UMW SD12CT1G

1.Features

The SD12C is designed to protect voltage sensitive components from ESD and transient events. Excellent clamping capability, low leakage and fast response time, make this part ideal for ESD protection on designs where board space is at a premium.

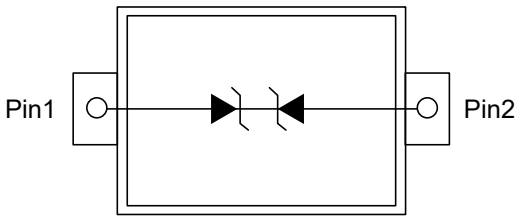
2.Mechanical Characteristics

- CASE: Void-free, transfer-molded, thermosetting plastic
- Epoxy Meets UL 94, V−0
- MOUNTING POSITION: Any
- QUALIFIED MAX REFLOW TEMPERATURE: 260°C
- Device Meets MSL 1 Requirements

3.Features

- Peak Power − 350 W (8 x 20 μs)
- Low Leakage
- Low Clamping Voltage
- Small Package for use in Portable Electronics
- Meets IEC61000−4−2 Level 4
- Meets IEC6100−4−4 Level 4
- Meets 16 kV Human Body Model ESD Requirements
- These Devices are Pb−Free and are RoHS Compliant

4.Pinning information



SOD-323

5.Absolute Maximum Ratings

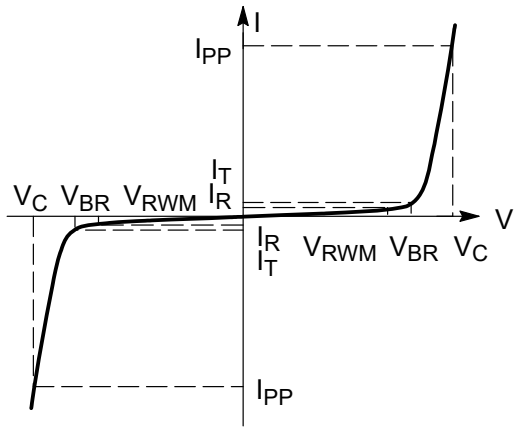
Parameter	Symbol	Value	Units
Peak Power Dissipation @ 20 μs @ TL ≤ 25°C	P_{PK}	350	W
IEC 61000−4−2 (ESD) Air		±30	kV
Contact		±30	kV
IEC 61000−4−4 (EFT)		40	A
Total Device Dissipation FR−5 Board,	P_D	200	mW
(Note 1) @ TA = 25°C, Derate above 25°C		1.5	mW/°C
Thermal Resistance from Junction−to−Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to 150	°C
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	°C

Notes:

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Minimum Solder Footprint.

6.Electrical Parameters (T_A=25°C unless otherwise noted)



Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
V_{BR}	Maximum Temperature Variation of V_{BR}

7.Electrical Characteristic (T_J=25°C unless otherwise noted)

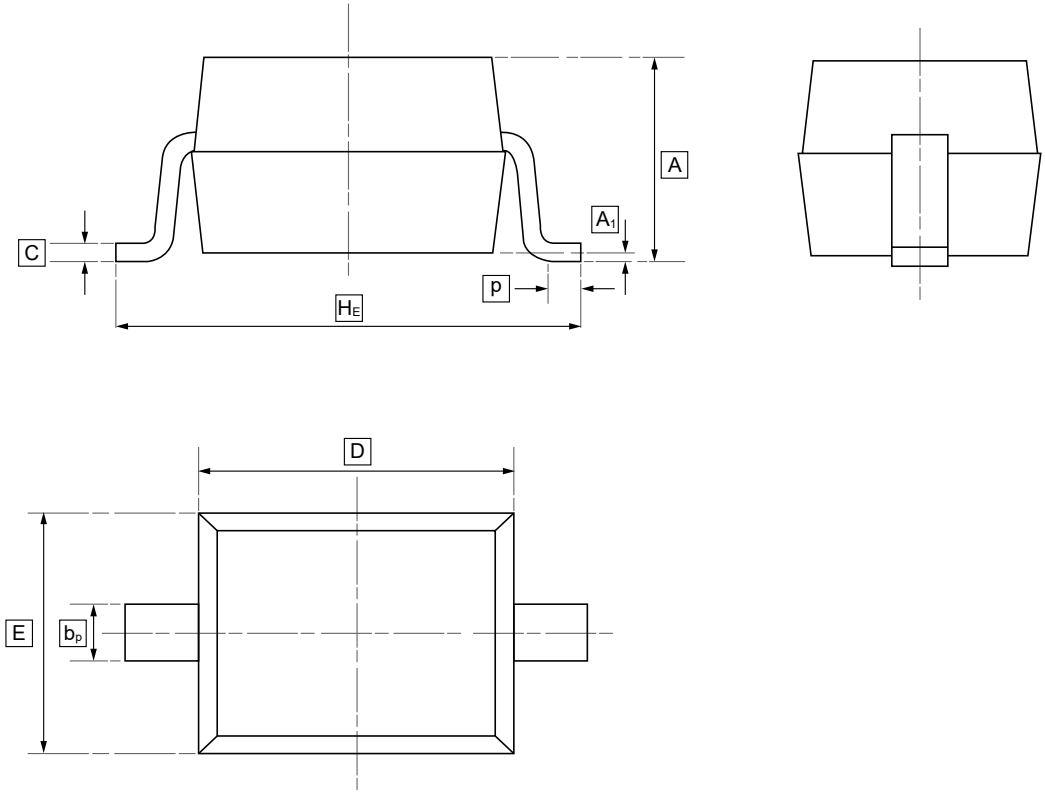
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}	(Note 2)			12	V
Breakdown Voltage	V_{BR}	I_T=1mA, (Note 3)	13.3			V
Reverse Leakage Current	I_R	V_{RWM}=12V			1	μA
Clamping Voltage	V_C	I_{PP}=5A, (8 x 20μsec Waveform)			19	V
Additional Clamping Voltage	I_{PP}	I_{PP}=15A, (8 x 20μsec Waveform)			24	V
Maximum Peak Pulse Current		8 x 20μsec Waveform			15	A
Capacitance	C_J	V_R=0V, f=1MHz		64		pF
		V_R=12V, f=1MHz		36		pF

Notes:

2. TVS devices are normally selected according to the working peak reverse voltage (VRWM), which should be equal or greater than the DC or continuous peak operating voltage level.

3. VBR is measured at pulse test current IT

8.SOD-323 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	A_1	p
Min	0.80	0.25	0.10	1.50	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

9.Ordering information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SD12CT1G	SOD-323	3000	Tape and reel

10.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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