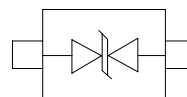


1-Line Bi-directional TVS Diode

Description

The BTSCXXVD323BL is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers and PDA's, using monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting sensitive semiconductor components from damage. The BTSCXXVD323BL complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. The BTSCXXVD323BL is assembled into a lead-free SOD-323 package and will protect one bidirectional line.

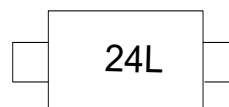


SOD-323

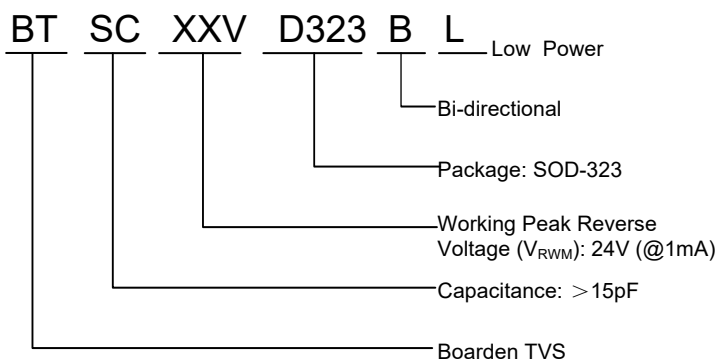
Features

- 300W peak pulse power (8/20 μs)
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 24V
- Ultra low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
- RoHS Compliant

Marking Information



Part Numbering System



Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals
- Pagers Peripherals
- Desktop and Servers

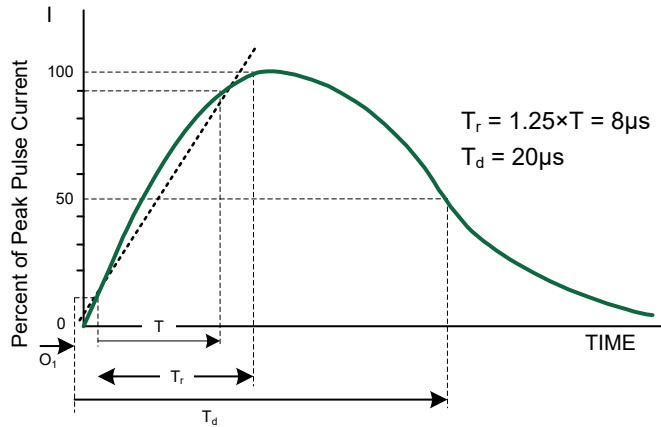
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	300	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 30 ± 30	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

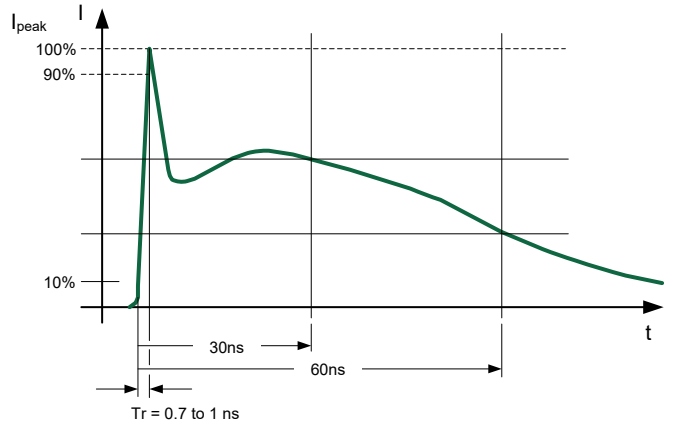
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

BTSC24VD323BL						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			24	V	
Breakdown Voltage	VBR	27			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			0.2	μA	$V_{RWM} = 24\text{V}$
Clamping Voltage	VC			40	V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	VC			60	V	$I_{PP} = 5\text{A}$ (8 x 20 μs pulse)
Peak Pulse Current	I _{PP}			5	A	$t_p = 8/20\mu\text{s}$
Junction Capacitance	C _J		15		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

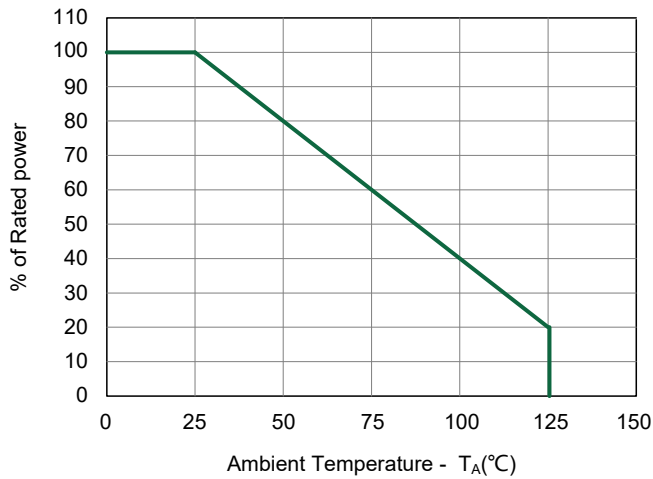
Typical characteristics ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)



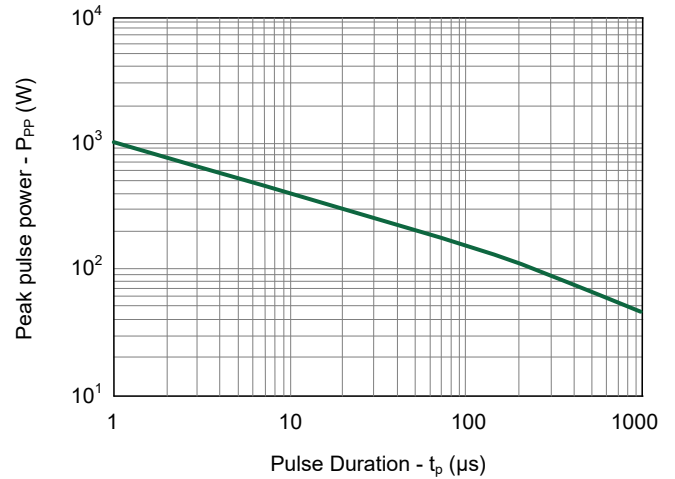
8/20µs Waveform per IEC61000-4-5



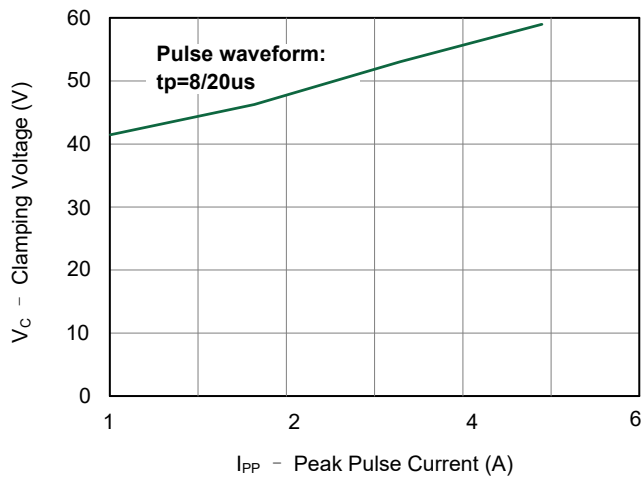
ESD Waveform per IEC61000-4-2



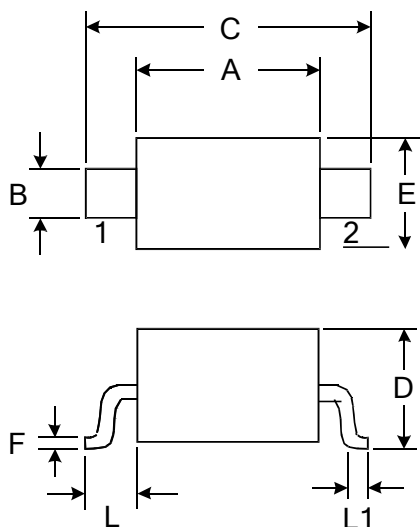
Power Derating vs. Ambient Temperature



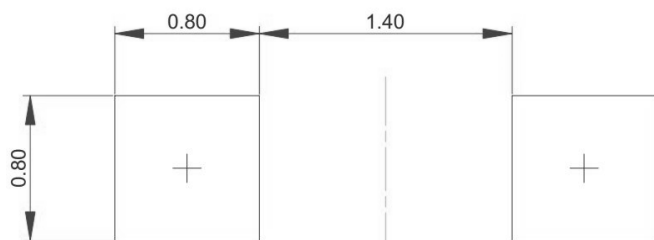
Non-repetitive Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

SOD-323 Package Outline Drawing


SYMBOL	DIMENSIONS			
	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D		1.150		0.043
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475 REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Suggested Land Pattern

Unit: mm
Ordering Information

Part Number	Packaging	Reel Size
BTSCXXVD323B	3000/Tape & Reel	7 inch