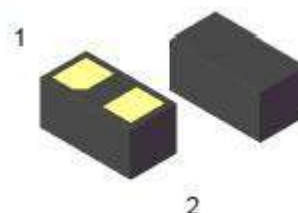


## 1-Line Bi-directional Low Capacitance TVS Diode

### 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:  $\pm 25\text{kV}$
    - Contact discharge:  $\pm 17\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 4A (8/20 $\mu\text{s}$ )
- RoHS Compliant

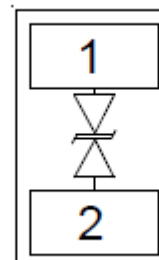
### DFN0603



### Applications:

- USB 3.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

### Pin Configuration



### Mechanical Characteristics

- Package: DFN0603
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 15,000 pcs
- Reel Size: 7 inch

### 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>  | 40          | W    |
| ESD per IEC 61000-4-2 (Air)            | V <sub>ESD</sub> | $\pm 25$    | Kv   |
| ESD per IEC 61000-4-2 (Contact)        |                  | $\pm 17$    |      |
| 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)

| Part Number | Device Marking | V <sub>RWM</sub><br>(V) | V <sub>BR</sub><br>(V) | I <sub>T</sub><br>(mA) | V <sub>C</sub><br>@1A | V <sub>C</sub> |      | I <sub>R</sub><br>μA<br>(Max) | C<br>(Pf)<br>(Typ.) |
|-------------|----------------|-------------------------|------------------------|------------------------|-----------------------|----------------|------|-------------------------------|---------------------|
|             |                |                         |                        |                        |                       | (Max)          | (@A) |                               |                     |
| KULC0521CT  | Q              | 5                       | 6.1                    | 1                      | 11                    | 25             | 4    | 1                             | 0.28                |

## Characteristic Curves

Fig1. 8/20μs Pulse Waveform

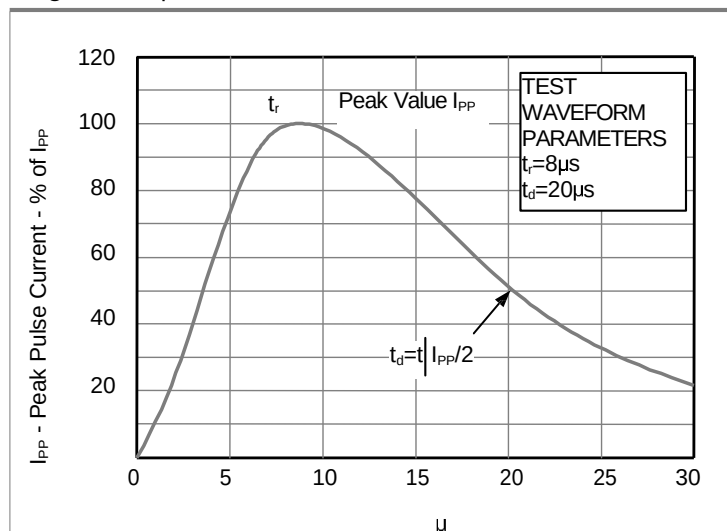


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

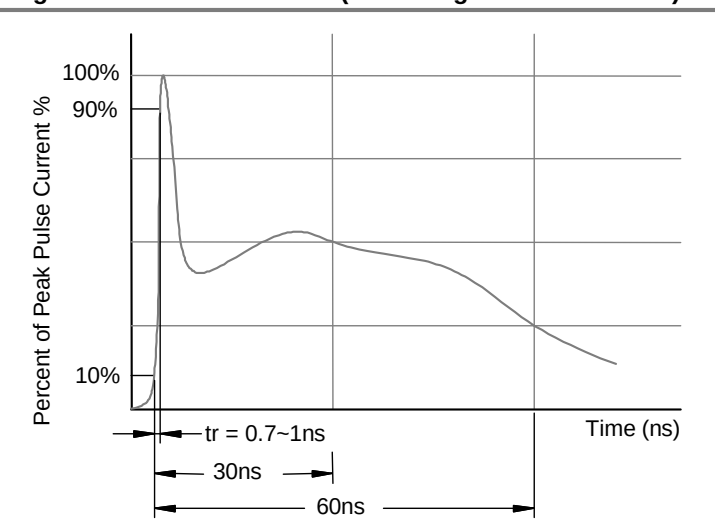
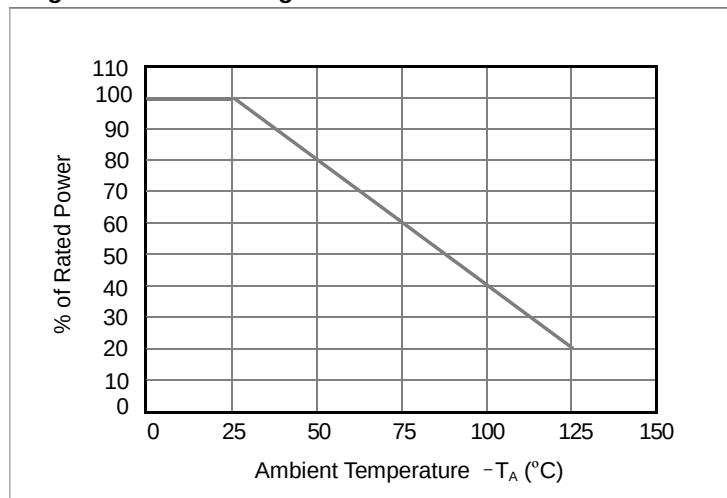
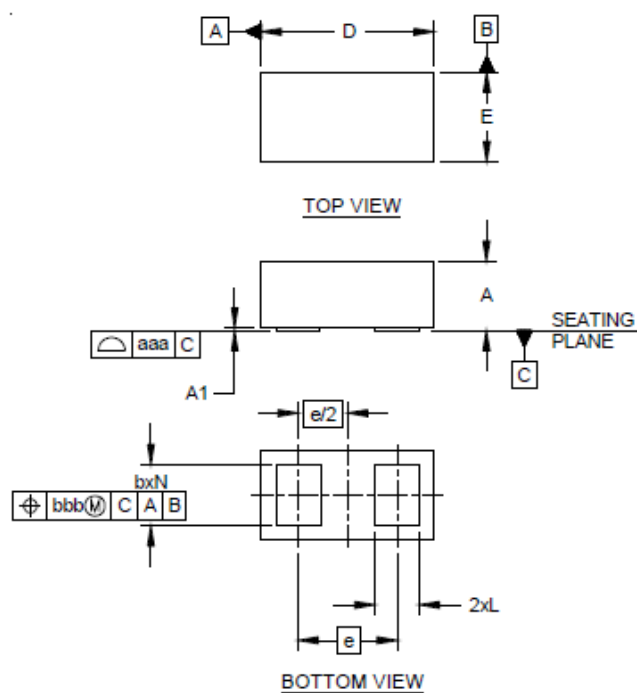


Fig3. Power Derating Curve

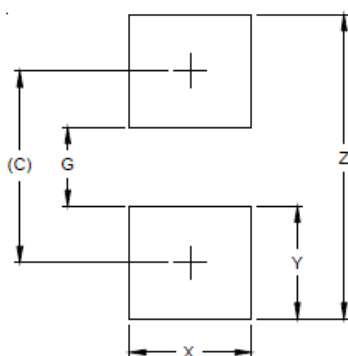


## DFN0603 Package Outline Drawing



| DIMENSIONS |             |      |       |
|------------|-------------|------|-------|
| DIM        | MILLIMETERS |      |       |
|            | MIN         | NOM  | MAX   |
| A          | 0.235       | 0.25 | 0.265 |
| A1         | 0.000       | 0.02 | 0.025 |
| b          | 0.20        | 0.22 | 0.24  |
| D          | 0.585       | 0.62 | 0.655 |
| E          | 0.285       | 0.32 | 0.355 |
| e          | 0.355BSC    |      |       |
| L          | 0.14        | 0.16 | 0.18  |
| N          | 2           |      |       |
| aaa        | 0.08        |      |       |
| bbb        | 0.10        |      |       |

## Suggested Land Pattern



| DIMENSIONS |             |
|------------|-------------|
| DIM        | MILLIMETERS |
| C          | 0.425       |
| G          | 0.175       |
| X          | 0.270       |
| Y          | 0.250       |
| Z          | 0.675       |