UMW ESDA8V2-1J

1.Description

The UMW ESDA8V2-1J is a unidirectional single line Transil diode designed specifically for the protection of integrated circuits in portable equipment and miniaturized electonic devices subject to EOS and ESD transient over voltages.

2.Applications

- Computers
- Printers
- Communication systems
  Cellular phone handsets and accessories
- Video equipment

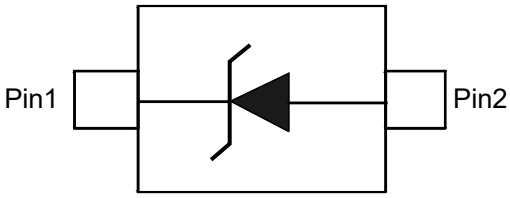
3.Features

- Breakdown voltage V_{BR}=8.2V
- Unidirectional device
- High peak power dissipation: 500W
  (8/20 μs waveform)
- ESD protection level better than IEC 61000-4-2 level 4: 30 kV contact discharge
- Low leakage current (< 0.5 μA @ 5 V)
- IEC 61000-4-2 level 4
  – ±15 kV (air discharge)
  – ±8 kV (contact discharge)
- MIL STD 883G - Method 3015-7: class 3B
  – HBM (human body model): ≥8kV

4.Benefits

- High EOS and ESD protection level
- High integration
- Suitable for high density boards

5.Pinning information



SOD-323

6.Absolute Maximum Ratings T_A= 25°C

Parameter		Symbol	Value	Units
ESD discharge: IEC 61000-4-2 air discharge on input pin			±30	kV
IEC 61000-4-2 contact discharge on input pin		V_{PP}	±30	kV
MIL STD 883G - Method 3015-7: class 3B			±30	kV
Peak pulse power dissipation (8/20 μs) (1)	$T_{j\ initial}=T_{amb}$	P_{PP}	500	W
Peak pulse current (8/20 μs)		I_{PP}	25	A
Junction temperature range		T_J	-40 to 125	°C
Storage temperature range		T_{STG}	-55 to 150	°C
Maximum lead temperature for soldering during 10s		T_L	260	°C

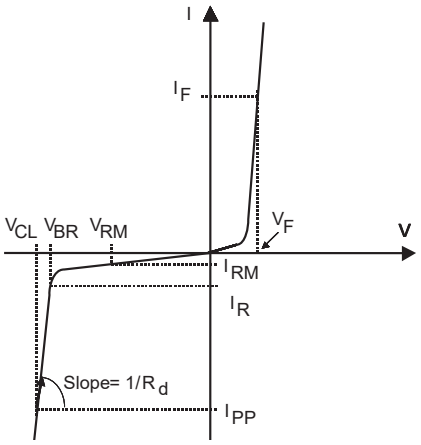
Notes:

For a surge greater than the maximum values, the diode will fail in short-circuit.

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Breakdown Voltage	V_{BR}	I_R=1mA	8.2			V
Leakage current @ V_{RM}	I_{RM}	V_{RWM}=5V		0.1	0.5	μA
		I_{PP}=1A			11	V
Clamping voltage (8/20 μs waveform)	V_{CL}	I_{PP}=5A			13	V
		I_{PP}=25A			20	V
Input capacitance	C	V_R=0V, F_{osc}=1MHz, V_{osc}=30mV		210	250	pF

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



Symbol	Parameter
V_{BR}	Breakdown voltage
I_{RM}	Leakage current @ V_{RM}
V_{RM}	Stand-of voltage
V_{CL}	Clamping voltage
I_{PP}	Peak pulse current
C	Input capacitance

9.1Typical characteristic

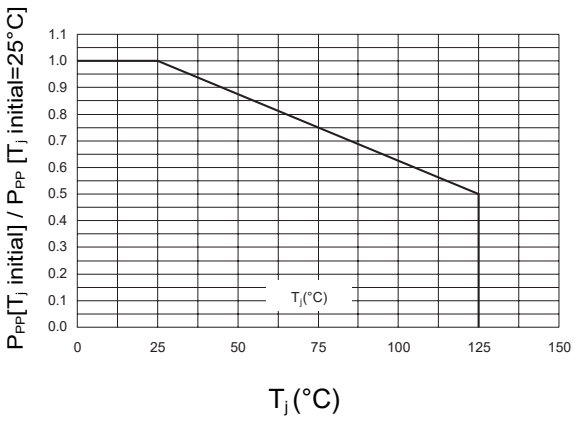


Figure 1: Relative variation of peak pulse power versus initial junction temperature

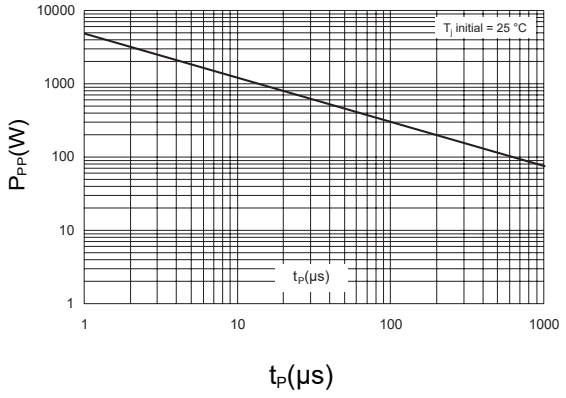


Figure 2: Peak pulse power versus exponential pulse duration

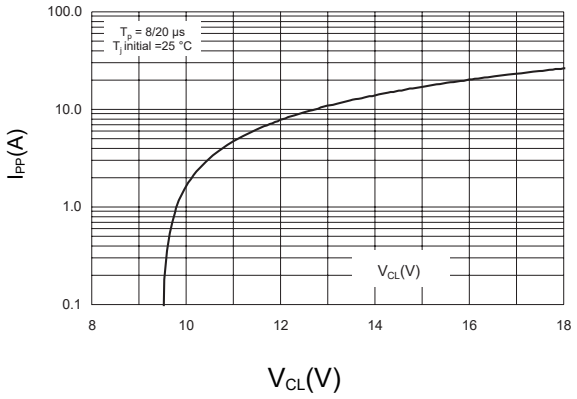


Figure 3: Clamping voltage versus peak pulse current (typical values, exponential waveform)

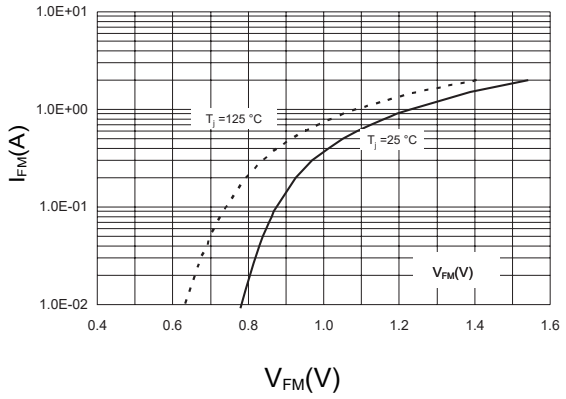


Figure 4: Forward voltage drop versus peak forward current (typical values)

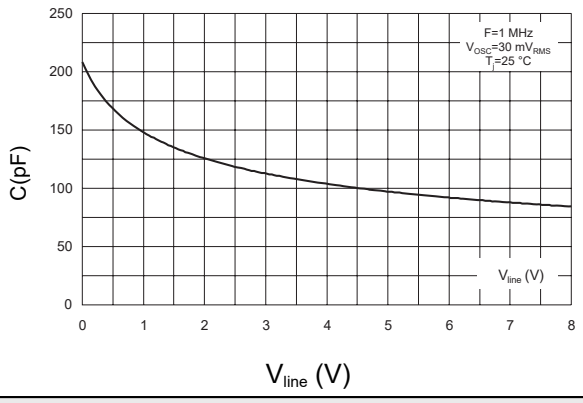


Figure 5: Junction capacitance versus reverse voltage applied (typical values)

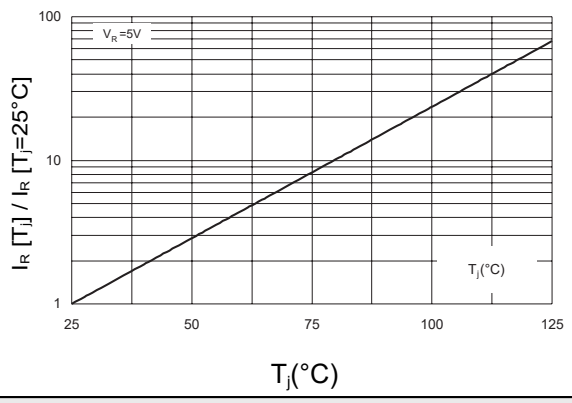


Figure 6: Relative variation of leakage current versus juntion temperature (typical values)

9.2Typical characteristic

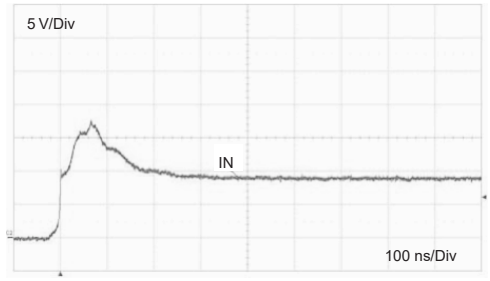


Figure 7: ESD response to IEC 61000-4-2
(+15 kV air discharge)

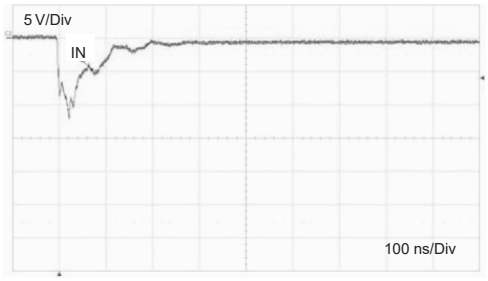
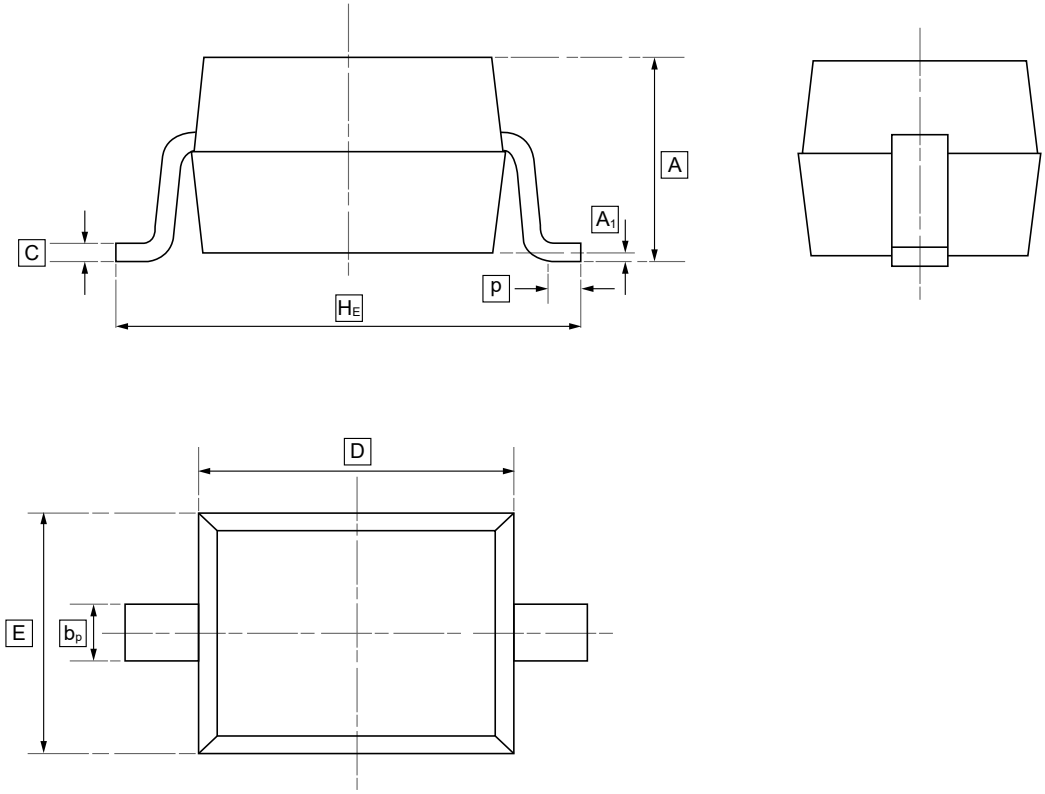


Figure 8: ESD response to IEC 61000-4-2
(-15 kV air discharge)

10.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

11.Ordering information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW ESDA8V2-1J	SOD-323	3000	Tape and reel

12.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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