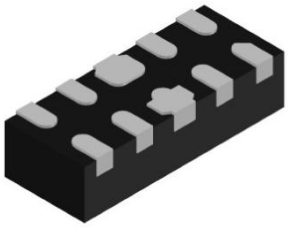
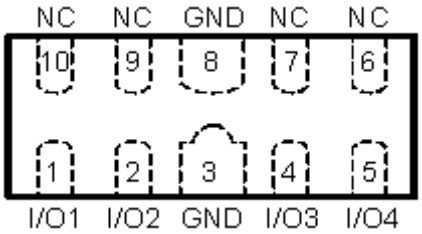
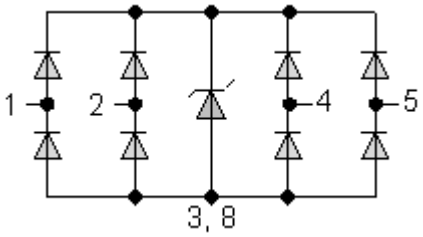
4-Line, Uni-directional, Transient Voltage Suppressor







DFN2510-10L

Features

- Ultra small package
- Stand-off voltage: 3.3V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±12kV (contact)
  IEC61000-4-5(surge): 6A (8/20μs)
- Ultra-low capacitance: CJ = 0.5 pF typ
- Low leakage current
- Low clamping voltage
- RoHS Compliant

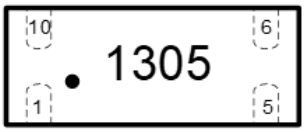
Applications

- USB 2.0 and USB 3.0
- HDMI 1.3, HDMI 1.4 and HDMI 2.0
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks
- Ethernet port: 10/100/1000 Mbs/s
- Desktop and Notebooks PCS

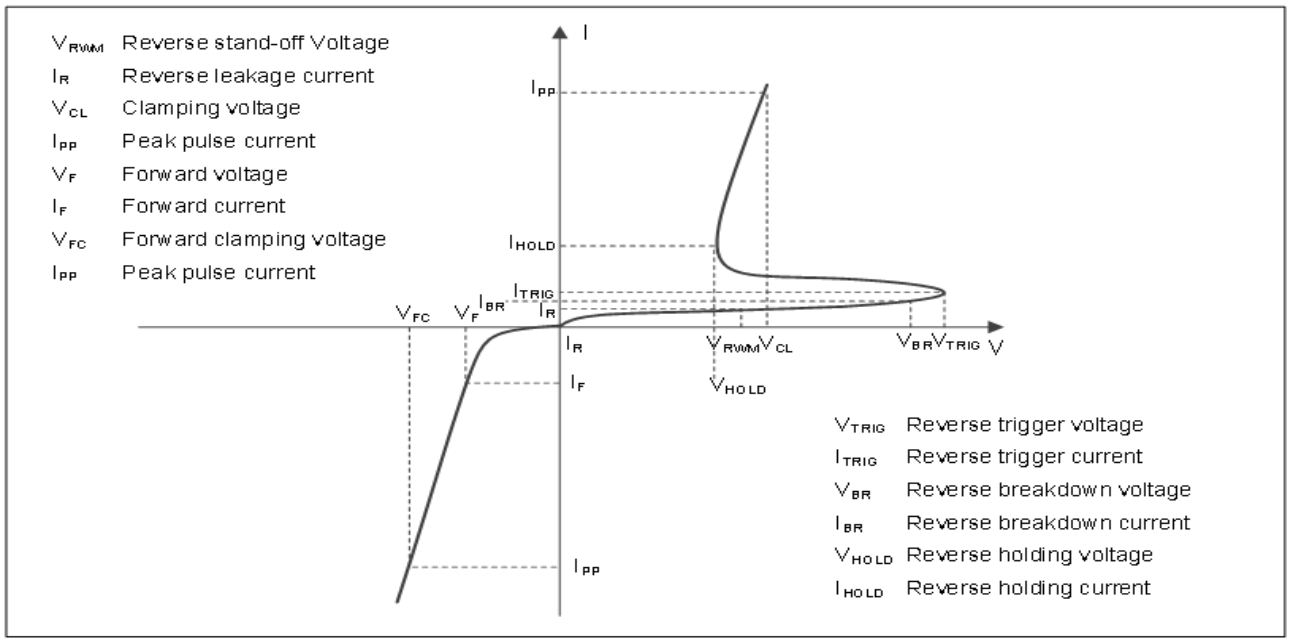
Caution:
This Device is designed for signal line protection only. Do not operate under electrical bias or connectto a power line.

Mechanical Characteristics

- Package: DFN2510-10L
- Case Material: “Green” Molding Compound.
- Marking Information: See Below



■Definitions of electrical characteristics



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

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	27	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	6	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±15	KV
ESD according to IEC61000-4-2 contact discharge		±12	KV
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Storage temperature	T_{STG}	-55~150	°C

■Electrical Characteristics (T_a=25℃ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				3.3
Reverse leakage current	I_R	nA	V_{RWM} =3.3V			100
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	6		
Forward voltage	V_F	V	I_T = 10mA		0.7	
Clamping voltage[1)]	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		6.0	
Clamping voltage[2)]	V_{CL}	V	V_{ESD} = +8kV		6.5	
Dynamic resistance[1)]	R_{DYN}	Ω			0.27	
Clamping voltage [3)]	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		2.5	3.5
		V	I_{PP} = 6A, t_p = 8/20μs		3.5	4.5
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz Any I/O pin to GND		0.5	0.65
		pF	V_R = 0V, f = 1MHz Between any I/O pin		0.25	0.4

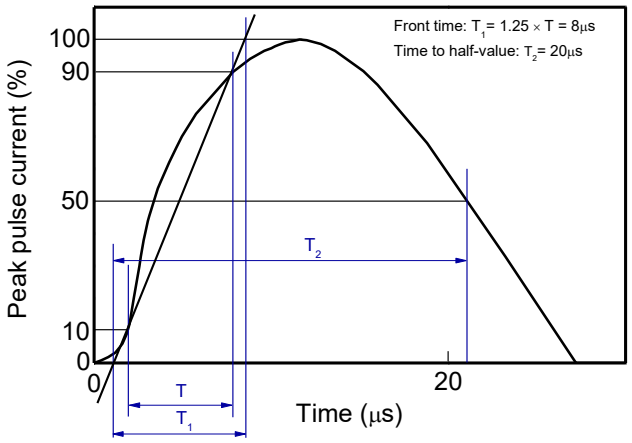
(1). TLP parameter: Z_0 = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
(2). Contact discharge mode, according to IEC61000-4-2.
(3). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

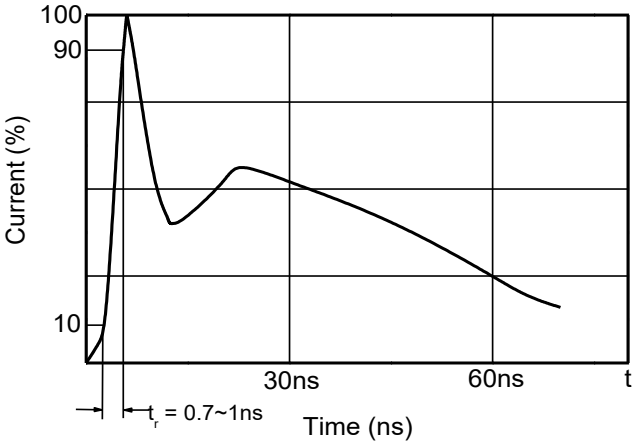
PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SESDULC1E14P5	Approximate 4	3000	30000	120000	Tae& reel

■ Typical Performance Characteristics (Ta=25℃ unless otherwise Specified)

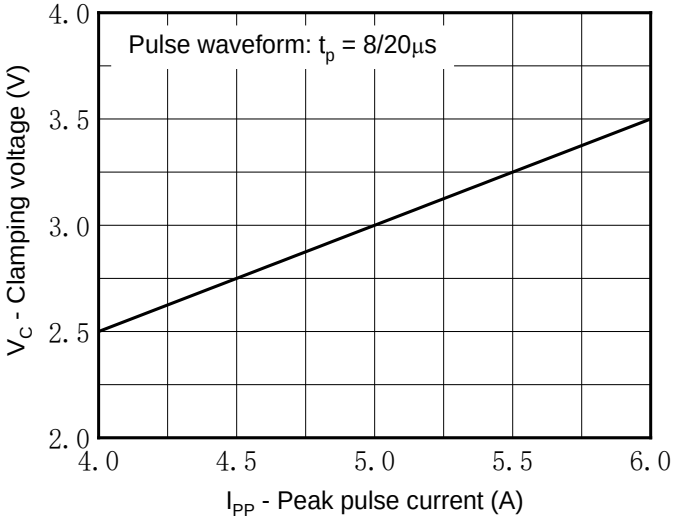
8/20μs waveform per IEC61000-4-5



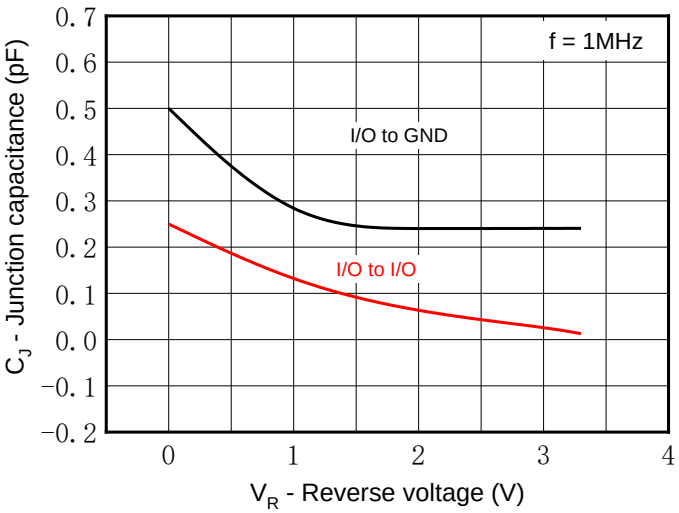
Contact discharge current waveform per IEC61000-4-2



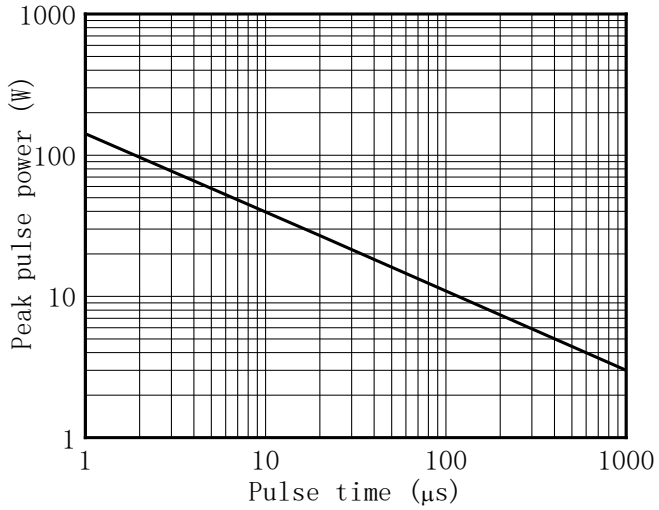
Clamping voltage vs. Peak pulse current



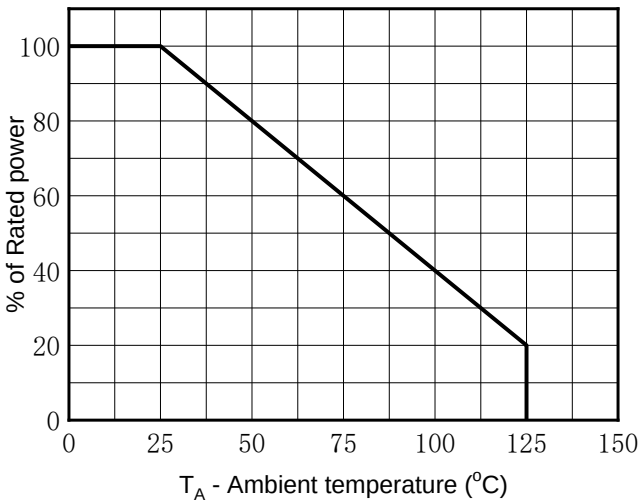
Capacitance vs. Reverse voltage



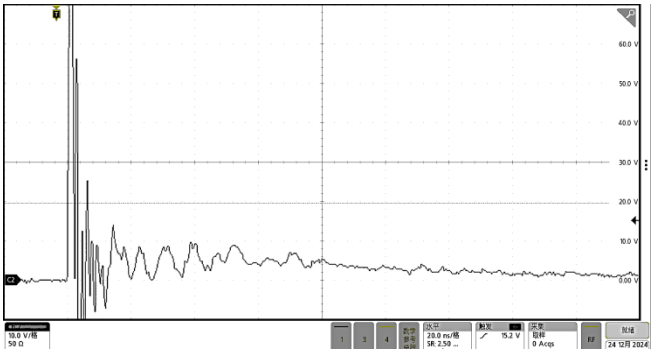
Non-repetitive peak pulse power vs. Pulse time



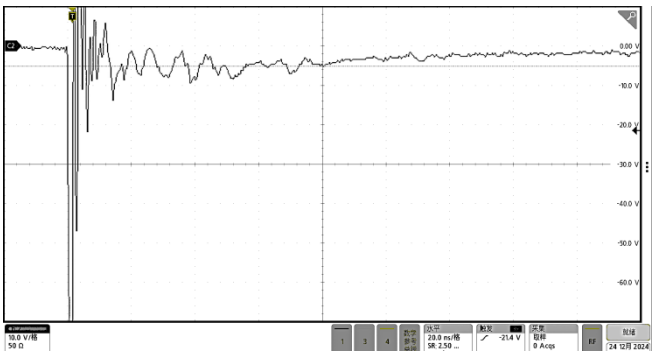
Power derating vs. Ambient temperature



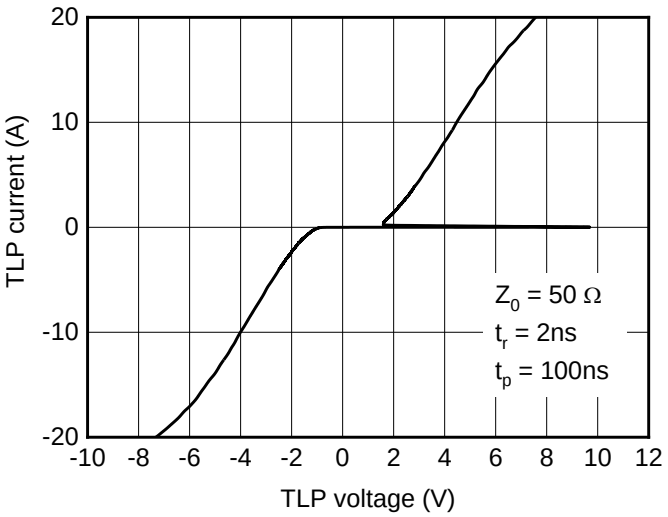
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



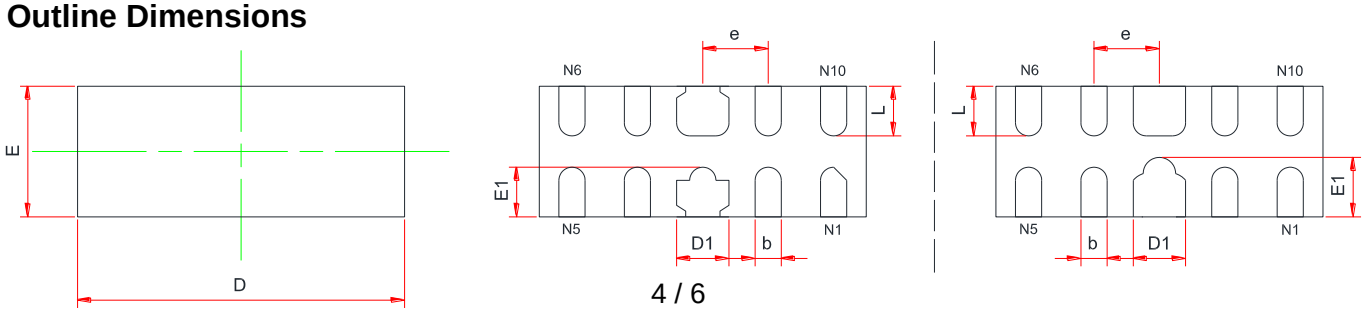
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

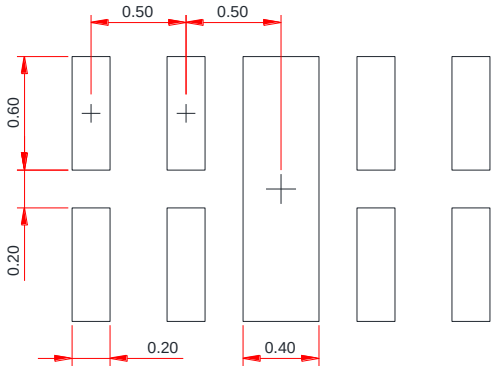


■ Outline Dimensions



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.500	0.575	0.650
A1	0.000	-	0.050
A3	0.150 Ref.		
D	2.400	2.500	2.600
E	0.900	1.000	1.100
D1	0.300	0.400	0.500
E1	0.300	0.455	0.610
b	0.130	0.190	0.250
e	0.500 BSC		
L	0.280	0.390	0.500

■ Recommend land pattern (Unit:mm)



Notes:
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met

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