

1.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.

3.Applications

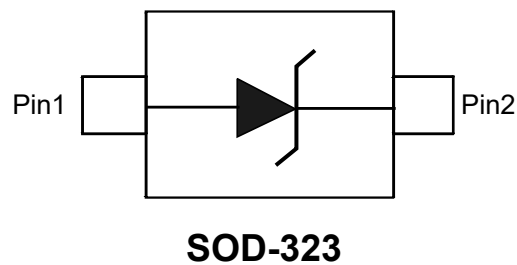
- Computers and peripherals
- Digital Cameras
- Audio and video equipment
- Cellular handsets and accessories

2.Features

- Uni-directional ESD protection of one line
- Reverse stand-off voltage: 7V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 1.7mm×1.3mm×1mm
- Fast response time

- Portable electronics
- Power supply protection
- Other electronics equipments communication systems

4.Pinning information





5. Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Parameter	Symbol	Limit	Units
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}(1)}$	± 25	kV
Air Model			
Contact Model		± 25	kV
JESD22-A114-B ESD Voltage		± 16	kV
Per Human Body Model			
ESD Voltage	Machine Model	± 0.4	kV
Peak Pulse Power	$P_{\text{pp}(2)}$	1040	W
Peak Pulse Current	$I_{\text{pp}(2)}$	65	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^\circ\text{C}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

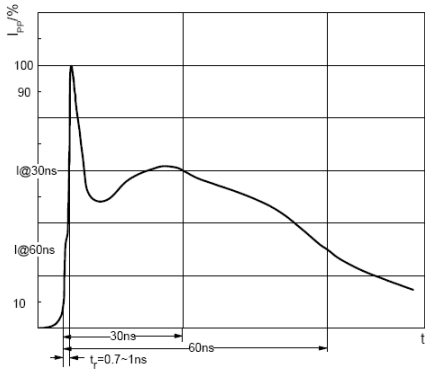
Notes:

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

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

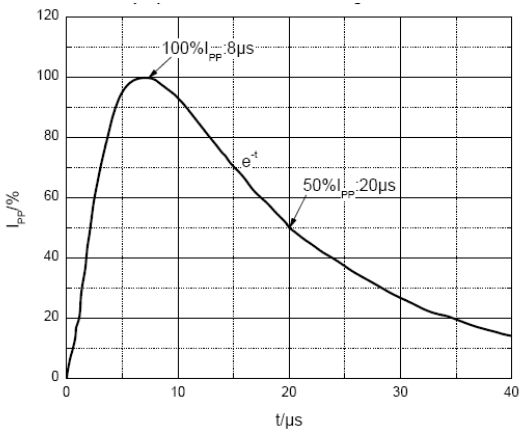


6.ESD standards compliance



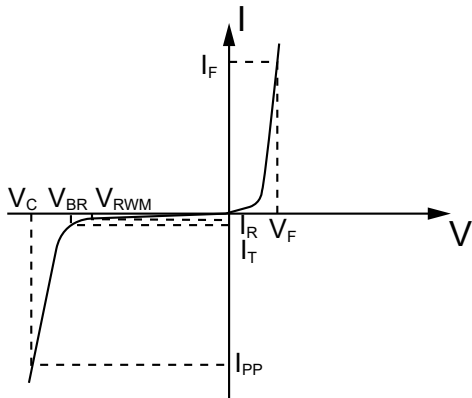
ESD pulse waveform according to IEC61000-4-2

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



8/20μs pulse waveform according to IEC 61000-4-5

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



V-I characteristics for a uni-directional TVS

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



7. Electrical Characteristic ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse stand off voltage	$V_{RWM(1)}$				7	V
Reverse leakage current	I_R	$V_{RWM}=7\text{V}$			1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	7.7		10	V
Clamping voltage	$V_{C(2)}$	$I_{PP}=65\text{A}$			16	V
Forward voltage	V_F	$I_F=20\text{mA}$	0.45		1.25	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$			500	pF

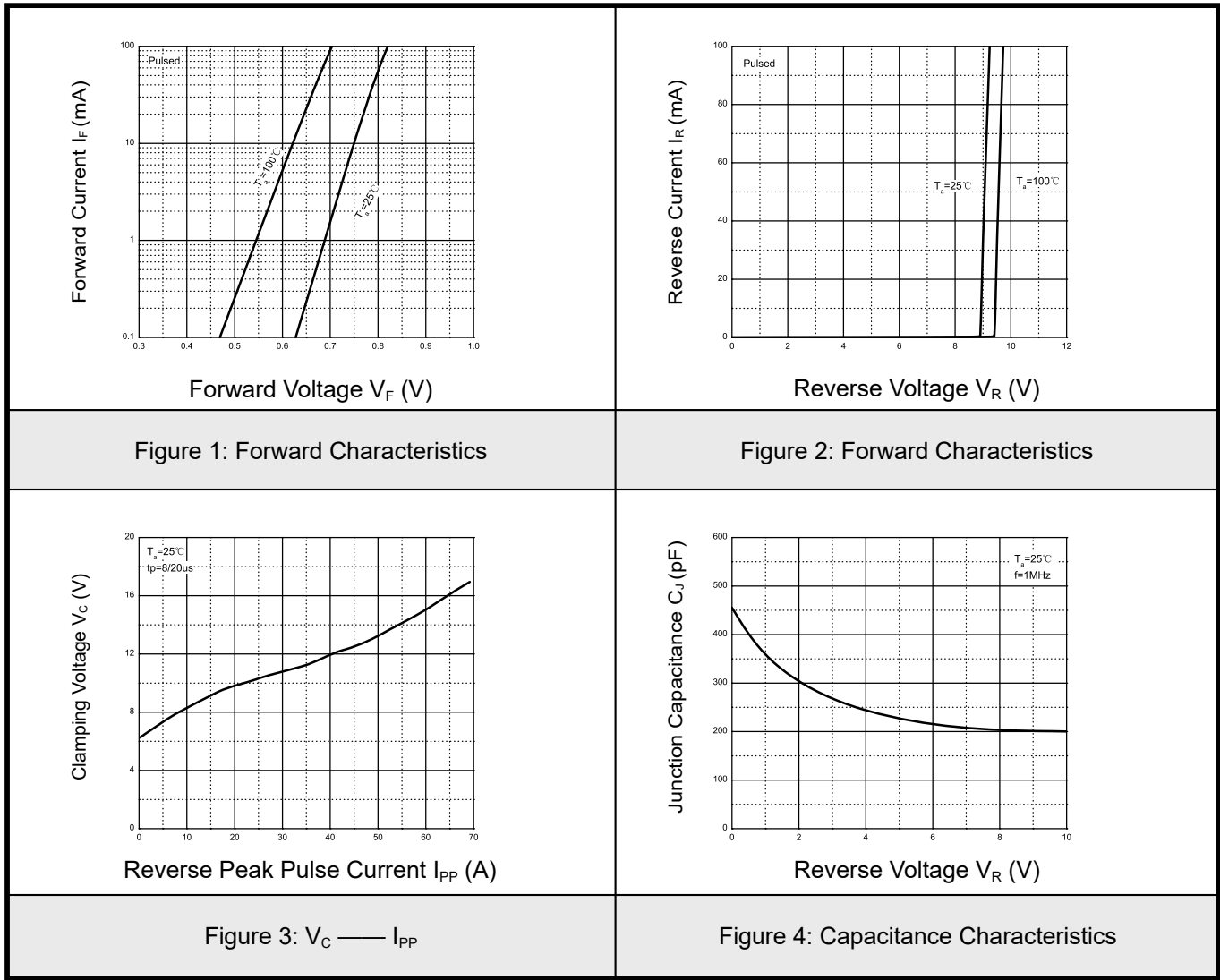
Notes:

(1). Other voltages available upon request.

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

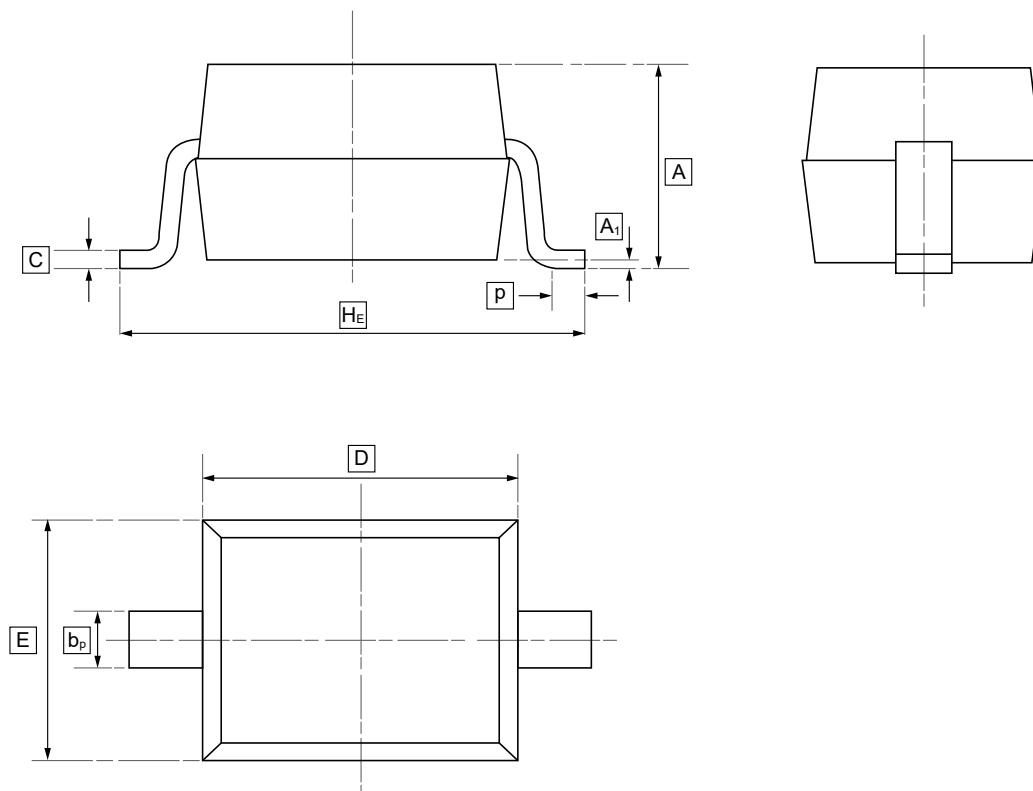


8. Typical characteristic





9.SOD-323 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	A_1	P
Min	0.90	0.25	0.10	1.60	1.15	2.30	0.01	0.20
Max	1.20	0.40	0.15	1.80	1.35	2.80	0.10	0.50



10.Ordering information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW ESDQ7V0D3	SOD-323	3000	Tape and reel



11.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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