DESCRIPTION

The KUUESD0524SP is an ultra-low capacitance Transient Voltage Suppressor (TVS) designed to protection for high-speed data interfaces. With typical capacitance of 0.2pF only, KUUESD0524SP is designed to protest parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4(±15KV air, ±8KV 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.

The KUUESD0524SP uses ultra-small DFN2510 package. Each KUUESD0524SP a is device can protect four high-speed data lines. The combined features of ultra-low capacitance, ultra-small size and high ESD robustness make KUUESD0524SP ideal for high-speed data ports and high-frequency lines (e.g., HDMI &DVI) applications. The low clamping voltage of the KUUESD0524SP guarantees a minimum stress on the protected IC.

FEATURES

- ✧Transient protection for high-speed data lines
  - IEC 61000-4-2(ESD) ±25KV(Air)
  - ±20KV(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*0.50mm)
- ✧Protects four data lines
- ✧Low capacitance:0.2pF for each channel
- ✧Low leakage current
- ✧Low clamping voltage
- ✧Each I/O pin can withstand over 1000 ESD strikes for ±8KV contact discharge

MACHANICAL DATA

- ✧DFN2510 package
- ✧Flammability Rating: UL 94V-0
- ✧Terminal: Matte tin plated.
- ✧Packaging: Tape and Reel
- ✧High temperature soldering guaranted:260℃/10s
- ✧Reel size: 7 inch

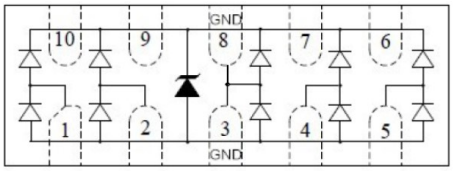
ORDERING INFORMATION

- ✧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 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)	100	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 (Tamb=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		10.0	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			15	V
		I_{PP} = 4A, t_p = 8/20μs Any I/O pin to GND			25	V
C_{ESD}	Parasitic Capacitance	V_R = 0V, f = 1MHz Between I/O and GND		0.2	0.25	pF
C_{ESD}	Parasitic Capacitance	V_R = 0V, f = 1MHz Between I/O and I/O		0.2	0.25	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

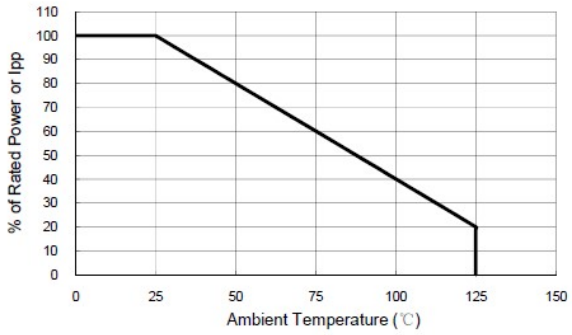


Fig 2 Clamping Voltage vs Peak Pulse Current

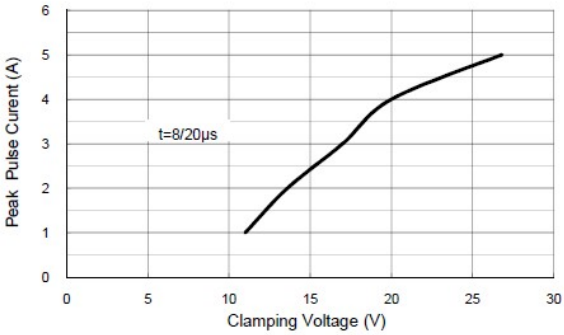


Fig 3 Voltage Sweeping of I/O to I/O or GND

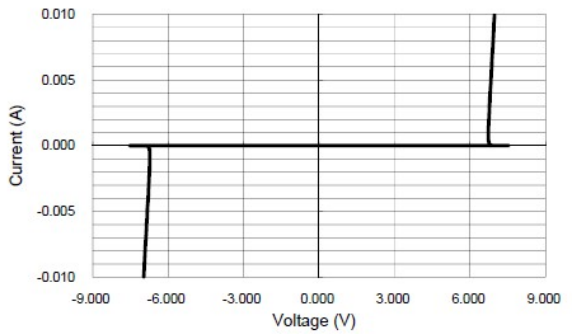


Fig 4 Voltage vs Capacitance I/O to I/O or GND

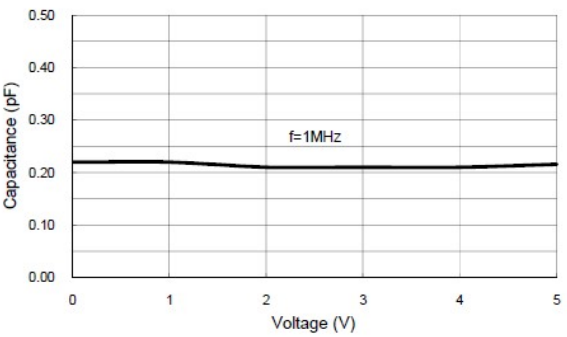


Fig 5 ESD Clamping of I/O to GND
(+8kV Contact per IEC 61000-4-2)

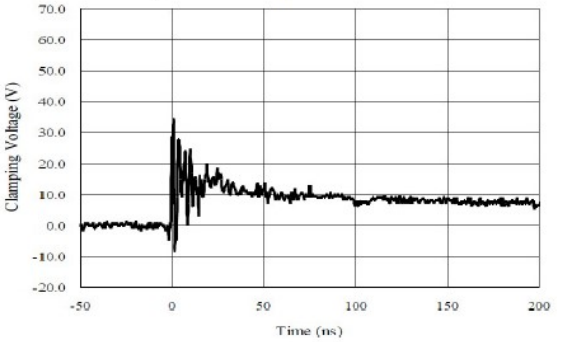
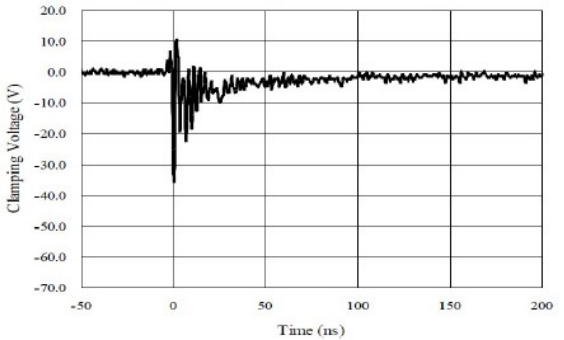
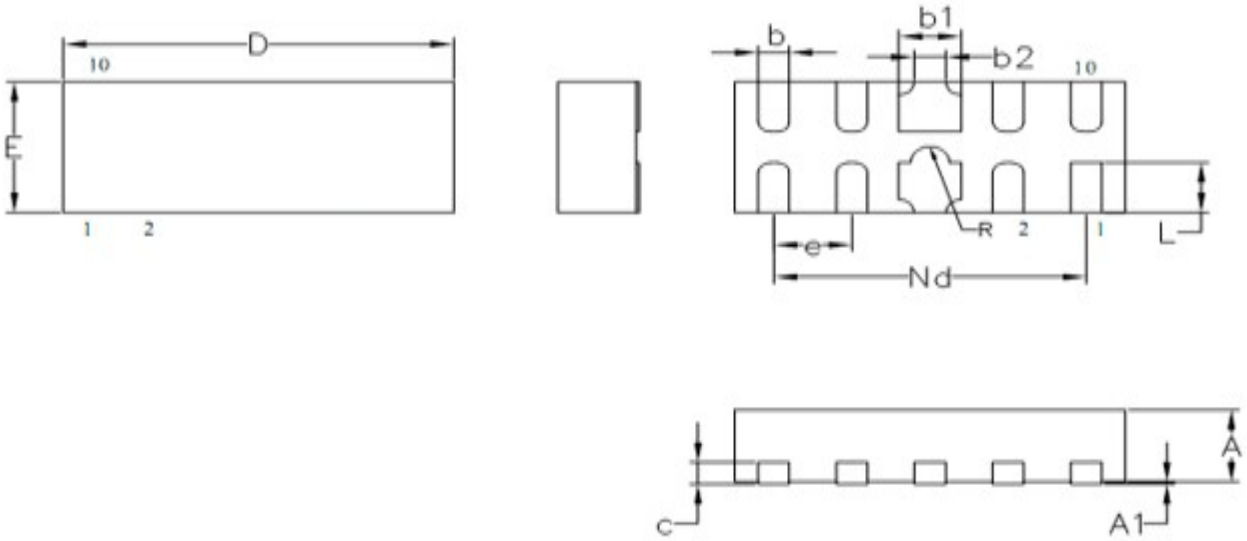


Fig 6 ESD Clamping of I/O to GND
(-8kV Contact per IEC 61000-4-2)



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