UMW PESD3V3U1UA

1.Description

Ultra low capacitance unidirectional ElectroStatic Discharge (ESD) protection diodes in small Surface-Mounted Device (SMD) plastic packages designed to protect one signal line from the damage caused by ESD and other transients.

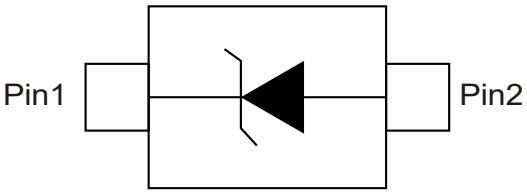
2.Features

- Unidirectional ESD protection of one line
- Ultra low diode capacitance: C_d=2.6pF
- Very low leakage current: I_{RM}=1nA
- ESD protection up to 9 kV
- IEC 61000-4-2; level 4 (ESD)

3.Applications

- USB interfaces
- 10/100/1000 Mbit/s Ethernet
- FireWire
- High-speed data lines
- Subscriber Identity Module (SIM) card protection
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals
- Audio and video equipment

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}				3.3	V
diode capacitance	C_d	V_R=0V, f=1MHz		2.6	3.1	pF

6.Limiting values

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
junction temperature	T_J				150	°C
ambient temperature	T_{amb}		-55		150	°C
storage temperature	T_{STG}		-65		150	°C

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			9	kV
		MIL-STD-883 (human body model)			10	kV

Notes:

① Device stressed with ten non-repetitive ESD pulses.

8.ESD standards compliance

Parameter	Conditions
IEC 61000-4-2; level 4 (ESD)	> 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}				3.3	V
reverse leakage current	I_{RM}	V_{RWM}=3V		1	100	nA
breakdown voltage	V_{BR}	I_R=5mA	4.5	5.6	6.8	V
diode capacitance	C_d	V_R=0V, f=1MHz		2.6	3.1	pF
differential resistance	r_{dif}	I_R=5mA			100	Ω

10.1Typical characteristic

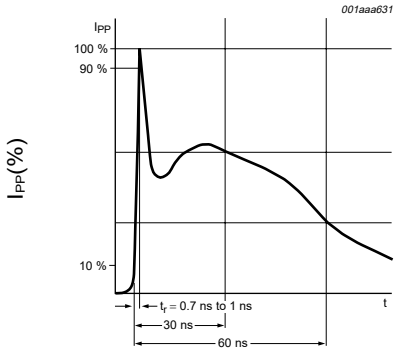


Figure 1: ESD pulse waveform according to IEC 61000-4-2

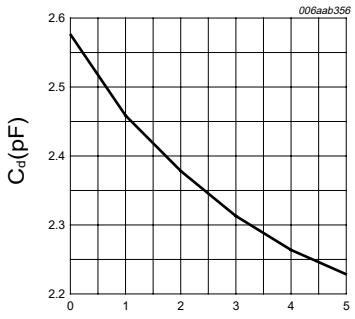


Figure 2: Diode capacitance as a function of reverse voltage; typical values

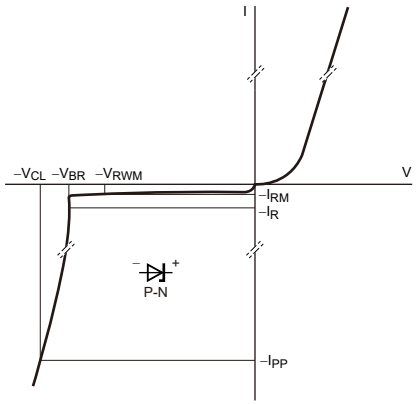


Figure 3: V-I characteristics for a unidirectional ESD protection diode

10.2Typical characteristic

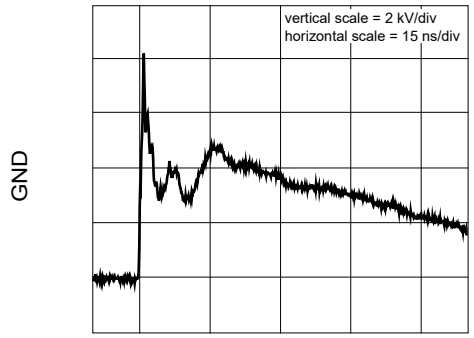


Figure 1: unclamped +8 kV ESD pulse waveform (IEC 61000-4-2 network)

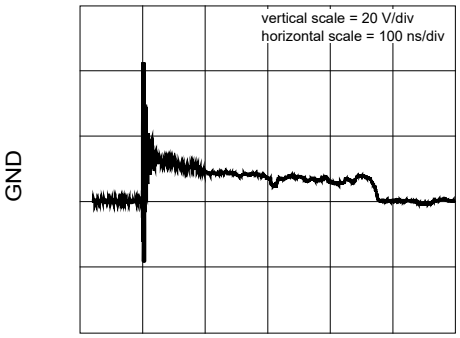


Figure 2: clamped +8 kV ESD pulse waveform (IEC 61000-4-2 network) pin 1 to 2

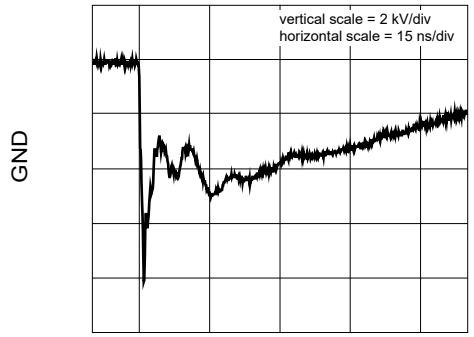


Figure 3: unclamped −8 kV ESD pulse waveform (IEC 61000-4-2 network)

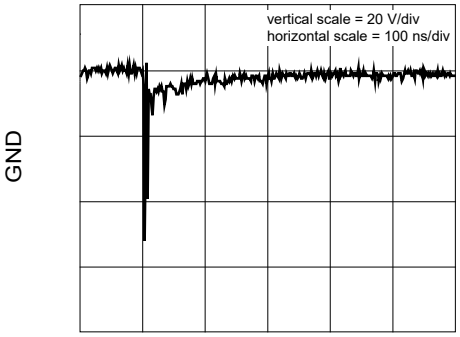
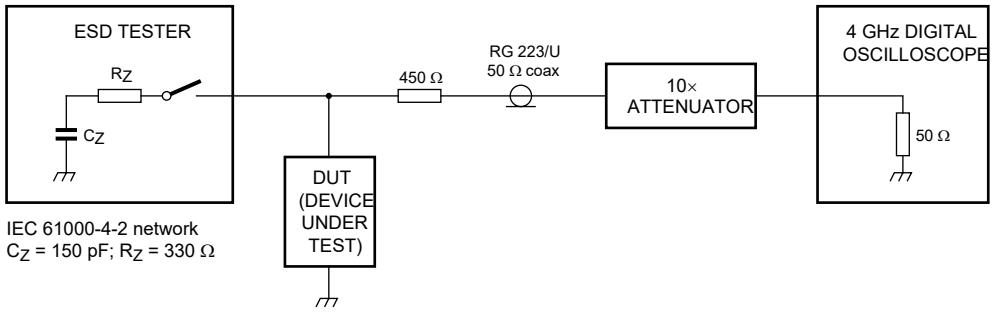
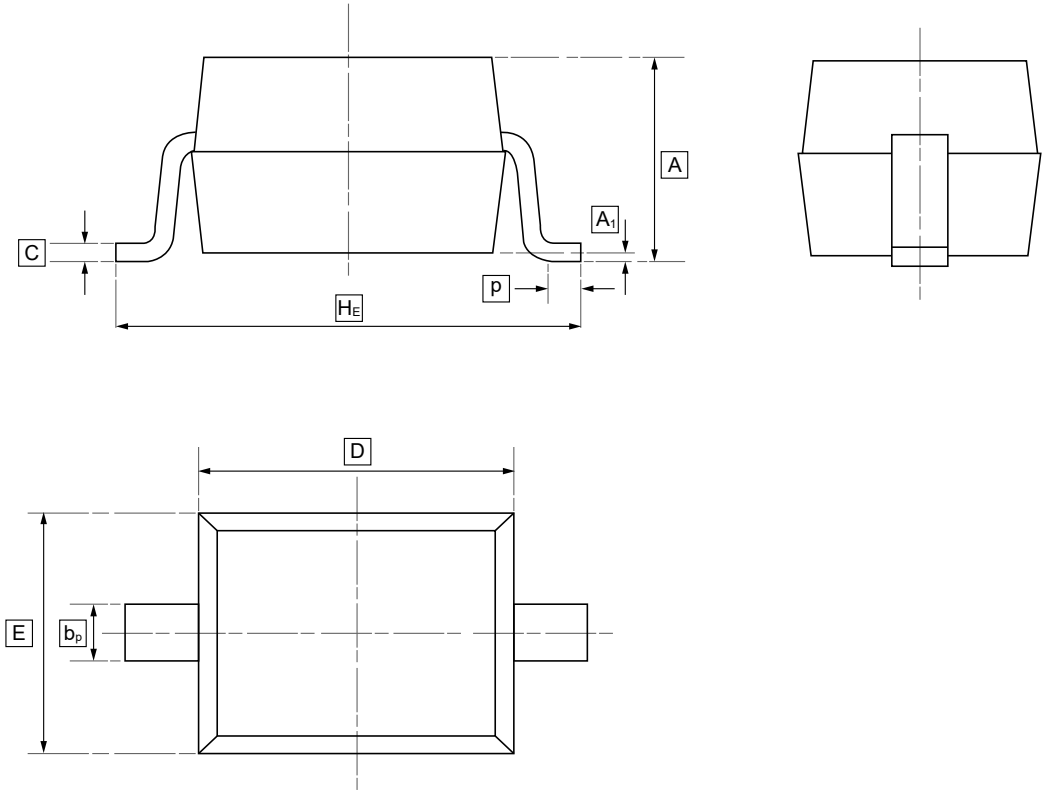


Figure 4: clamped −8 kV ESD pulse waveform (IEC 61000-4-2 network) pin 1 to 2



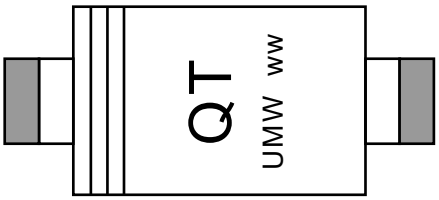
11.SOD-323 Package Outline Dimensions



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: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW PESD3V3U1UA	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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