

Unidirectional 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

- ◆ Unidirectional ESD protection of on-line
- ◆ Reverse stand-off voltage: 30V Max
- ◆ Low leakage current: nA Level
- ◆ Response time is typically <1ns
- ◆ Low clamping voltage: $V_C = 45V @ I_{PP} = 7A (TYP)$
- ◆ ESD Protection: 30kV (air)/30kV (contact) (IEC61000-4-2)
- ◆ Low leakage current

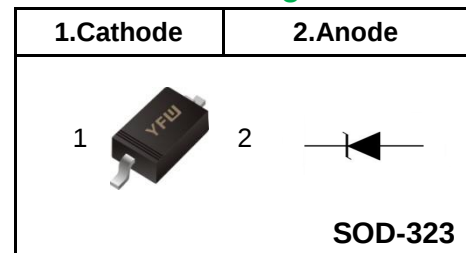
Mechanical Data

- ◆ SOD-323 Package
- ◆ Flammability Rating: UL 94V-0
- ◆ High temperature soldering guaranteed: 260℃/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)	V_{ESD}	± 30	kV
ESD per IEC61000-4-2(Contact)		± 30	
Peak Pulse Power (8/20us)	P_{PP}	350	W
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PPM}	7	A
Operating temperature	T_{OPT}	-55-+150	℃
Storage temperature range	T_{STG}	-55-+150	℃
Lead Soldering temperature	T_L	260(10 sec.)	℃

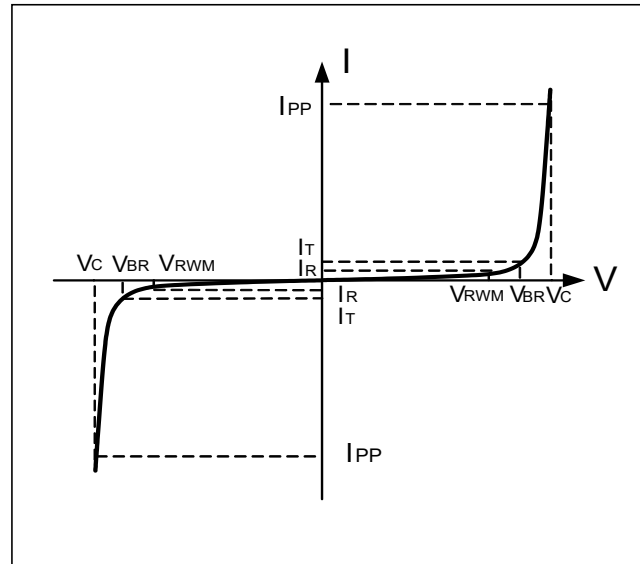
Electrical Characteristics

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 (nA) (max.)	CT (pF) (max.)
ESD3Z30	30W	35	31	1	50	50	7	100

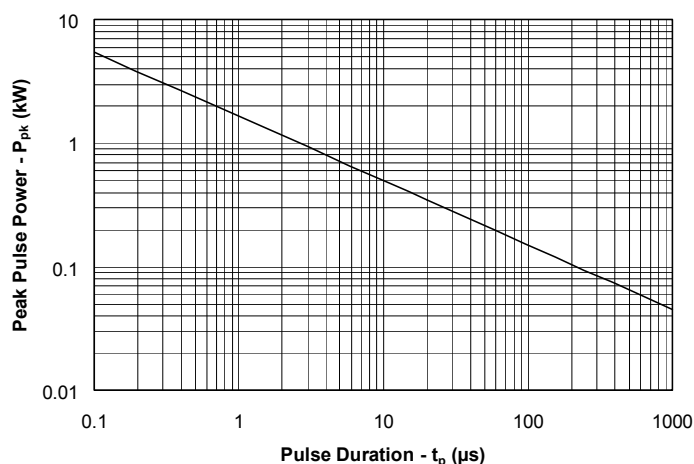
Electrical Parameters (TA = 25°C)

Symbol	Parameter
IPP	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @ IPP
VRWM	Working Peak Reverse Voltage
IR	Maximum Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IF	Forward Current
VF	Forward Voltage @ IF

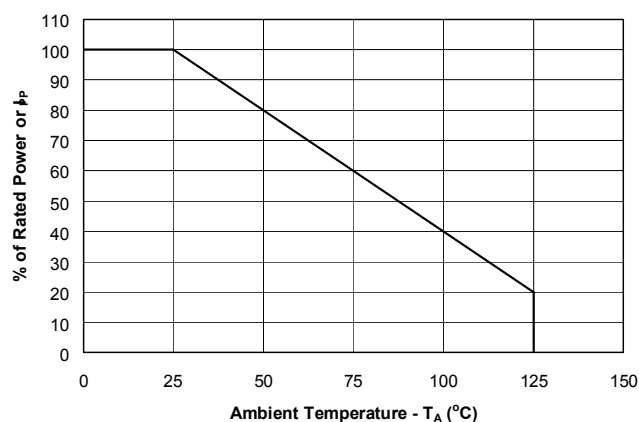


ELECTRICAL CHARACTERISTICS CURVE

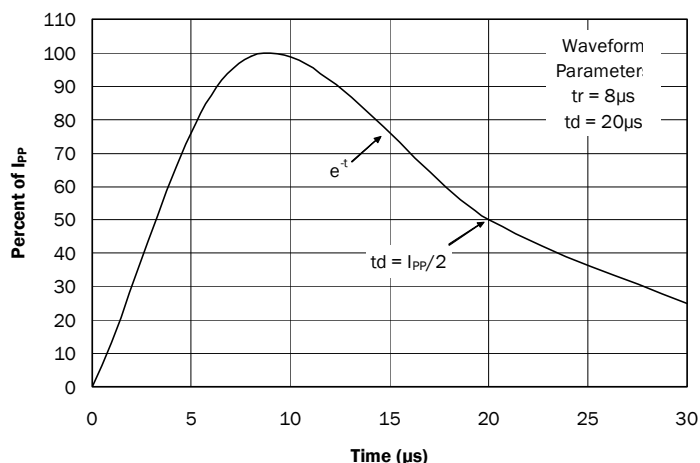
Non-Repetitive Peak Pulse Power vs. Pulse Time



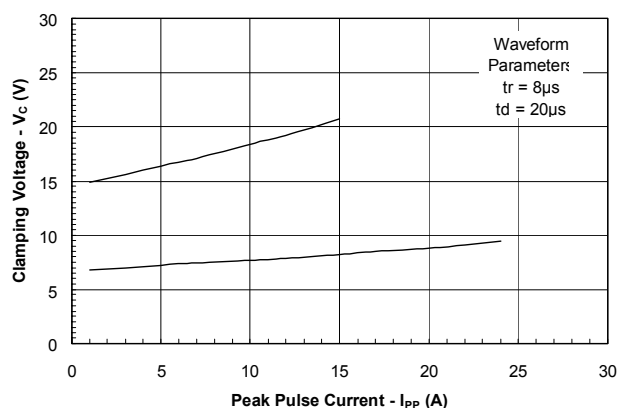
Power Derating Curve



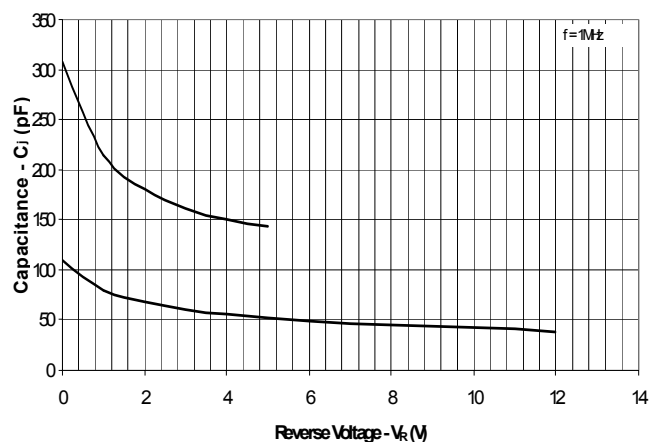
Pulse Waveform



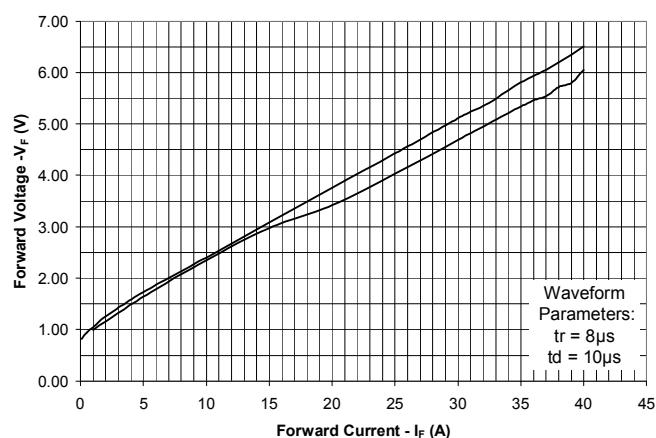
Clamping Voltage vs. Peak Pulse Current



Capacitance vs. Reverse Voltage



Forward Voltage vs. Forward Current



Ordering information

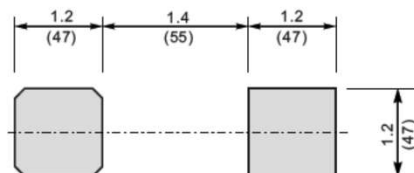
Package	Packing Description	Packing Quantity
SOD-323	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

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



Unit: $\frac{\text{mm}}{(\text{mil})}$

Disclaimer

The information presented in this document is for reference only. Guangdong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.