
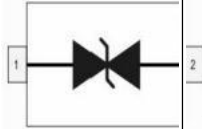




1-Line Low Capacitance Bi-directional TVS Diode

SOD323

## Schematic & Pin configuration

Simplified outline	Graphic symbol
	

## General description

These surge protection diodes are designed for applications requiring transient overvoltage 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 and benefits

- 300W peak pulse power (8/20 $\mu$ s)
- Working Voltage 5V
- Low leakage current:nA Level
- Complies with following standards:
  - IEC 61000-4-2 (ESD)immunity test  
Air discharge: $\pm$ 30KV  
Contact discharge: $\pm$ 30KV
  - IEC61000-4-5(Lightning)20A(8/20 $\mu$ S)
- RoHS compliant

### Application information

- Peripherals
- Portable Instrumentation
- Notebooks and Handhelds
- Personal Digital Assistants
- Cellular Handsets and Accessories
- Pagers Peripherals
- Desktop and Servers

## Ordering information

Par Number	Package	Packaging	Reel Size
SD05CS	SOD323	3000/Tape & Reel	7 inch

### Maximum Ratings (T<sub>4</sub>=25°C, unless otherwise specified)

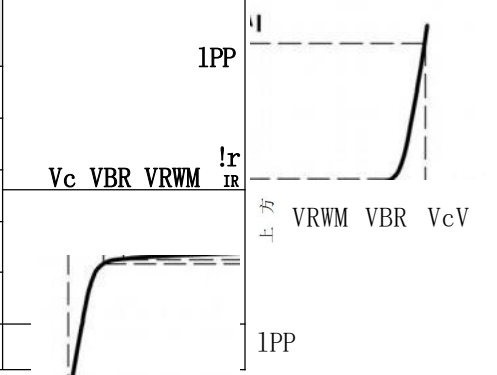
Parameter	Symbo	Value	Unit
Peak Pulse Power (t <sub>p</sub> =8/20 μ S)	Ppk	300	W
Peak Pulse Current(t <sub>p</sub> =8/20 μ S)	I <sub>pp</sub>	20	A
ESD voltage IEC 61000-4-2 (air discharge)	VESD	30	KV
ESD voltage IEC 61000-4-2 (contact discharge)	VESD	30	KV
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C
Operating Temperature Range	T <sub>op</sub>	-40 to +85	°C

### Electrical Characteristics (TA=25 °C, unless otherwise specified)

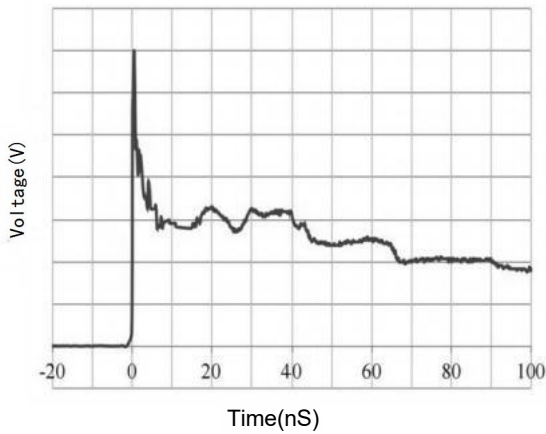
Parameter	Symbo	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	VRWN			5.0	V	
Breakdown Voltage	VBR	6.0	7.0	8.0	V	I <sub>r</sub> =1mA
Leakage Current I <sub>Leak</sub>	I <sub>R</sub>			0.1	μA	VRWM=5V
Clamping Voltage	V <sub>c</sub>		7.0	9.0	V	I <sub>pp</sub> =10A, T <sub>p</sub> =8/20 μ s
Clamping Voltage	V <sub>c</sub>		9.0	15.0	V	I <sub>pp</sub> =20A, T <sub>p</sub> =8/20 μ s
Junction Capacitance	C <sub>J</sub>		30	40	pF	V <sub>r</sub> =0V, f=1MHz

### Portion Electronics Parameter

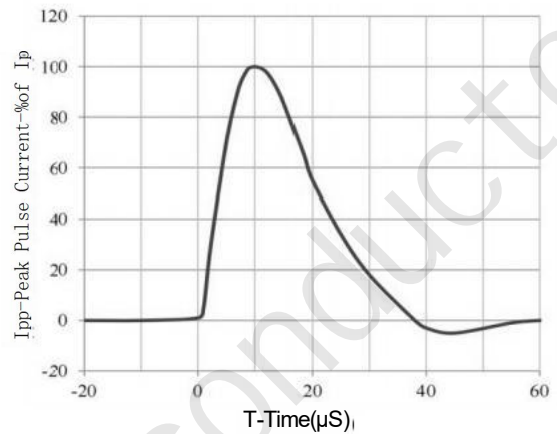
Symbo	Parameter
I <sub>pp</sub>	Reverse Peak Pulse Current
V <sub>c</sub>	Clamping Voltage @IPP
VRWN	Working Peak Reverse Voltage
I <sub>r</sub>	Reverse Leakage Current @VRWM
VBR	Breakdown Voltage @IT
I <sub>r</sub>	VBR Test Current



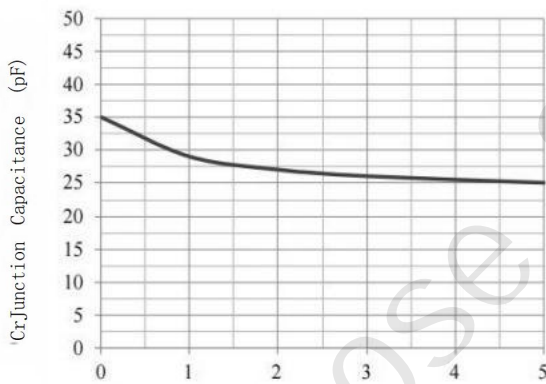
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



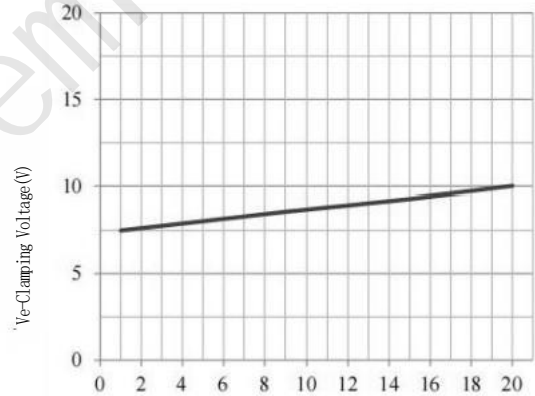
**IEC61000-4-2 Pulse Waveform**



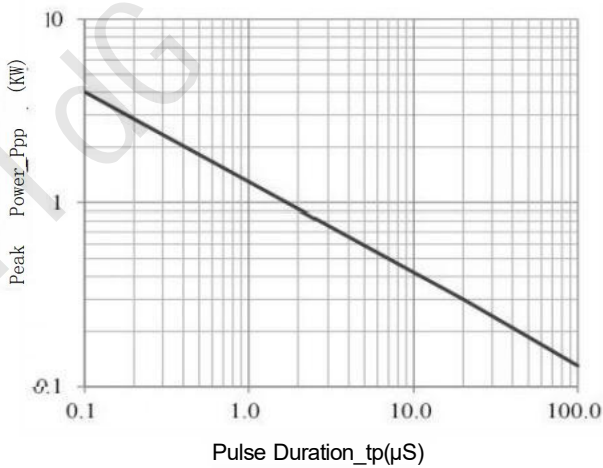
**IEC61000-4-58X20µs Pulse Waveform**



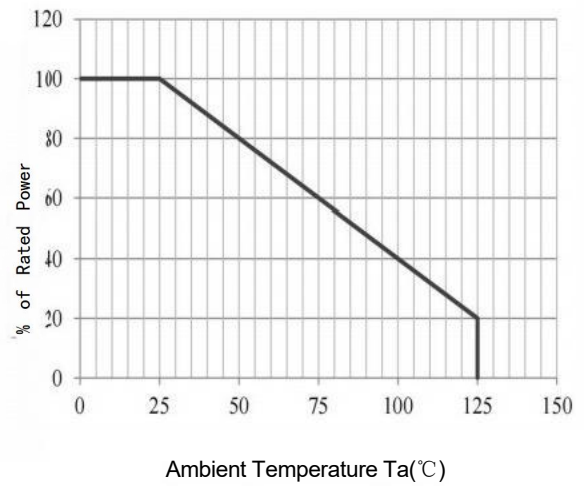
**Junction Capacitance vs. Reverse Voltage**



**Clamping Voltage vs. Peak Pulse Current**



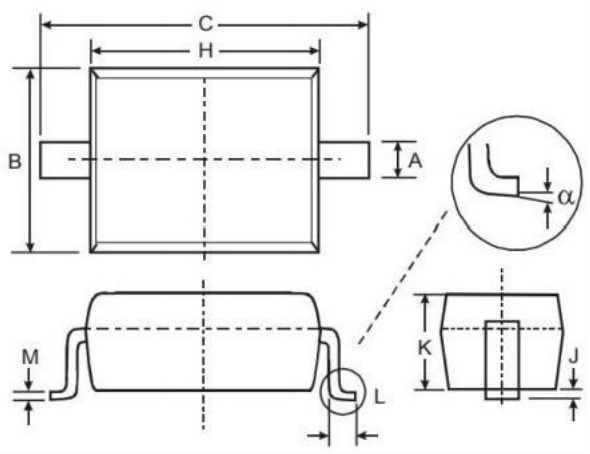
**Peak Pulse Power vs. Pulse Time**



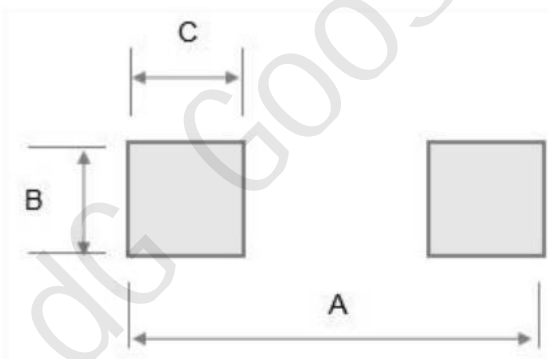
**Power Derating Curve**

**Package Outline Dimensions (mm)**

SOD323



SYMBOL	DIMENSIONS	
	MIN	MAX
A	0.25	0.40
B	1.20	1.40
C	2.35	2.75
H	1.50	1.80
J	0.01	0.15
K	0.75	1.05
L	0.20	0.40
M	0.08	0.25
$\alpha$	0°	8°

**Soldering Footprint(mm)**


SYMBOL	DIMENSIONS
A	3.20
B	0.80
C	0.80