

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.

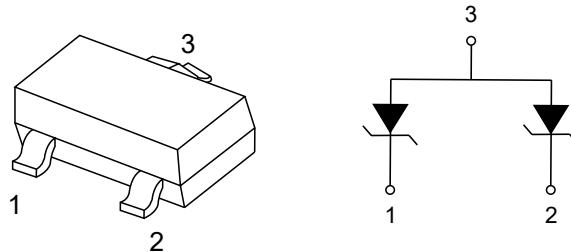
3. Applications

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

2. Features

- Uni-directional ESD protection of two line
- Reverse stand-off voltage: 24V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 2.9mm×1.3mm×1.0mm
- Fast response time

4. Pinning information



SOT-23



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	$P_{\text{PP}(2)}$	406	W
Peak Pulse Current	$I_{\text{PP}(2)}$	7	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	$^\circ\text{C}$

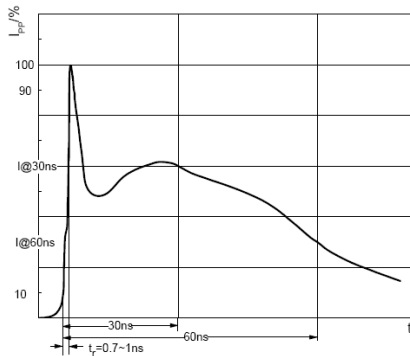
Notes:

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

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

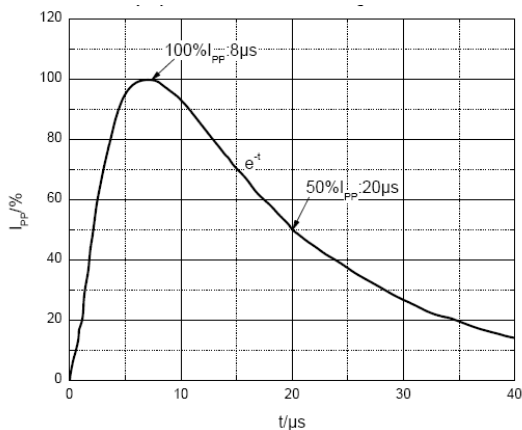


6.ESD standards compliance



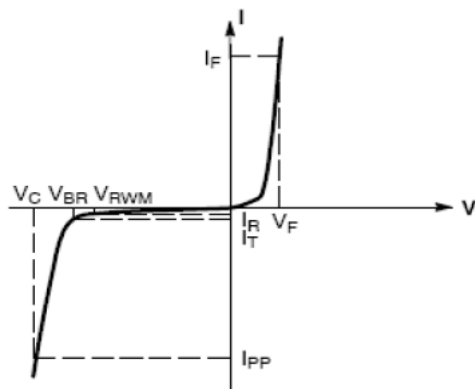
ESD pulse waveform according to IEC61000-4-2

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	$V_{RWM(1)}$				24	V
Reverse leakage current	I_R	$V_{RWM}=24\text{V}$			1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	26.7		33	V
Clamping voltage	$V_{C(2)}$	$I_{PP}=7\text{A}$			58	V
Forward voltage	V_F	$I_F=10\text{mA}$			0.9	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$		36		pF

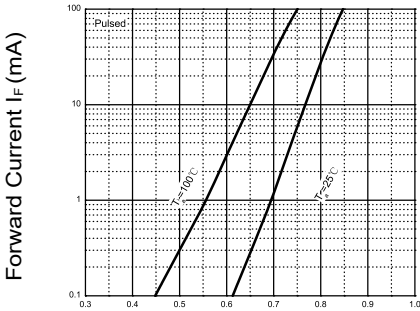
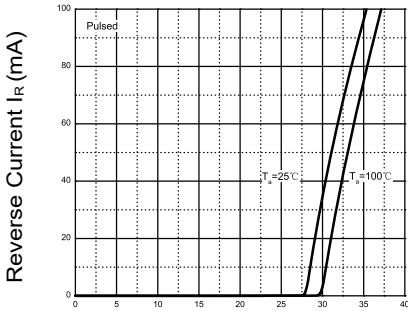
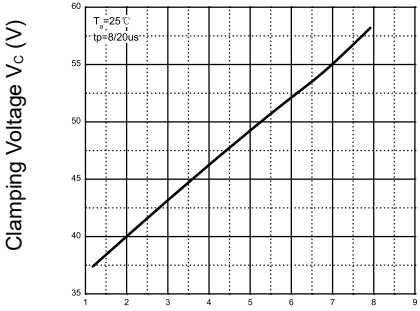
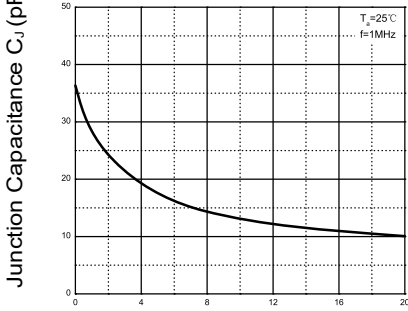
Notes:

(1) Other voltages available upon request.

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

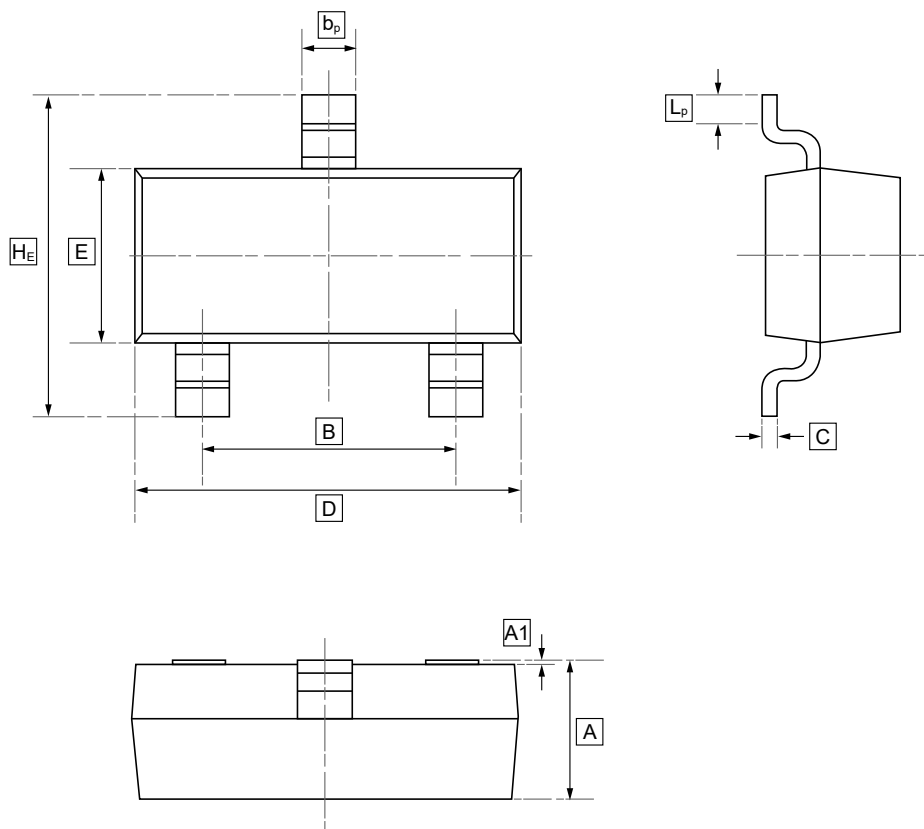


8. Typical characteristic

 <p>Forward Current I_F (mA)</p> <p>Forward Voltage V_F (V)</p>	 <p>Reverse Current I_R (mA)</p> <p>Reverse Voltage V_R (V)</p>	Figure 1: Forward Characteristics	Figure 2: Reverse Characteristics
 <p>Clamping Voltage V_C (V)</p> <p>Reverse Peak Pulse Current I_{PP} (A)</p>	 <p>Junction Capacitance C_J (pF)</p> <p>Reverse Voltage V_R (V)</p>	Figure 3: V_C — I_{PP}	Figure 4: Capacitance Characteristics



9.SOT-23 Package Outline Dimensions

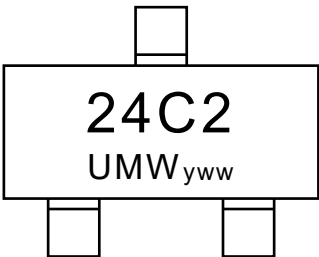


DIMENSIONS (mm are the original dimensions)

Symbol	A	B	b_p	C	D	E	H_E	A1	L_p
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50



10.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW ESD24VC2	SOT-23	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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