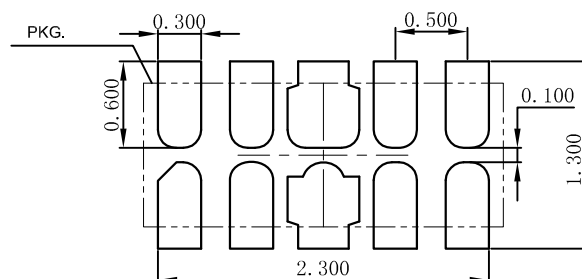
Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.017	0.022
A1	0.000	0.050	0.000	0.002
A3	0.152REF.		0.006REF.	
D	2.450	2.550	0.096	0.100
E	0.950	1.050	0.037	0.041
D1	0.350	0.450	0.014	0.018
E1	0.350	0.450	0.014	0.018
b	0.150	0.250	0.006	0.010
e	0.500TYP.		0.020TYP.	
L				

Soledering Footprint





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