

Bidirectional TVS Diodes

Description

The ESD3Zxx 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.

Features

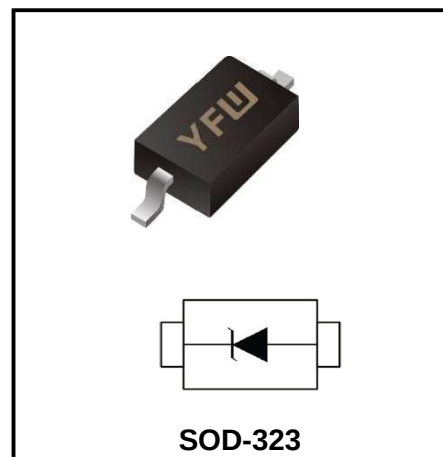
- ♦IEC61000-4-2(ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- ♦IEC61000-4-4(EFT) 40A(5/50ns)
- ♦350Watts Peak Pulse Power per (tp=8/20us)
- ♦Protects one I/O line(unidirectional)
- ♦Low clamping voltage
- ♦Working voltages: 3.3V to 36V
- ♦Low leakage current

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



ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air)	V_{ESD}	± 30	kV
ESD per IEC61000-4-2(Contact)			
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

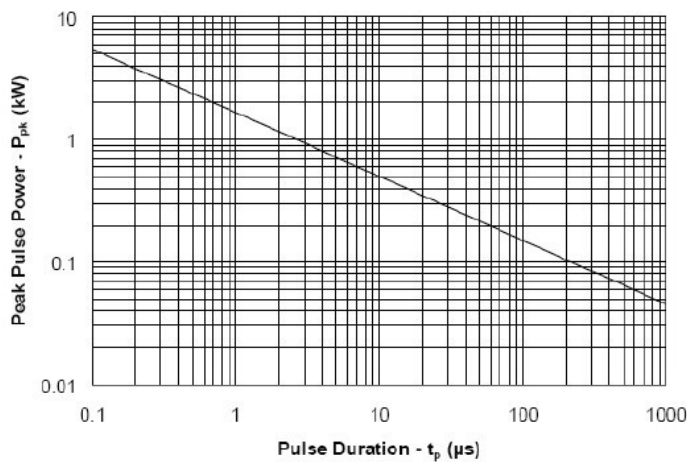
Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

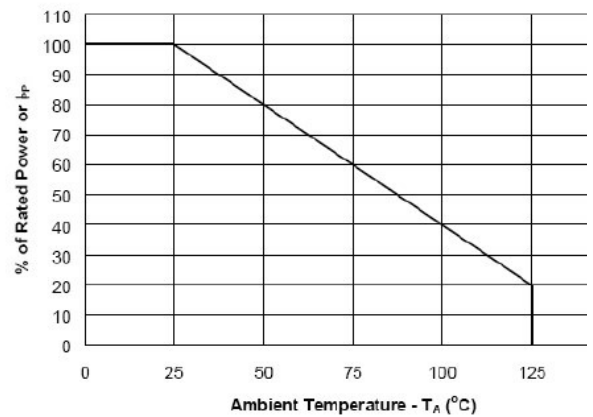
PART NUMBER	DEVICE MARKING	VRWM (V) (max.)	VB (V) (min.)	IT (mA)	Vc@1A (V) (max.)	Vc (V) (max.) (@A)		IR (uA) (max.)	CT (pF) (max.)
ESD3Z03	03W	3.3	4	1	6.5	14	20	40	450
ESD3Z05	05W	5	6	1	9.8	18	17	10	300
ESD3Z12	12W	12	13.3	1	19	32	11	1	130
ESD3Z15	15W	15	16.7	1	24	38	10	1	120
ESD3Z18	18W	18	20.0	1	29	45	9	1	100
ESD3Z20	20W	20	22.3	1	35	50	8	1	90
ESD3Z24	24W	24	26.7	1	43	52	7	1	80
ESD3Z36	36W	36	40.0	1	60	75	5	1	60

ELECTRICAL CHARACTERISTICS CURVE

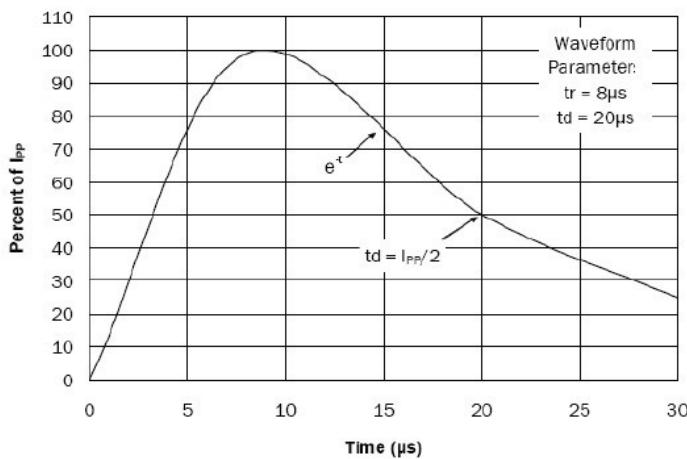
Non-Repetitive Peak Pulse Power vs. Pulse Time



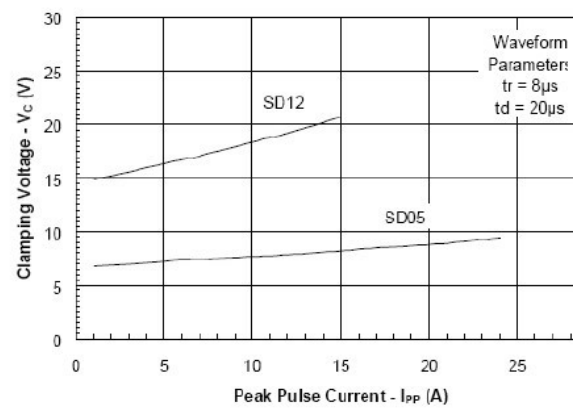
Power Derating Curve



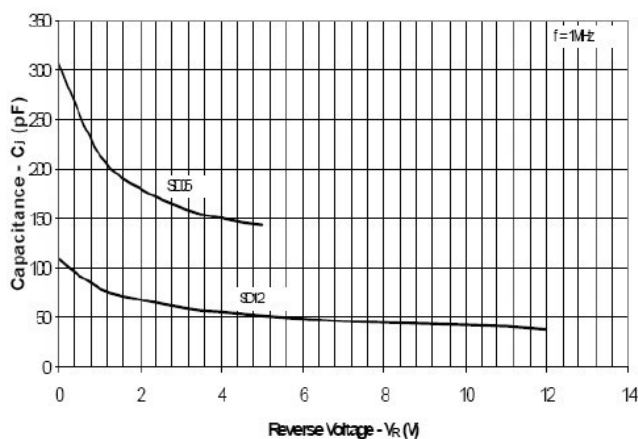
Pulse Waveform



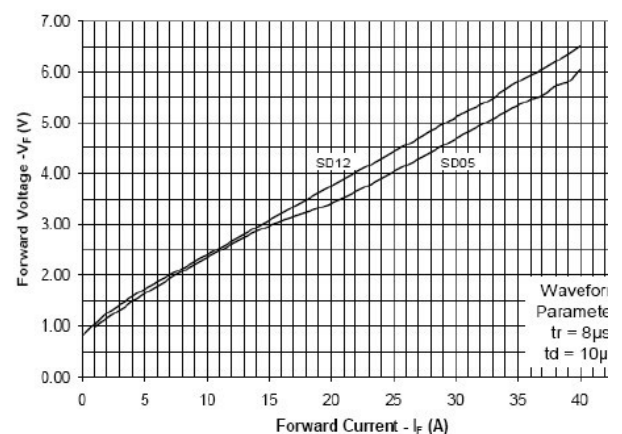
Clamping Voltage vs. Peak Pulse Current



Capacitance vs. Reverse Voltage

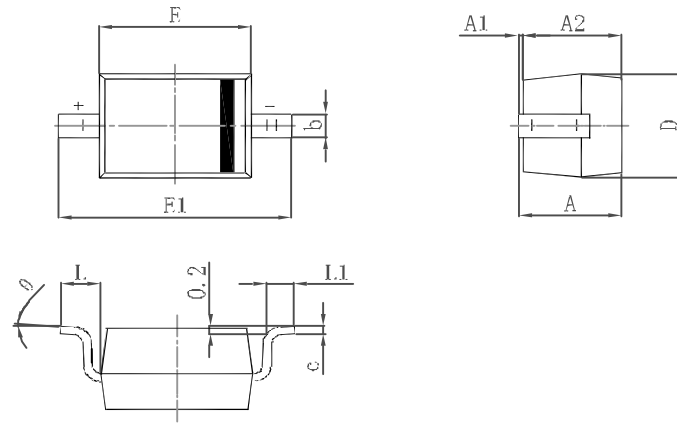


Forward Voltage vs. Forward Current



Package Outline

SOD-323



Symbol	Min.(mm)	Max.(mm)
A		1.000
A1	0.000	0.100
A2	0.800	0.900
b	0.250	0.350
c	0.080	0.150
D	1.200	1.400
E	1.600	1.800
E1	2.500	2.700
L	0.475REF	
L1	0.250	0.400

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOD-323	Tape/Reel, 7" reel	3 000	EIA-481-1