UMW PESD5V0S1UA

1.Features

- Transient Voltage Suppression (TVS) protection of one line
- Max. peak pulse power: P_{PP}=890 W
- Low clamping voltage: V_{CL}=19V
- Low leakage current: I_{RM}=300nA
- ESD protection up to 30kV
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge); I_{PP}=47 A
- AEC-Q101 qualified

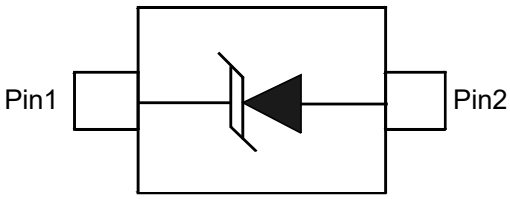
2.Applications

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Communication systems
- Portable electronics
- Medical and industrial equipment

3.Mechanical Data

- SOD323 package
- Molding compound flammability rating: UL94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

4.Pinning information



SOD-323

5. Quick reference data

T_{amb}=25°C unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Units
reverse standoff voltage	V_{RWM}				5	V
diode capacitance	C_d	V_R=0V, f=1MHz		480	530	pF

6.Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Parameter	Symbol	Conditions	Min	Typ	Max	Units
peak pulse power	P_{PP}	t_p=8/20μs ①②			890	W
peak pulse current	I_{PP}	t_p=8/20μs ①②			47	A
total power dissipation	P_{tot}	T_{amb} ≤ 25°C ③			360	mW
		④			500	mW
junction temperature	T_J				150	°C
ambient temperature	T_{amb}		-55		150	°C
storage temperature	T_{STG}		-65		150	°C

Notes:

① Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.

② Soldering point of cathode tab.

③ Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

④ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm^2.

7.ESD maximum ratings

T_{amb}=25°C unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Units
electrostatic discharge voltage	V_{ESD}	IEC 61000-4-2 (contact discharge) ①			30	kV
		machine model			400	V

Notes:

① Device stressed with ten non-repetitive ESD pulses.

8.ESD standards compliance

Parameter	Conditions
IEC 61000-4-2; level 4 (ESD)	> 15 kV (air); > 8 kV (contact)
MIL-STD-883; class 3 (human body model)	> 4 kV

9.Electrical Characteristic (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
reverse standoff voltage	V_{RWM}				5	V
reverse leakage current	I_{RM}	V_{RWM}=5V		0.3	4	μA
breakdown voltage	V_{BR}	I_R=5mA	6.2	6.8	7.3	V
diode capacitance	C_d	V_R=0V, f=1MHz		480	530	pF
clamping voltage	V_{CL}	I_{PP}=47A ①			19	V
		I_{PP}=25A			13.5	V
		I_{PP}=5A			9.8	V
differential resistance	r_{dif}	I_R=5mA		2	100	Ω

Notes:

① Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.

10.Typical characteristic

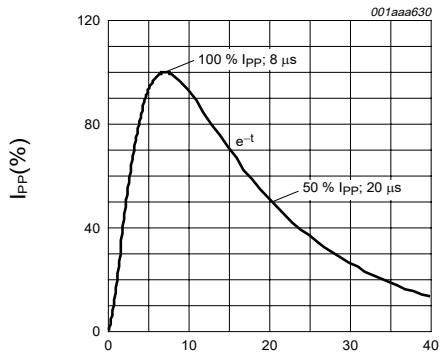


Figure 1: 8/20 µs pulse waveform according to IEC 61000-4-5

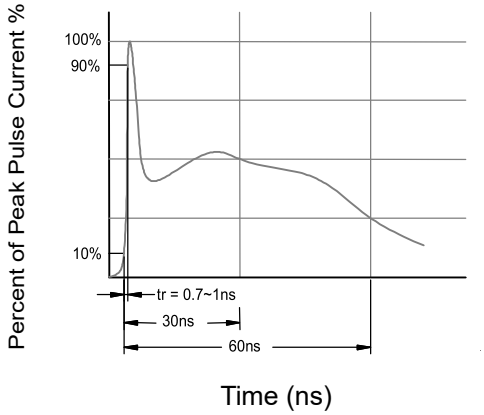


Figure 2: ESD pulse waveform according to IEC 61000-4-2

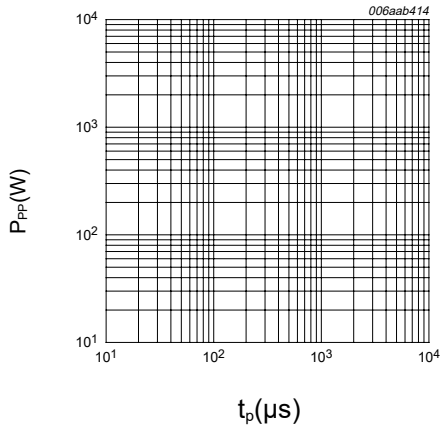


Figure 3: Peak pulse power as a function of exponential pulseduration; typical values

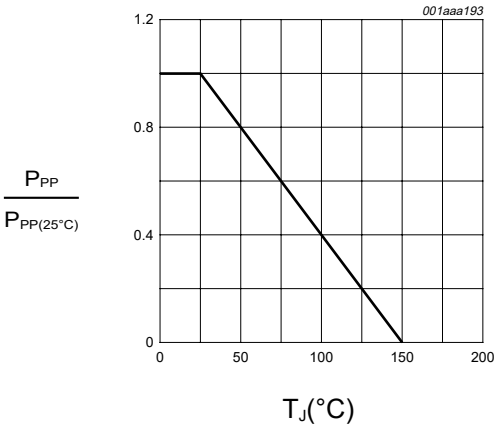


Figure 4: Relative variation of peak pulse power as a function of junction temperature; typical values

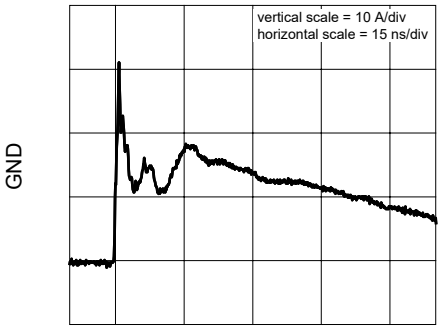


Figure 5: unclamped +8 kV ESD pulse waveform (IEC 61000-4-2 network)

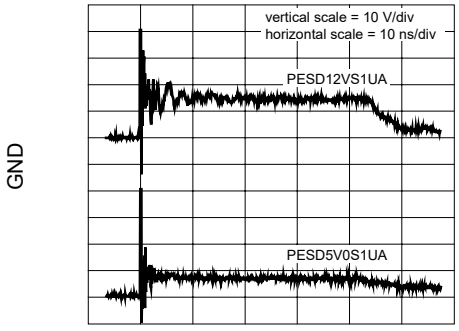
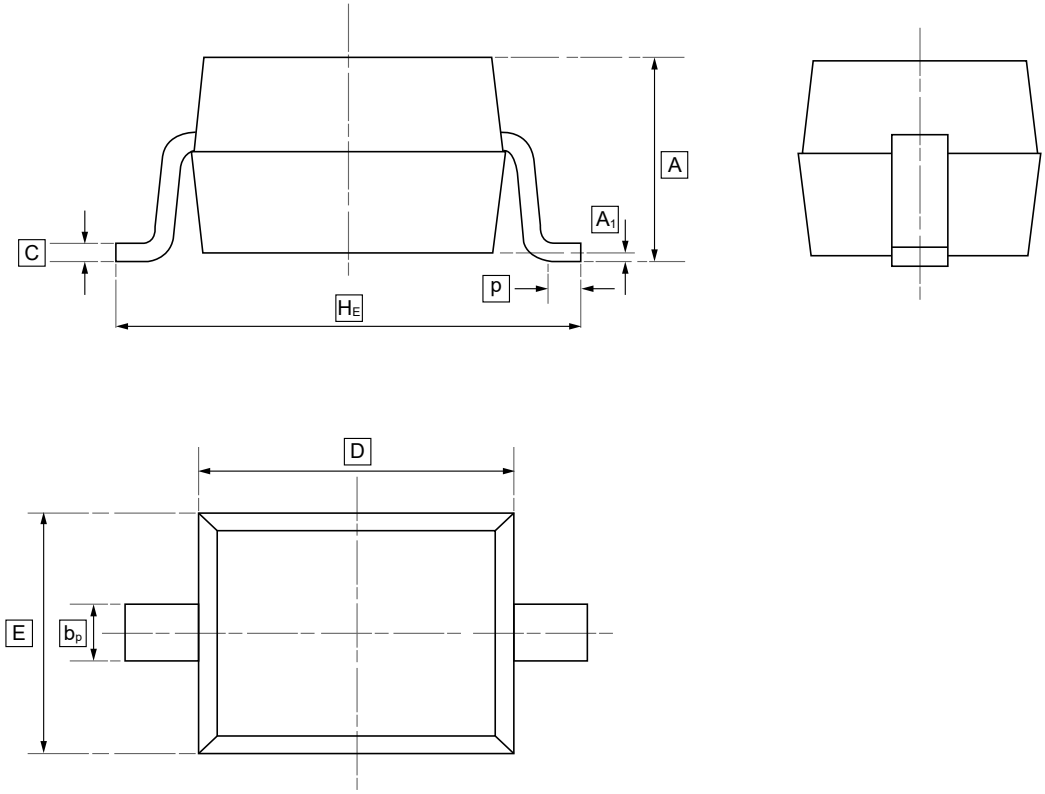


Figure 6: clamped +8 kV ESD pulse waveform (IEC 61000-4-2 network)

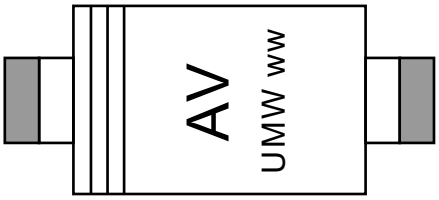
11.SOD-323 Package Outline Dimensions



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

12.Ordering information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW PESD5V0S1UA	SOD-323	3000	Tape and reel

13.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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