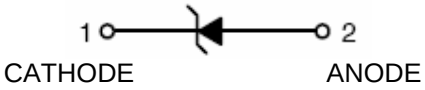
Transient Voltage Suppressors for ESD Protection General Description

The FTV3.3UUL2 is designec to protect voltage sensitive components 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 small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.



SOD882/ULP-2



Applications

- Cellular phones audio
- MP3 players
- Digital cameras
- Portable applicationss
- mobile telephone

Features

- Small Body Outline Dimensions:
  0.039″ x 0.024″(1.0 mm x 0.60 mm)
- Low Body Height: 0.020″ (0.50 mm)
- Stand−off Voltage: 3.3 V − 12 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000−4−2 Level 4 ESD Protection
- These are Pb−Free Devices
- We declare that the material of product compliance with RoHS requirements.

Ordering information

Device	Marking	Shipping
FTV3.3UUL2	E	10000/Tape&Reel

MAXIMUM RATINGS

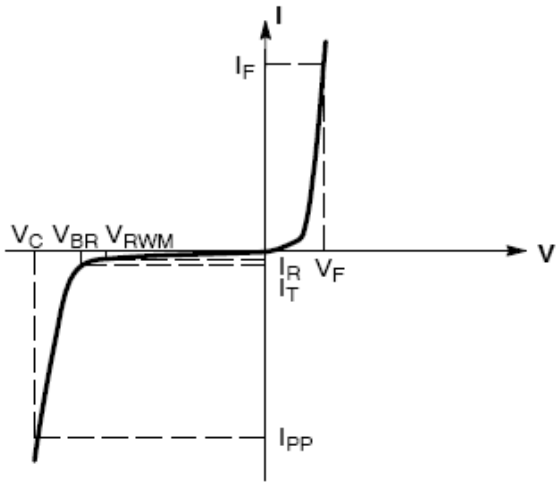
Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air Contact discharge		±15 ±8	kV kV
ESD Voltage Per Human Body Model		16	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T_A=25	PD	150	mW
Junction and Storage Temperature Range	TJ,TSTG	-55 to 150	
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0*0.75*0.62 in.

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
P_{PK}	Peak Power Dissipation
C	Max.Capacitance@VR=0 and f=1MHz



Uni-Directional TVS

ELECTRICAL CHARACTERISTICS (T_A=25 unless otherwise noted, VF=0.9V Max. @ IF=10Ma for all types)

Device	V_{RWM} (V)	I_R (! A) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T ″ mA#	I_{PP} (A) (Note 3)	V_C (V) @ Max I_{PP} (Note 3)	P_{PK} (W) (8*20 μs)	C (pF)
	Max	Max	Min		Max	Max	Typ	Typ
FTV3.3UUL2	3.3	2.5	5.0	1.0	9.8	10.4	102	80
FTV5.0UUL2	5.0	1.0	6.2	1.0	8.7	12.3	107	65
FTV12UUL2	12	1.0	13.3	1.0	5.9	23.7	140	30

1. Other voltage available upon request.
2. V_{BR} is measured with a pulse test current IT at an ambient temperature of 25℃
3. Surge current waveform per Figure 3.

TYPICAL CHARACTERISTICS

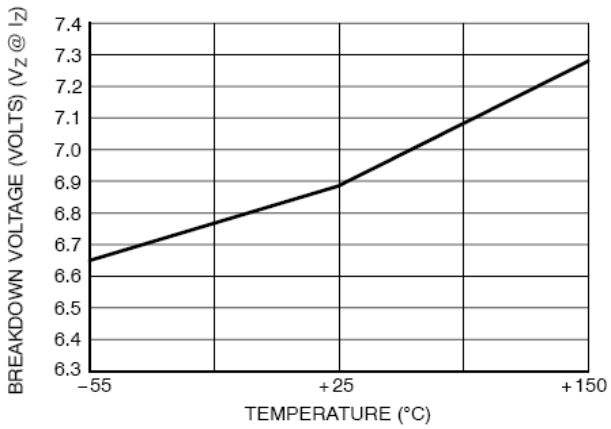


Figure 1. Typical Breakdown Voltage versus Temperature

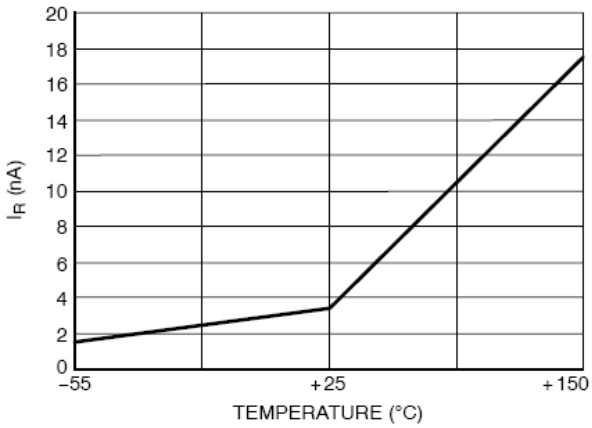


Fig 2. Typical Leakage Current versus Temperature

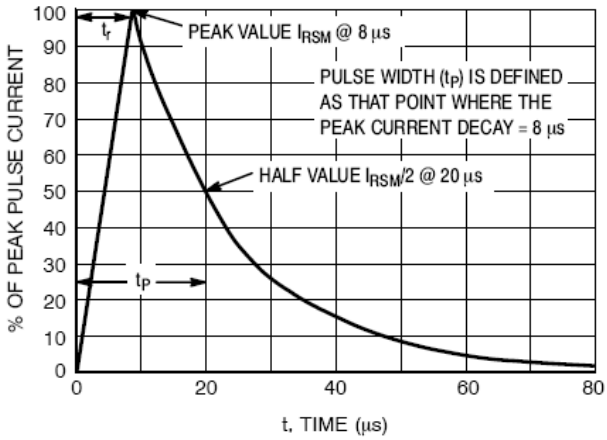


Figure 3. 8*20 µs Pulse Waveform

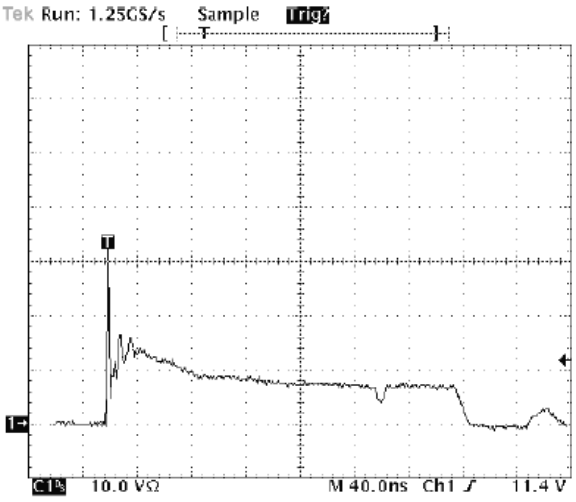


Figure 4. Positive 8kV contact per IEC 61000-4-2-LESD9D5.0T5G

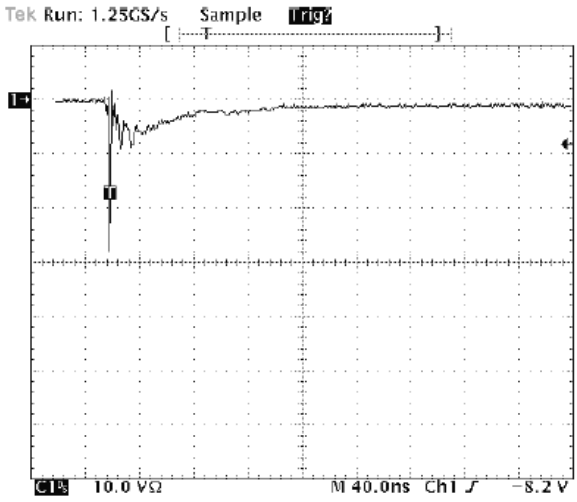


Fig 5. Negative 8kV contact per IEC 61000-4-2-LESD9D5.0T5G

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DIMENSION OUTLINE

Unit:mm

