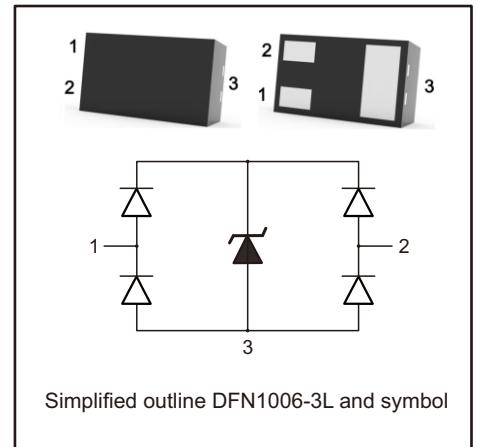




## Transient Voltage Suppressors for ESD Protection

### General Description

The ESDZULC5V0DS3A is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications



### FEATURES

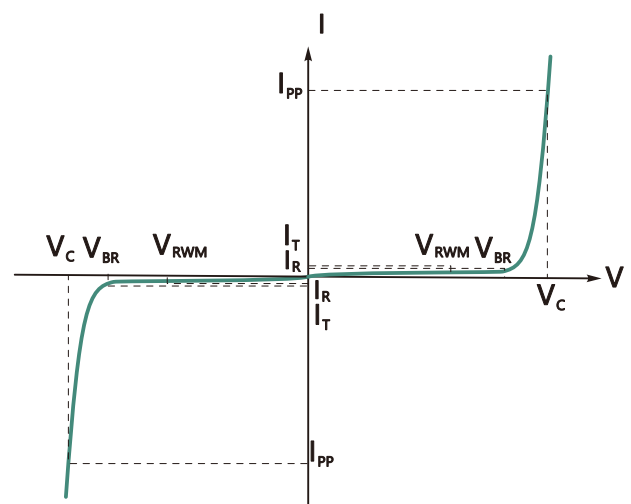
- Working voltages: 5V Max.
- Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 15\text{kV}$  (air)  $\pm 8\text{kV}$  (contact)  
IEC61000-4-5(Lightning): 3A (8/20 $\mu\text{s}$ )
- Ultra-low capacitance:  $C_j = 0.35\text{pF}$  typ.
- Low leakage current

### Applications

- Computers and peripherals;
- Audio and video equipment;
- Communication systems;
- Portable electronics.

### Electronics Parameter

| Parameter                           | Symbol    |
|-------------------------------------|-----------|
| Maximum Reverse Peak Pulse Current  | $I_{PP}$  |
| Clamping Voltage @ $I_{PP}$         | $V_C$     |
| Peak Reverse Working Voltage        | $V_{RWM}$ |
| Reverse Leakage Current @ $V_{RWM}$ | $I_R$     |
| Breakdown Voltage @ $I_T$           | $V_{BR}$  |
| Test Current                        | $I_T$     |





**MAXIMUM RATINGS(Ta=25°C unless otherwise noted)**

| Parameter                      | Symbol | Value    | Unit |
|--------------------------------|--------|----------|------|
| Peak Pulse Power (8/20μS)      | Ppk    | 60       | W    |
| Peak Pulse Current             | Ipp    | 3        | A    |
| ESD per IEC 61000-4-2(Air)     | VESD   | ±15      | KV   |
| ESD per IEC 61000-4-2(Contact) |        | ±8       |      |
| Operating Temperature Range    | TJ     | -40~+125 | °C   |
| Storage Temperature Range      | Tstg   | -55~+150 | °C   |

**ELECTRICAL CHARACTERISTICS(Ta=25°C unless otherwise noted)**

| Parameter                 | Symbol | Test conditions       | Min | Typ  | Max  | Unit |
|---------------------------|--------|-----------------------|-----|------|------|------|
| Reverse Stand-off Voltage | VRWM   |                       |     |      | 5    | V    |
| Breakdown Voltage         | VBR    | IT=1mA                | 6.5 | 7.5  | 9    | V    |
| Reverse Leakage Current   | IR     | VR=VRWM               |     |      | 0.5  | μA   |
| Clamping Voltage          | VC     | IPP=1A, tp=8/20μs     |     | 11   | 12   | V    |
|                           |        | IPP=3A, tp=8/20μs     |     | 19   | 21   | V    |
| Junction Capacitance      | Cj     | VR=0V, f=1MHz, IO-GND |     | 0.35 | 0.43 | pF   |
|                           |        | VR=0V, f=1MHz, IO-IO  |     | 0.2  | 0.3  | pF   |



Fig 1. Junction Capacitance

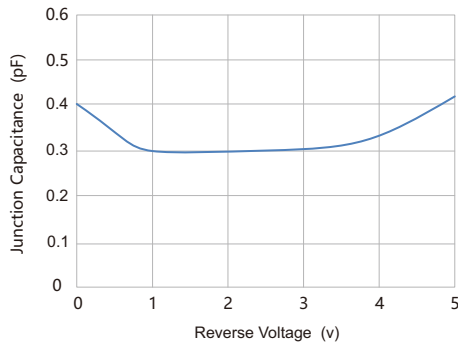


Fig.2 Clamping Voltage vs. Peak Pulse Current

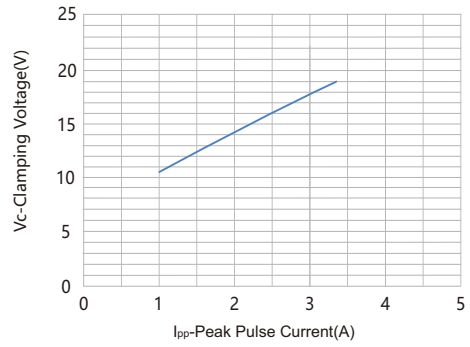


Fig.3 Peak Pulse Power vs. Pulse Time

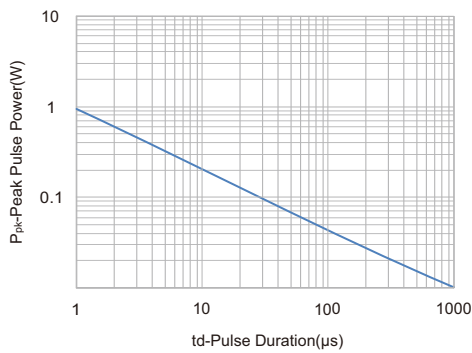


Fig.4 IEC61000-4-2 Pulse Waveform

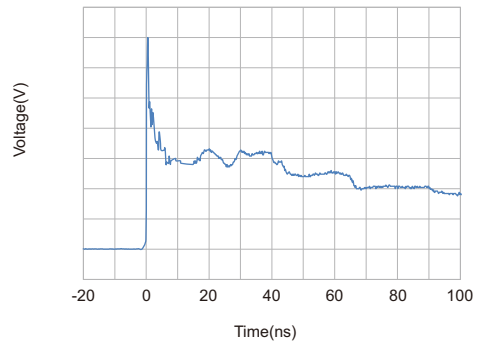


Fig 5. Power Derating Curve

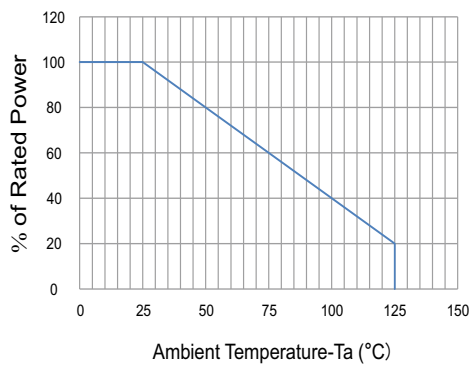
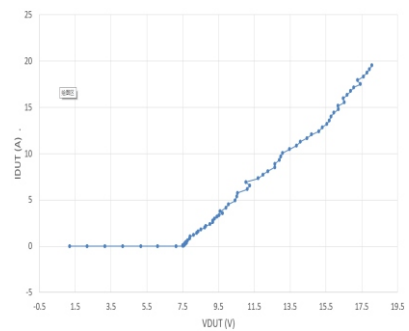
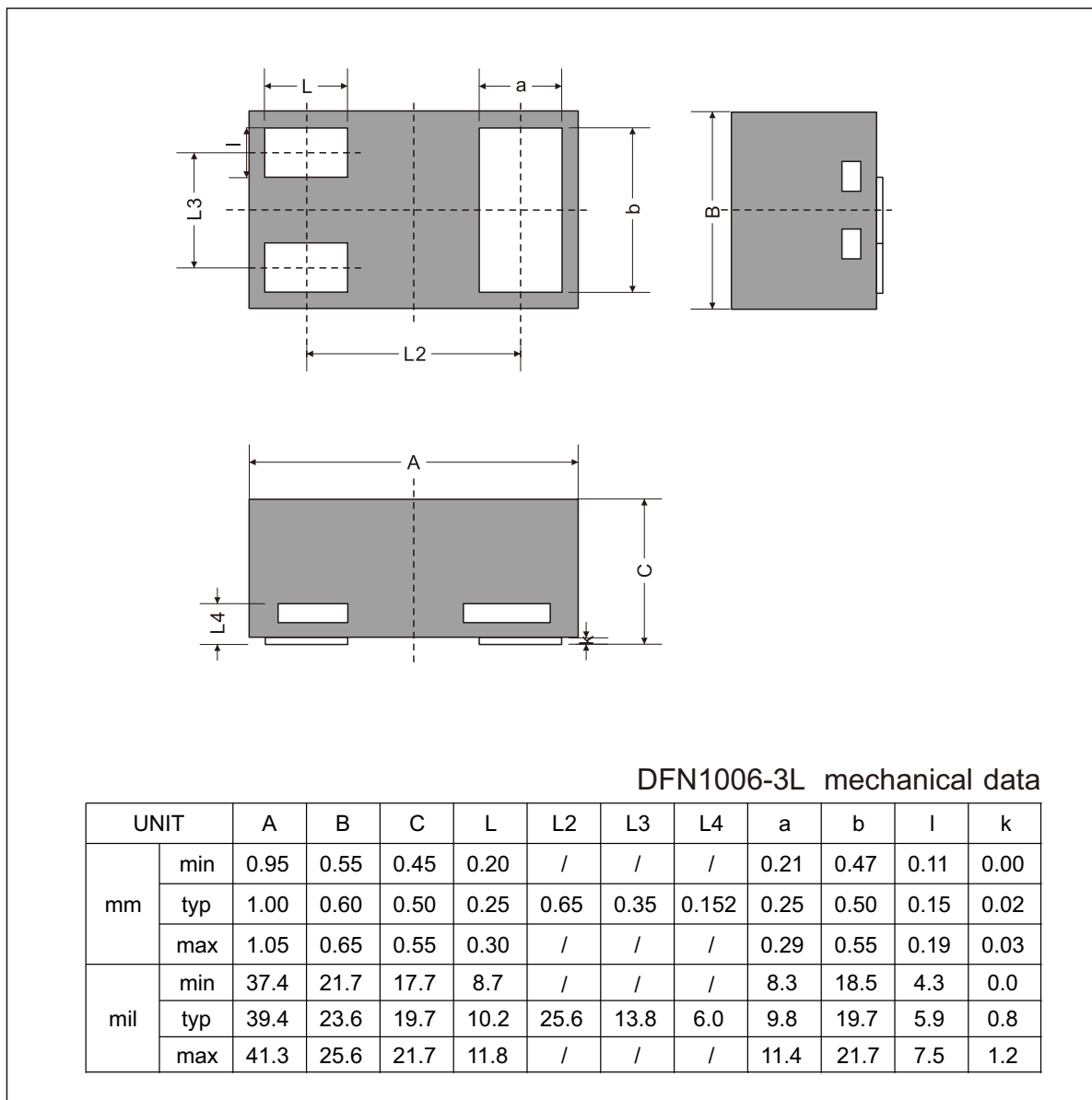


Fig.6 TLP Curve

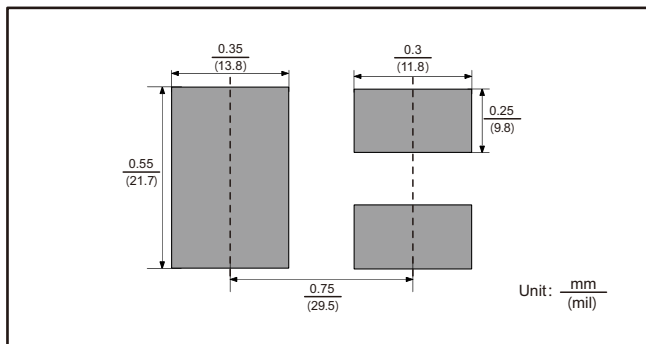




### DFN1006-3L Package Outline Dimensions



#### The recommended mounting pad size



#### Marking

| Type number    | Marking code |
|----------------|--------------|
| ESDZULC5V0DS3A | L3           |



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