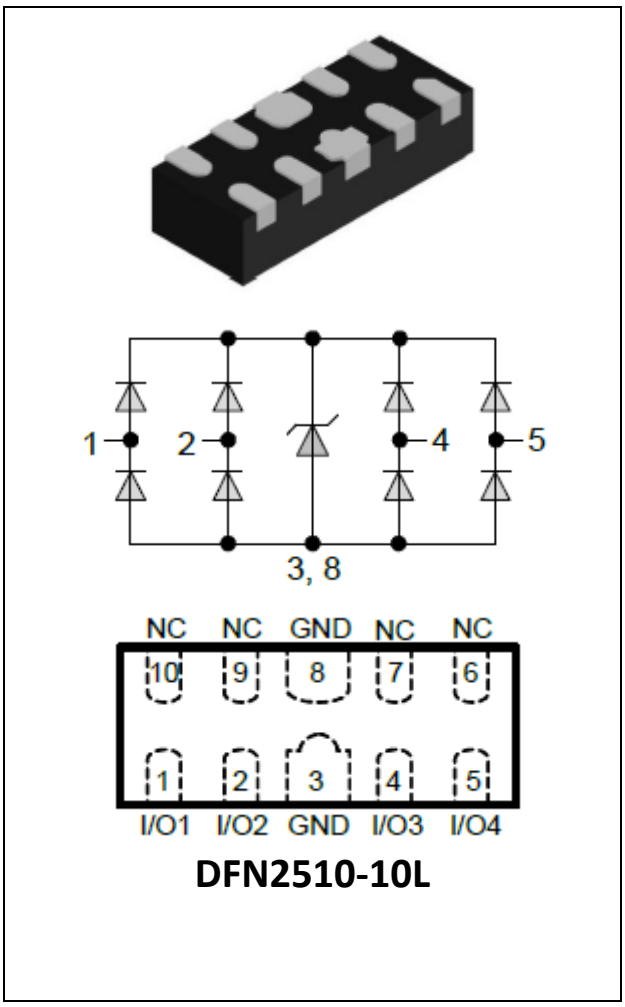
4-Line, Uni-directional, Ultra-low Capacitance Transient Voltage Suppressor



Features

- Stand-off voltage: 3.3V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-5(surge): 12A (8/20μs)
- Low leakage current
- Ultra-low capacitance: CJ = 0.4pF typ
- Low clamping voltage

V_{CL} = 8.8V typ. @ IPP = 16A (TLP)

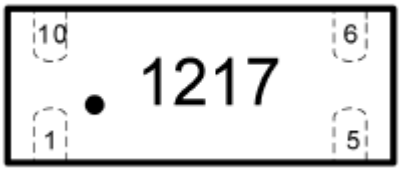
- RoHS Compliant

Applications

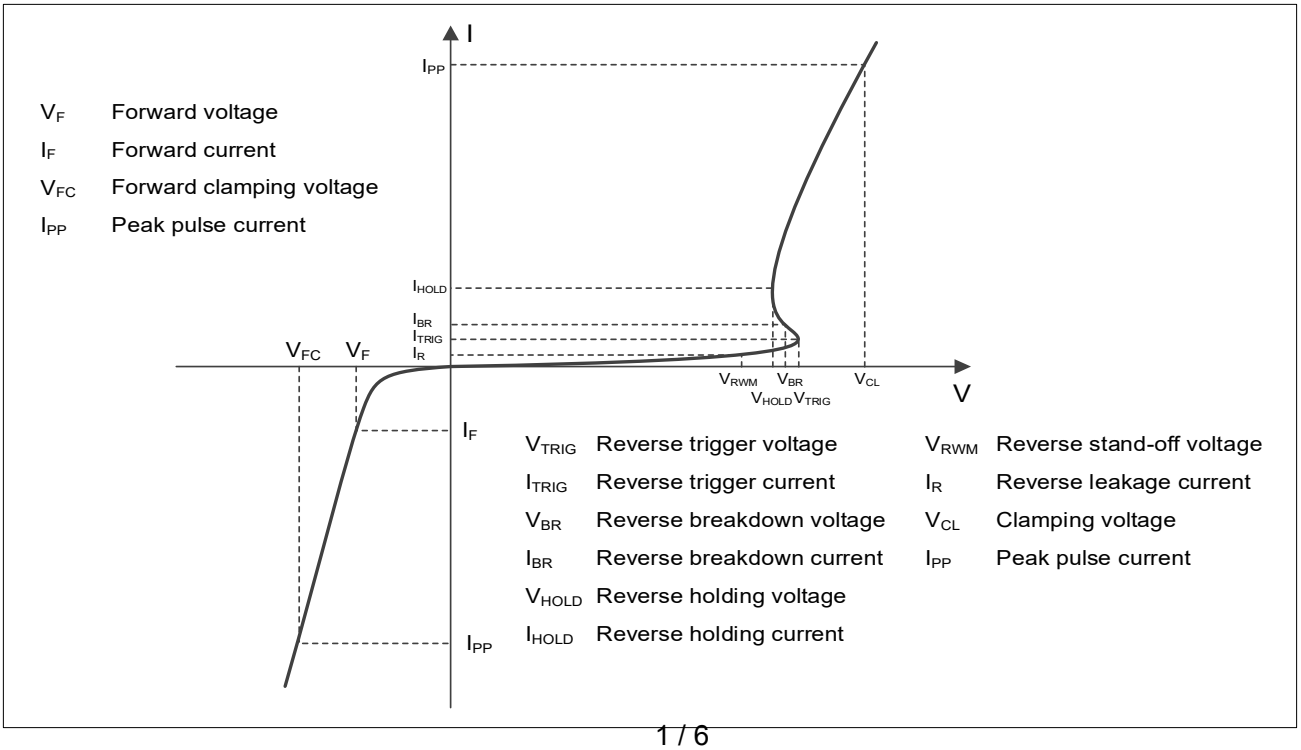
- USB 2.0 and USB 3.0
- HDMI 1.3, HDMI 1.4 and HDMI 2.0
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks
- Ethernet port: 10/100/1000 Mbs/s
- Desktop and Notebooks PCS

Mechanical Data

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



■Definitions of electrical characteristics



V_F	Forward voltage
I_F	Forward current
V_{FC}	Forward clamping voltage
I_{PP}	Peak pulse current

V_{TRIG}	Reverse trigger voltage	V_{RWM}	Reverse stand-off voltage
I_{TRIG}	Reverse trigger current	I_R	Reverse leakage current
V_{BR}	Reverse breakdown voltage	V_{CL}	Clamping voltage
I_{BR}	Reverse breakdown current	I_{PP}	Peak pulse current
V_{HOLD}	Reverse holding voltage		
I_{HOLD}	Reverse holding current		

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	450	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	12	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	
Junction temperature	T_J	125	℃
Storage temperature	T_{STG}	-55~150	℃

■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		<1	100
Reverse breakdown voltage	V_{BR}	V	I_T = 1mA	7	8	
Forward voltage	V_F	V	I_T = 20mA		0.83	
Clamping voltage [1)]	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		8.8	
Dynamic resistance [1)]	R_{DYN}	Ω			0.18	
Clamping voltage [2)]	V_{CL}	V	V_{ESD} = +8kV		9	
Clamping voltage	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		5	7
		V	I_{PP} =12A, t_p = 8/20μs		10	12
Junction capacitance	CJ	pF	V_R = 0V, f = 1MHz Any I/O pin to GND		0.40	0.65

Notes:

(1). TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

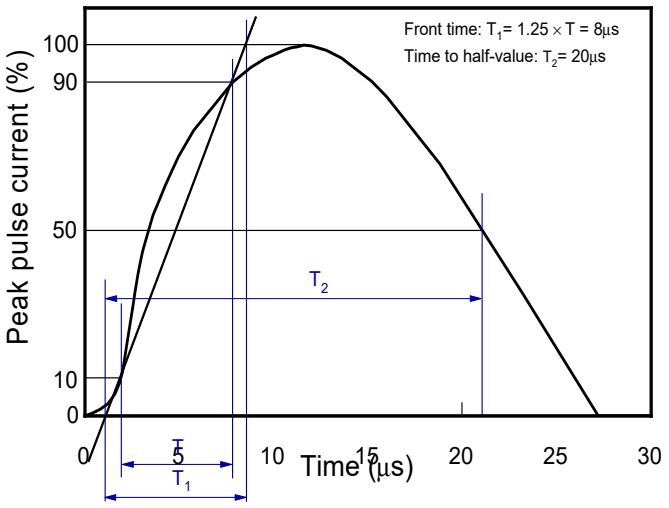
(3). Non-repetitive current pulse, according to IEC61000-4-5

■Ordering Information (Example)

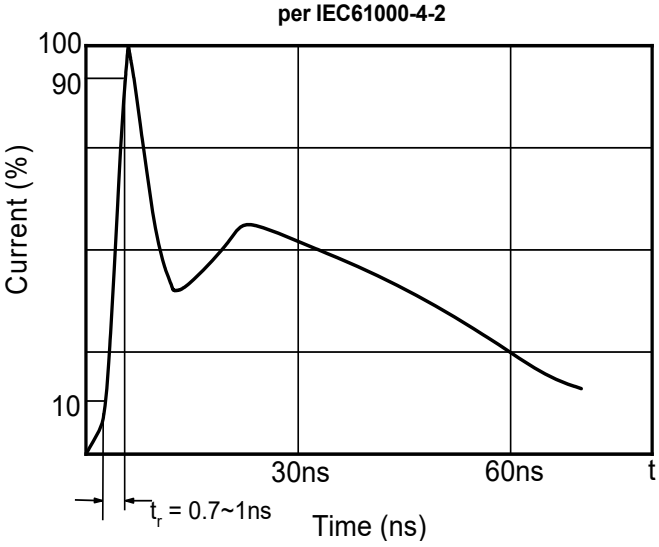
PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSLC3314P5	F1	Approximate 3.48	3000	30000	120000	7 reel

■ Characteristics (Typical)

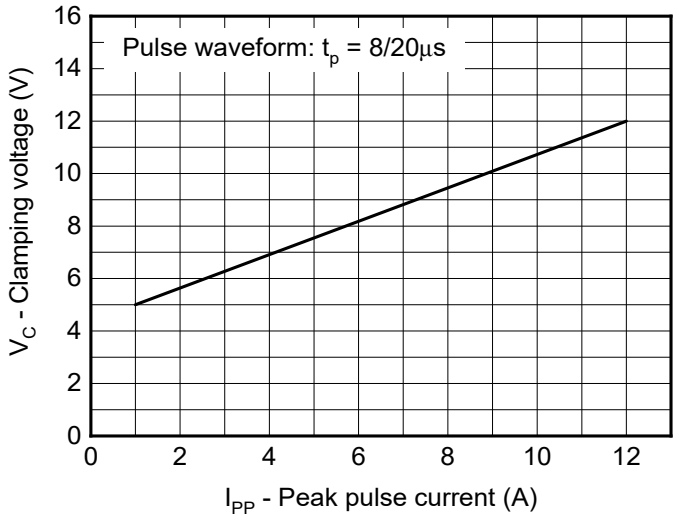
8/20μs waveform per IEC61000-4-5



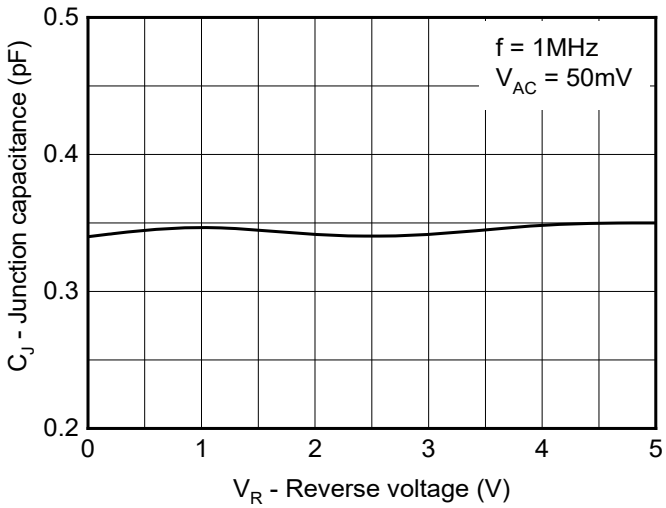
Contact discharge current waveform per IEC61000-4-2



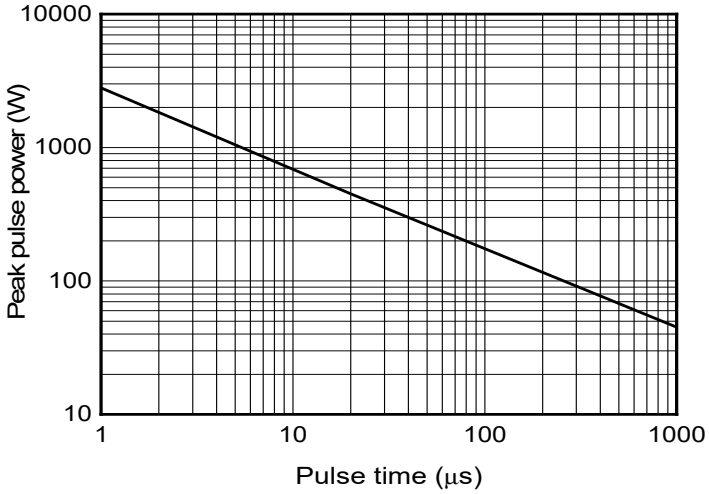
Clamping voltage vs. Peak pulse current



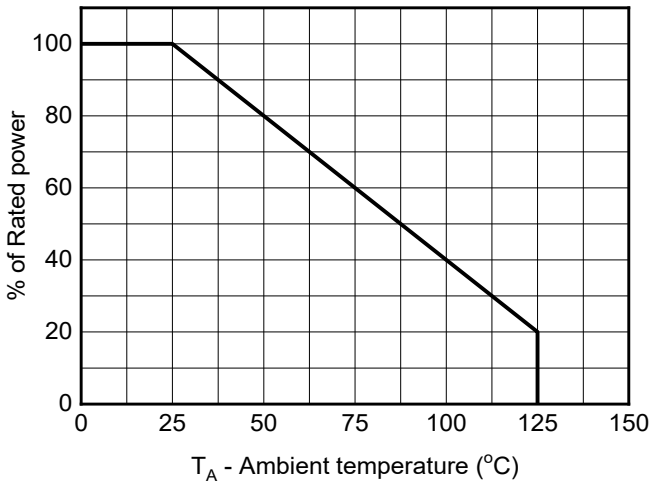
Capacitance vs. Reverse voltage



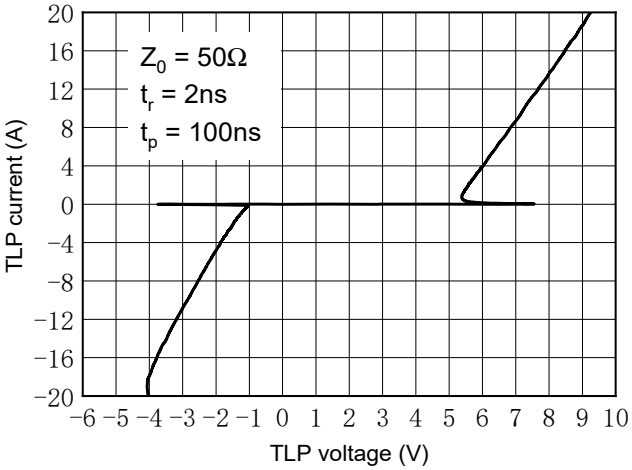
Non-repetitive peak pulse power vs. Pulse time



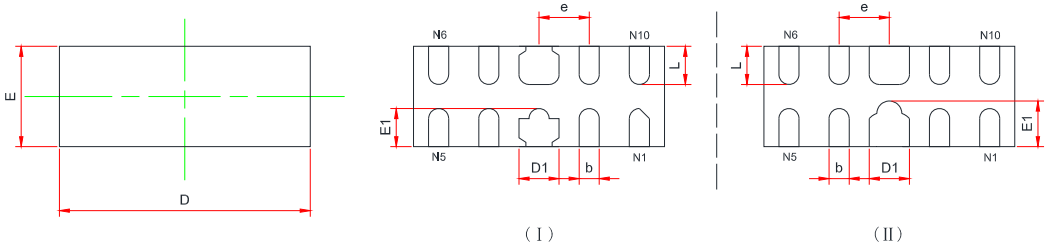
Power derating vs. Ambient temperature



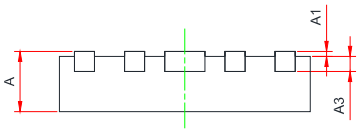
TLP Measurement



■ Outline Dimensions



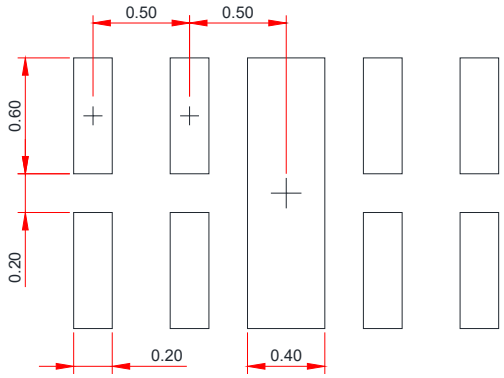
Top View　　Bottom View



Side View

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

■ Soldering Footprint



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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