

1-Line Standard Capacitance Bi-directional TVS Diode

Features

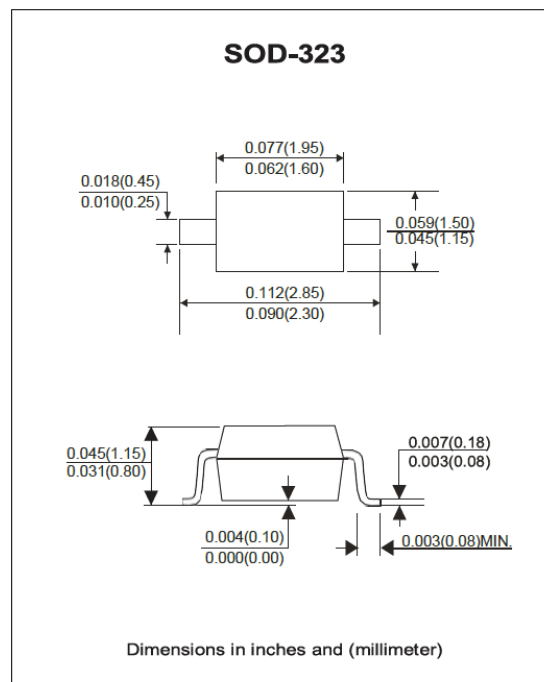
- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact).
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 17A (8/20 μs).
- 450W peak pulse power (8/20 μs).
- Replacement for MLV (0805).
- Protects one power or I/O port.
- Low Clamping Voltage.
- Operating voltage: 15V.

Applications

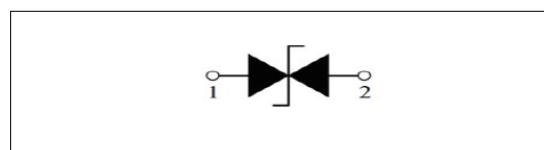
- Laptop Computers.
- Cellular Phones.
- Digital Cameras.
- Personal Digital Assistant.

Mechanical Characteristics

- Package: Molded JEDEC SOD-323.
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- RoHS Compliant



Circuit Diagram

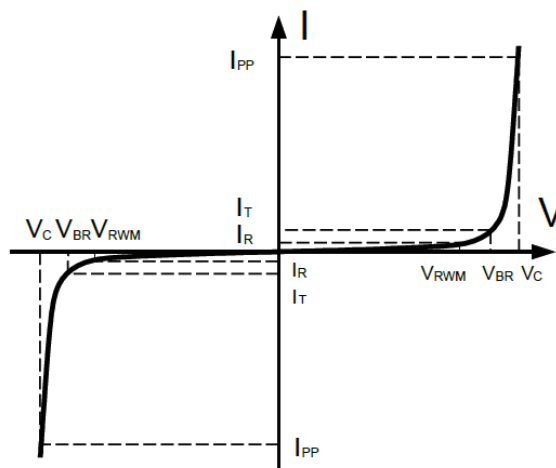


Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	450	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	17	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	KV
Operating Temperature Range	T_J	-55 to 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$

Electrical Parameters ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Electrical Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				15	V
Reverse breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	16.7			V
Reverse leakage current	I_R	$V_{RWM} = 15\text{V}$			0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$		19.5		V
Clamping Voltage	V_C	$I_{PP} = 17\text{A}, t_p = 8/20\mu\text{s}$			26.8	V
Junction capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$		65		pF

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

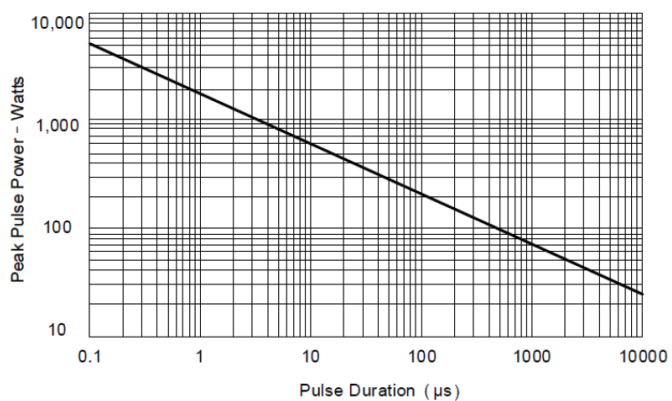


Fig 1. Peak Pulse Power vs. Pulse Time

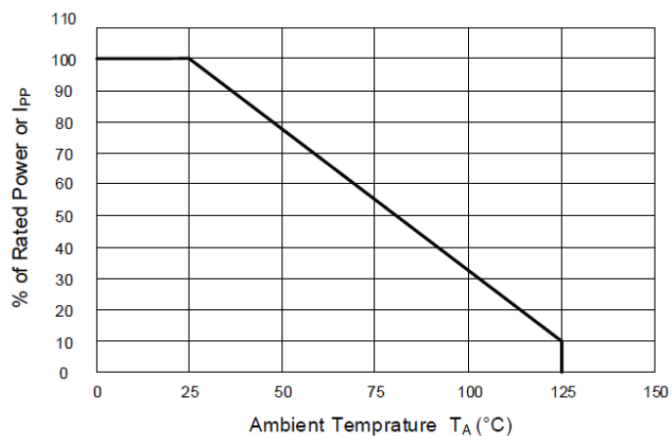


Fig 2. Power Derating Curve

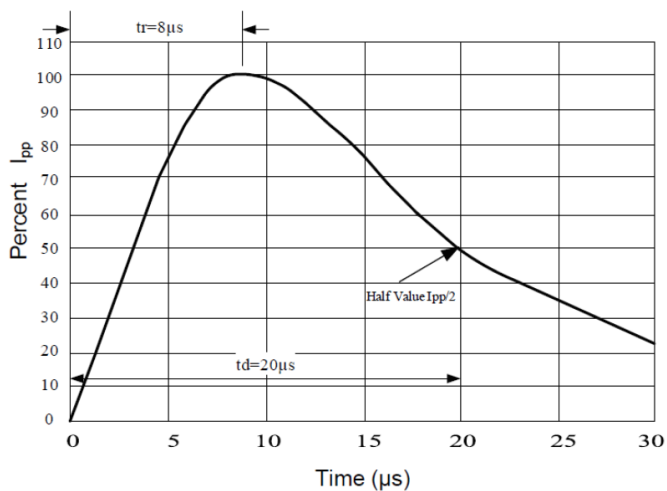


Fig 3. 8x20µs Pulse Waveform

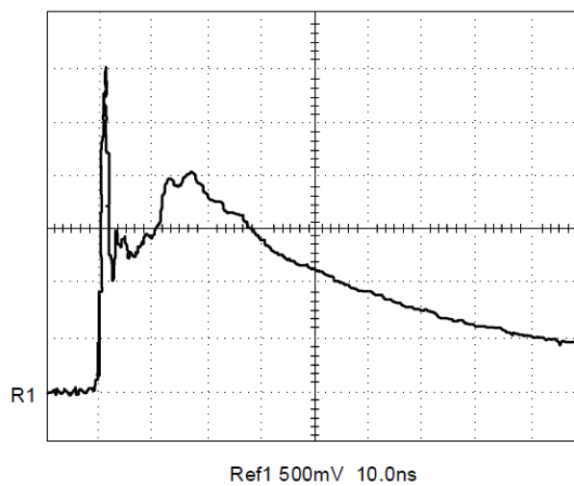
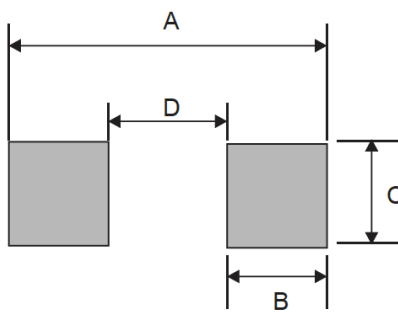


Fig 4. ESD Clamping Voltage Per IEC 61000-4-2

Suggested PAD Layout

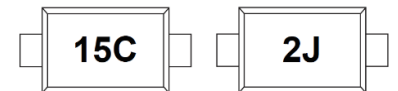
Symbol	SOD-323	
	(mm)	(inch)
A	2.85	0.112
B	0.63	0.025
C	0.83	0.033
D	1.60	0.063



The diagram illustrates the suggested pad layout for the SOD-323 package. It shows two rectangular pads. Dimension A is the total width between the inner edges of the pads. Dimension B is the width of the right pad. Dimension C is the height of the pads. Dimension D is the distance between the inner edges of the pads.

Marking Code

Part Number	Marking Code
SC15F1BST	15C or 2J



The diagram shows two marking code examples: '15C' and '2J'. Each code is enclosed in a rectangular frame with small tabs on the left and right sides, representing the marking area on the package.

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SC15F1BST	SOD-323	3,000	7	Tape and reel