

**Bidirectional TVS Diodes**

**Description**

The ESD3ZxxCM 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**

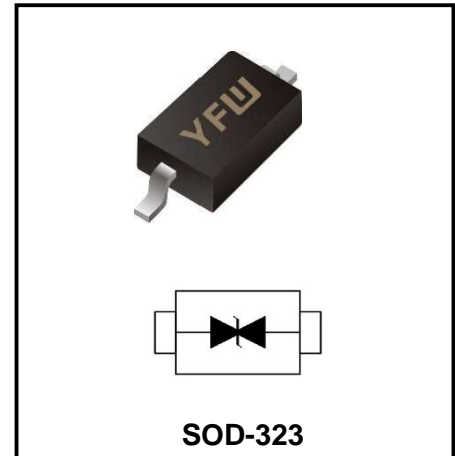
- ◆IEC61000-4-2(ESD) ±15kV(air), ±8kV(contact)
- ◆IEC61000-4-4(EFT) 40A(5/50ns)
- ◆350Watts Peak Pulse Power per (tp=8/20us)
- ◆Protects one I/O line(unidirectional)
- ◆Low clamping voltage
- ◆Working voltages:  
3V, 5V, 8V, 12V, 15V, 18V, 20V, 24V, 36V
- ◆Low leakage current

**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



**ABSOLUTE MAXIMUM RATING**

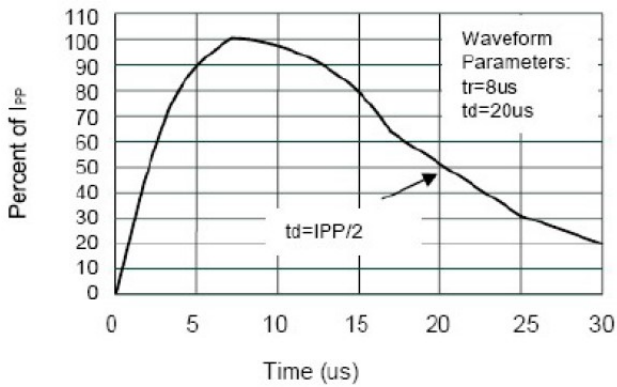
Parameters	Symbol	Value	Unit
ESD per IEC61000-4-2(Air)	V <sub>ESD</sub>	±15	kV
ESD per IEC61000-4-2(Contact)		±8	
Peak Pulse Power (8/20us)	P <sub>PP</sub>	350	W
Operating temperature	T <sub>OPT</sub>	-55-+150	°C
Storage temperature range	T <sub>STG</sub>	-55-+150	°C
Lead Soldering temperature	T <sub>L</sub>	260(10 sec.)	°C

## Electrical Characteristics

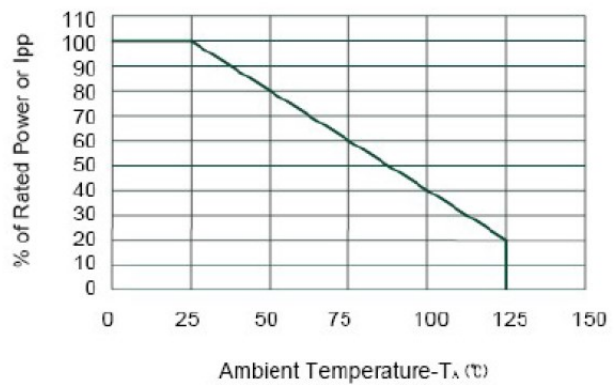
Ratings at 25°C ambient temperature unless otherwise specified

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.)
ESD3Z03CM	2A	3.3	4	1	7.5	13	20	40	450
ESD3Z05CM	2B	5	6	1	9.8	18	17	10	200
ESD3Z08CM	2C	8	8.5	1	13.4	24	15	2	120
ESD3Z12CM	2D	12	13.3	1	19	32	11	1	75
ESD3Z15CM	2J	15	16.7	1	24	38	10	1	68
ESD3Z18CM	2K	18	20	1	29	45	9	1	57
ESD3Z20CM	2L	20	22.3	1	35	50	8	1	52
ESD3Z24CM	2H	24	26.7	1	43	52	7	1	50
ESD3Z36CM	2N	36	40	1	60	75	5	1	35

## ELECTRICAL CHARACTERISTICS CURVE



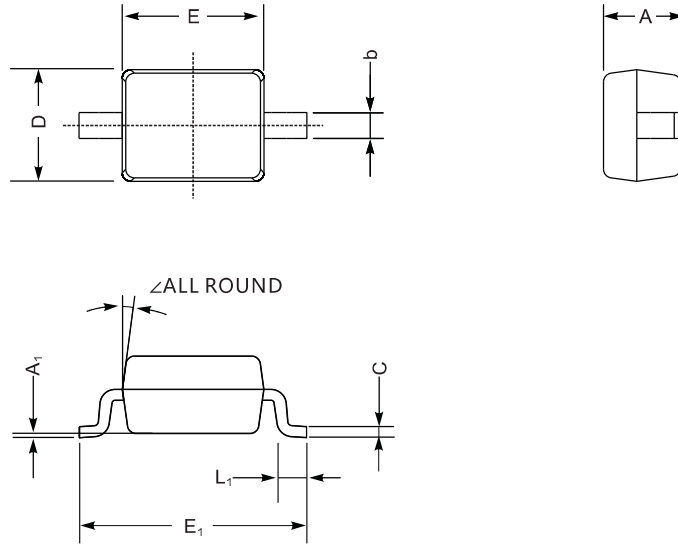
Pulse Waveform



Power Derating Curve

**Package Outline**

**SOD-323**



UNIT		A	C	D	E	E <sub>1</sub>	b	L <sub>1</sub>	A <sub>1</sub>	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	

**Summary of Packing Options**

Package	Packing Description	Packing Quantity	Industry Standard
SOD-323	Tape/Reel,7"reel	3000	EIA-481-1

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