

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

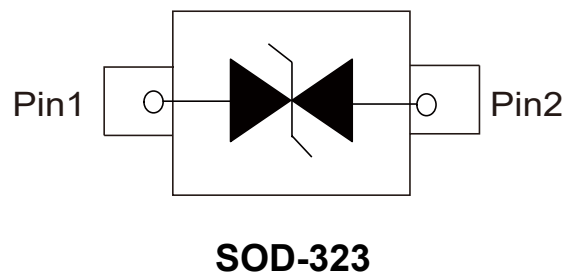
2.Features

- 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: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 10A (8/20 μs)

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





5. Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

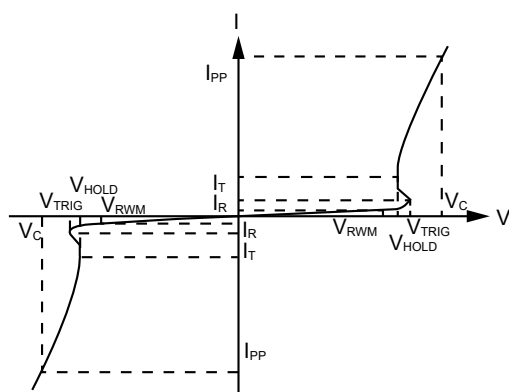
Parameter	Symbol	Maximum	Units
Peak Pulse Power (8/20 μs)	P_{PK}	150	W
Peak Pulse Current (8/20 μs)	I_{PP}	10	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	kV
Junction Temperature	T_J	-55 to 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$



6. Electrical Characteristic ($T_A=25^\circ\text{C}$ unless otherwise noted)

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

7. Portion Electronics Parameter

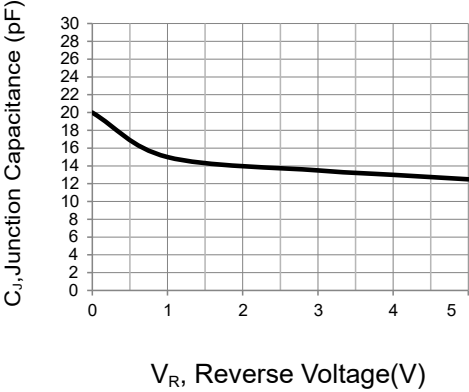
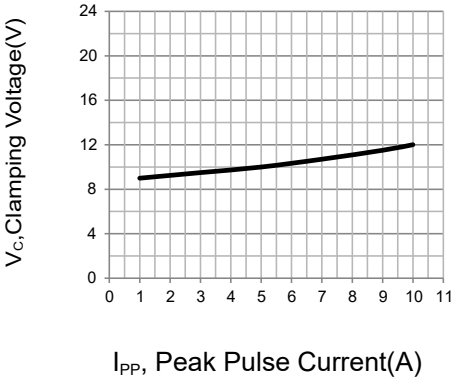
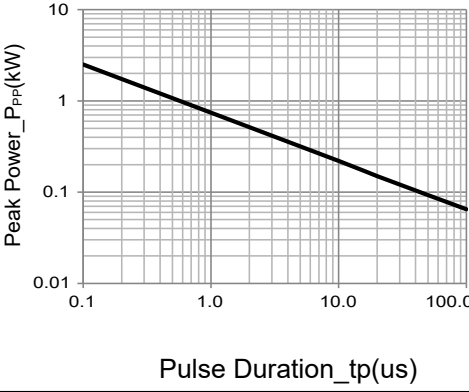
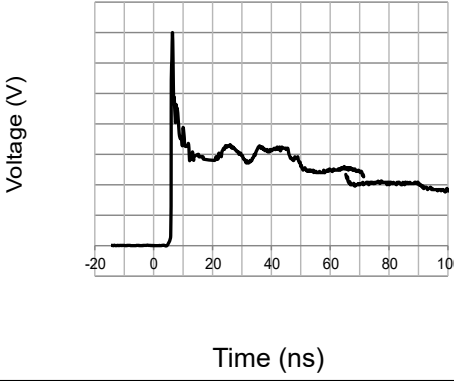
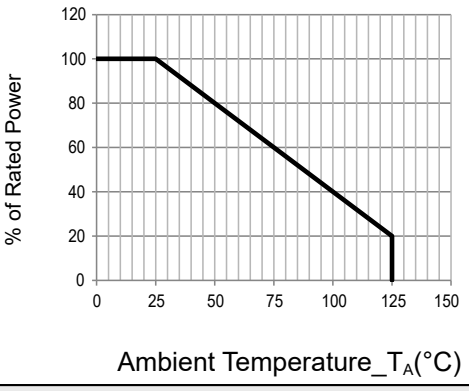
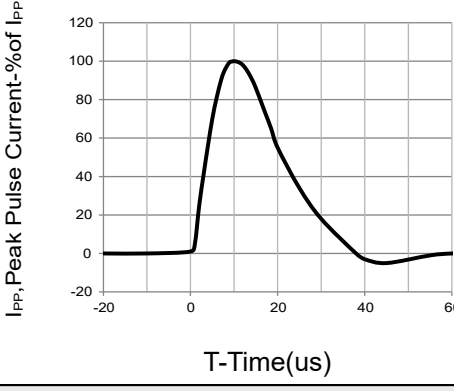


V-I characteristics for a uni-directional TVS

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}

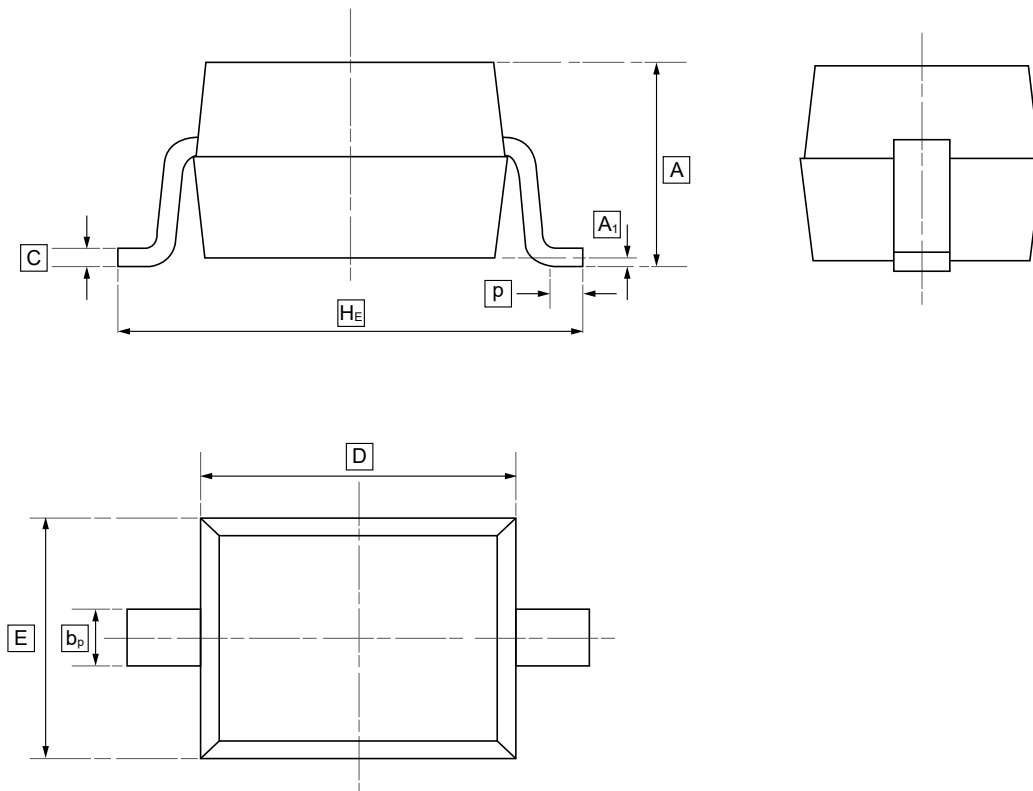


8. Typical characteristic

 C_{j}, Junction Capacitance (pF) V_R, Reverse Voltage(V)	 V_c, Clamping Voltage(V) I_{PP}, Peak Pulse Current(A)	Figure 1: Junction Capacitance vs. Reverse Voltage	Figure 2: Clamping Voltage vs. Peak Pulse Current
 Peak Power P_{PP}(kW) Pulse Duration t_p(us)	 Voltage (V) Time (ns)	Figure 3: Peak Pulse Power vs. Pulse Time	Figure 4: IEC61000-4-2 Pulse Waveform
 % of Rated Power Ambient Temperature T_A(°C)	 I_{PP}, Peak Pulse Current-% of I_{PP} T-Time(us)	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

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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