

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 multi-layer varistors (MLV) in consumer equipment applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

## FEATURES

- Uni-directional ESD protection of one line
- Reverse stand-off voltage: 24V
- 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 3 ESD protection

## APPLICATIONS

- Computers and peripherals
- Digital cameras
- Audio and video equipment
- Cellular handsets and accessories
- Portable electronics

## MARKING

ZY

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOD-523	8K	7 inch

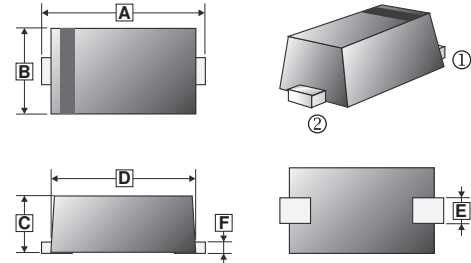
## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise specified)

Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V <sub>ESD</sub> <sup>1</sup>	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power <sup>2</sup>		P <sub>PP</sub>	330	W
Peak Pulse Current <sup>2</sup>		I <sub>PP</sub>	7.5	A
Lead Solder Temperature – Maximum (10 Second Duration)		T <sub>L</sub>	260	°C
Operating and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55 ~ +150	°C

Notes:

1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20µs exponential decay waveform according to IEC61000-4-5.

### SOD-523



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	D	1.10	1.30
B	0.70	0.90	E	0.25	0.35
C	0.50	0.77	F	0.07	0.20



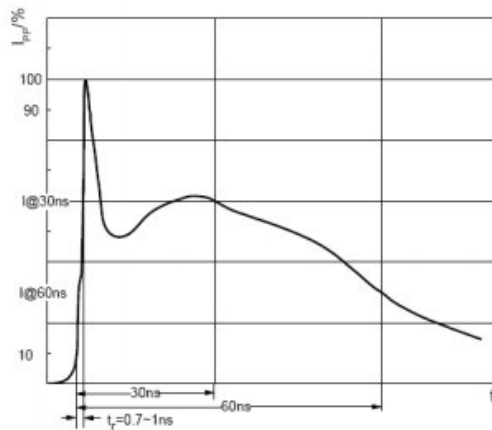
### ESD STANDARDS COMPLIANCE

#### IEC61000-4-2 Standard

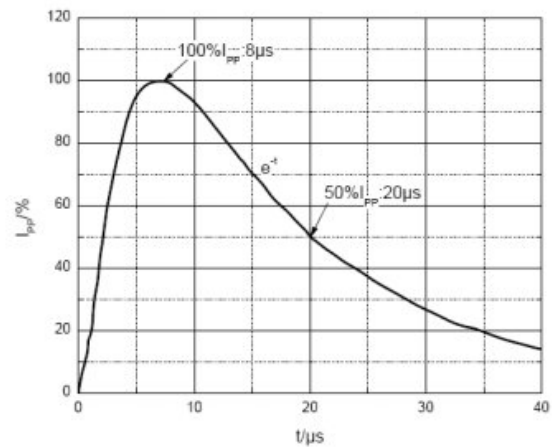
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

#### 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



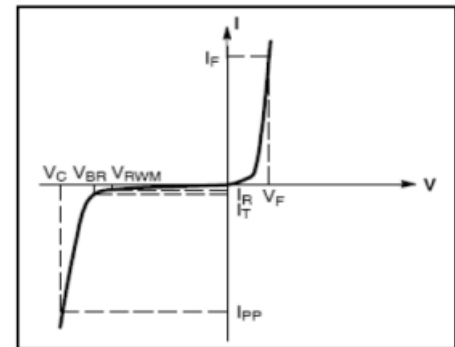
ESD pulse waveform according to IEC61000-4-2



8/20µs 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
$V_F$	Forward Voltage @ $I_F$
$I_F$	Forward Current



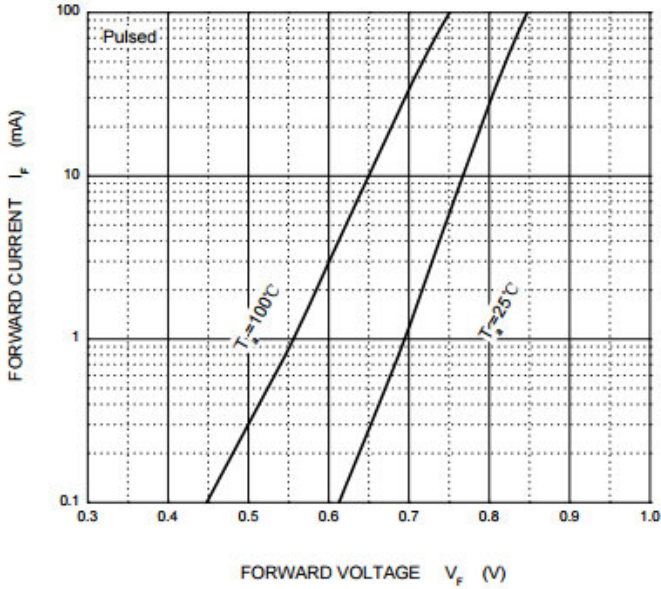
V-I characteristics for a uni-directional TVS

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise specified)

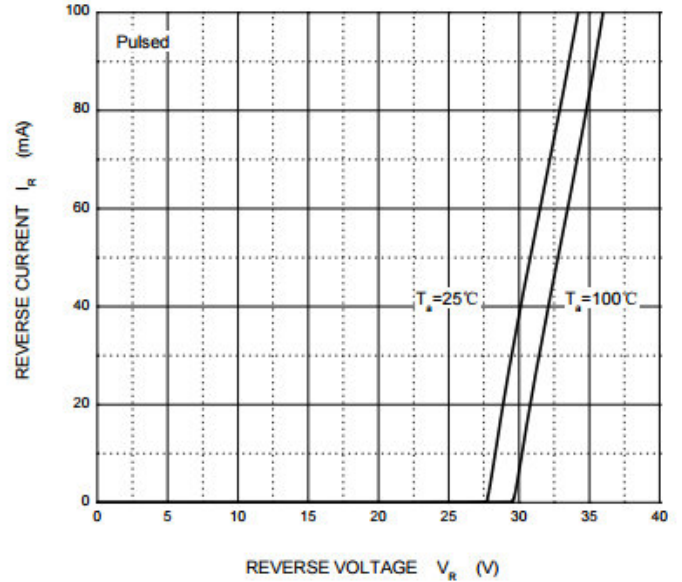
Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage <sup>1</sup>	$V_{RWM}$	-	-	24	V	
Reverse Breakdown Voltage	$V_{BR}$	26.7	-	33	V	$I_T=1mA$
Reverse Leakage Current	$I_R$	-	-	1	µA	$V_{RWM}=24V$
Clamping Voltage <sup>2</sup>	$V_C$	-	-	44	V	$I_{PP}=7.5A$
Forward Voltage	$V_F$	-	-	0.9	V	$I_F=10mA$
Junction Capacitance	$C_J$	-	36	-	pF	$V_R=0V, f=1MHz$

**TYPICAL CHARACTERISTICS CURVES**

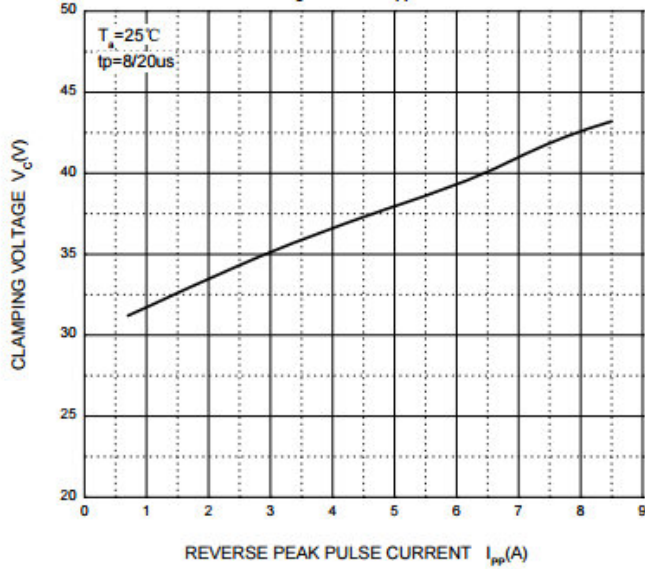
**Forward Characteristics**



**Reverse Characteristics**



$V_c$  —  $I_{pp}$



**Capacitance Characteristics**

