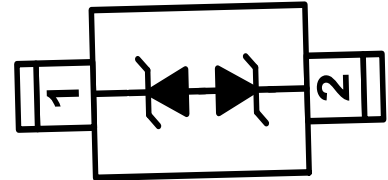


DESCRIPTION

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 multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.



SOD-523 (Top View)

FEATURES

- Bi-directional ESD protection of one line
- Low capacitance: 12pF(Typ.)
- Low reverse stand-off voltage: 5.0V Low
- reverse clamping voltage
- Low leakage current

APPLICATIONS

- Computers and peripherals
- PAD
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection
- Portable electronics
- Other electronics equipments communication systems

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	±25	kV
	Contact Model	±25	
	JESD22-A114-B ESD Voltage	±16	
	Per Human Body Model	±16	
ESD Voltage	Machine Model	±0.4	
Peak Pulse Power	P _{PP} ⁽²⁾	50	W
Peak Pulse Current	I _{PP} ⁽²⁾	5	A
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C
Operation Junction and Storage Temperature Range	T _J , T _{stg}	-55 ~ +150	°C

(1). Device stressed with ten non-repetitive ESD pulses.

(2). Non-repetitive current pulse 8/20µs exponential decay waveform according to IEC61000-4-5.

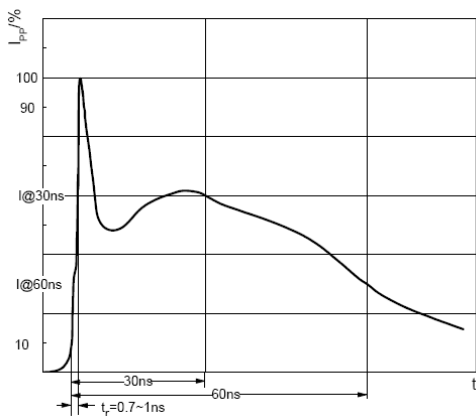
ESD standards compliance

IEC61000-4-2 Standard

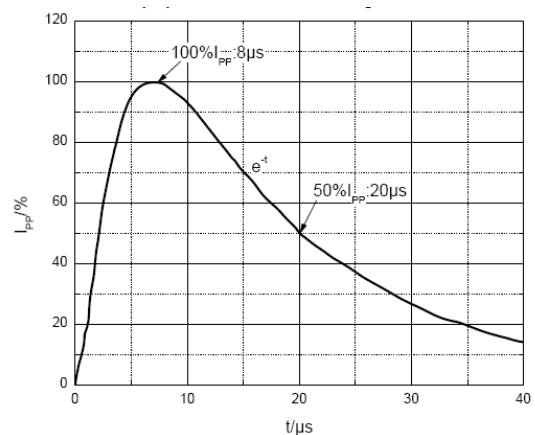
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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



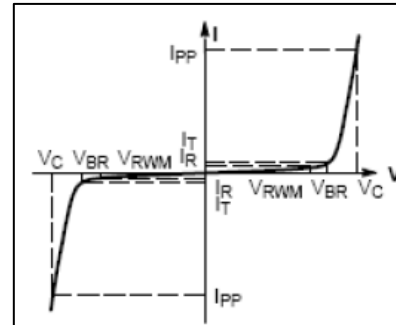
ESD pulse waveform according to IEC61000-4-2



8/20µs 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-I characteristics for a Bi-directional TVS

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

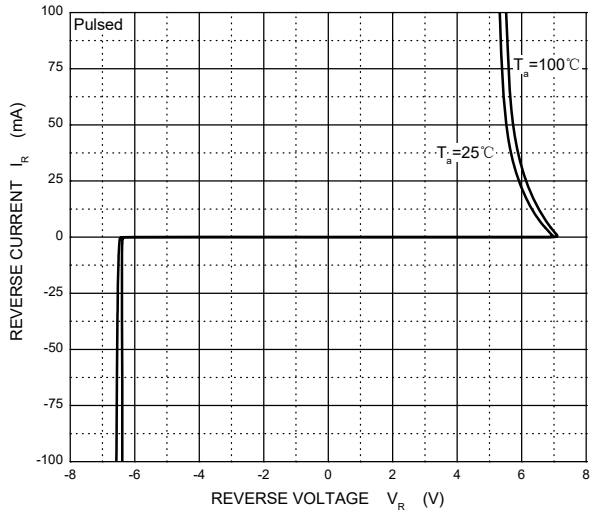
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				5	V
Reverse leakage current	I_R	$V_{RWM}=5V$			0.1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	5.8		8.3	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=5A$			10	V
Junction capacitance	C_J	$V_R=0V, f=1\text{MHz}$		12	15	pF

(1). Other voltages available upon request.

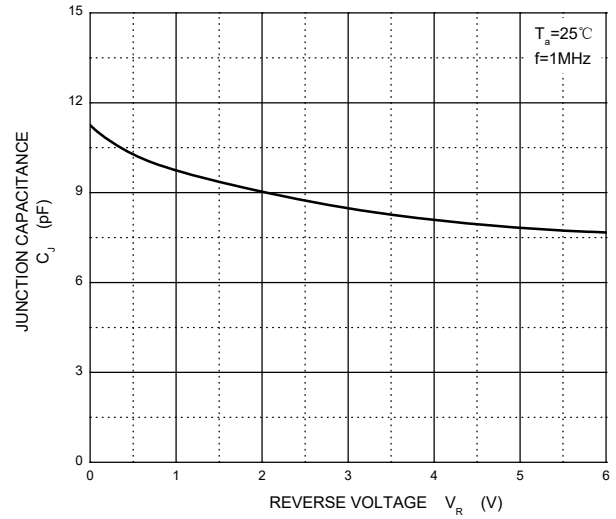
(2). Non-repetitive current pulse 8/20 μs exponential decay waveform

TYPICAL CHARACTERISTICS

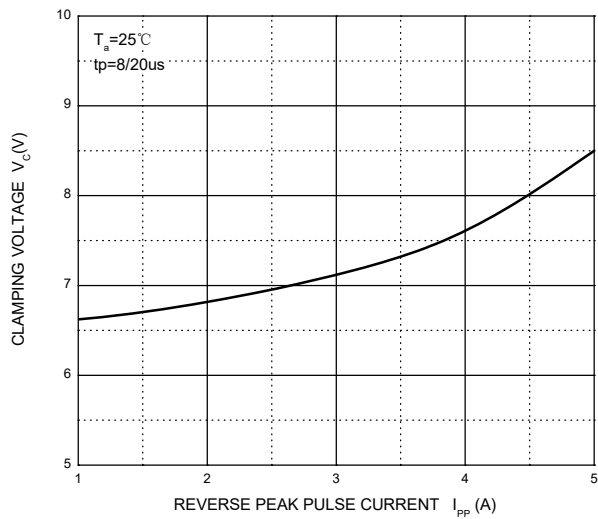
Reverse Characteristics



Capacitance Characteristics

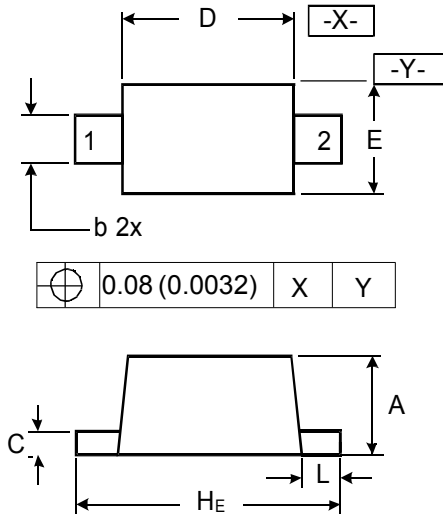


V_C — I_{PP}



Package outline dimensions

SOD-523



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.70	0.020	0.028
b	0.25	0.35	0.010	0.014
C	0.07	0.20	0.0028	0.0079
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
HE	1.50	1.70	0.059	0.067
L	0.15	0.25	0.006	0.010

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
UMW CESDBLC5V0D5	SOD-523	3000	Tape and reel