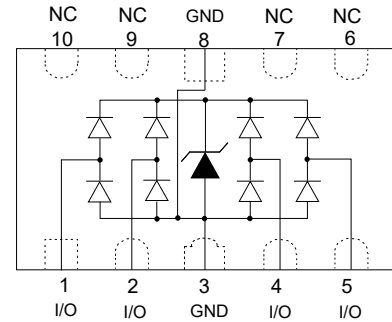


Description

The PESDALC10N3V3U is low capacitance transient voltage suppressor array for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. All pins are rated to withstand 16kV ESD pulses using the IEC 61000-4-2 air discharge method, which can meet the requirement of level 4.

Note: that the PCB traces are used to connect the pin pairs for each line (pin 1 to pin 10, pin2 to pin9, pin4 to pin7, pin5 to pin6)



Feature

- DFN2510-10L Package
- Working voltage: 3.3V
- Low clamping voltage
- Low capacitance
- RoHS compliant
- Transient protection for data lines to
 - IEC 61000-4-2(ESD) ±16KV(air), ±16KV(contact);
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
 - IEC 61000-4-5 (Lightning) 6A (8/20us)

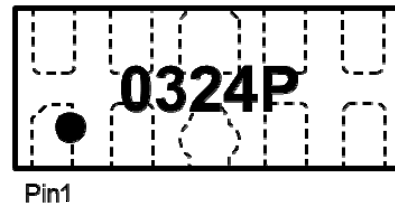
Applications

- USB 2.0,3.0 Power & Data Line Protection
- DVI & HDMI 2.1 Port Protection
- Serial ATA Port Protection
- Mobile Handsets
- Digital Cameras and camcorders
- PDA & MP3 Players
- Digital TV and Set-top Boxes
- Other Portable Electronic Components

Mechanical Characteristics

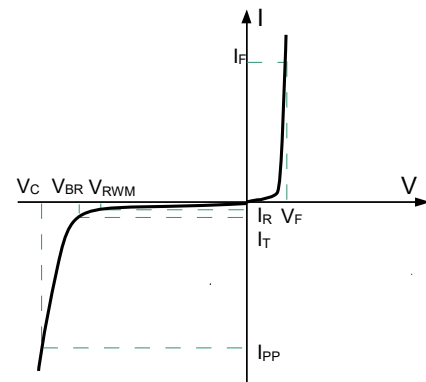
- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Pure tin plating: 7 ~ 17 um
- Pin flatness : ≤3mil

Marking



Electronics Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical characteristics per line@(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				3.3	V
Breakdown Voltage	V_{BR}	$I_t = 1mA$	5.6		7.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3V, T = 25^\circ C$			1.0	μA
Clamping Voltage ¹⁾	V_C	TLP=16A, $t_p=100ns$		15		V
Dynamic resistance	R_{DYN}	-		0.48		Ω
Clamping Voltage ²⁾	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$		8.0	9.0	V
Clamping Voltage ²⁾	V_C	$I_{PP} = 6A, t_p = 8/20\mu s$		12.5	14	V
Junction Capacitance(IO-IO)	C_J	$V_R=0V, f = 1MHz$		0.3	0.4	pF
Junction Capacitance(IO-GND)	C_J	$V_R=0V, f = 1MHz$		0.6	0.8	pF

Notes:

1. TLP parameter: $Z_0=50\Omega, t_p=100ns, t_r=2ns$, averaging window from 70ns to 90ns. R_{DYN} is calculated from 4A to 16A.
2. Non-repetitive current pulse, according to IEC61000-4-5.

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	90	W
Operating Temperature	T_J	-55 to +150	$^\circ C$
Storage Temperature	T_{STG}	-55 to +150	$^\circ C$

Typical Characteristics

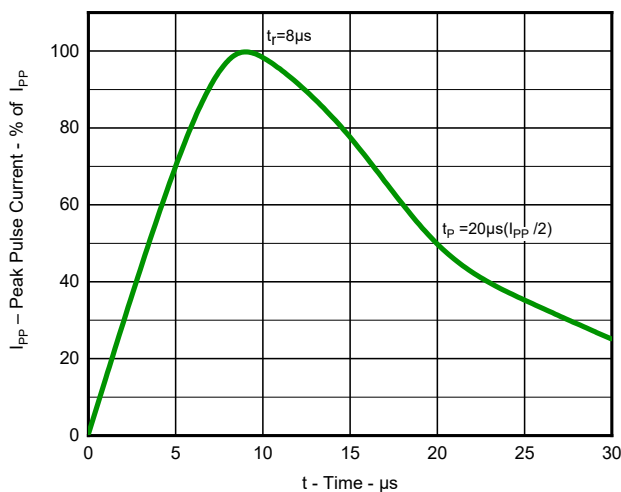


Fig 1.Pulse Waveform(8/20μs)

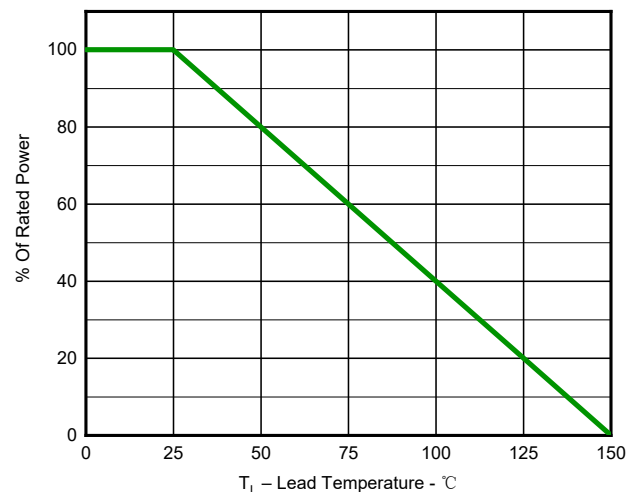


Fig 2.Power Derating Curve

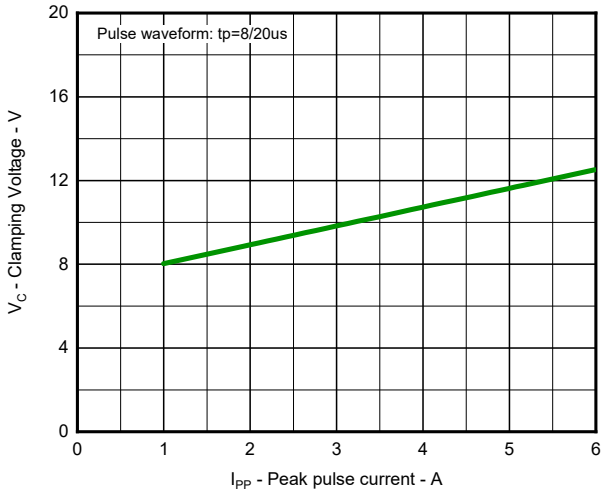


Fig 3. Clamping voltage vs. Peak pulse current

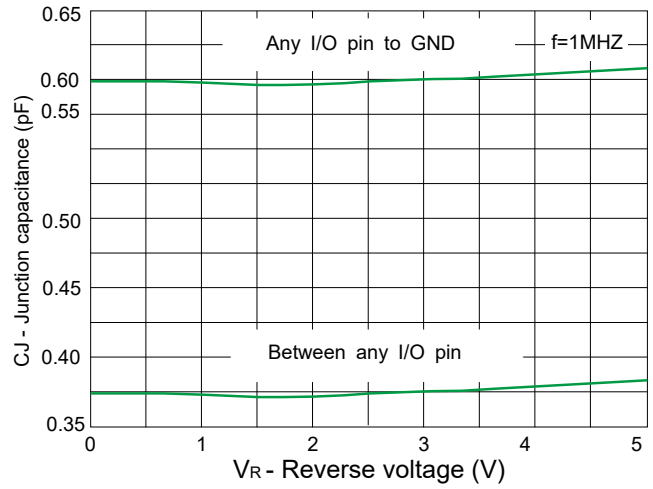


Fig 4 . Capacitance vs. Reverses voltage

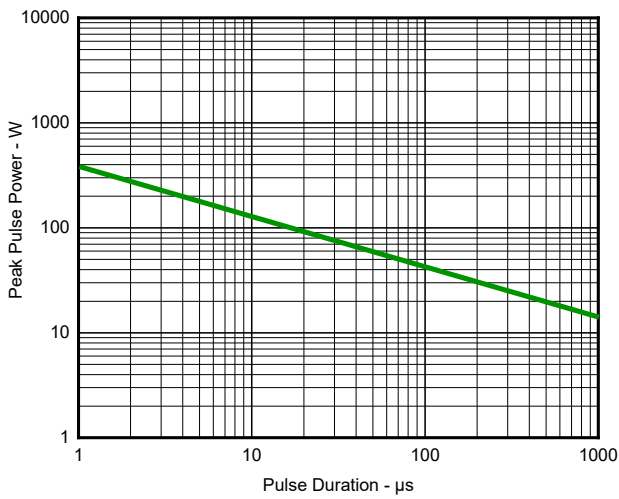


Fig 5. Non Repetitive Peak Pulse Power vs. Pulse time

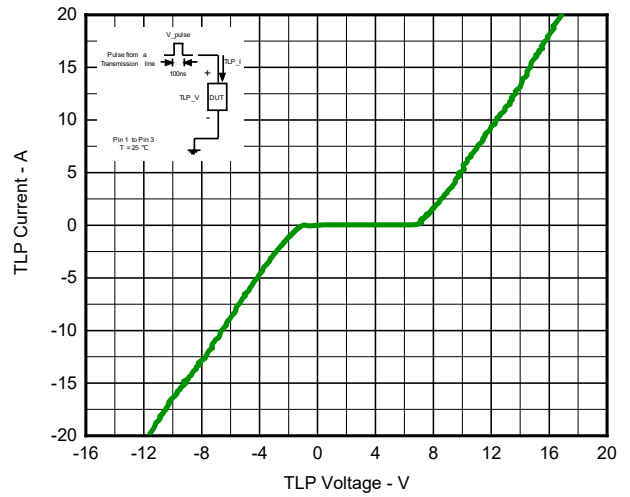
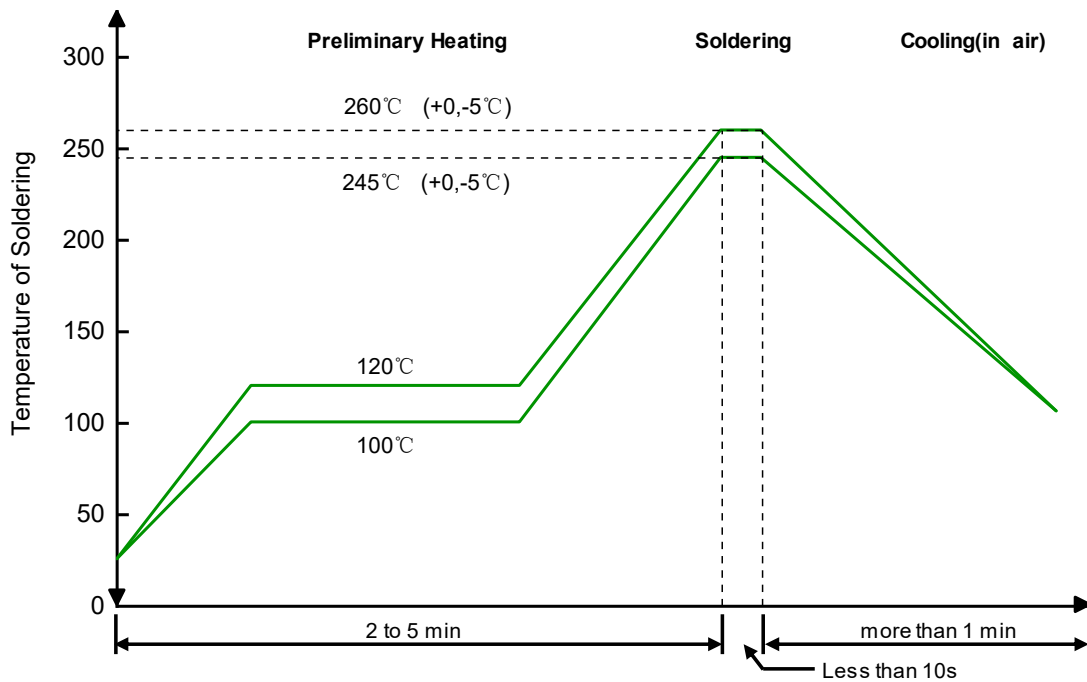


Fig 6. TLP Measurement

Solder Reflow Recommendation



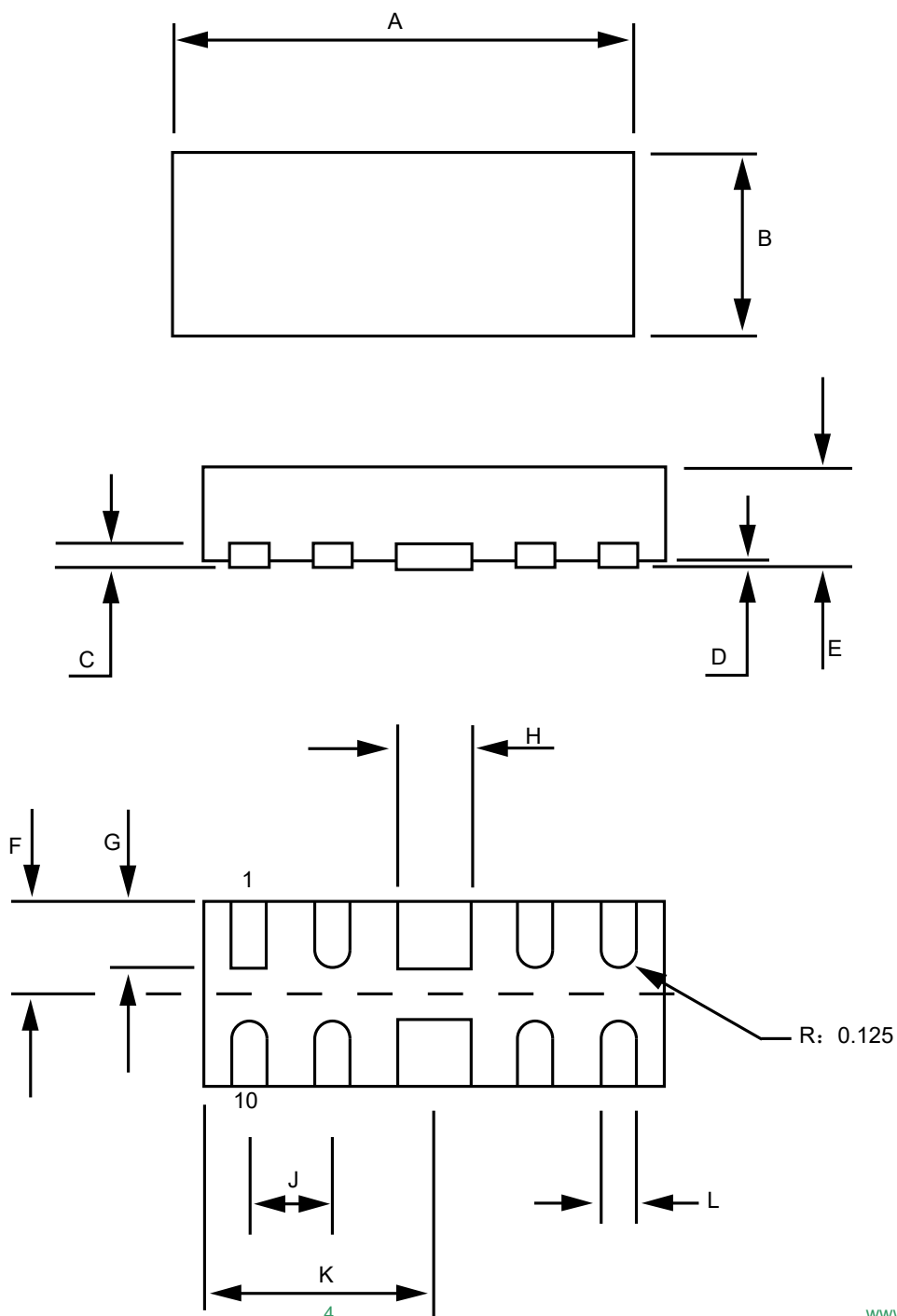
Remark: Pb free for 260°C; Pb for 245°C.

PCB Design

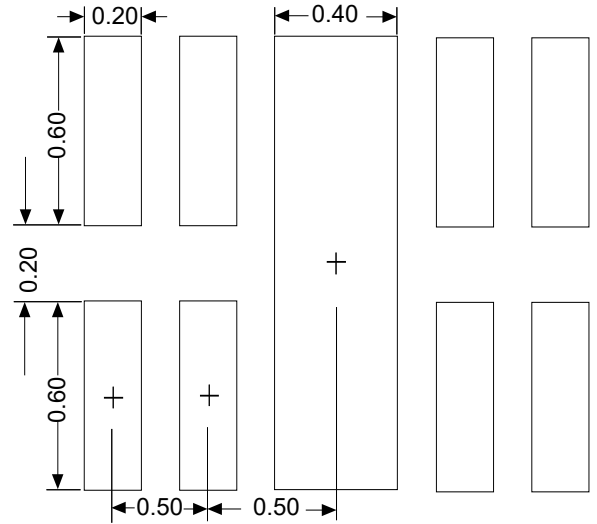
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- Do not make false economies and save copper for the ground connection.
- Place via holes to ground as close as possible to the anode of the TVS diode.
- Use as many via holes as possible for the ground connection.
- Keep the length of via holes in mind! The longer the more inductance they will have.

Product dimension (DFN2510-10L)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.40	2.60	0.094	0.102
B	0.90	1.10	0.035	0.043
C	0.13		0.005	
D	0.00	0.05	0.00	0.002
E	0.50	0.65	0.020	0.026
F	0.45	0.55	0.017	0.022
G	0.30	0.425	0.012	0.017
H	0.35	0.45	0.014	0.018
J	0.5 BSC		0.020 BSC	
K	1.20	1.30	0.047	0.056
L	0.15	0.25	0.006	0.010

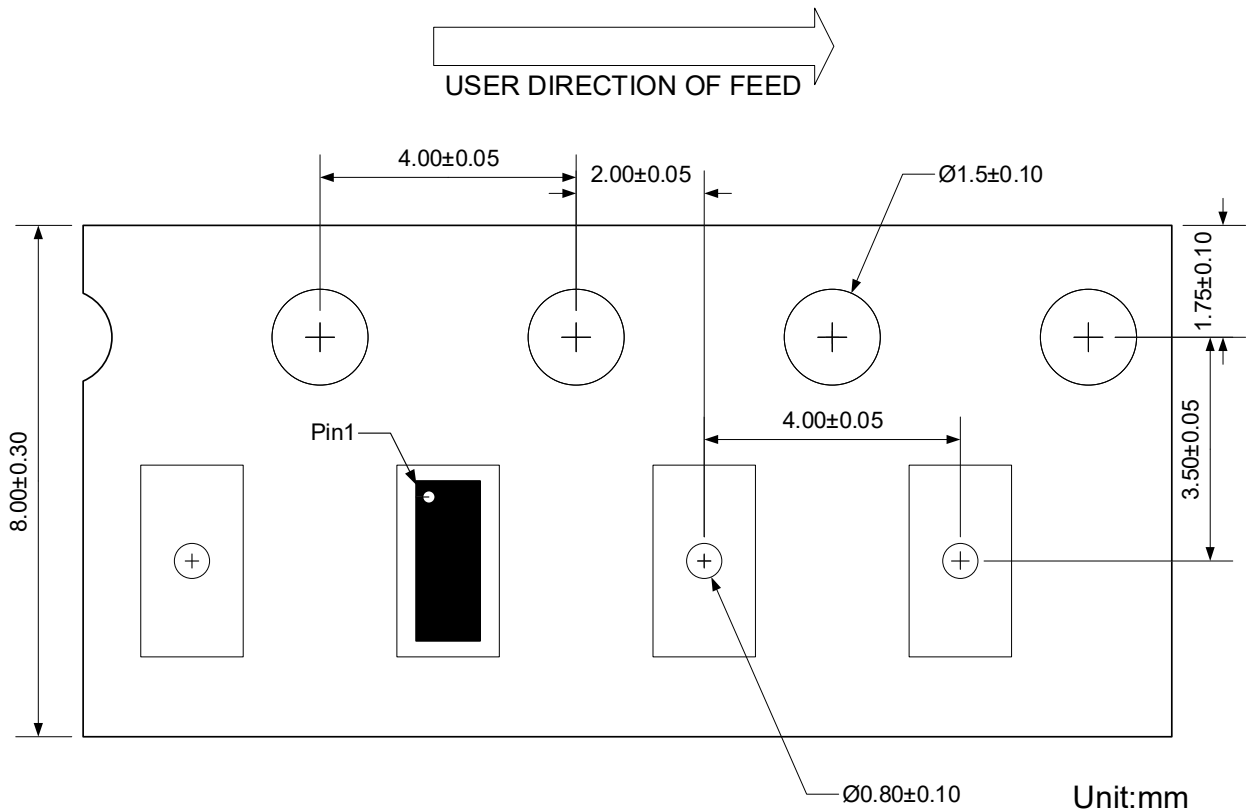


Unit:mm

Ordering information


Device	Package	Shipping
PESDALC10N3V3U	DFN2510-10L (Pb-Free)	3000 / Tape & Reel

Load with information



Unit:mm


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