

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

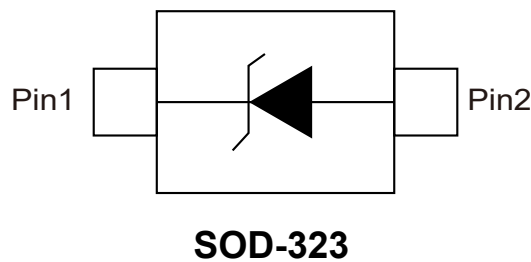
- Computers and peripherals
- Digital Cameras
- Audio and video equipment
- Cellular handsets and accessories

2.Features

- Uni-directional ESD protection of one line
- Reverse stand-off voltage: 12V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 1.7mm×1.3mm×1mm

- Portable electronics
- PAD
- Other electronics equipments
- communi-cation systems

4.Pinning information





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

Parameter	Symbol	Maximum	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		± 0.4	kV
Machine Model			
Peak Pulse Power	$P_{\text{pp}(2)}$	1600	W
Peak Pulse Current	$I_{\text{pp}(2)}$	50	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	$^\circ\text{C}$

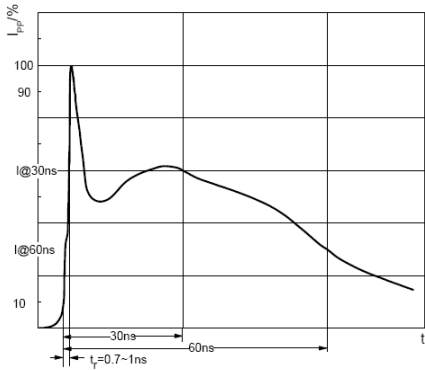
Notes:

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

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

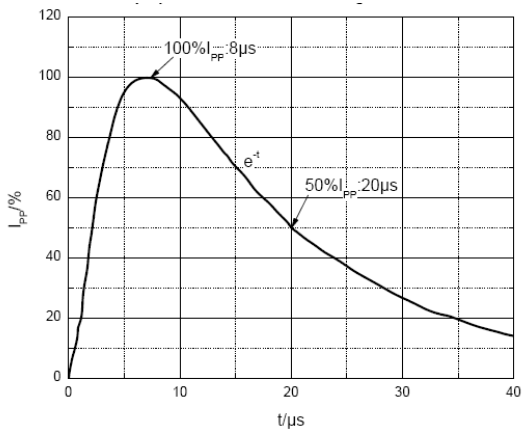


6.ESD standards compliance



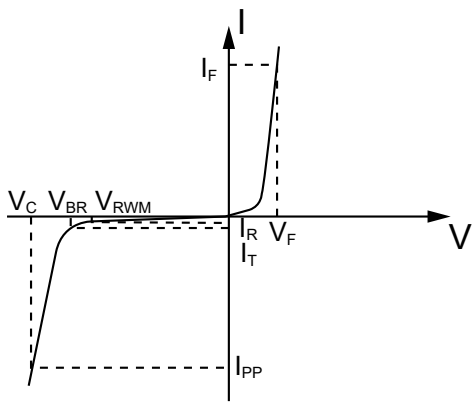
ESD pulse waveform according to IEC61000-4-2

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	$V_{RWM(1)}$				12	V
Reverse leakage current	I_R	$V_{RWM}=12\text{V}$			1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	13.3		16.5	V
Clamping voltage	$V_{C(2)}$	$I_{PP}=50\text{A}$			32	V
Forward voltage	V_F	$I_F=10\text{mA}$			0.9	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$		300		pF

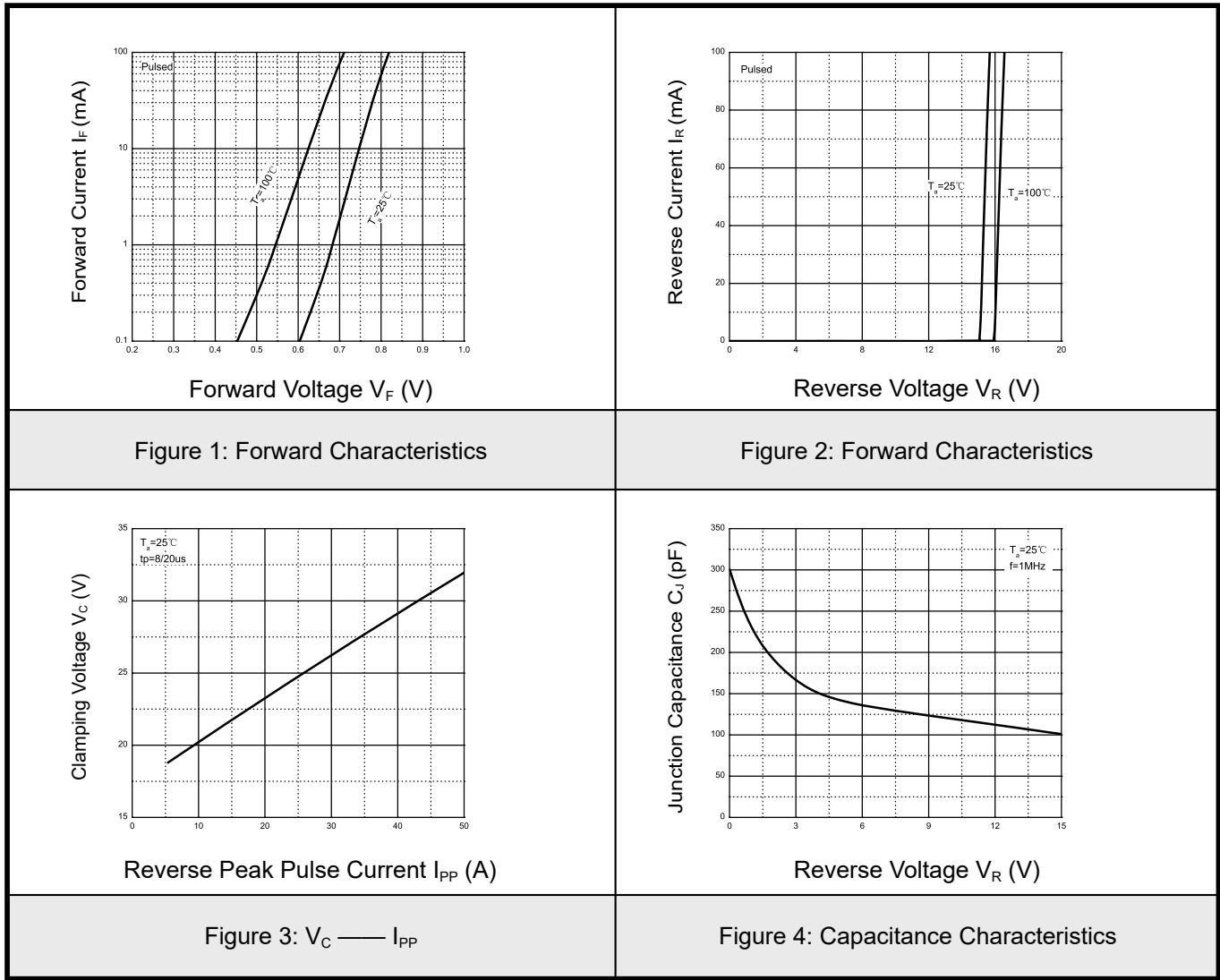
Notes:

(1).Other voltages available upon request.

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

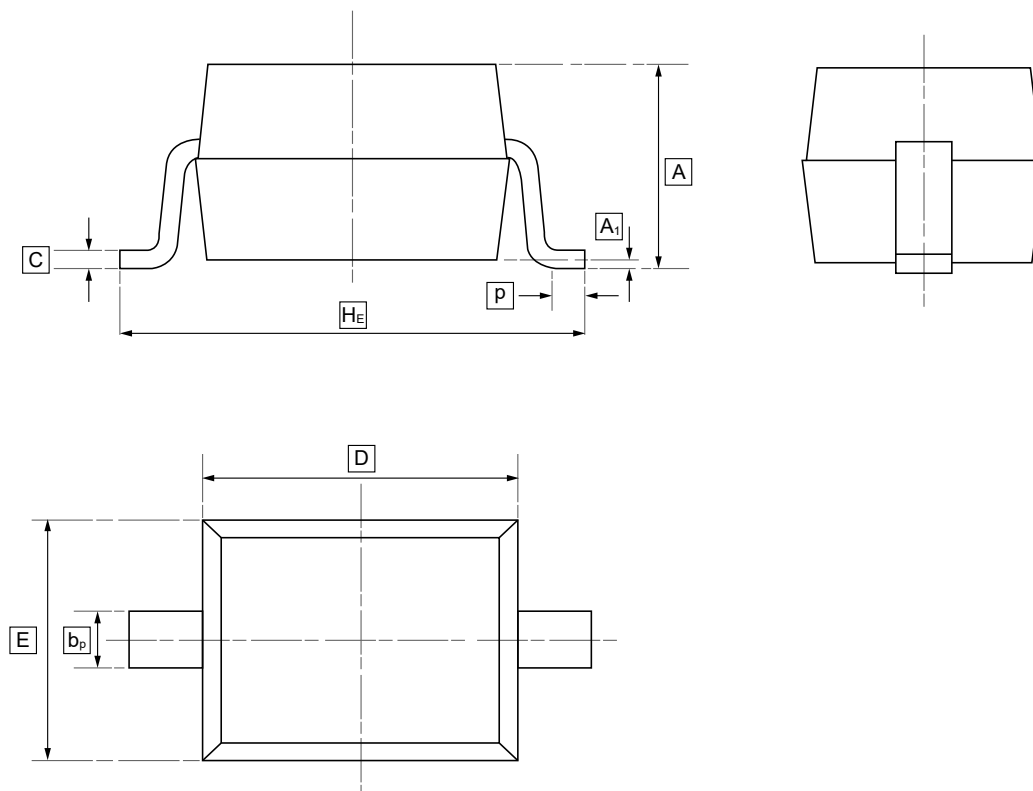


8. Typical characteristic





9.SOD-323 Package Outline Dimensions

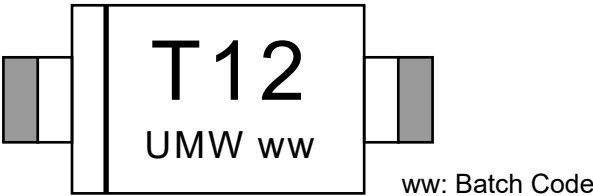


DIMENSIONS (mm are the original dimensions)

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



Order Code	Package	Base QTY	Delivery Mode
UMW ESDT12VD3	SOD-323	3000	Tape and reel



11.Disclaimer

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