

**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**

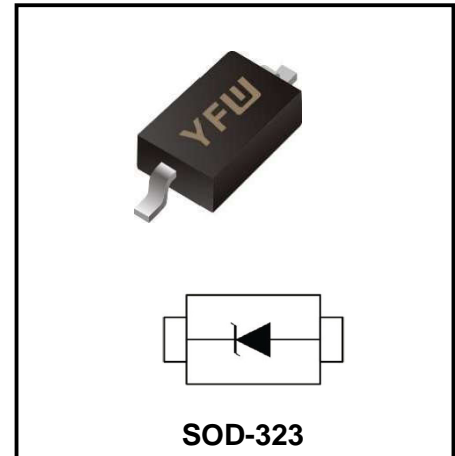
- ◆IEC61000-4-2(ESD) ±15kV(air), ±8kV(contact)
- ◆IEC61000-4-4(EFT) 40A(5/50ns)
- ◆350Watts Peak Pulse Power per (tp=8/20us)
- ◆Protects one I/O line(unidirectional)
- ◆Low clamping voltage
- ◆Working voltages: 3.3V to 36V
- ◆Low leakage current

**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 <sub>ESD</sub>	±30	kV
ESD per IEC61000-4-2(Contact)			
Peak Pulse Power (8/20us)	P <sub>PP</sub>	350	W
Operating temperature	T <sub>OPT</sub>	-55-+150	°C
Storage temperature range	T <sub>STG</sub>	-55-+150	°C
Lead Soldering temperature	T <sub>L</sub>	260(10 sec.)	°C

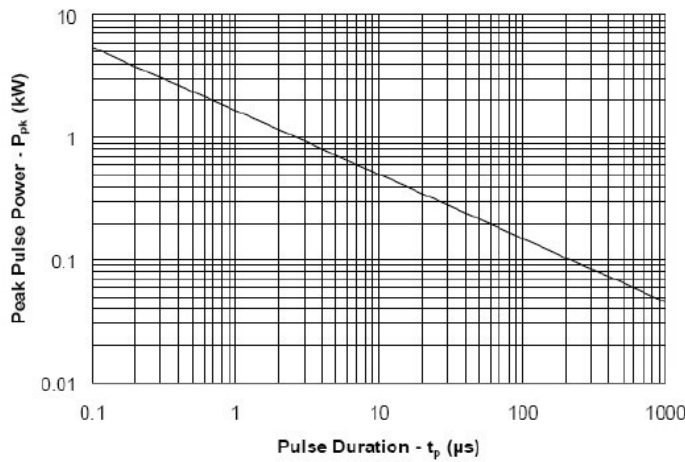
## Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

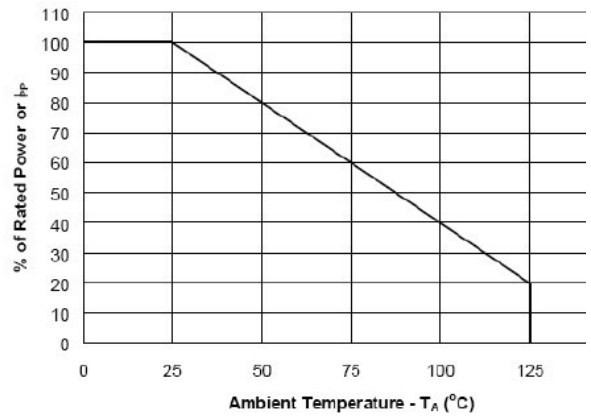
PART NUMBER	DEVICE MARKING	VRWM (V) (max.)	VB (V) (min.)	IT (mA)	Vc@1A (V) (max.)	Vc (V) (max.) (@A)		IR (uA) (max.)	CT (pF) (max.)
ESD3Z03	03W	3.3	4	1	6.5	14	20	40	450
ESD3Z05	05W	5	6	1	9.8	18	17	10	300
ESD3Z12	12W	12	13.3	1	19	32	11	1	130
ESD3Z15	15W	15	16.7	1	24	38	10	1	120
ESD3Z18	18W	18	20.0	1	29	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**

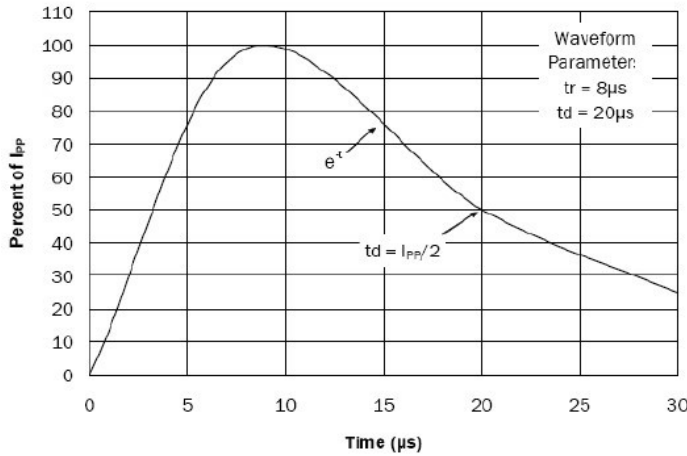
**Non-Repetitive Peak Pulse Power vs. Pulse Time**



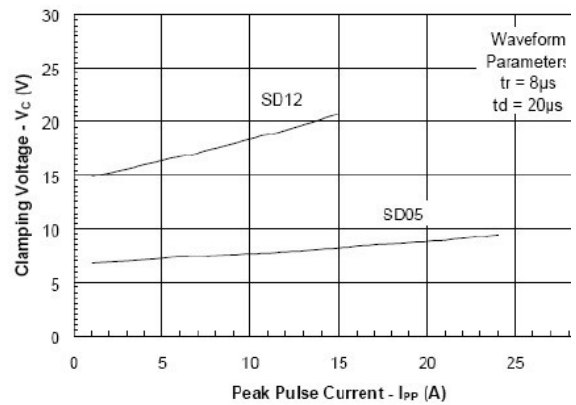
**Power Derating Curve**



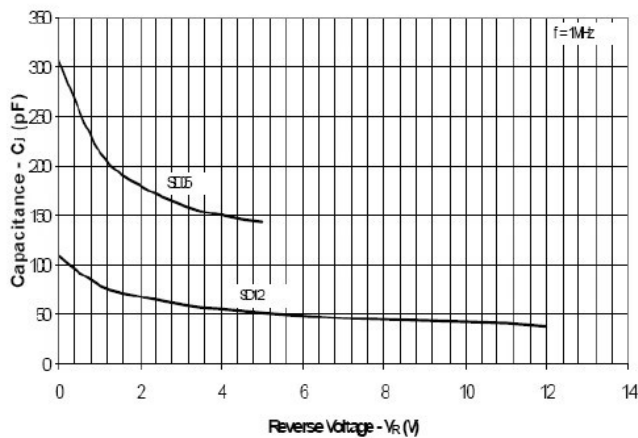
**Pulse Waveform**



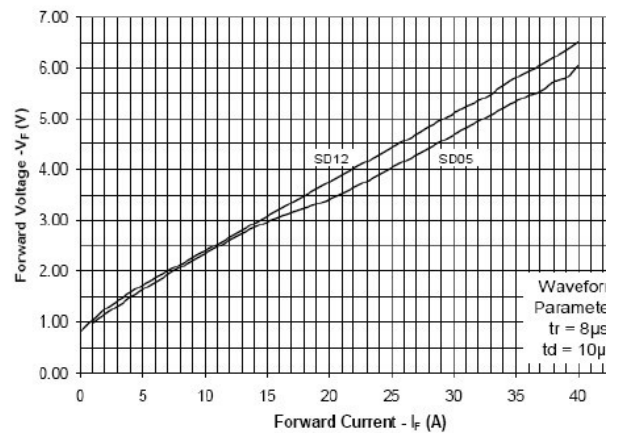
**Clamping Voltage vs. Peak Pulse Current**



**Capacitance vs. Reverse Voltage**

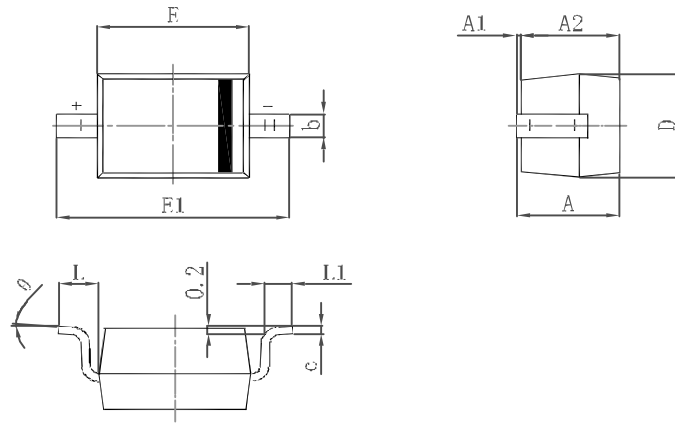


**Forward Voltage vs. Forward Current**



**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

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