



Bi-directional 24V High Capacitance TVS Protector

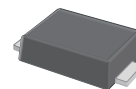
Description

The PTVSHC1TF24VBH transient voltage suppressor is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDA's.

They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, lower operating voltage, lower clamping voltage and no device degradation when compared to MLVs.

The PTVSHC1TF24VBH protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events.

PINNING



MECHANICAL DATA

- Case: SOD-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 15mg / 0.00053oz

Feature

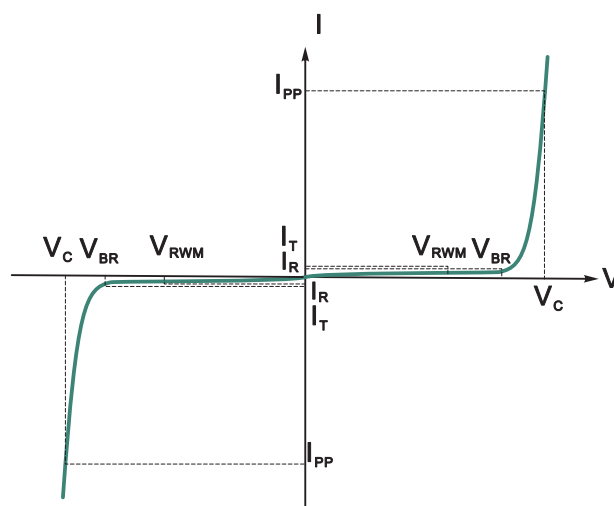
- 6500W Peak pulse power per line (tp = 8/20μs)
- SOD-123FL package
- Response time is typically < 1 ns
- Protect one I/O or power line
- Low clamping Voltage
- RoHS compliant
- Transient protection for data lines to
- IEC 61000-4-2(ESD) ±30KV(air), ±30KV(contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)

Applications

- Cell phone handsets and accessories
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation
- Cordless phones
- Digital cameras
- PeripheralsMP3 players

Electronics Parameter

Parameter	Symbol
Maximum Reverse Peak Pulse Current	I_{PP}
Clamping Voltage @ I_{PP}	V_C
Peak Reverse Working Voltage	V_{RWM}
Reverse Leakage Current @ V_{RWM}	I_R
Breakdown Voltage @ I_T	V_{BR}
Test Current	I_T
Forward Current	I_F
Forward Voltage @ I_F	V_F





Absolute maximum rating@25°C

Rating	Symbol	Value	Unit
Peak Pulse Power(tp=8/20us)	P _{PP}	6500	W
Peak Pulse Current(tp=8/20us)	I _{PP}	185	A
Operating Junction Temperature	T _J	-55 to +150	°C
Storage Temperature	T _{STG}	-55 to +150	°C

Electrical characteristics per line@25°C(unless otherwise specified)

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage ⁽¹⁾	V _{RWM}				24	V
Reverse Breakdown Voltage	V _{BR}	I _T =1mA	26		30	V
Reverse Leakage Current	I _R	V _{RWM} =24V, T _a =25°C			1.0	uA
Clamping Voltage	V _C	I _{PP} =140A, tp=8/20us		33	34	V
Clamping Voltage	V _C	I _{PP} =185A, tp=8/20us		35	38	V
Junction Capacitance	C _j	V _R =0V, f=1HMz		320		pF

NOTE1: V_{RWM} is the maximum reverse working voltage, or reverse stand-off voltage.
ESD can protect signal line properly within its rated voltage.
If the signal line's voltage is over V_{RWM}, ESD will change to other state.

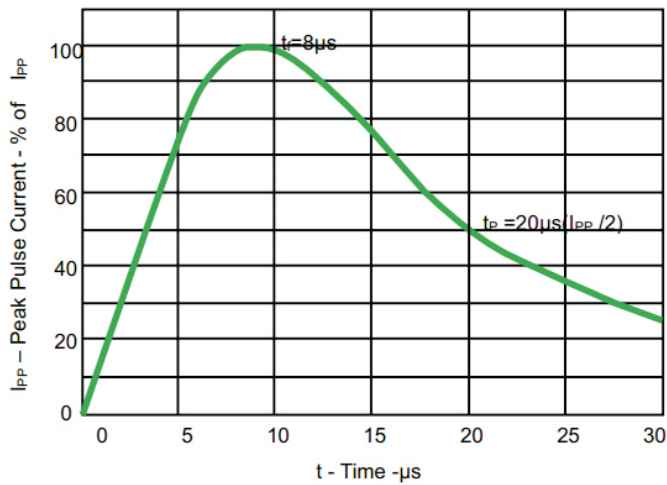


Fig 1. Pulse Waveform

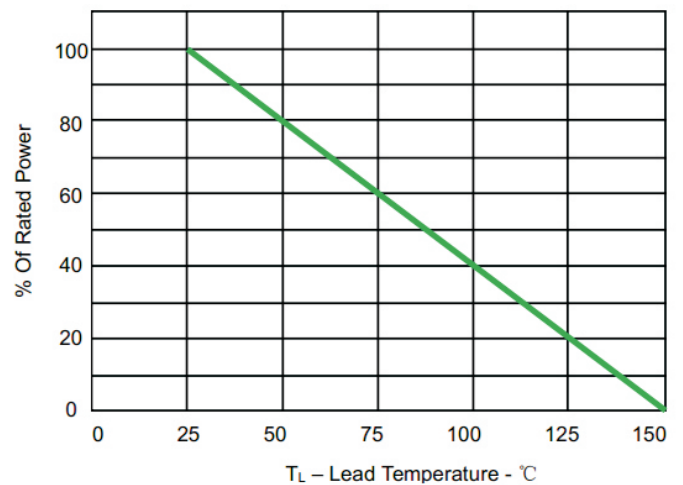


Fig 2. Power Derating Curve

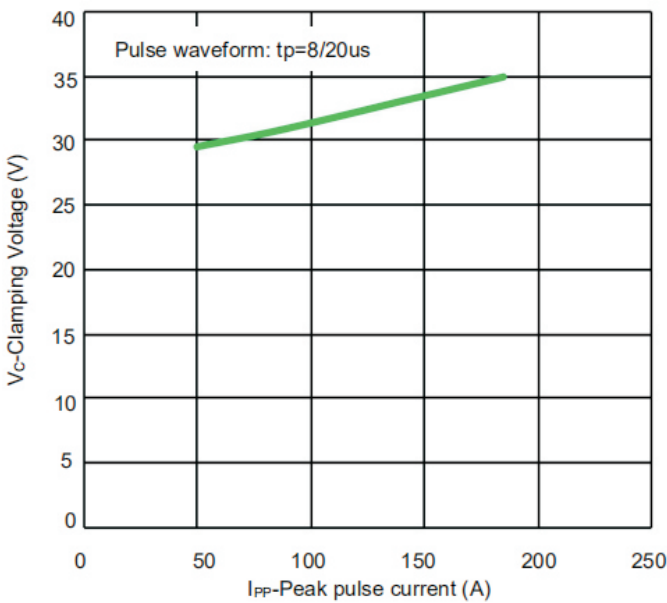


Fig 3. Clamping voltage vs. Peak pulse current

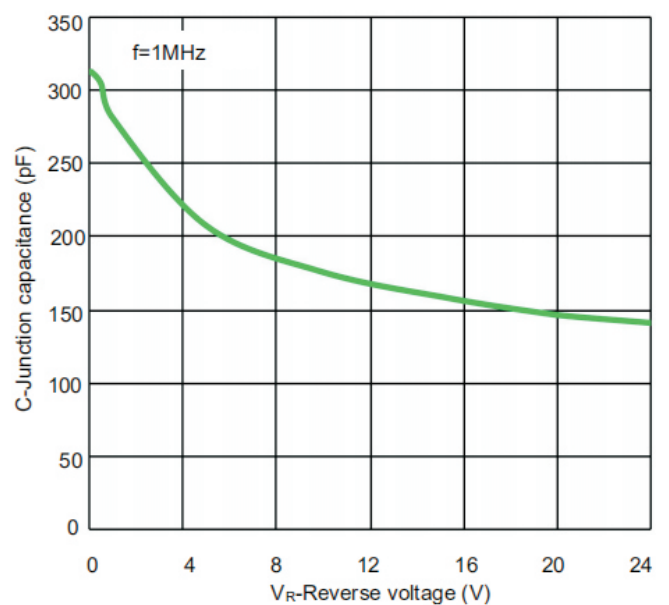


Fig 4. Capacitance vs. Reverse voltage

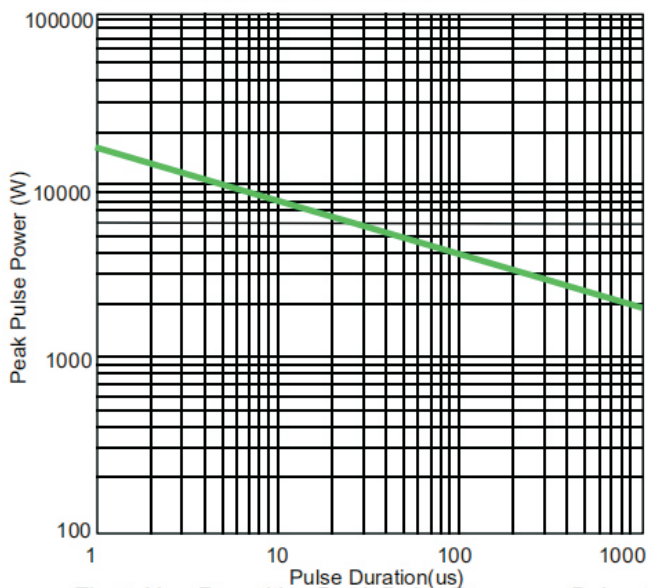


Fig 5. Non Repetitive Peak Pulse Power vs. Pulse time

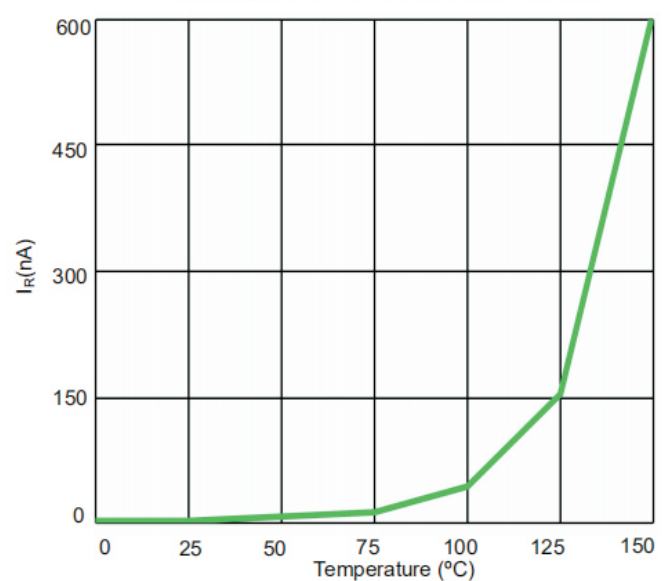


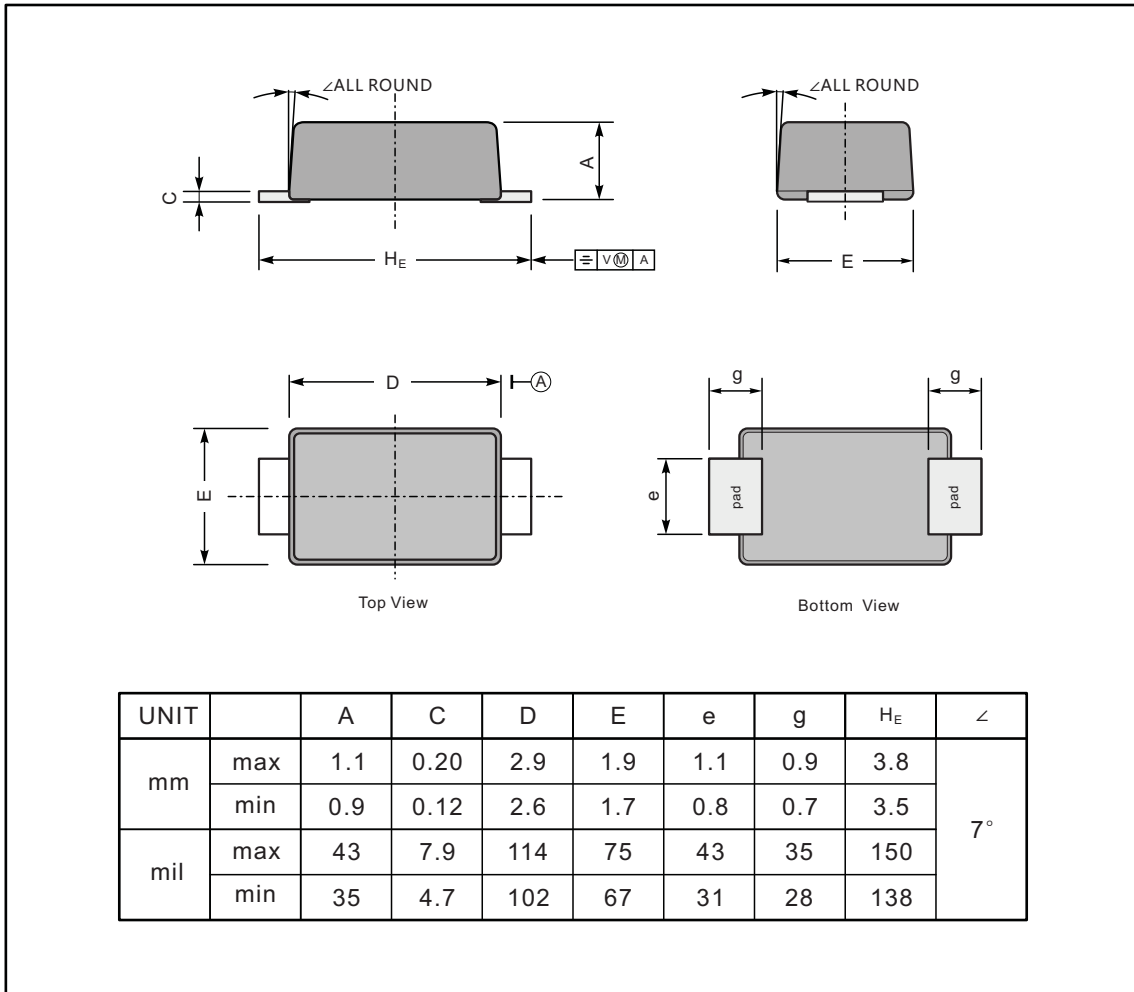
Fig 6. Typical Leakage Current vs. Temperature



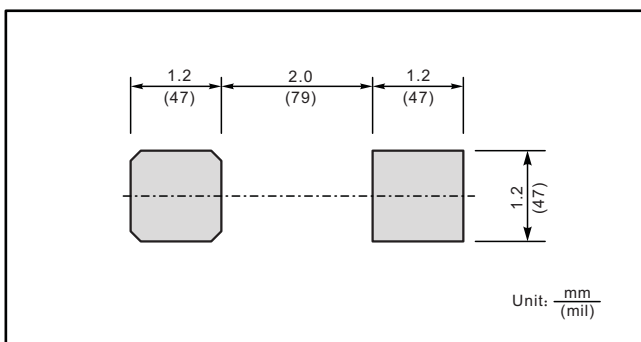
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123FL



The recommended mounting pad size



Marking

Type number	Marking code
PTVSHC1TF24VBH	BZ-V