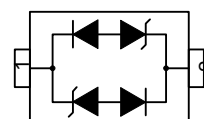
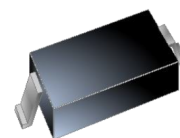


1-Line Ultra Low Capacitance Bi-directional TVS Diode

Description

The BTUC05VD323B is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The BTUC05VD323B has an ultra-low capacitance with a typical value at 1pF, and 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 SOD-323 lead-free package. The small size, ultra-low capacitance and high ESD surge protection make BTUC05VD323B an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

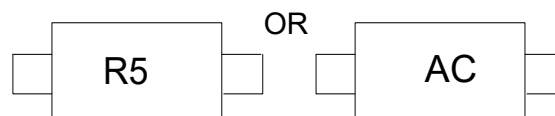


SOD-323

Features

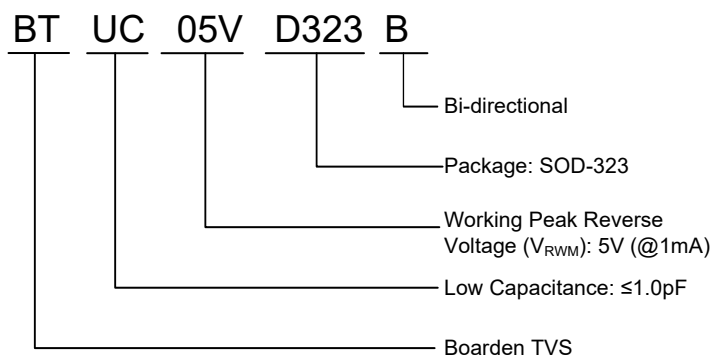
- Ultra low capacitance: 1pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 18A (8/20 μs)
- RoHS Compliant

Marking Information



Device Marking Code

Part Numbering System



Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports
- Ethernet 10/100/1000 Base T

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

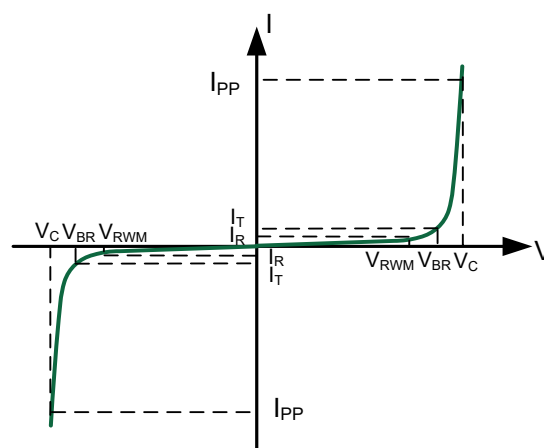
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	350	W
Peak Pulse Current (8/20 μs)	I _{PP}	18	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^\circ\text{C}$

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

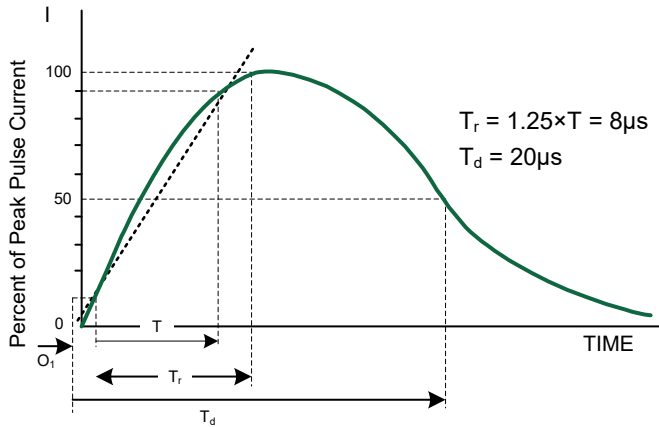
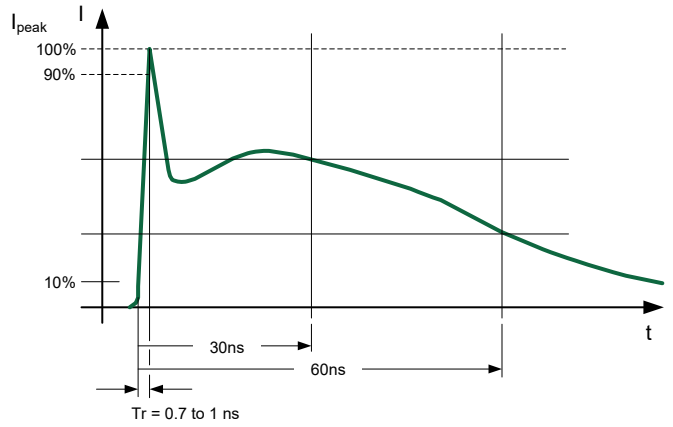
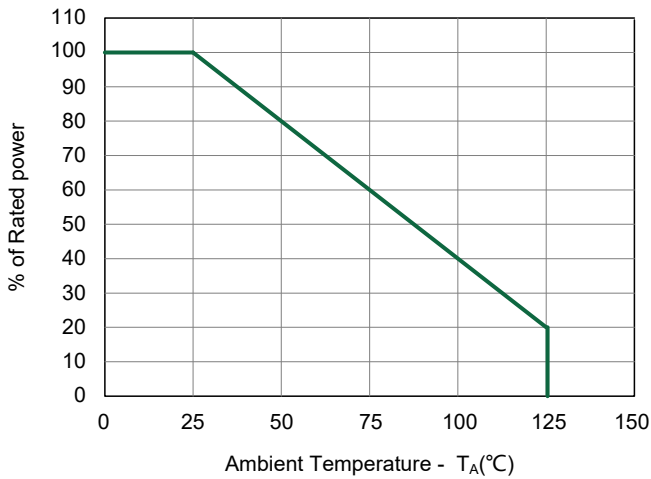
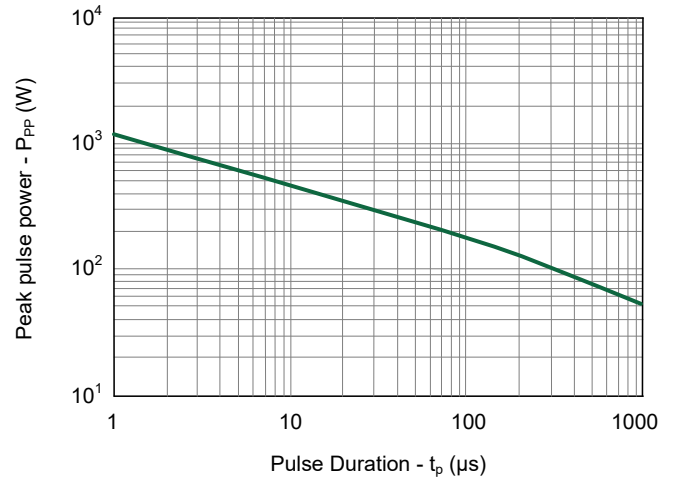
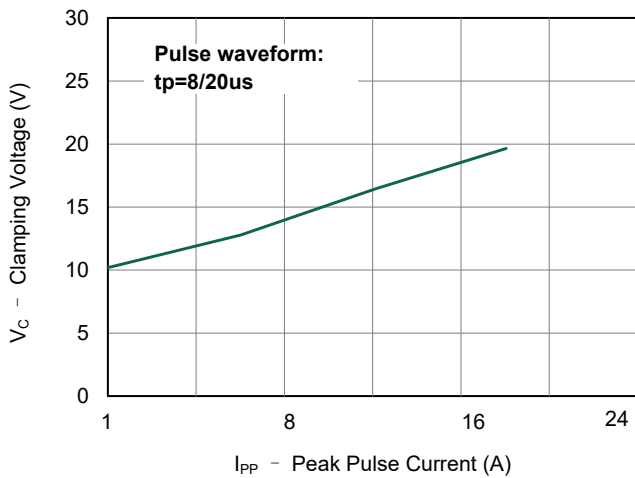
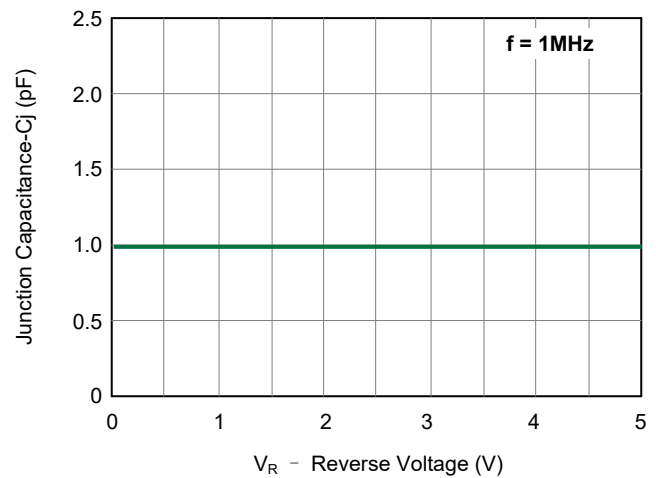
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 5V
Clamping Voltage	V _C			10	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	V _C			20	V	I _{PP} = 18A (8 x 20 μs pulse)
Junction Capacitance	C _J		1		pF	V _R = 0V, f = 1MHz

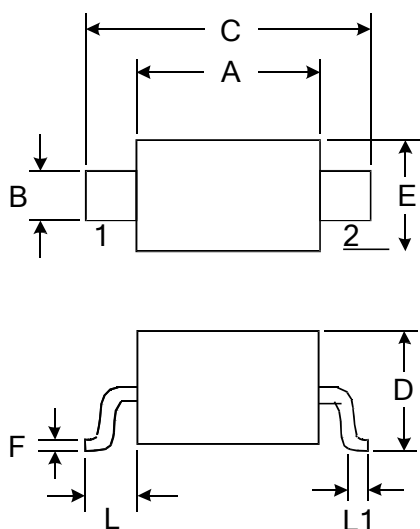
IV Curve Characteristics

Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
I _R	Maximum Reverse Leakage Current @ V _{RWM}
V _{BR}	Breakdown Voltage @ I _T
I _T	Test Current
V _C	Clamping Voltage @ I _{PP}
I _{PP}	Maximum Reverse Peak Pulse Current

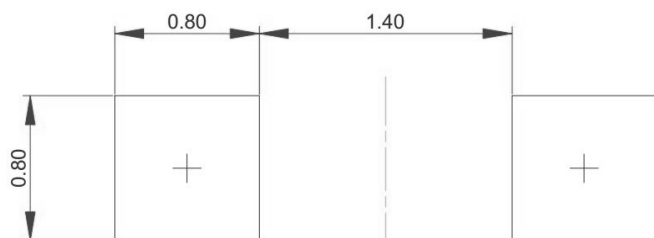


Bi-Directional TVS

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

Junction Capacitance vs. Reverse Voltage

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
BTUC05VD323B	3000/Tape & Reel	7 inch