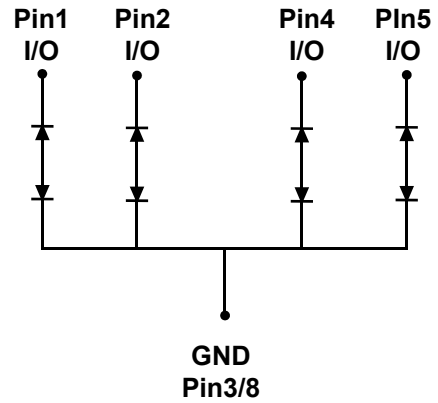


### Description

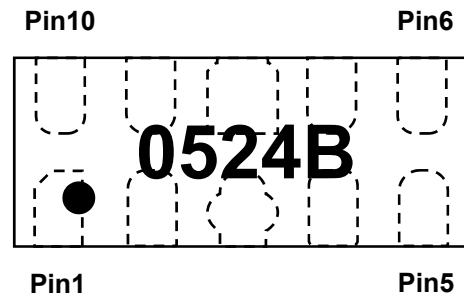
The PESDARC10N5VB is low capacitance transient voltage suppressor array for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. All pins are rated to withstand 15KV ESD pulses using the IEC 61000-4-2 air discharge method, which can meet the requirement of level 4.



Circuit Diagram

### Feature

- 75W peak pulse power ( $t_p = 8/20\mu s$ )
- DFN2510-10L Package
- Working voltage: 5.0V
- Low clamping voltage
- Low capacitance
- RoHS compliant
- Transient protection for data lines to IEC 61000-4-2(ESD)  $\pm 15KV$ (air),  $\pm 15KV$ (contact); IEC 61000-4-5 (Lightning) 7.5A (8/20us)



Marking (Top View)

### Applications

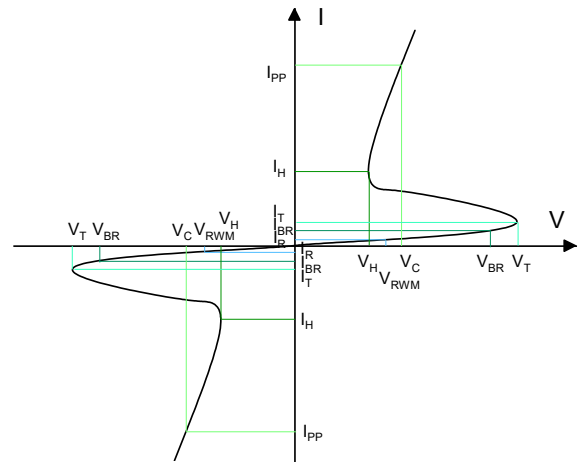
- USB 2.0,3.0 Power & Data Line Protection
- DVI & HDMI 2.1 Port Protection
- Serial ATA Port Protection
- Mobile Handsets
- Digital Cameras and camcorders
- PDA & MP3 Players
- Digital TV and Set-top Boxes
- Other Portable Electronic Components

### 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:  $\leq 3mil$

## Electronics Parameter

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Reverse Breakdown Voltage
$I_T$	Reverse Trigger Current
$I_{PP}$	Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_T$	Reverse Trigger Voltage
$I_{BR}$	Reverse Breakdown Current
$I_H$	Reverse Holding Current
$V_H$	Reverse Holding Voltage



## Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$	-	-5.0	-	5.0	V
Breakdown Voltage	$V_{BR}$	$I_t = 1\text{mA}$	6.0	-	10	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$	-	-	1.0	$\mu\text{A}$
Reverse Holding Current	$I_H$	$T = 25^\circ\text{C}$	-	30	-	mA
Clamping Voltage <sup>1)</sup>	$V_C$	TLP = 16A, $t_p = 100\text{ns}$	-	9.0	-	V
Dynamic resistance <sup>1)</sup>	$R_{DYN}$	-	-	0.375	-	$\Omega$
Clamping Voltage <sup>2)</sup>	$V_C$	$I_{PP} = 5.5\text{A}, t_p = 8/20\mu\text{s}$	-	5.0	7.0	V
		$I_{PP} = 7.5\text{A}, t_p = 8/20\mu\text{s}$	-	8.0	10	
Forward Voltage	$V_F$	$I_F = 10\text{mA}$	-	0.83	1.2	V
Capacitance Between IO and GND	$C_J$	$V_R = 2.5\text{V}, f = 1\text{MHz}$	-	0.22	0.3	pF
Capacitance Between IO and I/O			-	0.21	-	pF

Notes:

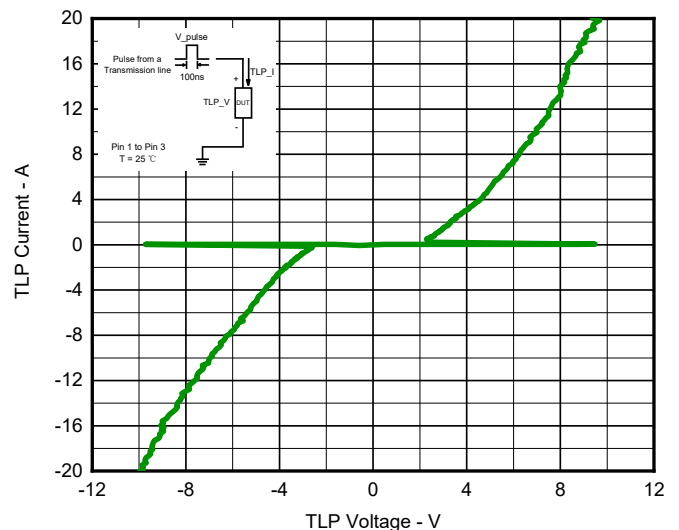
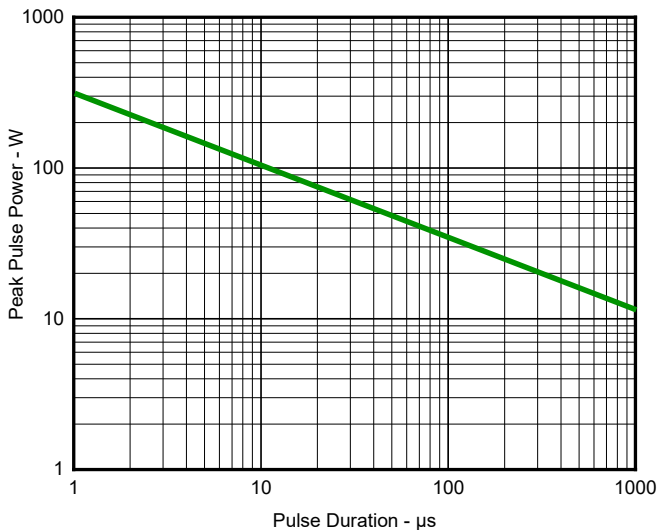
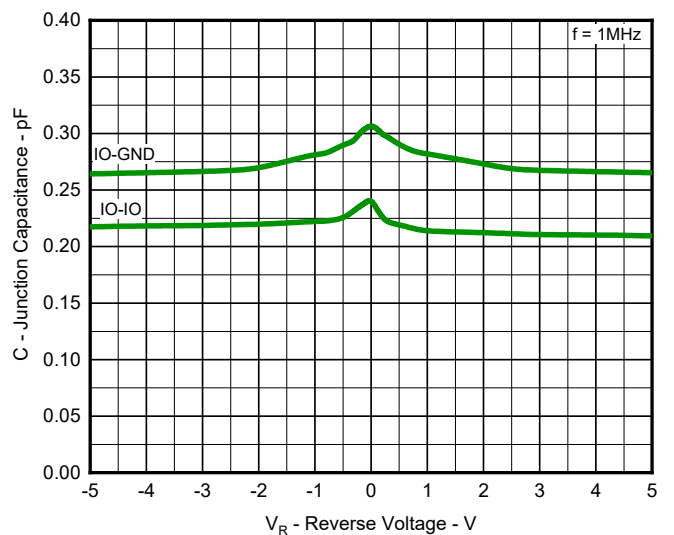
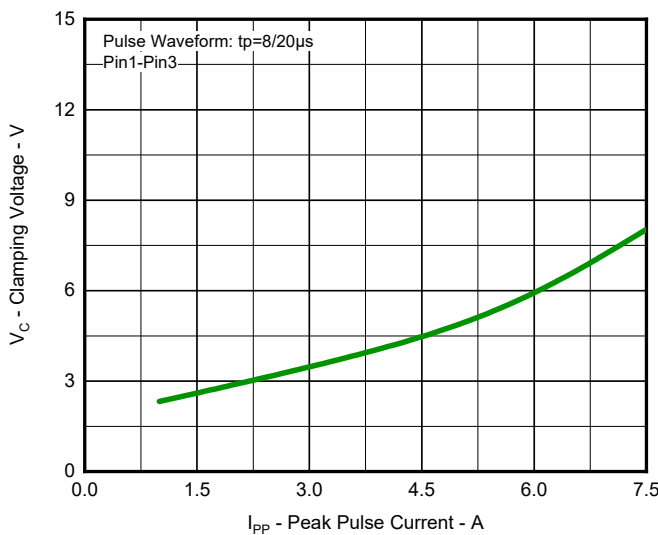
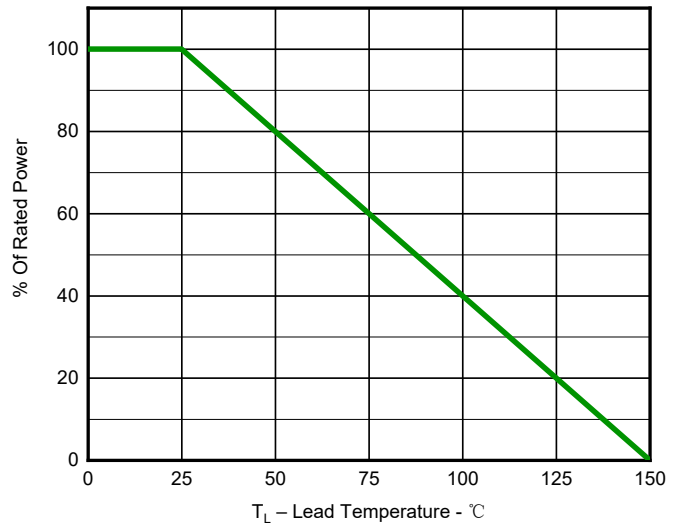
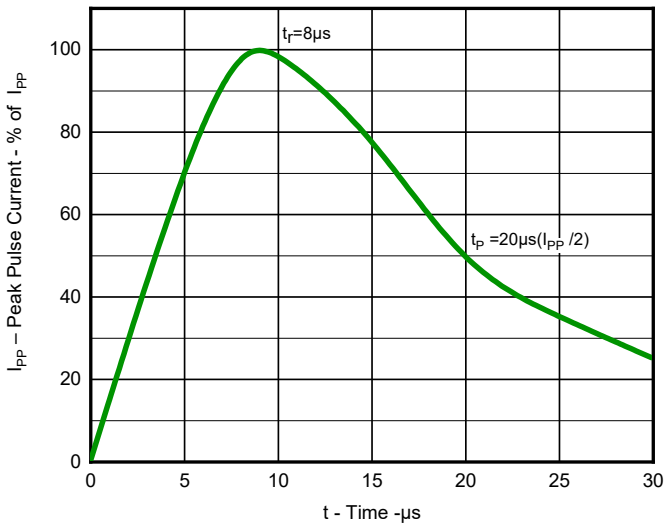
1. TLP parameter:  $Z_0 = 50\Omega$ ,  $t_p = 100\text{ns}$ ,  $t_r = 2\text{ns}$ , averaging window from 70ns to 90ns.  $R_{DYN}$  is calculated from 4A to 16A.

2. Non-repetitive current pulse, according to IEC61000-4-5.

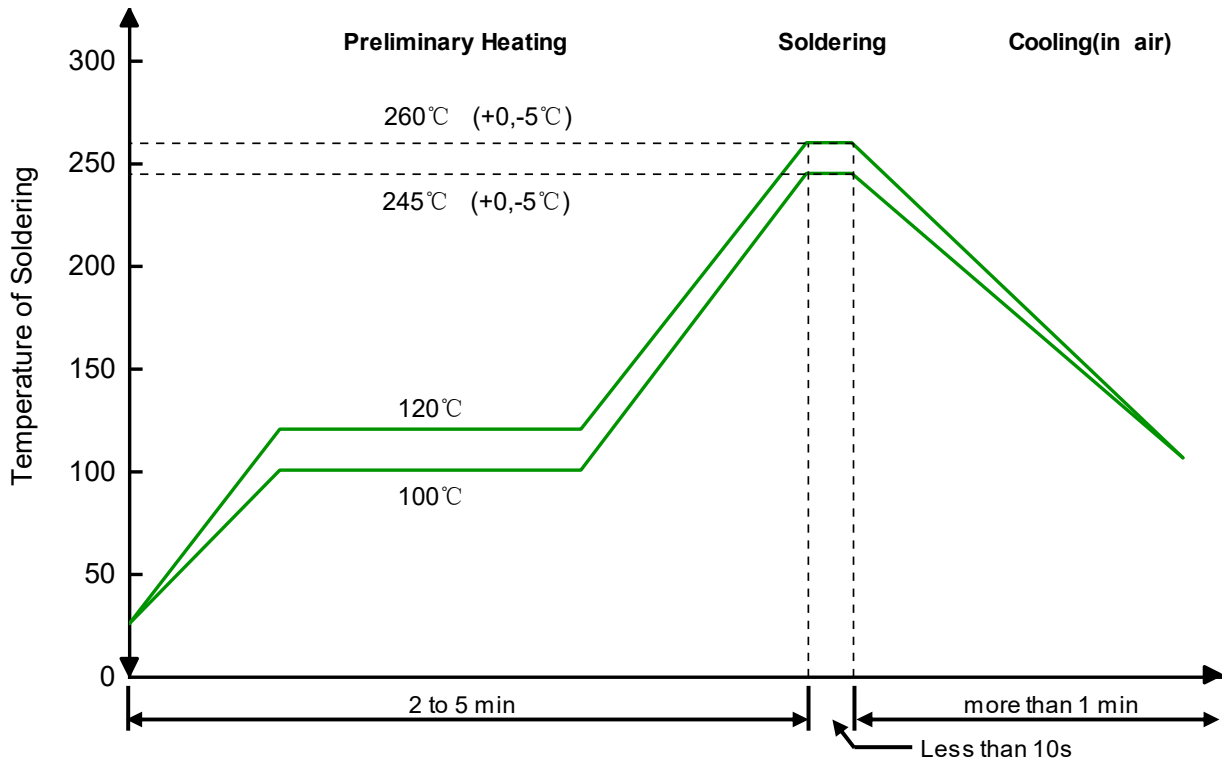
## Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )	$P_{PP}$	75	W
Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )	$I_{PP}$	7.5	A
Lead Soldering Temperature	$T_L$	260 (10 sec)	$^\circ\text{C}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ\text{C}$
ESD Protection-Contact Discharge	$V_{ESD}$	$\pm 15$	kV
ESD Protection-Air Discharge	$V_{ESD}$	$\pm 15$	kV

## Typical Characteristics



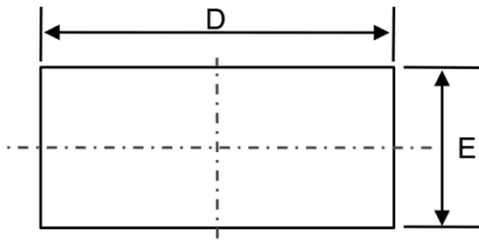
Solder Reflow Recommendation



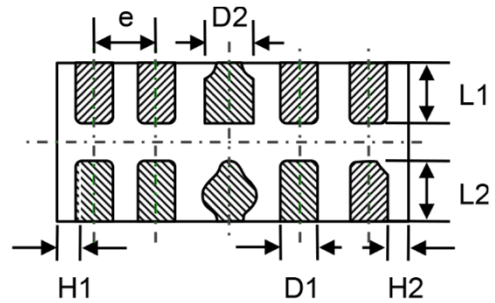
Remark: Pb free for 260°C; Pb for 245°C.



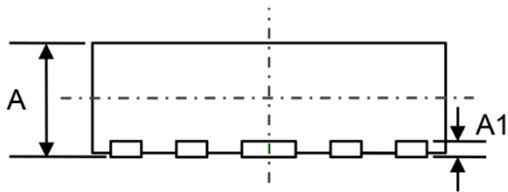
## Product dimension (DFN2510-10L)



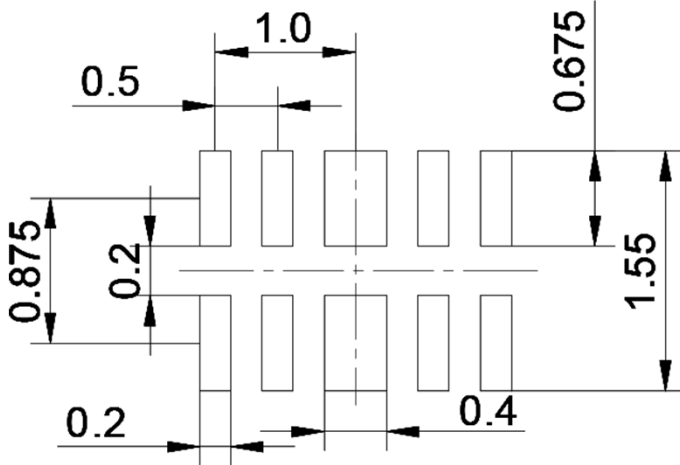
TOP VIEW



BOTTOM VIEW



SIDE VIEW




Unit: mm

Suggested PCB Layout

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.50	0.65	0.020	0.026
A1	0.15 Ref.		0.006 Ref.	
D	2.40	2.60	0.094	0.102
D1	0.15	0.25	0.006	0.010
D2	0.35	0.45	0.014	0.018
E	0.90	1.10	0.035	0.043
e	0.50 Ref.		0.020 Ref.	
L1	0.30	0.46	0.012	0.018
L2	0.30	0.46	0.012	0.018
H1	0.075	0.175	0.003	0.007
H2	0.075	0.175	0.003	0.007


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