

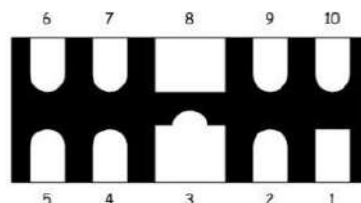
## 4-Line Ultra Low Capacitance TVS Diode Array

Array

### Features

- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Low clamping voltage with snap back technology
- Up to 4 lines protects
- Leadless flow -through package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
 Air discharge:  $\pm 25\text{kV}$   
 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

### Dimensions DFN2510P10



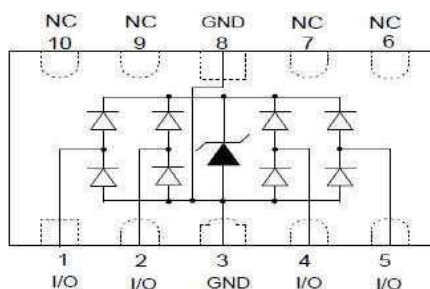
### Applications

- HDMI 1.3 & 1.4, USB 2.0 & 3.0 and MDDI ports
- Monitors and flat panel displays
- Set -top box and Digital TV
- Video graphics cards
- Digital Video Interface (DVI)
- Notebook Computers
- PCI Express and Serial SATA Ports

### Mechanical Characteristics

- Package: DFN2510P10
- Lead Finish: Matte Tin
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3000pcs
- Reel Size: 7inch
- Device Marking: 332P

### Pin Configuration



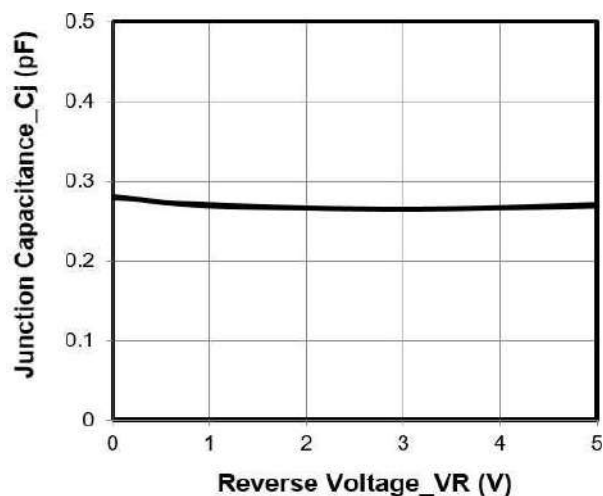
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                              | Symbol           | Value       | Unit |
|----------------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20 $\mu\text{s}$ ) | P <sub>pk</sub>  | 40          | W    |
| ESD per IEC 61000-4-2 (Air)            | V <sub>ESD</sub> | $\pm 25$    | 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   |

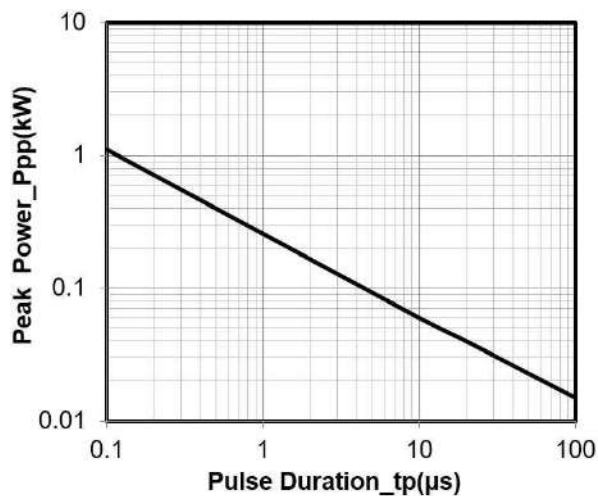
## Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter               | Symbol | Test Condition                                  | Min | Typ  | Max  | Unit |
|-------------------------|--------|-------------------------------------------------|-----|------|------|------|
| Reverse Working Voltage | VRWM   | Any I/O pin to ground                           |     |      | 3.3  | V    |
| Breakdown Voltage       | VBR    | T = 1mA, any I/O pin to ground                  | 5.5 |      | 7.5  | V    |
| Reverse Leakage Current | IR     | VRWM = 3.3V, any I/O pin to ground              |     |      | 0.5  | μA   |
| Clamping Voltage        | VC     | PP = 1A (8 x 20μs pulse), any I/O pin to ground |     |      | 9    | V    |
| Clamping Voltage        | VC     | PP = 3A (8 x 20μs pulse), any I/O pin to ground |     |      | 13   | V    |
| Junction Capacitance    | CJ     | VR = 1.5V, f = 1MHz, between I/O pins           |     | 0.28 | 0.34 | pF   |

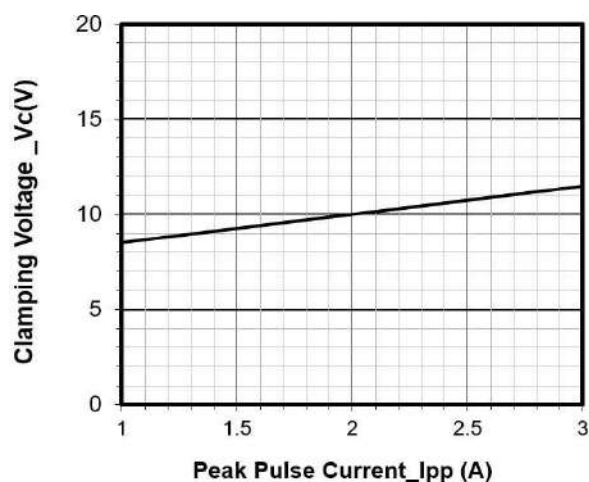
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



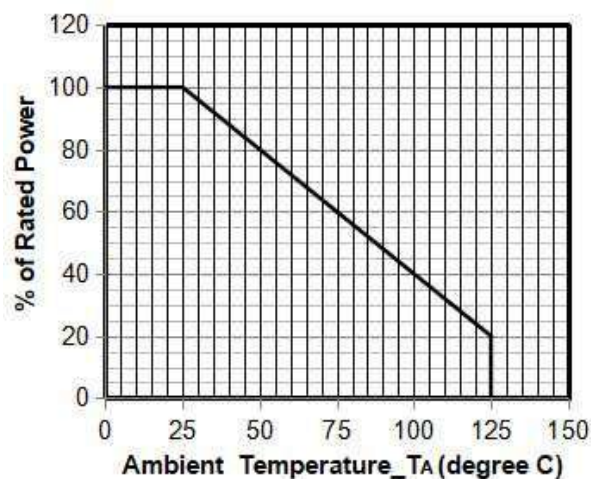
**Junction Capacitance vs. Reverse Voltage**



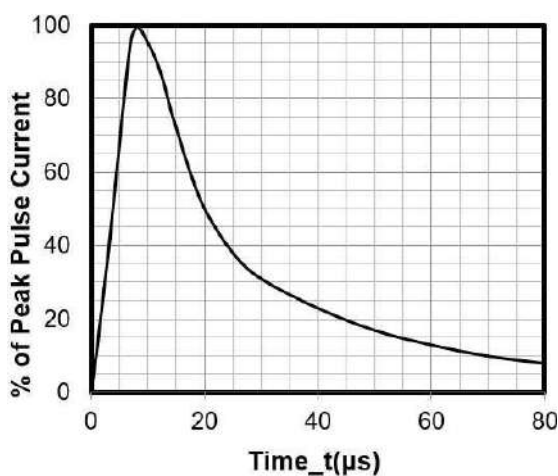
**Peak Pulse Power vs. Pulse Time**



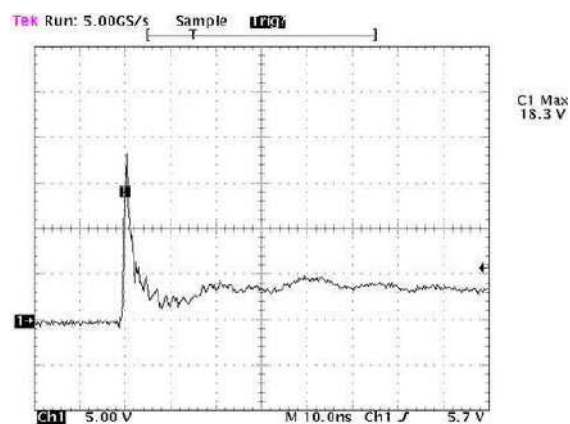
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**

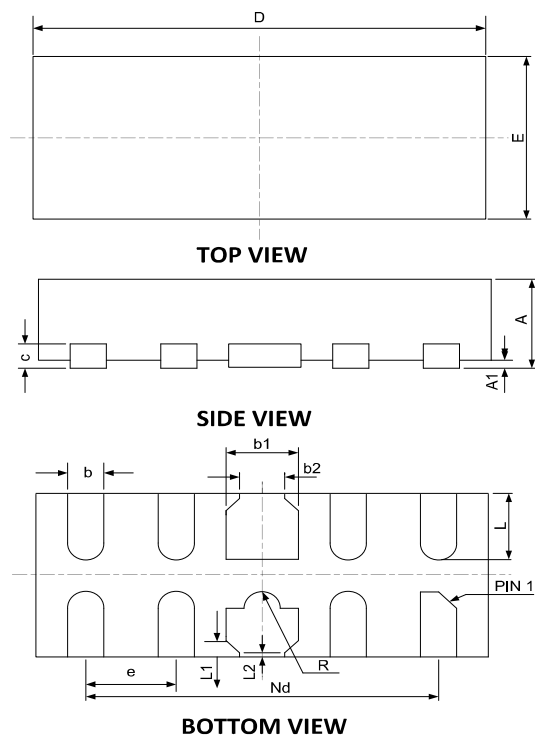


**8 X 20μs Pulse Waveform**



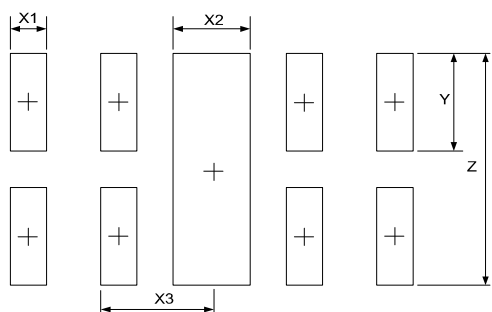
Note: Data is taken with a 10x attenuator  
**ESD Clamping Voltage**  
**8 kV Contact per IEC61000-4-2**

## DFN2510P10 Package Outline Drawing



| SYM | DIMENSIONS  |      |      |          |       |       |
|-----|-------------|------|------|----------|-------|-------|
|     | MILLIMETERS |      |      | INCHES   |       |       |
|     | MIN         | NOM  | MAX  | MIN      | NOM   | MAX   |
| A   | 0.45        | 0.50 | 0.55 | 0.018    | 0.020 | 0.022 |
| A1  | 0.00        | 0.02 | 0.05 | 0.000    | 0.001 | 0.002 |
| b   | 0.15        | 0.20 | 0.25 | 0.006    | 0.008 | 0.010 |
| b1  | 0.35        | 0.40 | 0.45 | 0.014    | 0.016 | 0.018 |
| b2  | 0.20        | 0.25 | 0.30 | 0.008    | 0.010 | 0.012 |
| c   | 0.10        | 0.15 | 0.20 | 0.004    | 0.006 | 0.008 |
| D   | 2.45        | 2.50 | 2.55 | 0.098    | 0.100 | 0.102 |
| e   | 0.50BSC     |      |      | 0.020BSC |       |       |
| Nd  | 2.00BSC     |      |      | 0.080BSC |       |       |
| E   | 0.95        | 1.00 | 1.05 | 0.038    | 0.040 | 0.042 |
| L   | 0.35        | 0.40 | 0.45 | 0.014    | 0.016 | 0.018 |
| L1  | 0.075REF    |      |      | 0.003REF |       |       |
| L2  | 0.050REF    |      |      | 0.002REF |       |       |
| h   | 0.08        | 0.12 | 0.15 | 0.003    | 0.005 | 0.006 |
| R   | 0.05        | 0.10 | 0.15 | 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  |