

### Features

- 4 Bi-directional Channels ESD protection
- Typically Used at High Speed Ports
- Low operating voltage: 3.3V
- Low Channel Input Capacitance of 0.3pF(Typ)  
Typical for I/Os (Typ)
- -IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- Totally Lead-Free & Fully RoHS Compliant
- Halogen and Antimony Free. "Green" Device

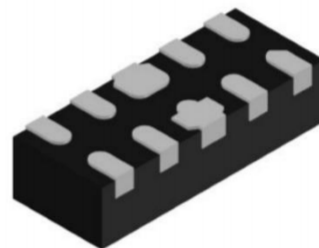
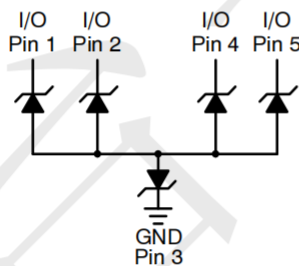
### Mechanical Characteristics

- Package: DFN2510-10L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

### Applications

- USB 3.1 & 3.2 and MDDI ports
- PCI express and Serial SATA
- Ports Notebook Computers
- Tablets

### Dimensions and Pin Configuration



DFN2510-10L

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

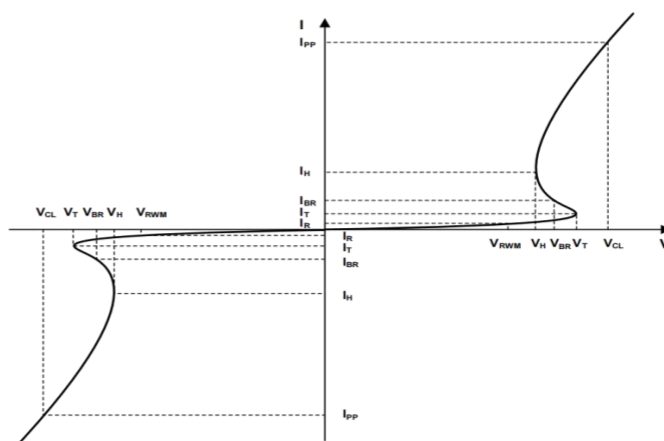
| Parameter                                                      | Symbol           | Value       | Unit |
|----------------------------------------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)                                      | P <sub>pp</sub>  | 70          | W    |
| IEC 61000-4-2 Spec Current at 60 ns (A)                        | I <sub>pp</sub>  | 7           | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | VESD             | ±30<br>±30  | KV   |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150 | °C   |

### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

| Parameter               | Symbol           | Min | Typ  | Max | Unit | Test Condition                                        |
|-------------------------|------------------|-----|------|-----|------|-------------------------------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> | --  | --   | 3.3 | V    |                                                       |
| Breakdown Voltage       | V <sub>BR</sub>  | 5.8 | --   | 9.5 | V    | I <sub>T</sub> = 1mA                                  |
| Reverse Leakage Current | I <sub>R</sub>   | --  | --   | 200 | nA   | V <sub>RWM</sub> = 3.3V                               |
| Clamping Voltage        | V <sub>C</sub>   | --  | 5.8  | 7.5 | V    | I <sub>pp</sub> = 1A (8x 20us pulse)                  |
| Clamping Voltage        | V <sub>C</sub>   | --  | 8.0  | 10  | V    | I <sub>pp</sub> = 6 A (8x 20us pulse)                 |
| Junction Capacitance    | C <sub>J</sub>   | --  | 0.3  | 0.4 | pF   | V <sub>R</sub> = 0V, f = 1MHz,<br>Any vO pin to GND   |
| Junction Capacitance    | C <sub>J</sub>   | --  | 0.15 | --  | pF   | V <sub>R</sub> = 0V, f = 1MHz,<br>Between any I/O pin |

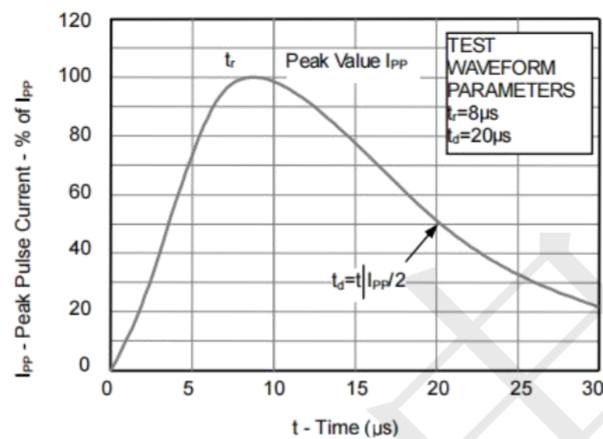
### Electrical Characteristics

| Symbol           | Parameter                 |
|------------------|---------------------------|
| V <sub>BR</sub>  | Reverse Breakdown Voltage |
| I <sub>BR</sub>  | Reverse Breakdown Current |
| V <sub>RWM</sub> | Reverse Stand-off Voltage |
| I <sub>R</sub>   | Reverse Leakage Current   |
| V <sub>H</sub>   | Holding Voltage           |
| I <sub>H</sub>   | Holding Current           |
| V <sub>T</sub>   | Trigger Voltage           |
| I <sub>T</sub>   | Trigger Current           |
| I <sub>PP</sub>  | Peak Pulse Current        |
| V <sub>CL</sub>  | Clamping Voltage          |

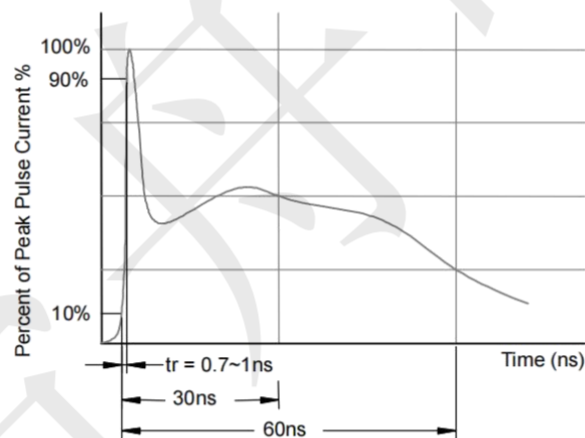


### Characteristic Curves

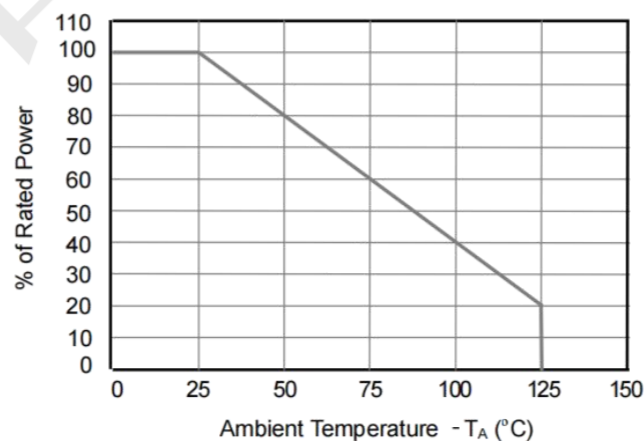
**Fig1. 8/20 $\mu$ s Pulse Waveform**



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**

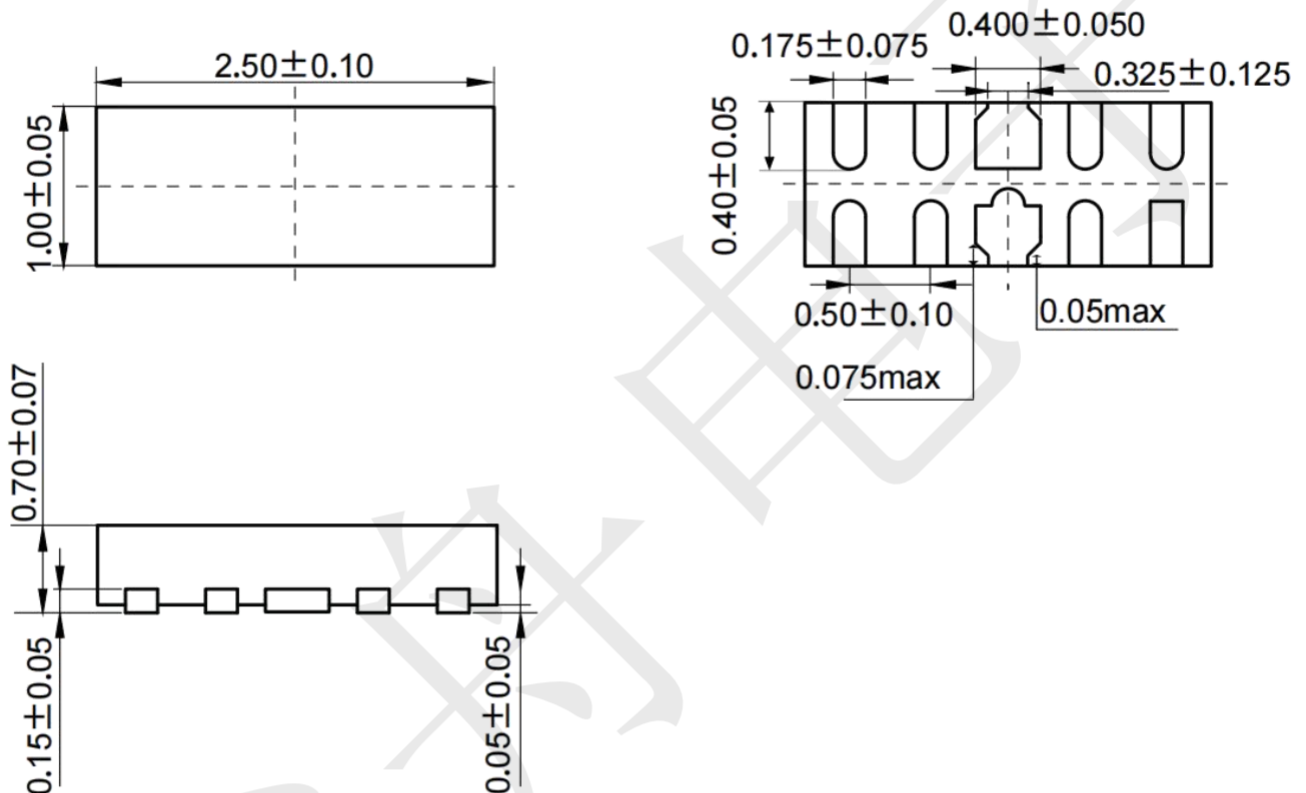


**Fig3. Power Derating Curve**



**Package Outline Dimensions (unit: mm)**

**DFN2510-10L**



**Mounting Pad Layout (unit: mm)**

