

DESCRIPTION

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

The combination of small size, 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.



FEATURES

- Uni-directional ESD protection of one line
- Reverse stand-off voltage: 7V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 1.70mm × 1.30mm × 1.00mm
- Fast response time

APPLICATIONS

- Computers and peripherals
- Digital Cameras
- Audio and video equipment
- Cellular handsets and accessories
- Portable electronics
- Power supply protection
- Other electronics equipments communication systems

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

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	±25	kV
	Contact Model	±25	
	Per Human Body Model	±16	
	Machine Model	±0.4	
JESD22-A114-B ESD Voltage	V _{ESD} ⁽¹⁾		
ESD Voltage	P _{PP} ⁽²⁾	1040	W
Peak Pulse Power	I _{PP} ⁽²⁾	î î	A
Peak Pulse Current	T _L	260	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _J , T _{stg}	-55 ~ +150	°C
Operation Junction and Storage Temperature Range			

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

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

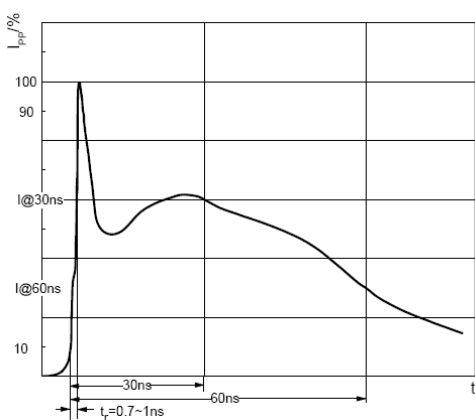
ESD standards compliance

IEC61000-4-2 Standard

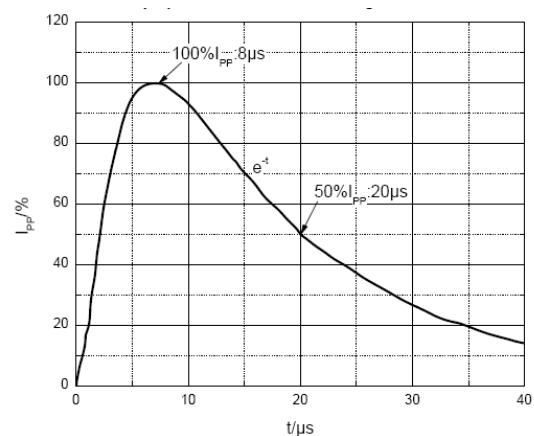
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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



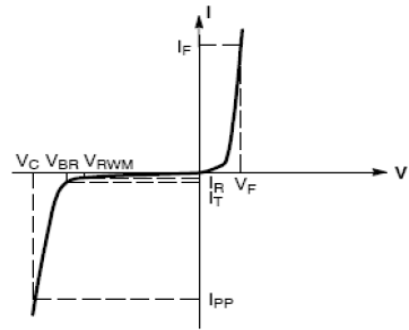
ESD pulse waveform according to IEC61000-4-2



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 _F	Forward Voltage@ I _F
I _F	Forward Current



V-I characteristics for a uni-directional TVS

ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise specified)

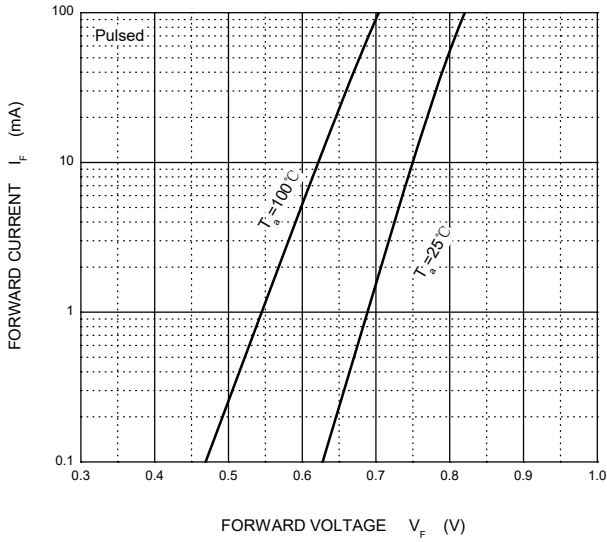
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	V _{RWM} ⁽¹⁾				7	V
Reverse leakage current	I _R	V _{RWM} =7V			1	μA
Breakdown voltage	V _(BR)	I _T =1mA	7.7		10.0	V
Clamping voltage	V _C ⁽²⁾	I _{PP} =65A			16	V
Forward voltage	V _F	I _F =20mA	0.45		1.25	V
Junction capacitance	C _J	V _R =0V,f=1MHz			500	pF

(1).Other voltages available upon request.

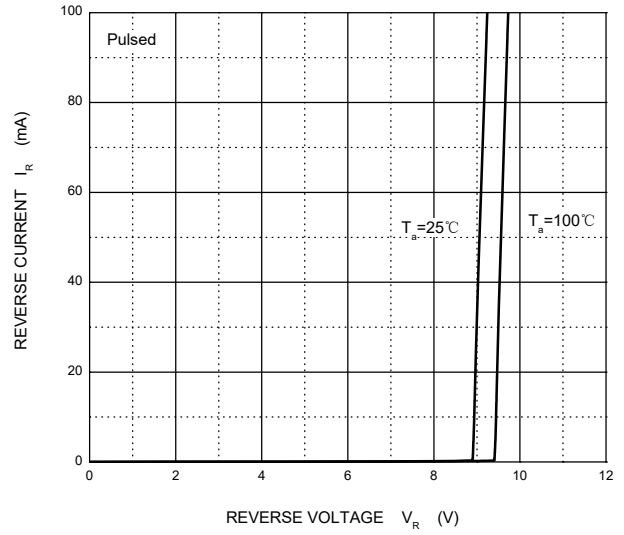
(2).Non-repetitive current pulse 8/20μs exponential decay waveform

TYPICAL CHARACTERISTICS

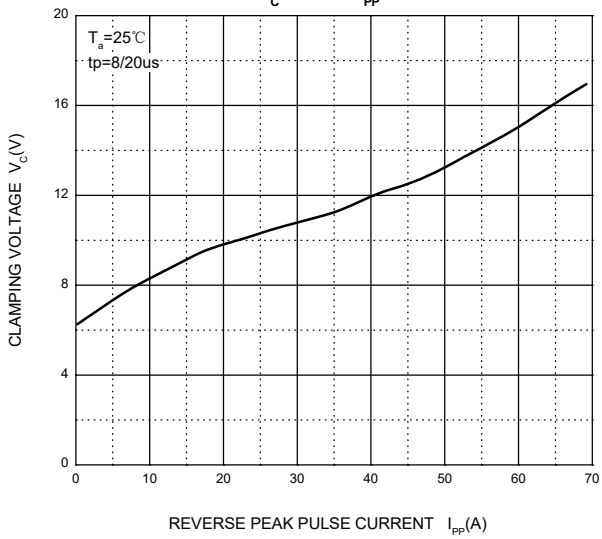
Forward Characteristics



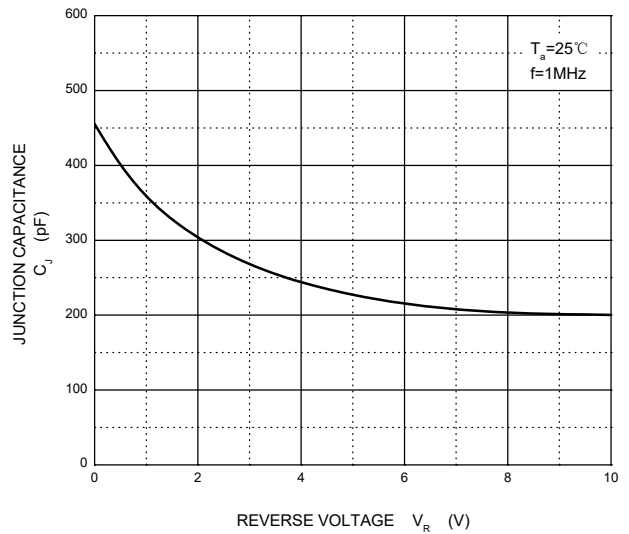
Reverse Characteristics



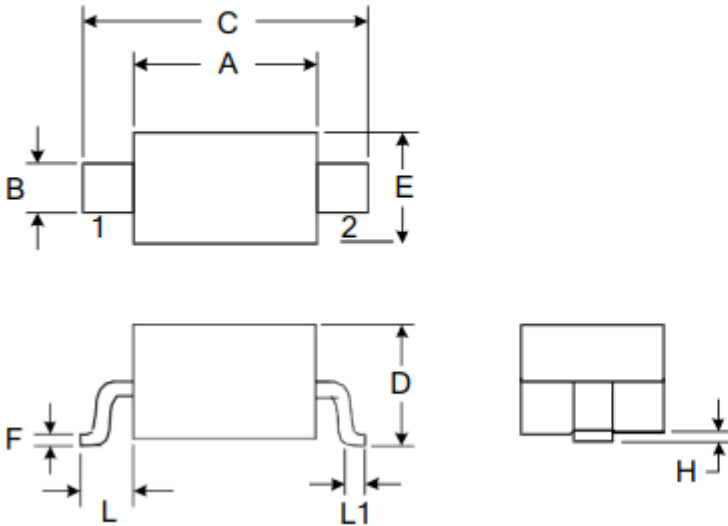
V_C — I_{PP}



Capacitance Characteristics

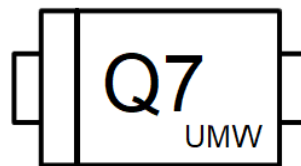


Outline Drawing – SOD323



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D		1.000		0.039
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475 REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
UMW ESDQ7V0D3	SOD-323	3000	Tape and reel