

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: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- RoHS Compliant

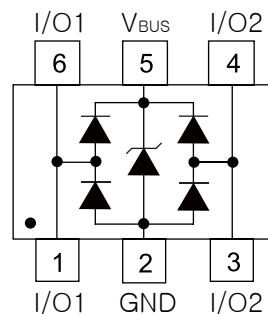
Mechanical Characteristics

- Package: SOT-666
- Lead Finish: Matte Tin
- UL Flammability Classification Rating 94V-0
- Shipping Qty :3000pcs/7Inch Tape & Reel

Applications

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

Dimensions and Pin Configuration





FTVESD0512X6

Low Capacitance TVS Diode Array

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs) | Ppk | 100 | W |
| Peak Pulse Current (8/20μs) | Ipp | 5 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ±30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ±30 | |
| Operating Temperature Range | TJ | -55 to +125 | °C |
| Storage Temperature Range | Tstg | -55 to +150 | °C |

Electrical Characteristics (T_A=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|--------|-----|-----|------|------|---------------------------------------|
| Reverse Working Voltage | VRWM | | | 5 | V | |
| Breakdown Voltage | VBR | 6.5 | | | V | IT = 1mA |
| Reverse Leakage Current | IR | | | 0.08 | uA | VRWM =5V |
| Clamping Voltage | VC | | | 10 | V | I _{PP} = 1A (8 x 20μs pulse) |
| Clamping Voltage | VC | | | 16 | V | I _{PP} = 5A (8 x 20us pulse) |
| Junction Capacitance | CJ | | 0.8 | 0.9 | pF | VR = 0V, f = 1MHz (IO to GND) |
| Junction Capacitance | CJ | | 0.3 | | pF | VR = 0V, f = 1MHz (IO to IO) |

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

Fig1. 8/20μs Pulse Waveform

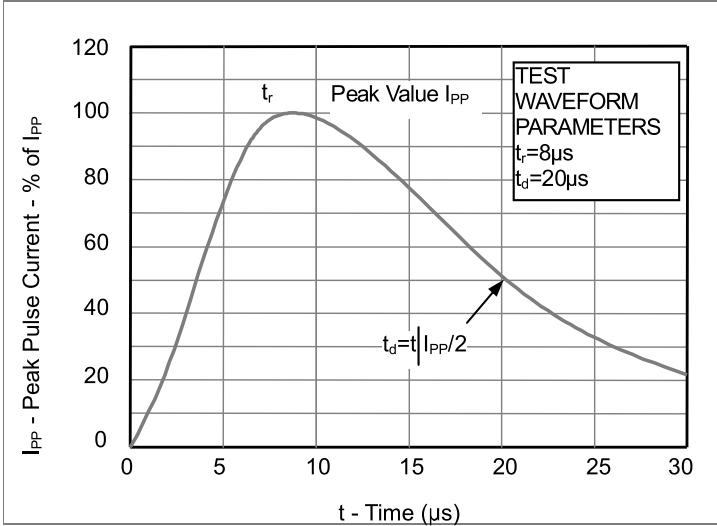


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

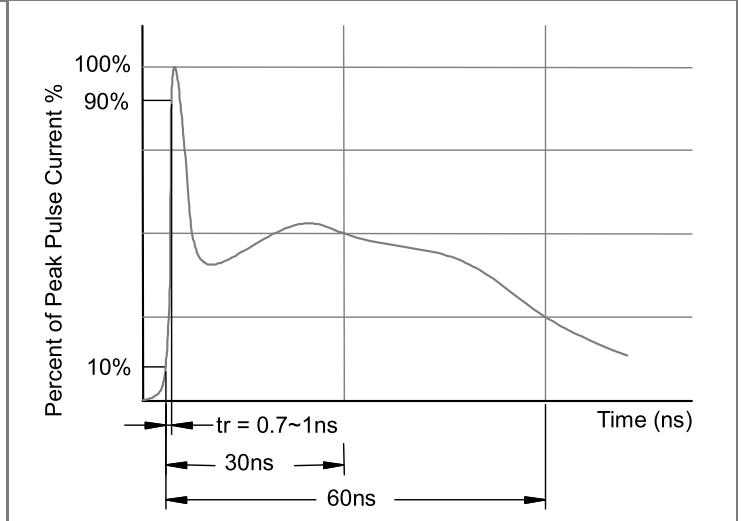
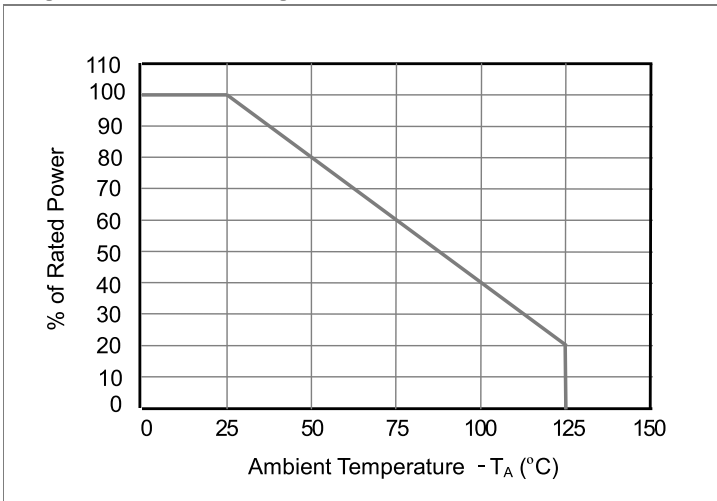


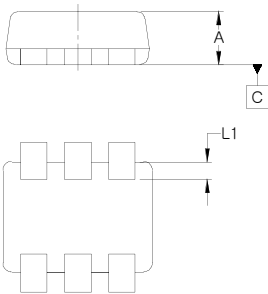
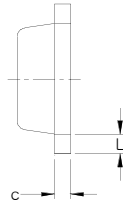
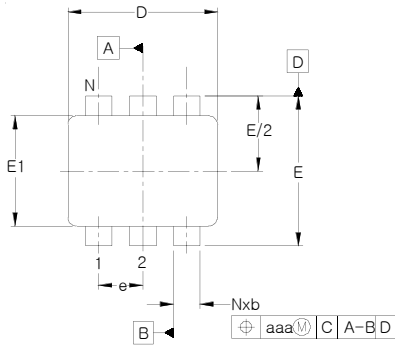
Fig3. Power Derating Curve





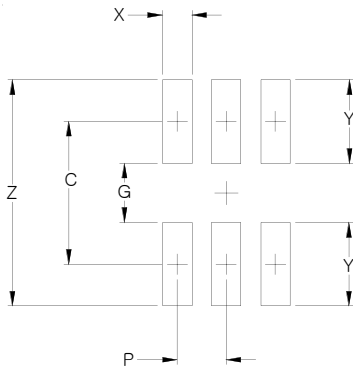
FTVESD0512X6

Outline Drawing - SOT-666



| DIM | INCHES | | | MILLIMETERS | | |
|-----|----------|------|------|-------------|------|------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | .019 | - | .024 | 0.50 | - | 0.60 |
| b | .005 | - | .012 | 0.15 | - | 0.30 |
| c | .003 | - | .007 | 0.10 | - | 0.18 |
| D | .059 | .063 | .067 | 1.50 | 1.60 | 1.70 |
| E | .061 | .063 | .067 | 1.55 | 1.60 | 1.70 |
| E1 | .043 | .047 | .049 | 1.10 | 1.20 | 1.25 |
| e | .020 BSC | | | 0.50 BSC | | |
| L | .003 | .008 | .012 | 0.10 | 0.20 | 0.30 |
| L1 | .003 | .006 | .008 | 0.10 | 0.15 | 0.20 |
| N | 6 | | | 6 | | |
| aaa | .004 | | | 0.10 | | |

Land Pattern -SOT-666



| DIM | DIMENSIONS | |
|-----|------------|-------------|
| | INCHES | MILLIMETERS |
| C | (.057) | (1.45) |
| P | .020 | 0.50 |
| G | .024 | 0.60 |
| X | .012 | 0.30 |
| Y | .033 | 0.85 |
| Z | .090 | 2.30 |