

Transient Voltage Suppressors ESD Protection Diodes with Ultra–Low Capacitance

The FTV05LBE is designed to protect voltage sensitive components that require ultra–low capacitance from ESD and transient voltage events. Excellent clamping capability , low capacitance , 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.

SOD–523



● **FEATURES**

- 1)Ultra Low Capacitance 0.5 pF
- 2)Low Clamping Voltage
- 3)Small Body Outline Dimensions
- 4)Stand–off Voltage: 5 V
- 5)Low Leakage
- 6)Response Time is Typically < 1.0 ns
- 7)IEC61000–4–2 Level 4 ESD Protection
- 8)We declare that the material of product compliant with RoHS requirements and Halogen Free.

● **MECHANICAL CHARACTERISTICS:**

CASE: Void- free, transfer- molded, thermosetting plastic Epoxy Meets UL 94 V–0
LEAD FINISH: 100% Matte Sn (Tin)

● **DEVICE MARKING AND RESISTOR VALUES**

Device	Marking	Shipping
FTV05LBE	L5	3000/Tape&Reel

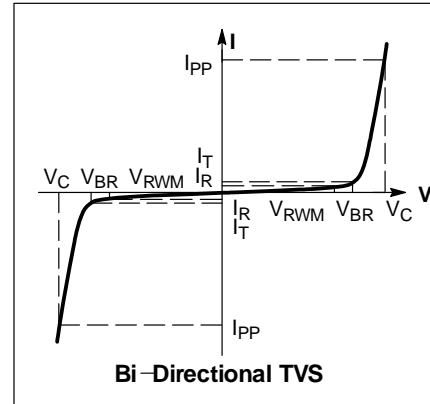
● **MAXIMUM RATINGS(Ta = 25 °C)**

Parameter	Symbol	Limits	Unit
IEC 61000–4–2 (ESD) Contact Air		±8	kV
Total Device Dissipation, FR–5 Board (Note 1) @ _A T= 25°C	P _D	200	mW
Junction Temperature Range	T _J	–55~+125	°C
Storage temperature Range	T _{stg}	–55~+150	°C
Lead Solder Temperature Maximum (10 Second Duration)	T _L	260	°C

1. FR–5 = 1.0 x 0.75 x 0.62 in.

ELECTRICAL CHARACTERISTICS (TA = 25°C C unless otherwise noted)

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}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ $V_R = 0$ and $f = 1.0$ MHz



● ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Device	Device Marking	V_{RWM} (V)	I_R (u A) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T	C (pF)		V_C (V) @ $I_{PP} = 1$ A	VC
		Max	Max	Min	mA	Typ	Max	Max	
FTV05LBE	L5	5	1	5.4	1	0.5	0.9	12.9	Per IEC61000-4-2 Figures 1 and 2 See Below

2. VBR is measured with a pulse test current I_T at an ambient temperature of 25°C.

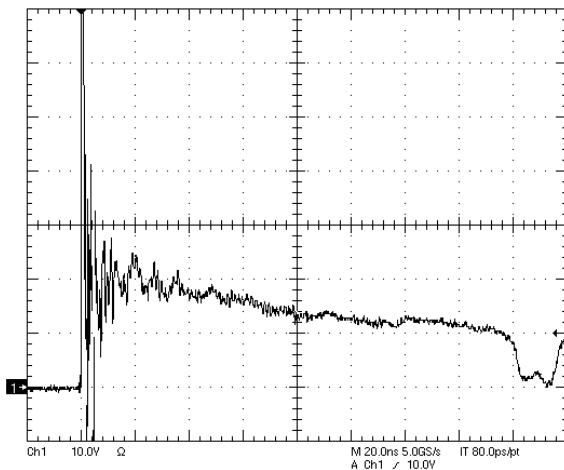


Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

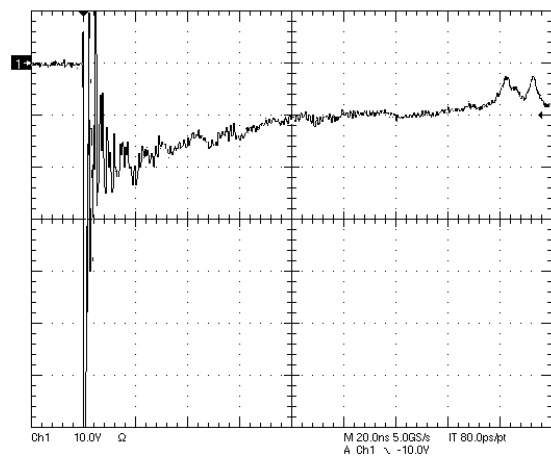


Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

ELECTRICAL CHARACTERISTICS CURVES

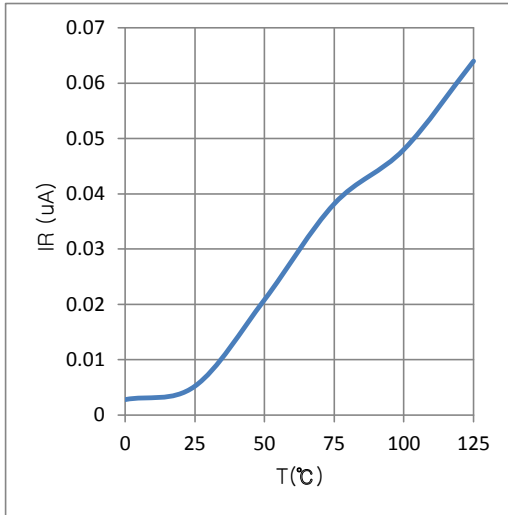


Fig 3. Reverse character

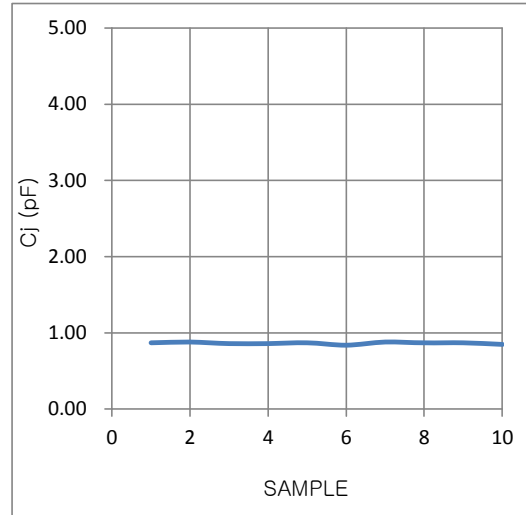
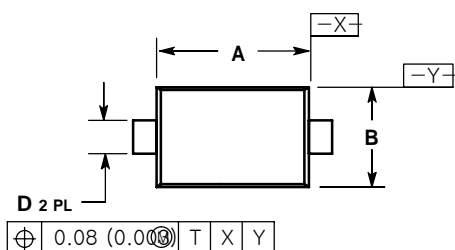


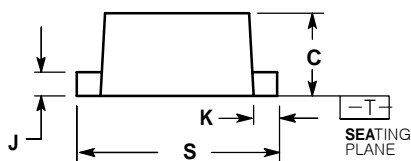
Fig 4. Capacitance character

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

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067



SOLDERING FOOTPRINT*

