
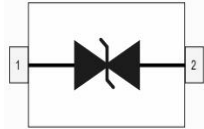




1-Line Low Capacitance Bi-directional TVS Diode

**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 (8/20µS)
- Working Voltage 5V
- Low leakage current: nA Level
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30KV
    - Contact discharge: ±30KV
  - IEC61000-4-5 (Lightning) 20A (8/20µS)
- 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** ( $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

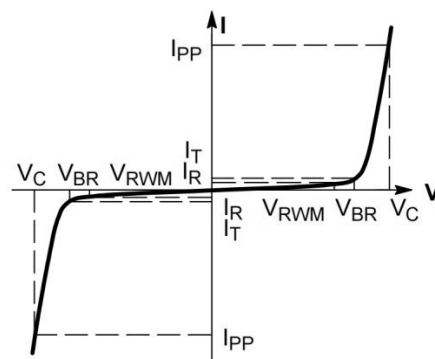
Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )	$P_{PK}$	300	W
Peak Pulse Current( $t_p = 8/20\mu\text{s}$ )	$I_{PP}$	20	A
ESD voltage IEC 61000-4-2 (air discharge)	$V_{ESD}$	30	KV
ESD voltage IEC 61000-4-2 (contact discharge)	$V_{ESD}$	30	KV
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Operating Temperature Range	$T_{OP}$	-40 to +85	$^\circ\text{C}$

**Electrical Characteristics** ( $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

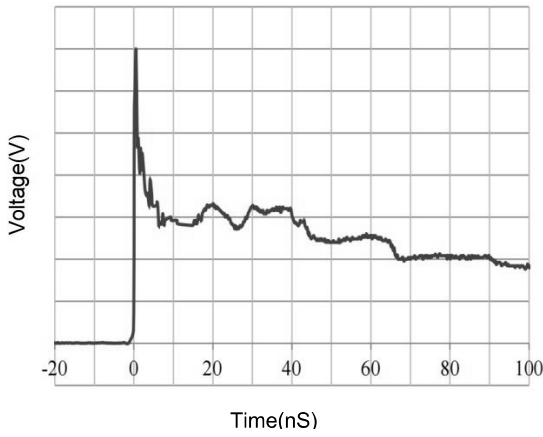
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	5.0	V	
Breakdown Voltage	$V_{BR}$	6.0	7.0	8.0	V	$I_T=1\text{mA}$
Leakage Current ILeak	$I_R$	--	--	0.1	$\mu\text{A}$	$V_{RWM}=5\text{V}$
Clamping Voltage	$V_C$	--	7.0	9.0	V	$I_{PP}=10\text{A}, t_p=8/20\mu\text{s}$
Clamping Voltage	$V_C$	--	9.0	15.0	V	$I_{PP}=20\text{A}, t_p=8/20\mu\text{s}$
Junction Capacitance	$C_J$	--	30	40	pF	$V_R=0\text{V}, f=1\text{MHz}$

**Portion Electronics Parameter**

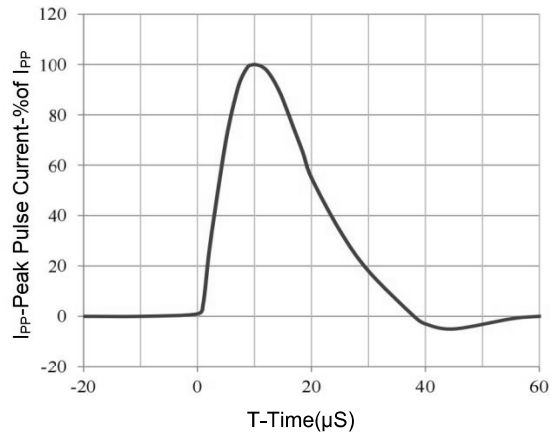
Symbol	Parameter
$I_{PP}$	Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ IPP
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Reverse Leakage Current @ VRWM
$V_{BR}$	Breakdown Voltage @ IT
$I_T$	VBR Test Current



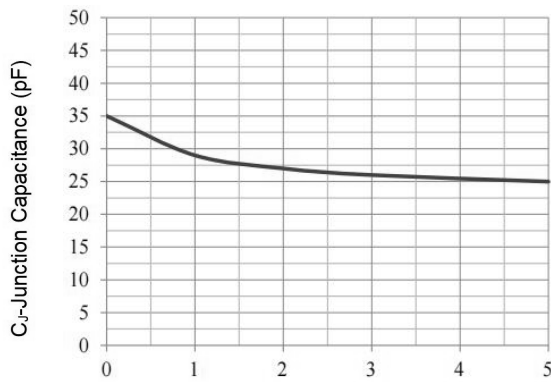
**Typical Performance Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise Specified)



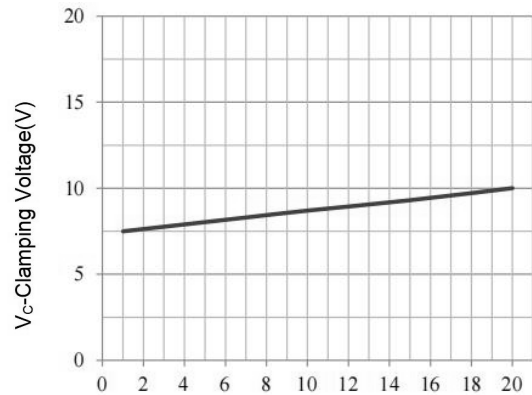
**IEC61000-4-2 Pulse Waveform**



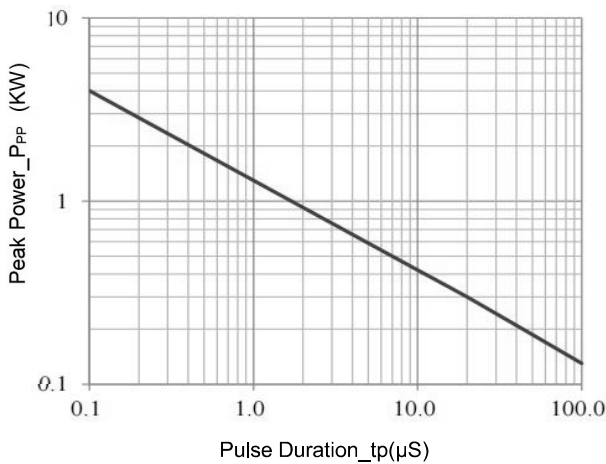
**IEC61000-4-5 8X20μS Pulse Waveform**



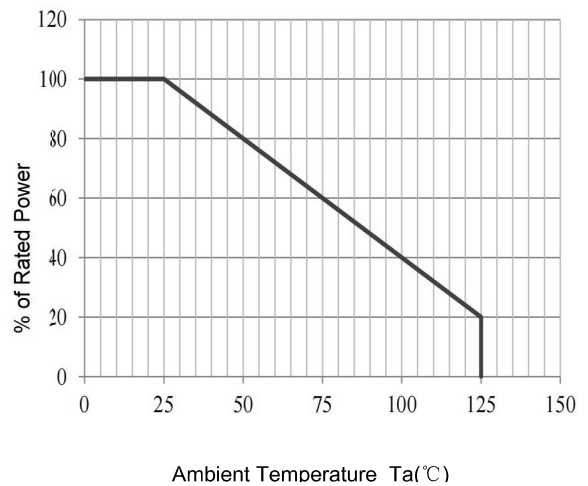
$V_R$ —Reverse Voltage(V)  
**Junction Capacitance vs. Reverse Voltage**



**Clamping Voltage vs. Peak Pulse Current**



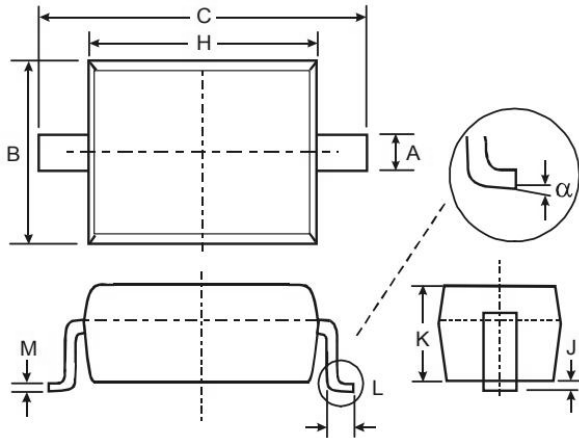
**Peak Pulse Power vs. Pulse Time**



**Power Derating Curve**

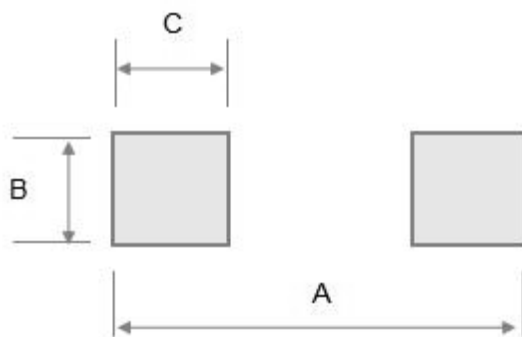
**Package Outline Dimensions (mm)**

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