

ESD0524P

DESCRIPTION

The ESD0524P is a ultra-low capacitance Transient Voltage Suppressor (TVS) designed to protection for high-speed data interfaces. With typical capacitance of 0.2pF (I/O to I/O) only,

The ESD0524P is a designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4($\pm 15\text{KV}$ air, $\pm 8\text{KV}$ contact discharge), IEC61000-4-4 (electrical fast transient-EFT) (40A, 5/50ns), very fast charged device model (CDM) ESD and cable discharge event(CDE), etc.

FEATURES

- ◇ Transient protection for high-speed data lines
IEC 61000-4-2(ESD) $\pm 25\text{KV}$ (Air)
 $\pm 20\text{KV}$ (Contact)
- IEC 61000-4-4(EFT)40A(5/50ns)
Cable Discharge Event(CDE)
- ◇ Package optimized for high-speed lines
- ◇ Ultra-small package(2.5mm*1.0mm*0.5mm)
- ◇ Protects four data lines
- ◇ Low capacitance: 0.2pF (I/O to I/O)
- ◇ Low leakage current
- ◇ Low clamping voltage
- ◇ Each I/O pin can withstand over 1000 ESD strikes for $\pm 8\text{KV}$ contact discharge

MACHANICAL DATA

- ◇ DFN2510 package
- ◇ Flammability Rating: UL 94V-0
- ◇ Terminal: Matte tin plated.
- ◇ Packaging: Tape and Reel
- ◇ High temperature soldering guaranteed: $260^{\circ}\text{C}/10\text{s}$
- ◇ Reel size: 7 inch

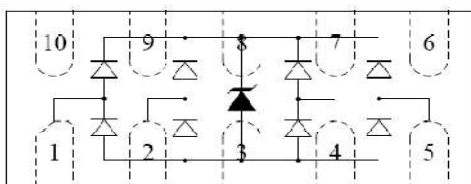
ORDERING INFORMATION

- ◇ Package: DFN2510
- ◇ Material: Halogen free
- ◇ Packing: Tape & Reel
- ◇ Quantity per reel: 3,000pcs

APPLICATIONS

- ◇ Serial ATA
- ◇ PCI Express
- ◇ Desktops, Servers and Notebooks
- ◇ MDDI Ports
- ◇ USB 2.0/3.0 Power and Data Line Protection
- ◇ Display Ports
- ◇ High Definition Multi-Media Interface (HDMI)
- ◇ Digital Visual Interface (DVI)

PIN CONFIGURATION



PACKAGE OUTLINE

ABSOLUTE MAXIMUM RATING			
Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (8/20μs)	60	W
V _{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±25 ±20	kV
T _{OPT}	Operating Temperature	-55/+125	°C
T _{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (T _{amb} =25°C)						
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA Any I/O pin to GND	6.0		9.0	V
I _R	Reverse Leakage Current	V _{RWM} = 5V Any I/O pin to GND			1.0	μA
V _C	Clamping Voltage	I _{PP} = 1A, t _p = 8/20μs Any I/O pin to GND			10	V
V _C	Clamping Voltage	I _{PP} = 4A, t _p = 8/20μs Any I/O pin to GND			15	V
C _{ESD}	Parasitic Capacitance	V _R = 0V, f = 1MHz Between I/O and GND		0.4	0.5	pF
C _{ESD}	Parasitic Capacitance	V _R = 0V, f = 1MHz Between I/O and I/O		0.2	0.3	pF

Note: I/O pins are pin 1,2,4,5, GND pins are pin 3,8.

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Power Derating Curve

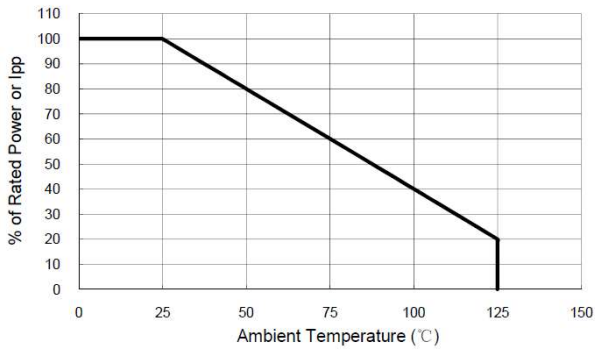


Fig 2 Clamping Voltage vs Peak Pulse Current

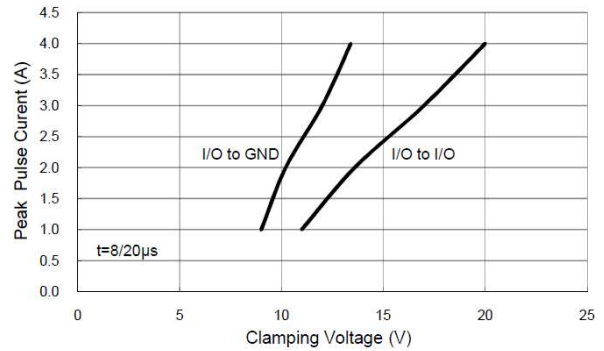


Fig 3 Voltage Sweeping of I/O to I/O

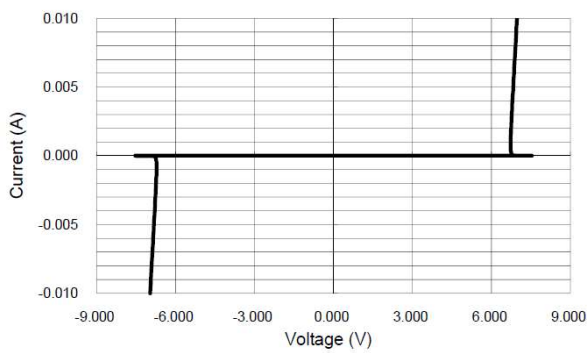


Fig 4 Voltage vs Capacitance

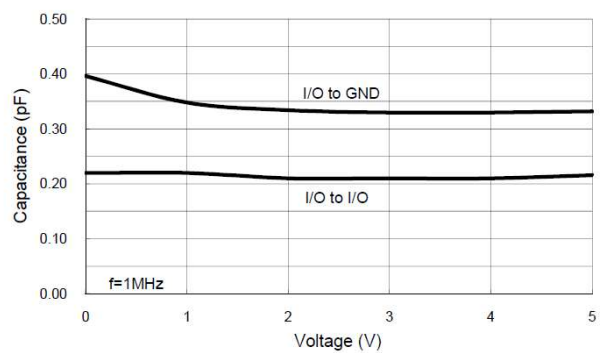


Fig 5 ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)

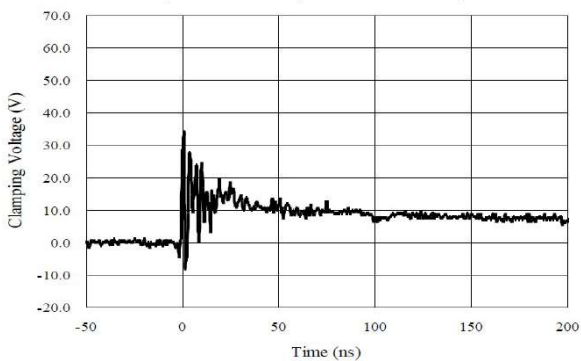
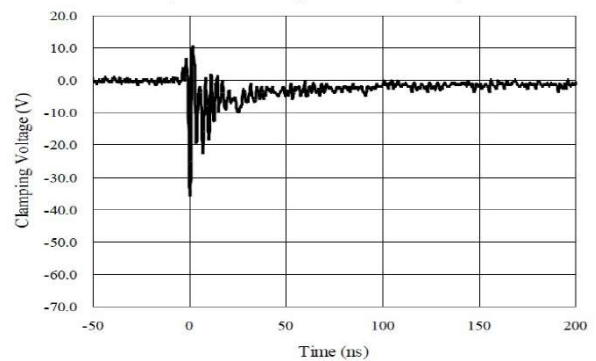
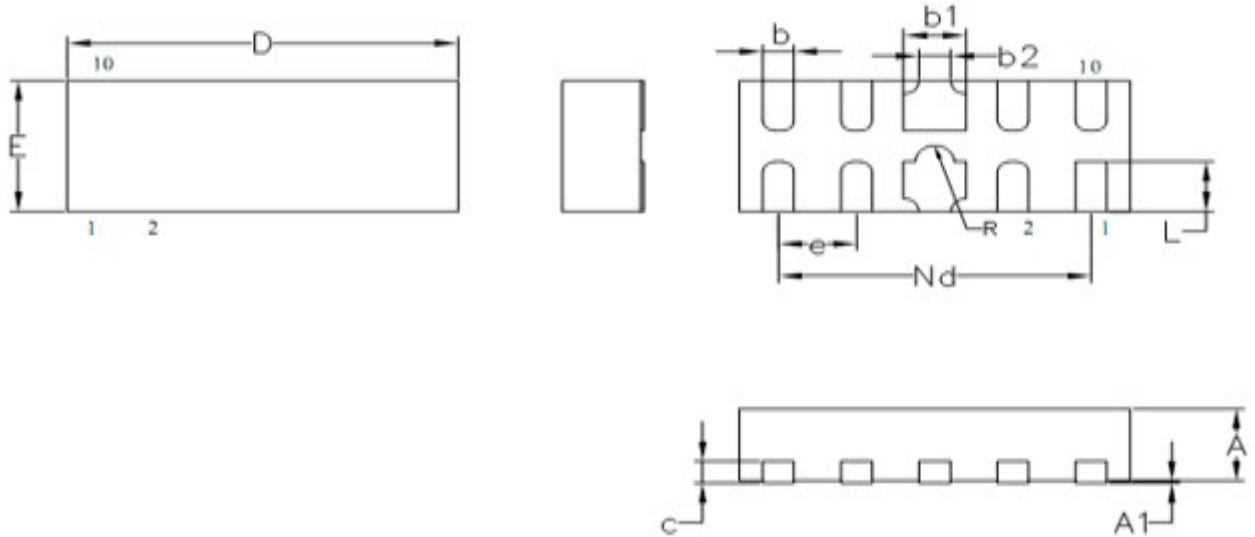


Fig 6 ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



ESD0524P

DFN2510 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions (mm)		
	Min.	Nom.	Max.
D	2.45	2.50	2.55
E	0.95	1.00	1.05
b1	0.35	0.40	0.45
b2	0.20REF		
b	0.15	0.20	0.25
L	0.33	0.38	0.43
Nd	2.00BSC		
e	0.50BSC		
R	0.10	0.125	0.15
A	0.45	0.50	0.55
c	0.15REF		
A1	0.00	-	0.05

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [Yongyutai Electronics](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE8.2A](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#)
[SMBJ33CATR](#) [SMBJ6.5A](#) [SMBJ8.0A](#) [ESD101-B1-02ELS](#) [E6327](#) [ESD112-B1-02EL](#) [E6327](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-](#)
[HF](#) [3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [SCM1293A-04SO](#)
[ESD200-B1-CSP0201](#) [E6327](#) [SM12-7](#) [CEN955](#) [W/DATA](#) [VESD12A1A-HD1-GS08](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [ESD101-B1-02EL](#)
[E6327](#) [AOZ8808DI-03](#) [5KP15A](#) [5KP48A](#) [5KP90A](#) [ESD3V3D7-TP](#) [15KPA36A-LF](#) [P4KE56CA](#) [P4KE68A](#) [P4KE91CATR](#) [P6KE120A](#)
[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)