

RoHS Compliant Product  
 A suffix of "-C" specifies halogen and lead-free

**DESCRIPTION**

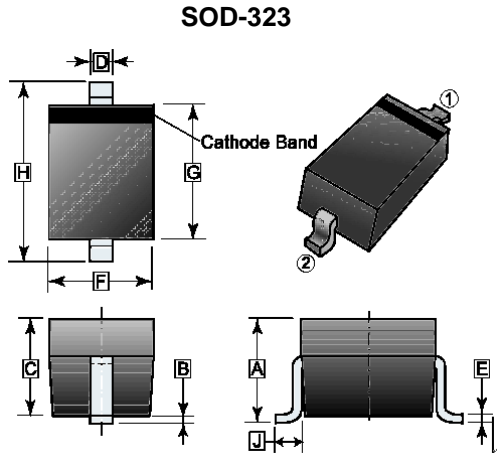
Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

**FEATURES**

- Bi-Directional ESD Protection of One Line
- Reverse Stand-off Voltage: 5V
- Low Reverse Clamping Voltage
- Low Leakage Current
- Fast Response Time
- JESD22-A114-B ESD Rating of Class 3B Per Human Body Model
- IEC 61000-4-2 Level 4 ESD Protection

**MARKING**



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.05	REF.	F	1.15	1.45
B	0.20	REF.	G	1.60	1.90
C	0.80	1.00	H	2.30	2.75
D	0.25	0.40	J	0.475 REF	
E	0.08	0.20			



**PACKAGE INFORMATION**

Package	MPQ	Leader Size
SOD-323	3K	7 inch

**ORDER INFORMATION**

Part Number	Type
SD05VC-C	Lead (Pb)-free and Halogen-free

**ABSOLUTE MAXIMUM RATINGS** (T<sub>A</sub>=25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
IEC 61000-4-2 ESD Voltage <sup>1</sup>	Air Model	V <sub>ESD</sub>	±25	kV
	Contact Model		±25	
	Per Human Body Model		±16	
	Machine Model		±0.4	
Peak Pulse Power <sup>2</sup>		P <sub>PP</sub>	476	W
Peak Pulse Current <sup>2</sup>		I <sub>PP</sub>	28	A
Maximum Lead Solder Temperature @10Second Duration		T <sub>L</sub>	260	°C
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	150, -55~150	°C

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-off Voltage	$V_{RWM}$	-	-	5	V	
Reverse Leakage Current	$I_R$	-	-	1	$\mu\text{A}$	$V_{RWM}=5\text{V}$
Breakdown Voltage	$V_{(BR)}$	5.5	-	7.5	V	$I_T=1\text{mA}$
		5	-	-		$I_T=100\text{mA}$
Clamping Voltage <sup>2</sup>	$V_C$	-	-	17	V	$I_{PP}=28\text{A}$
Junction Capacitance	$C_J$	-	-	60	pF	$V_R=0\text{V}$ , $f=1\text{MHz}$

Notes:

1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20 $\mu\text{s}$  exponential decay waveform according to IEC61000-4-5.

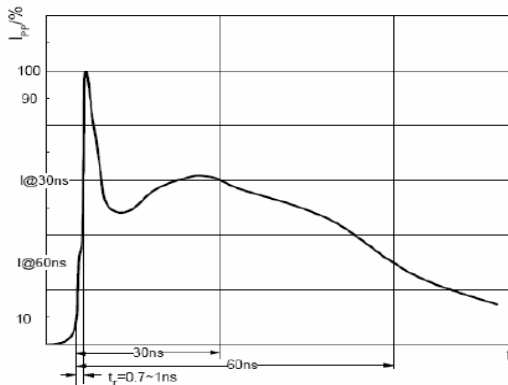
**ESD STANDARDS COMPLIANCE**

**IEC61000-4-2 Standard**

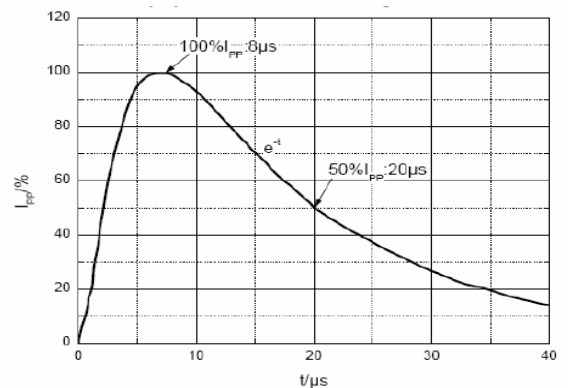
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

**JESD22-A114-B Standard**

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999



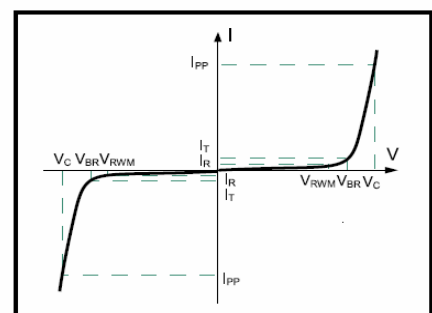
ESD pulse waveform according to IEC61000-4-2



8/20 $\mu\text{s}$  pulse waveform according to IEC 61000-4-5

**ELECTRICAL PARAMETER**

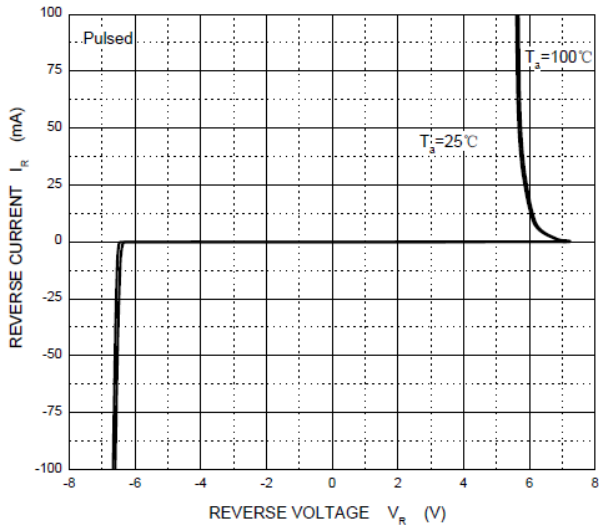
Symbol	Parameter
$V_C$	Clamping Voltage @ $I_{PP}$
$I_{PP}$	Peak Pulse Current
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{RWM}$	Reverse Standoff Voltage



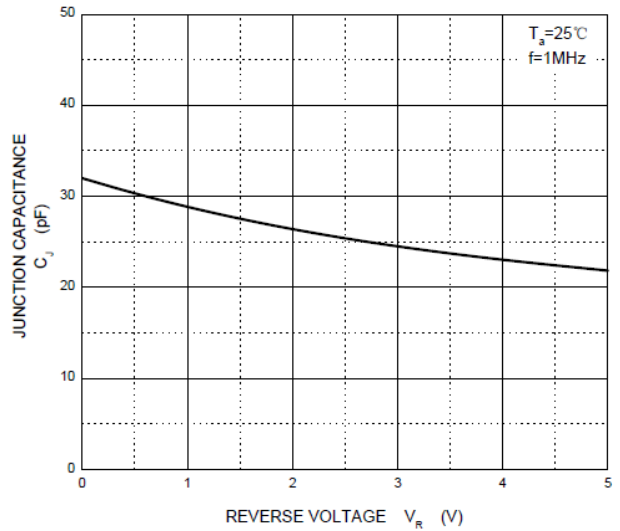
V-I characteristics for a Bi-directional TVS

**TYPICAL CHARACTERISTICS**

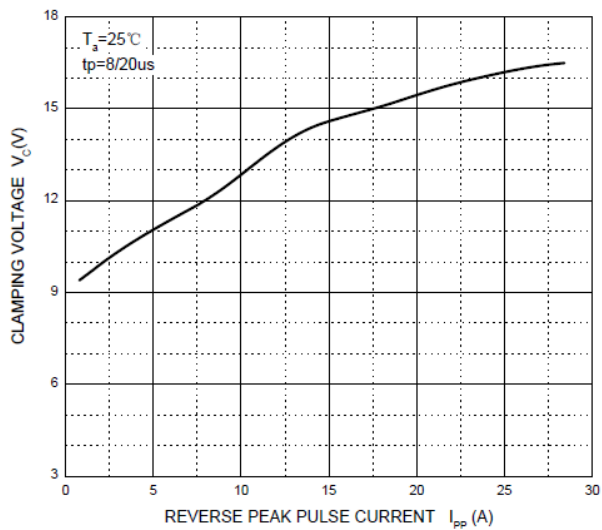
**Reverse Characteristics**



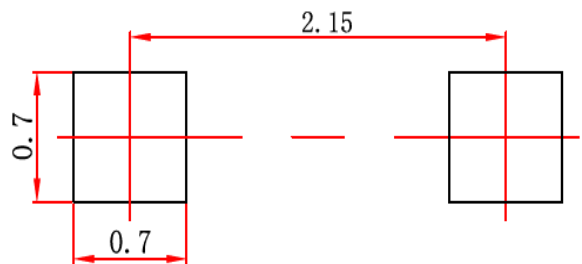
**Capacitance Characteristics**



**$V_C$  —  $I_{PP}$**



**Mounting Pad Layout**



\*Dimensions in millimeters