

## ULTRA LOW CAPACITANCE TVS DIODE ARRAY

### Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 20\text{kV}$
    - Contact discharge:  $\pm 20\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 3A (8/20  $\mu\text{s}$ )
- RoHS Compliant

### Applications

- USB 2.0/3.1 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100/1000 Ethernet
- HDMI 1.3/1.4/2.0 interface

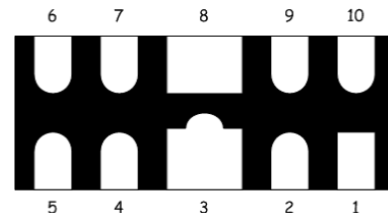
### Mechanical Characteristics

- Package: DFN2510P10
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000pcs
- Reel Size: 7 inch
- Device Marking: 054LV

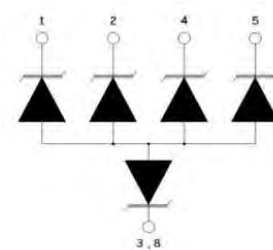
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	P <sub>pp</sub>	45	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 20$	Kv
ESD per IEC 61000-4-2 (Contact)		$\pm 20$	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STJ</sub>	-55 to +150	°C

### Dimensions DFN2510P10



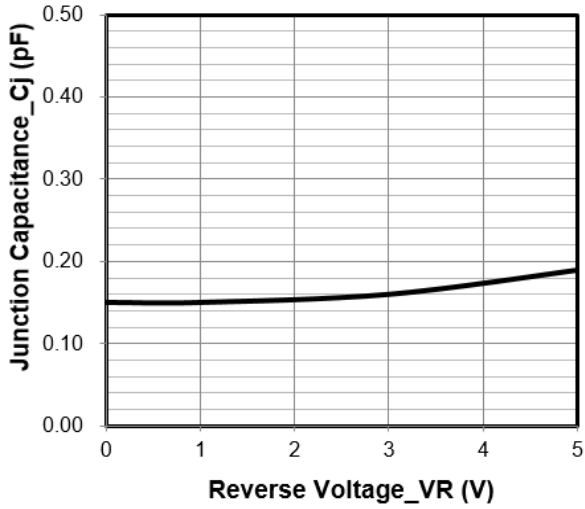
### Pin Configuration



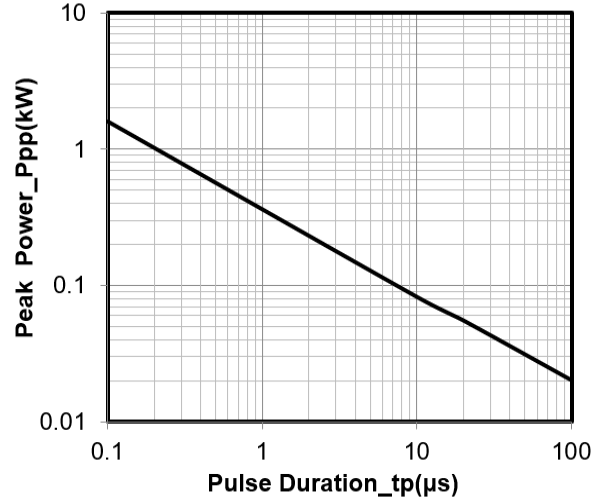
## Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$			0.5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 3A$ (8 x 20 $\mu s$ pulse)			15	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		0.1	0.15	pF

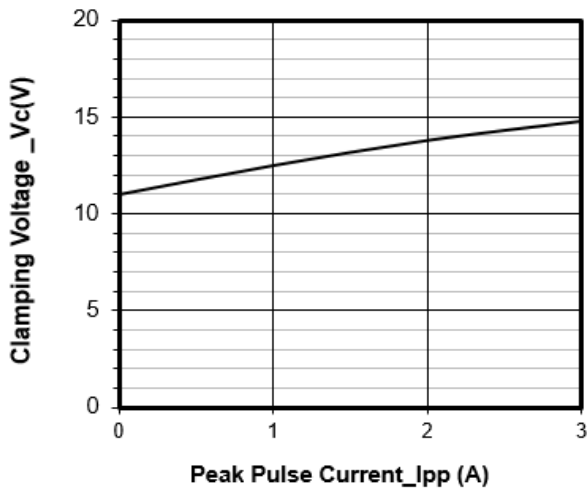
## Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise Specified)



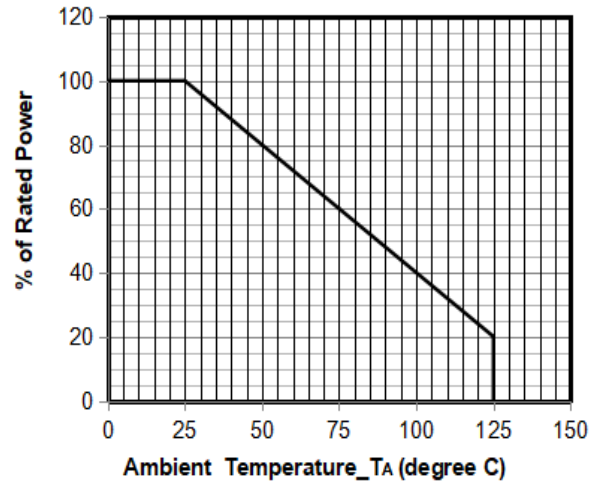
Junction Capacitance vs. Reverse Voltage



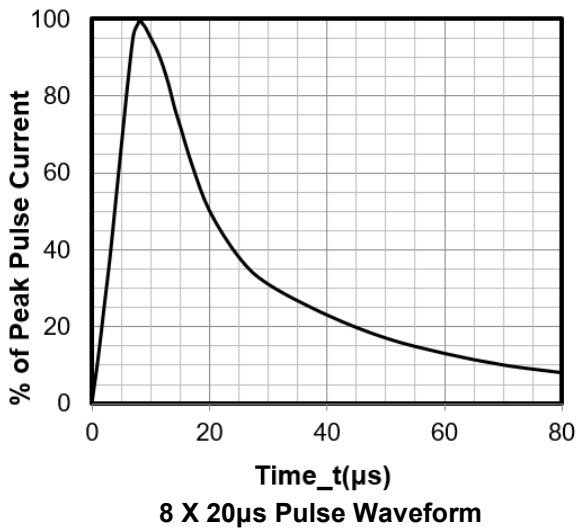
Peak Pulse Power vs. Pulse Time



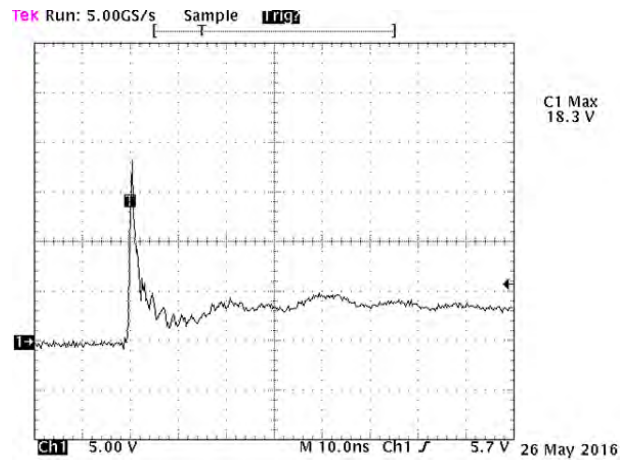
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

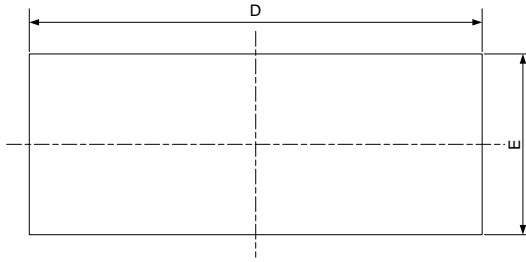


8 X 20μs Pulse Waveform

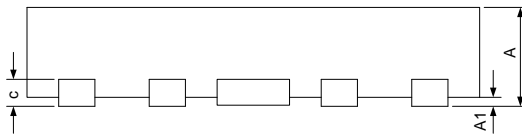


Note: Data is taken with a 10x attenuator  
Contact discharge current waveform  
per IEC61000-4-2

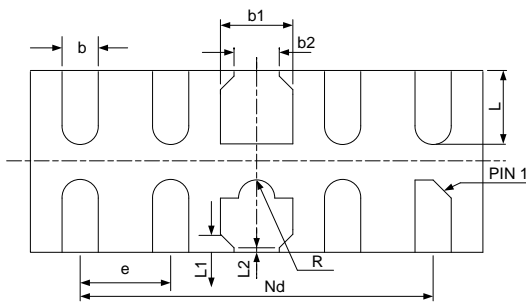
## DFN2510-10 Package Outline Drawing



TOP VIEW



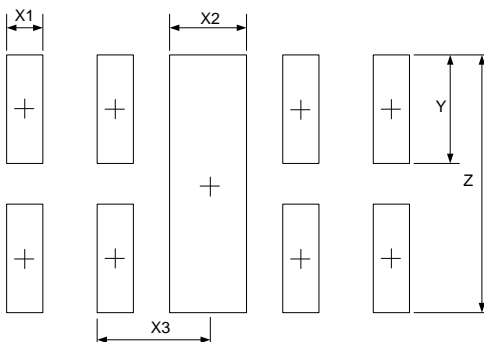
SIDE VIEW



BOTTOM VIEW

SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.450	0.500	0.550	0.018	0.020	0.022
A1	0.000	0.020	0.050	0.000	0.001	0.002
b	0.150	0.200	0.250	0.006	0.008	0.010
b1	0.350	0.400	0.450	0.014	0.016	0.018
b2	0.200	0.250	0.300	0.008	0.010	0.012
c	0.100	0.150	0.200	0.004	0.006	0.008
D	2.450	2.500	2.550	0.098	0.100	0.102
e	0.50BSC			0.020BSC		
Nd	2.00BSC			0.080BSC		
E	0.950	1.000	1.050	0.038	0.040	0.042
L	0.350	0.400	0.450	0.014	0.016	0.018
L1	0.075REF			0.003REF		
L2	0.050REF			0.002REF		
h	0.080	0.120	0.150	0.003	0.005	0.006
R	0.050	0.100	0.150	0.002	0.004	0.006

## Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X1	0.200	0.008
X2	0.400	0.016
X3	0.600	0.024
Y	0.600	0.024
Z	1.400	0.056

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