UMW ESDK5B0U1S3

1.Description

The UMW EK5B0U1S3 is a bi-directional TVS diode, making this device an ideal solution for protecting voltage sensitive data and power line. It is assembled into an ultra-small SOD-323 lead-free package. The small size and high.

ESD surge protection make EK5B0U1S3 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications

2.Features

- Ultra low capacitance: 20 pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
- – IEC 61000-4-2 (ESD) immunity test

  Air discharge: ±30kV

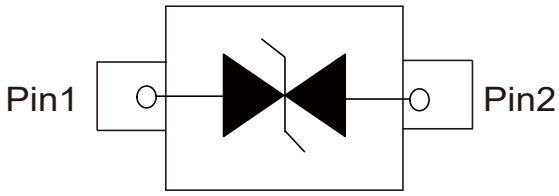
  Contact discharge: ±30kV

  – IEC61000-4-5 (Lightning) 10A (8/20μs)

3.Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

4.Pinning information



SOD-323

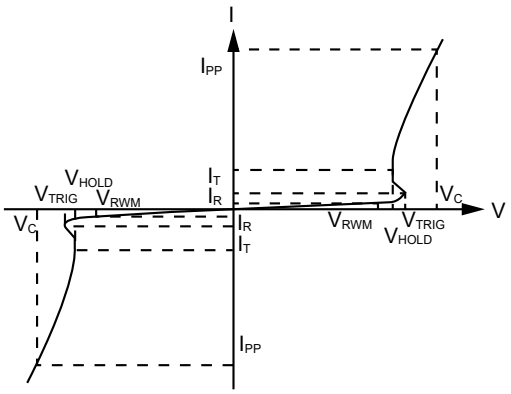
5.Absolute Maximum Ratings T_A= 25°C

Parameter	Symbol	Maximum	Units
Peak Pulse Power (8/20μs)	P_{PK}	150	W
Peak Pulse Current (8/20μs)	I_{PP}	10	A
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±30	kV
ESD per IEC 61000−4−2 (Contact)		±30	kV
Junction Temperature	T_J	-55 to 125	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T=1mA	6	7		V
Reverse Leakage Current	I_R	V_{RWM}=5V			0.5	μA
Clamping Voltage	V_C	I_{PP}=1A(8 x 20μs pulse)			7.5	V
Clamping Voltage	V_C	I_{PP}=10A(8 x 20μs pulse)		12	15	V
Junction Capacitance	C_J	V_R=0V, f=1MHz		20	25	pF

7.Portion Electronics Parameter



V-I characteristics for a uni-directional TVS

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

8.Typical characteristic

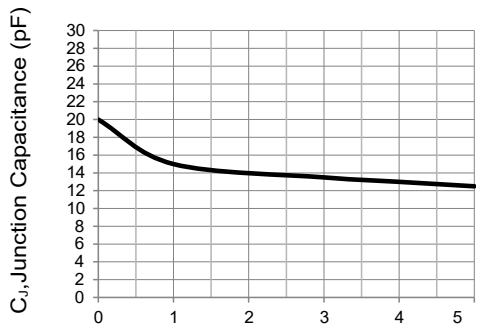


Figure 1: Junction Capacitance vs. Reverse Voltage

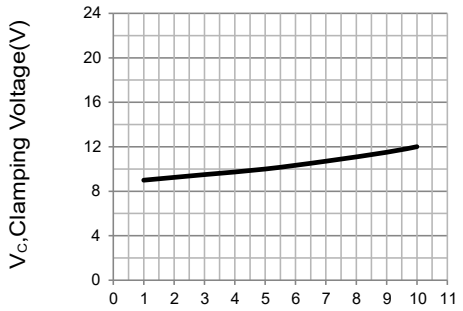


Figure 2: Clamping Voltage vs. Peak Pulse Current

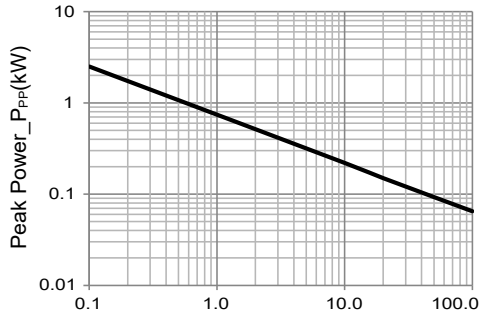


Figure 3: Peak Pulse Power vs. Pulse Time

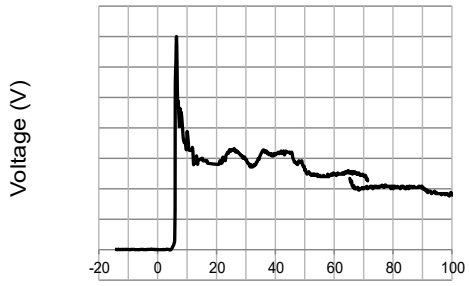


Figure 4: IEC61000−4−2 Pulse Waveform

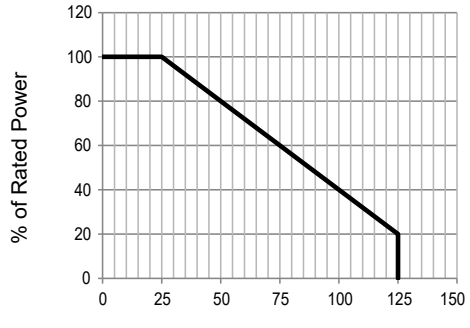


Figure 5: Power Derating Curve

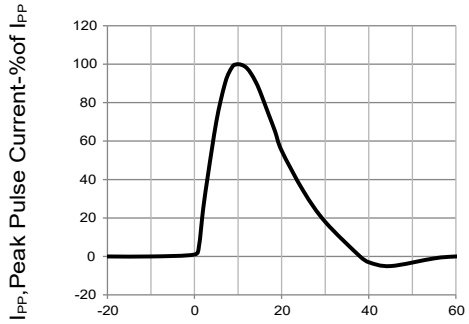
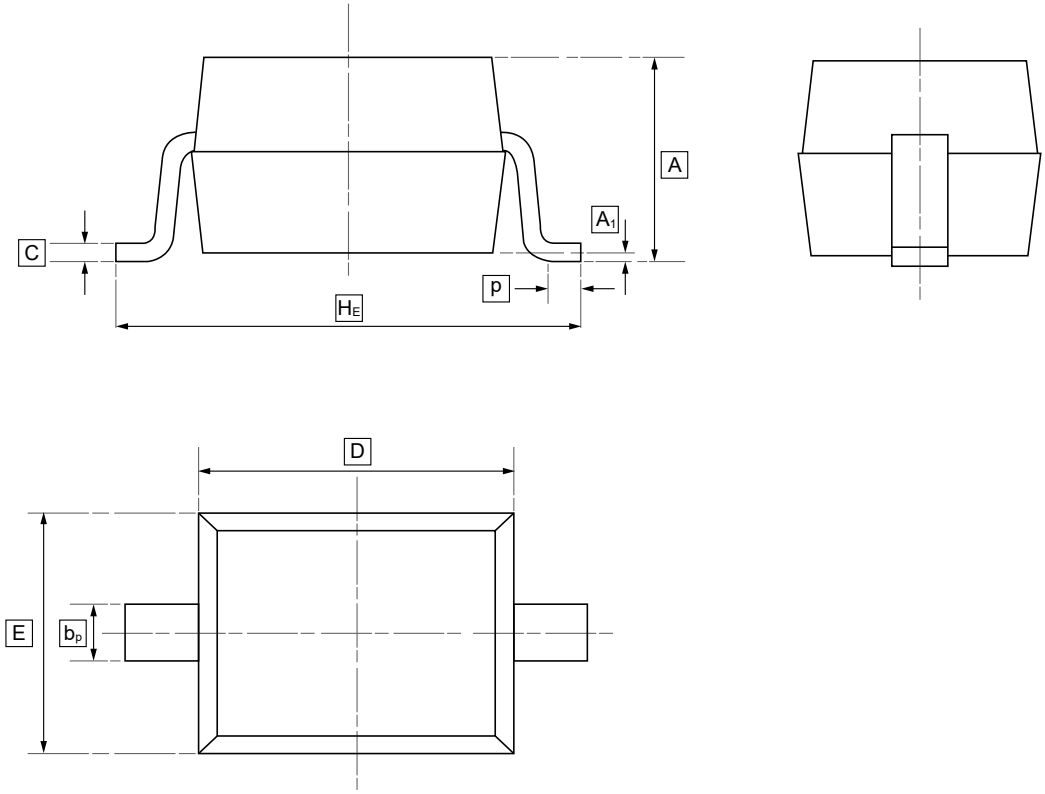


Figure 6: 8 X 20us Pulse Waveform

9.SOD-323 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	A_1	P
Min	0.90	0.25	0.10	1.60	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

10.Ordering information

ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW ESDK5B0U1S3	SOD-323	3000	Tape and reel

11.Disclaimer

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