

Bidirectional TVS Diodes

Description

The ESD3ZxxC Series is designed for applications requiring transient over voltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

This series has been specifically designed to protect sensitive components which are connected to power, data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE(Cable Discharge Events), and EFT (electrical fast transients).

Features

- ♦IEC61000-4-2(ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ♦IEC61000-4-4(EFT) 40A(5/50ns)
- ♦350Watts Peak Pulse Power per (tp=8/20us)
- ♦Protects one I/O line(unidirectional)
- ♦Low clamping voltage
- ♦Working voltages:
3.3V, 5V, 8V, 12V, 15V, 18V, 20V, 24V, 36V
- ♦Low leakage current

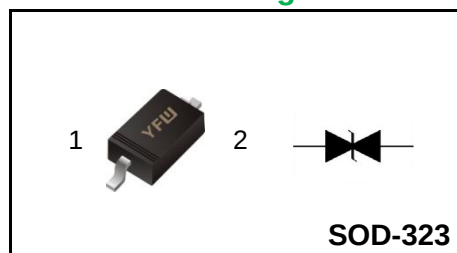
Mechanical Data

- ♦SOD-323 Package
- ♦Flammability Rating: UL 94V-0
- ♦High temperature soldering guaranteed: 260°C/10s

Applications

- ♦Cell Phone Handsets and Accessories
- ♦Microprocessor based equipment
- ♦Personal Digital Assistants(PDA's)
- ♦Notebooks, Desktops, and Servers
- ♦Portable Instrumentation
- ♦Networking and Telecom
- ♦Serial and Parallel Ports
- ♦Peripherals

Pinning



ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air) ESD per IEC61000-4-2(Contact)	V_{ESD}	± 30	kV
Peak Pulse Power (8/20us)	P_{PP}	350	W
Operating temperature	T_{OPT}	-55-+150	°C
Storage temperature range	T_{STG}	-55-+150	°C
Lead Soldering temperature	T_L	260(10 sec.)	°C

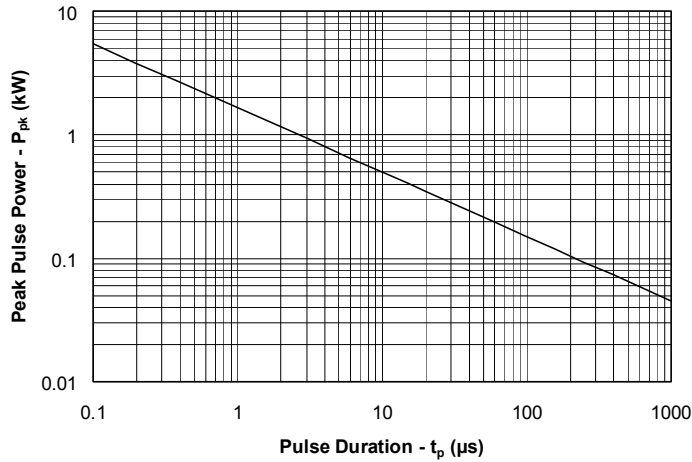
Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

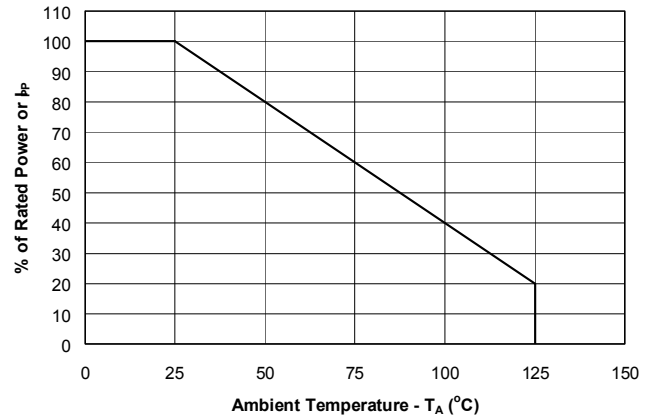
PART NUMBER	DEVICE MARKING	VRWM (V) (max.)	VB (V) (min.)	IT (mA)	Vc@1A (V) (max.)	Vc (V) (max.) (@A)		IR (uA) (max.)	CT (pF) (max.)
ESD3Z3.3C	2M	3.3	4	1	7.5	13	20	40	15
ESD3Z5.0C	3M	5	6	1	9.8	18	17	10	200
ESD3Z8.0C	2C	8	8.5	1	13.4	24	15	2	120
ESD3Z12C	2D	12	13.3	1	19	32	11	1	75
ESD3Z15C	2J	15	16.7	1	24	38	10	1	68
ESD3Z18C	2K	18	20	1	29	45	9	1	57
ESD3Z20C	2L	20	22.3	1	35	50	8	1	52
ESD3Z24C	2H	24	26.7	1	43	52	7	1	50
ESD3Z36C	2N	36	40	1	60	75	5	1	35

ELECTRICAL CHARACTERISTICS CURVE

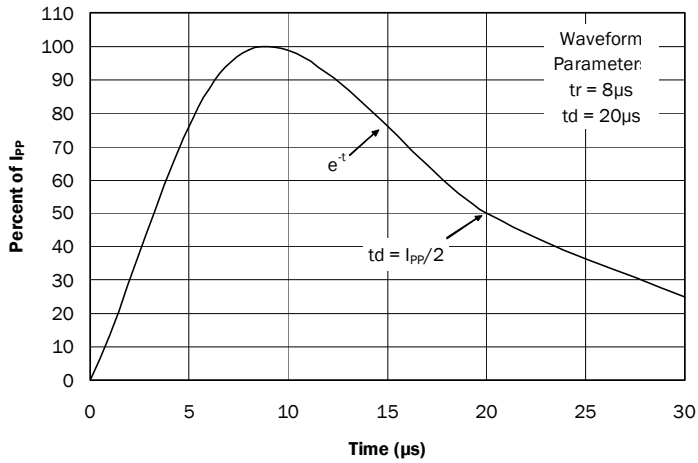
Non-Repetitive Peak Pulse Power vs. Pulse Time



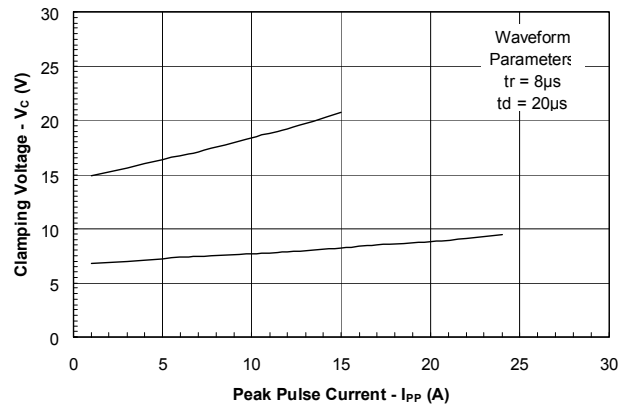
Power Derating Curve



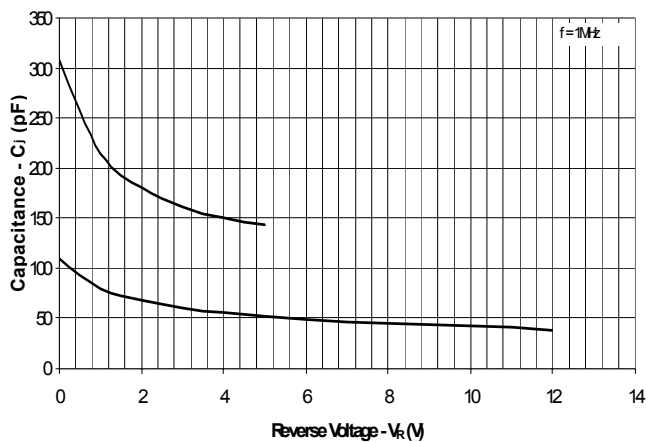
Pulse Waveform



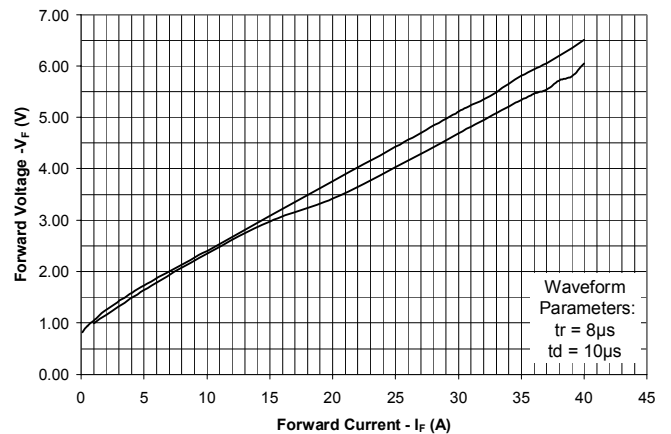
Clamping Voltage vs. Peak Pulse Current



Capacitance vs. Reverse Voltage



Forward Voltage vs. Forward Current



Ordering information

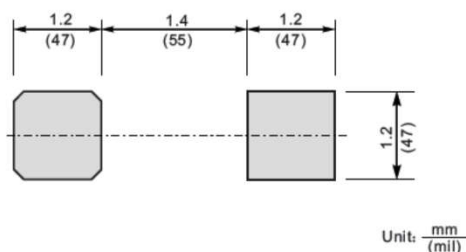
Package	Packing Description	Packing Quantity
SOD-323	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOD-323

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
C	0.08	0.15	3.1	5.9
D	1.2	1.4	47	55
E	1.4	1.8	63	70
E1	2.55	2.75	100	108
b	0.25	0.4	9.8	16
L1	0.2	0.45	7.9	16
A1	-	0.2	-	8
∠	9°			

The recommended mounting pad size



Disclaimer

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