Transient Voltage Suppressors for ESD Protection

General Description

The FTV3.3UT is designed 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.

SOD-923

We declare that the material of product compliance with RoHS requirements.

Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

PIN 1. CATHODE
2. ANODE

Features

- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 150 Watts @ 8 x 20us Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000−4−2 Level 4 ESD Protection
- IEC61000−4−4 Level 4 EFT Protection

Ordering information

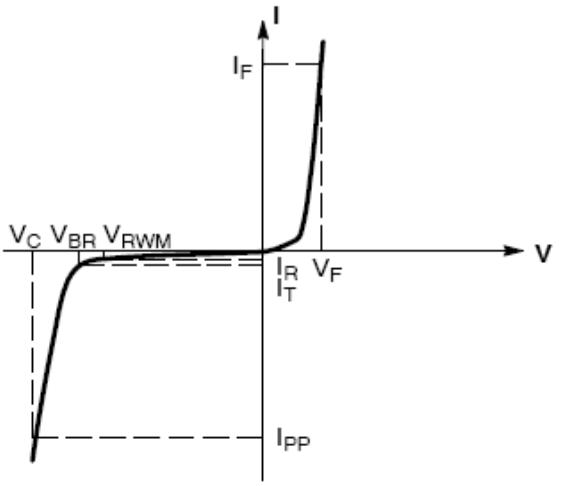
Device	Marking	Shipping
FTV05UT	E	8000/Tape&Reel

Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p= 8/20us)	150	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +155	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±15 ±8	KV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model	16	KV

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



Uni-Directional TVS

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.VF = 0.9V at IF = 10mA

Device	V_{RWM} (V)	I_R (uA) @ 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
FDV3.3UT	3.3	2.5	5.0	1.0	9.8	10.4	102	80
FTV05UT	5.0	1.0	6.2	1.0	8.7	12.3	107	65
FTV12UT	12	1.0	13.5	1.0	5.9	23.7	140	30

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

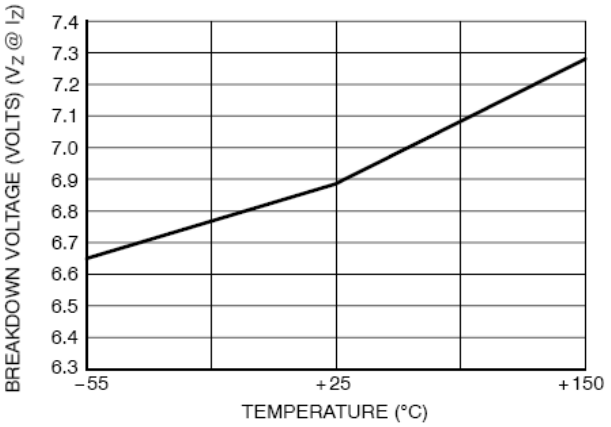


Figure 1. Typical Breakdown Voltage versus Temperature

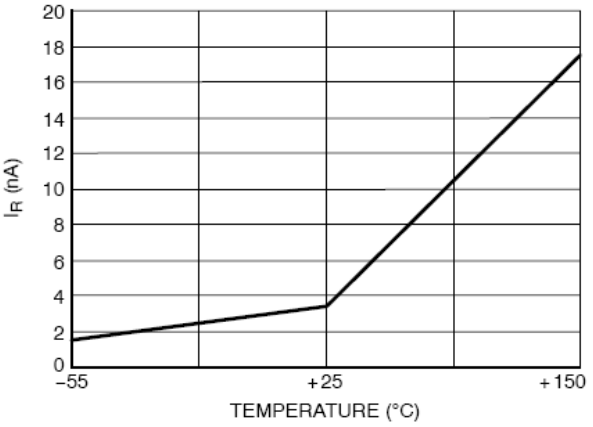


Fig 2. Typical Leakage Current versus Temperature

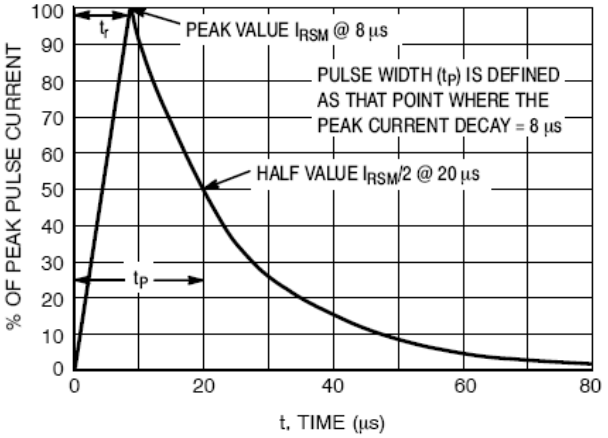


Figure 3. 8*20 µs Pulse Waveform

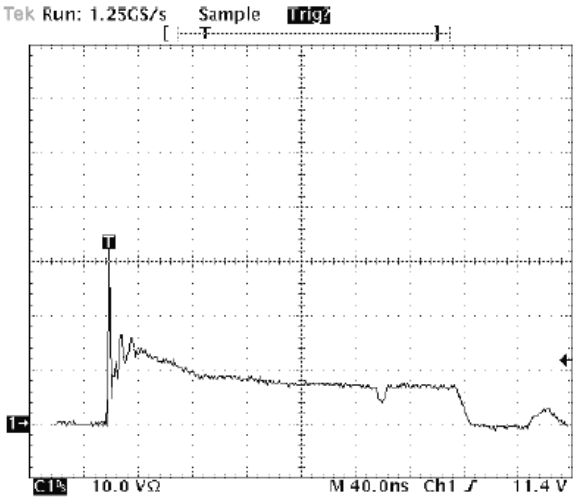


Figure 4. Positive 8kV contact per IEC 61000-4-2-LESD9D5.0T5G

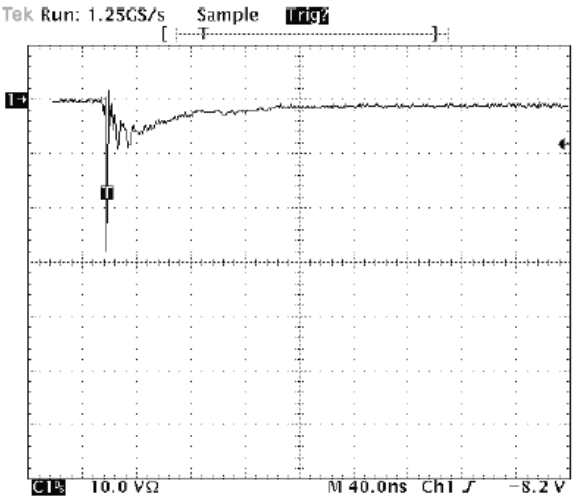
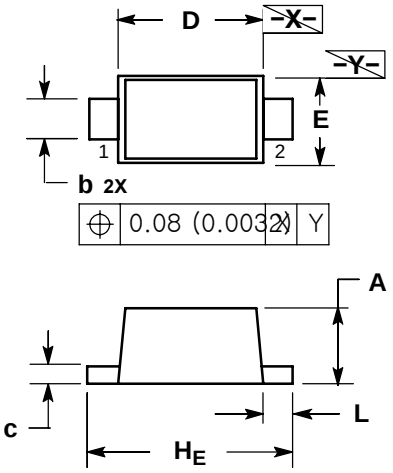


Fig 5. Negative 8kV contact per IEC 61000-4-2-LESD9D5.0T5G

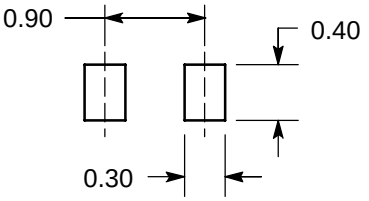
SOD−923



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H_E	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS