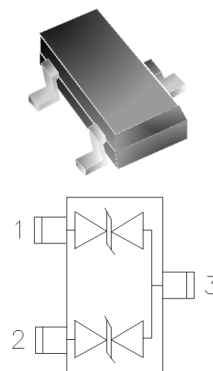


2-Line Bi-directional TVS Diode Array

Description

The BTSCXXVT23B is a bi-directional TVS diode array, utilizing leading monolithic silicon technology to provide fast re-response time and low ESD clamping voltage, making this device an ideal solution for protecting sensitive semiconductor components from damage. The BTSCXXVT23B complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a lead-free SOT-23 package. It is designed to protect components which are connected to data and transmission lines from voltage surges.



SOT-23

Features

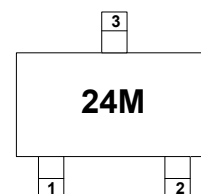
- 300W peak pulse power (8/20 μs)
- Protects two bi-directional lines
- Ultra low leakage: nA level
- Operating voltage: 24V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test

Air discharge: $\pm 30\text{kV}$

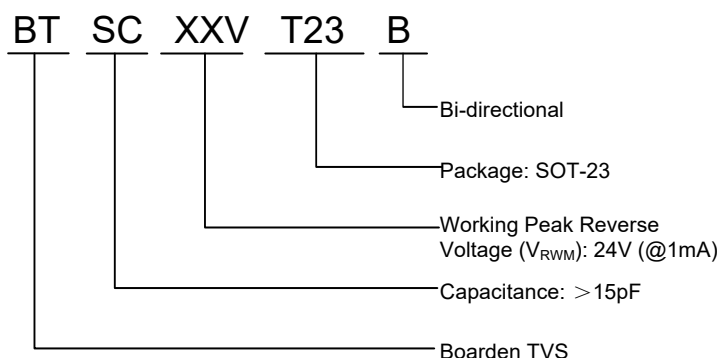
Contact discharge: $\pm 30\text{kV}$

- RoHS Compliant

Marking Information



Part Numbering System



Applications

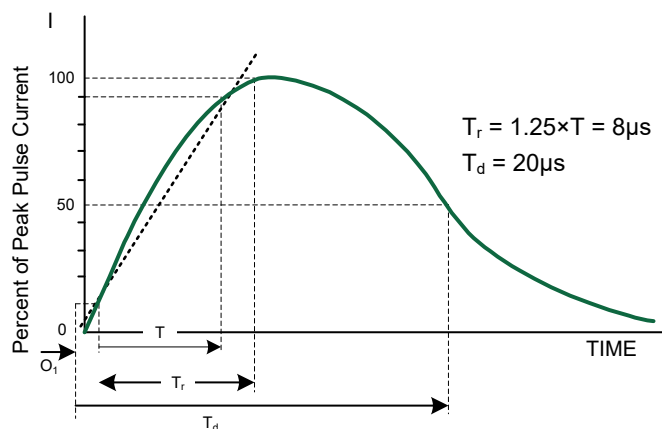
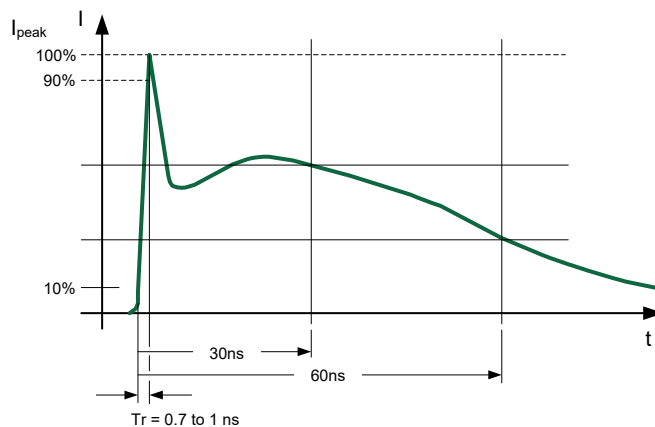
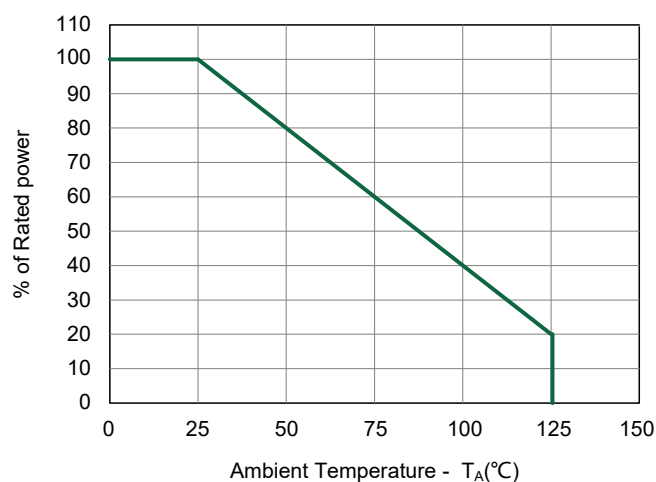
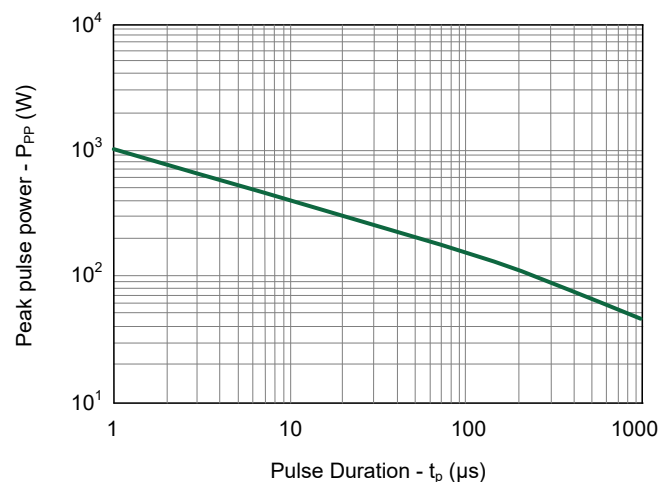
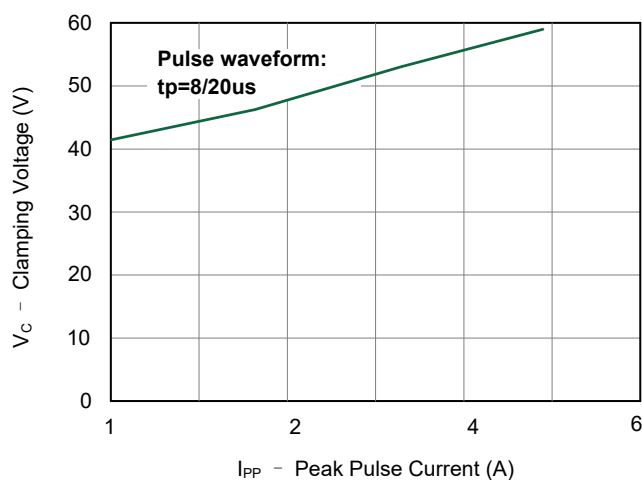
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

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

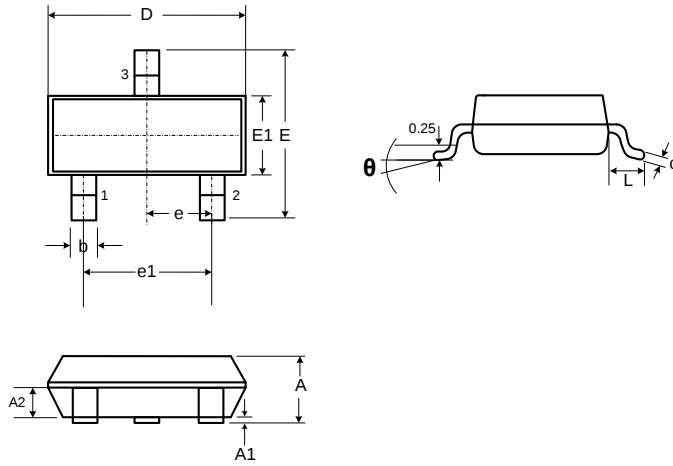
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	300	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 30 ± 30	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

BTSC24VT23B						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			24	V	
Breakdown Voltage	VBR	27			V	IT = 1mA
Reverse Leakage Current	IR			0.2	μA	VRWM = 24V
Clamping Voltage	VC			40	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	VC			60	V	I _{PP} = 5A (8 x 20 μs pulse)
Peak Pulse Current	I _{PP}			5	A	t _p = 8/20 μs
Junction Capacitance	CJ		15	30	pF	VR = 0V, f = 1MHz, Pin 1 to Pin 3 or Pin 2 to Pin 3

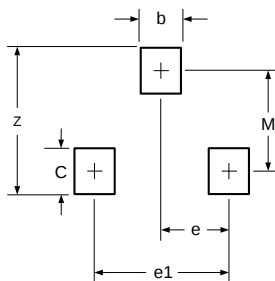
Typical characteristics ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise noted)

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

SOT-23 Package Outline Drawing



SYMBOL	DIMENSIONS			
	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
A2	0.60	0.70	0.0236	0.0275
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.05	0.110	0.120
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.30	0.50	0.012	0.020
θ	0	8°	0	8°

Suggested Land Pattern



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.0795	2.02
C	0.0315	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.0315	0.80

Ordering Information

Part Number	Packaging	Reel Size
BTSCXXVT23B	3000/Tape & Reel	7 inch