

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™, 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 Lines
- Low Capacitance
- Reverse Stand-off Voltage:7V
- 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

## APPLICATIONS

- Computers and Peripherals
- Power Lines
- Audio and Video Equipment
- Portable Electronics
- Subscriber Identity Module(SIM) Card Protection
- Other Electronics Equipments Communication Systems

## MARKING

Z

## PACKAGE INFORMATION

Package	MPQ	Leader Size
WBFBP-02C-A	10K	7 inch

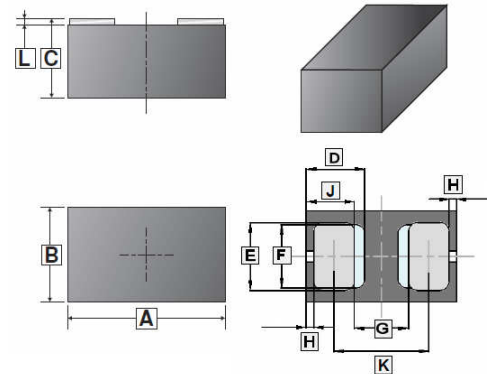
## ORDER INFORMATION

Part Number	Type
SESDA07C-C	Lead (Pb)-free and Halogen-free

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

Parameter	Symbol	Limit	Unit	
IEC 61000-4-2 ESD Voltage <sup>1</sup>	Air Model	±25	kV	
	Contact Model	±25		
	JESD22-A114-B ESD Voltage <sup>1</sup>	Per Human Body Model		±16
	ESD Voltage <sup>1</sup>	Machine Model		±0.4
Peak Pulse Power <sup>2</sup>	P <sub>PP</sub>	85	W	
Peak Pulse Current <sup>2</sup>	I <sub>PP</sub>	5	A	
Lead Solder Temperature–Maximum (10Sec. Duration)	T <sub>L</sub>	260	°C	
Operating & Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	150, -55~150	°C	

### WBFBP-02C-A



	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.95	1.05	G	0.36	REF.
B	0.55	0.65	H	0.05	REF.
C	0.45	0.55	J	0.27	0.37
D	0.39	REF.	K	0.58	0.68
E	0.4	0.5	L	0.01	0.09
F	0.42	REF.			



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

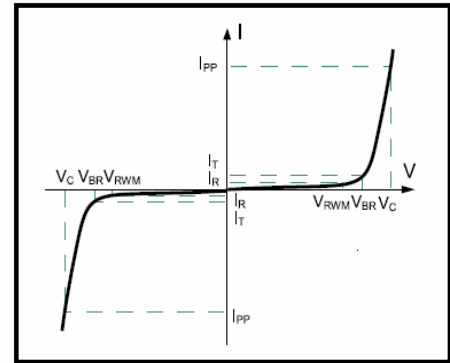
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-off Voltage	$V_{RWM}$	-	7	-	V	
Breakdown Voltage	$V_{BR}$	8.2	-	-	V	$I_T=1\text{mA}$
		7	-	-	V	$I_T=100\text{mA}$
Reverse Leakage Current	$I_R$	-	-	1	$\mu\text{A}$	$V_{RWM}=7\text{V}$
Clamping Voltage <sup>2</sup>	$V_C$	-	-	17	V	$I_{PP}=5\text{A}$
Junction Capacitance	$C_J$	-	9	-	pF	$V_R=0, f=1\text{MHz}$

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.

**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

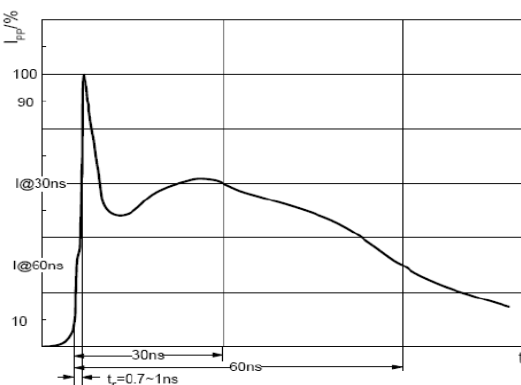
**ESD STANDARDS COMPLIANCE**

**IEC61000-4-2 Standard**

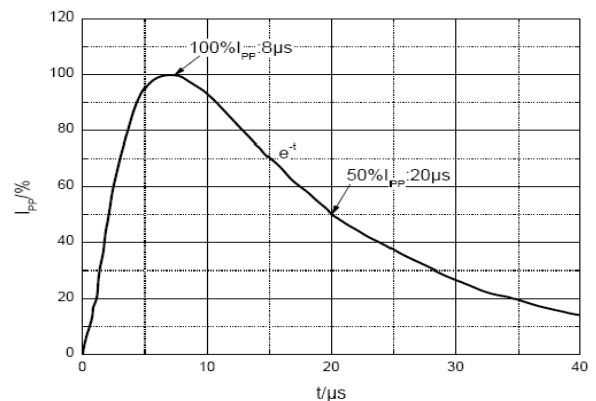
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

**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



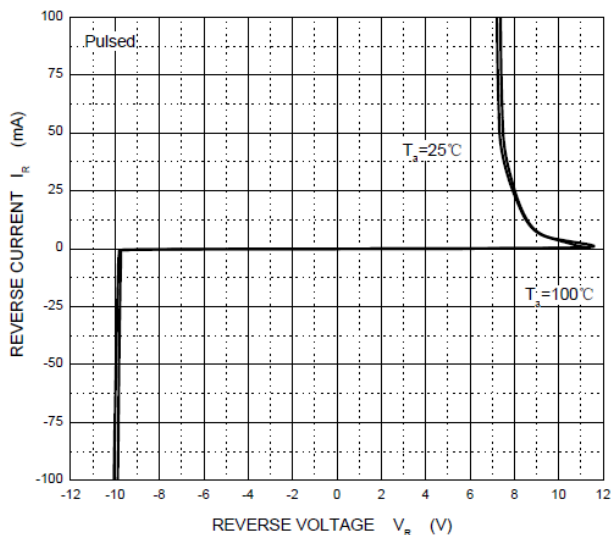
ESD pulse waveform according to IEC61000-4-2



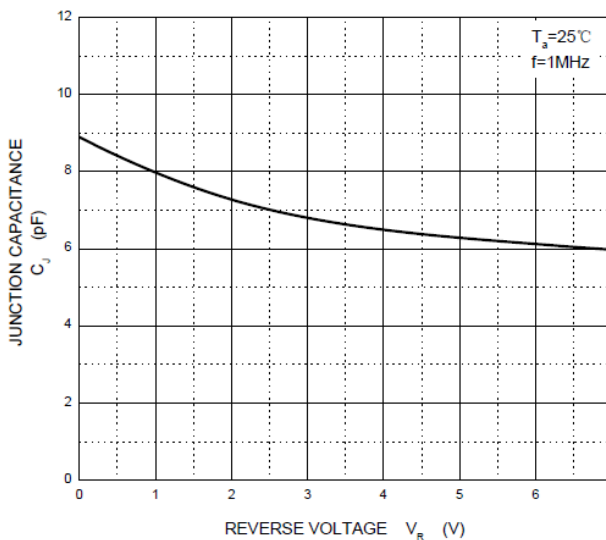
8/20 $\mu\text{s}$  pulse waveform according to IEC 61000-4-5

**RATINGS AND CHARACTERISTICS CURVES**

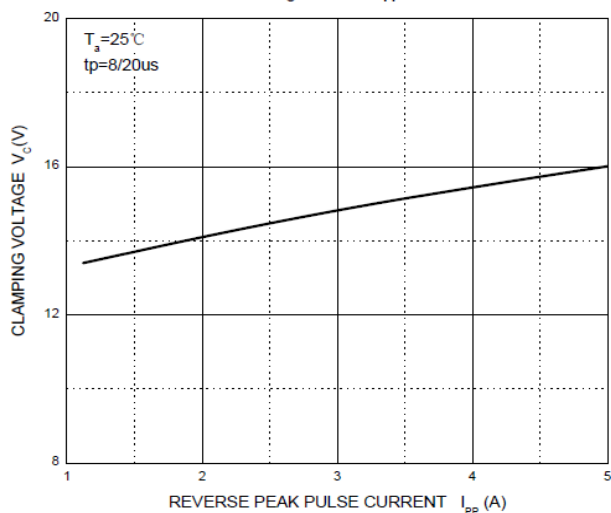
Reverse Characteristics



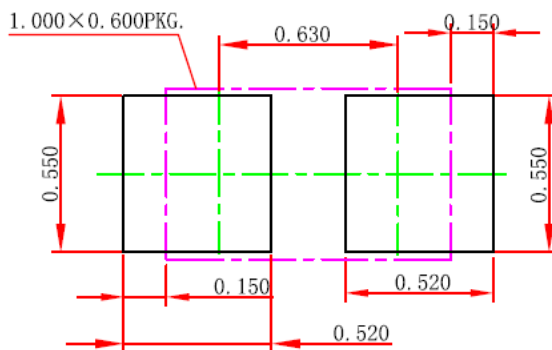
Capacitance Characteristics



$V_C$  —  $I_{PP}$



Mounting Pad Layout



\*Dimensions in millimeters