

1.Description

The 23BA05UL is a uni-directional TVS diode to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high speed data lines. It complies with IEC 61000-4-2 (ESD), $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into a lead-free SOT-23 package.

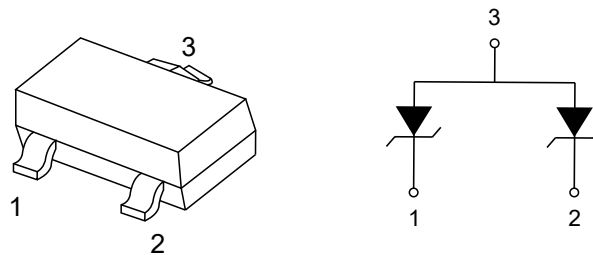
2.Features

- Low clamping voltage
- Ultra low leakage current
- Operating voltage: 5V
- IEC-61000-4-2 ESD $\pm 25\text{kV}$ Air, $\pm 20\text{kV}$ Contact
- Packaging: 7 inch reel, 3000pcs/reel

3.Applications

- Cellular Handsets and Accessories
- Portable Instrumentation
- Personal Digital Assistants
- Notebooks and Handhelds
- Digital Cameras
- Peripherals

4.Pinning information



SOT-23



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

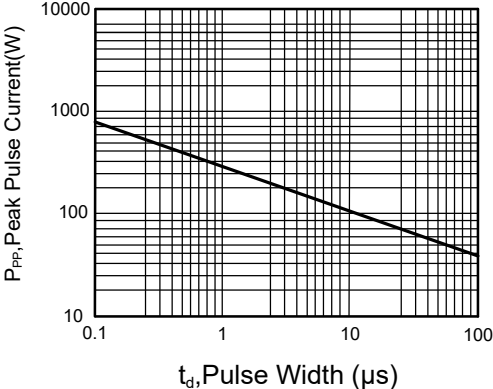
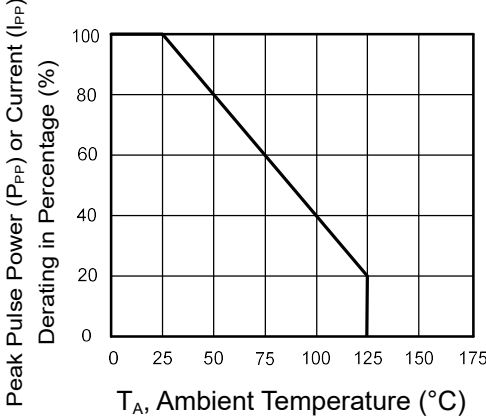
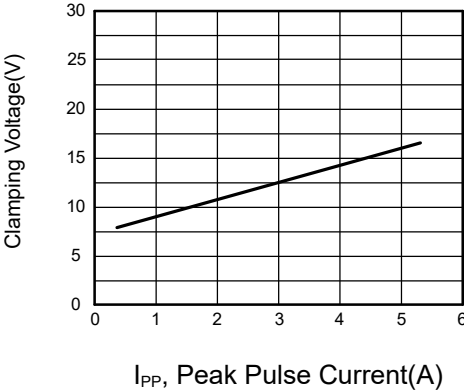
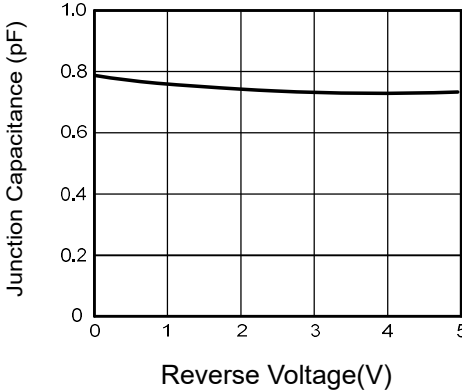
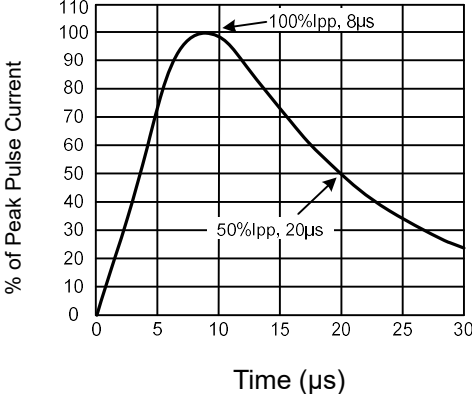
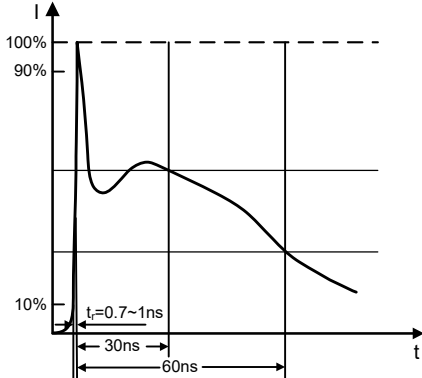
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20 μs)	P_{PP}	80	W
Peak Pulse Current (8/20 μs)	I_{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	kV
Ambient Temperature Range	T_A	-55 to 125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6			V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}(8/20\mu\text{s})$			9	V
Clamping Voltage	V_C	$I_{PP}=5\text{A}(8/20\mu\text{s})$			16	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$			0.8	pF



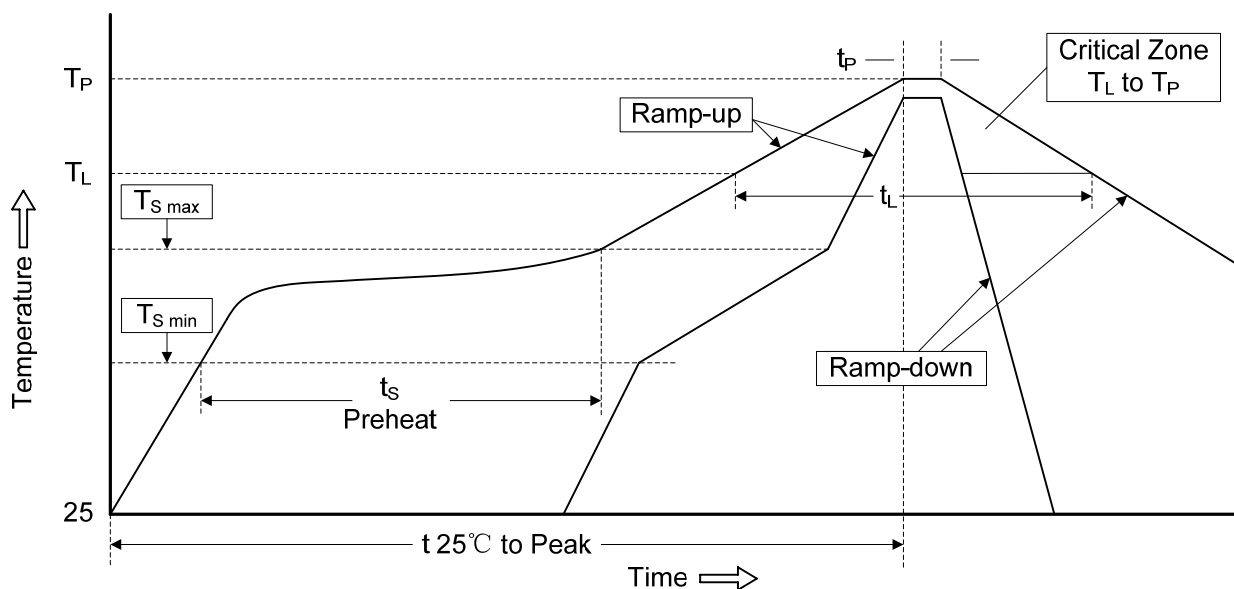
7. Typical characteristic

	
Figure 1: Peak Pulse Power Rating Curve	Figure 2: Pulse Derating Curve
	
Figure 3: Clamping Voltage vs. Peak Pulse Current	Figure 4: Junction Capacitance vs. Reverse Voltage
	
Figure 5: Pulse Waveform (8/20μs)	Figure 6: Pulse Waveform (IEC61000-4-2)



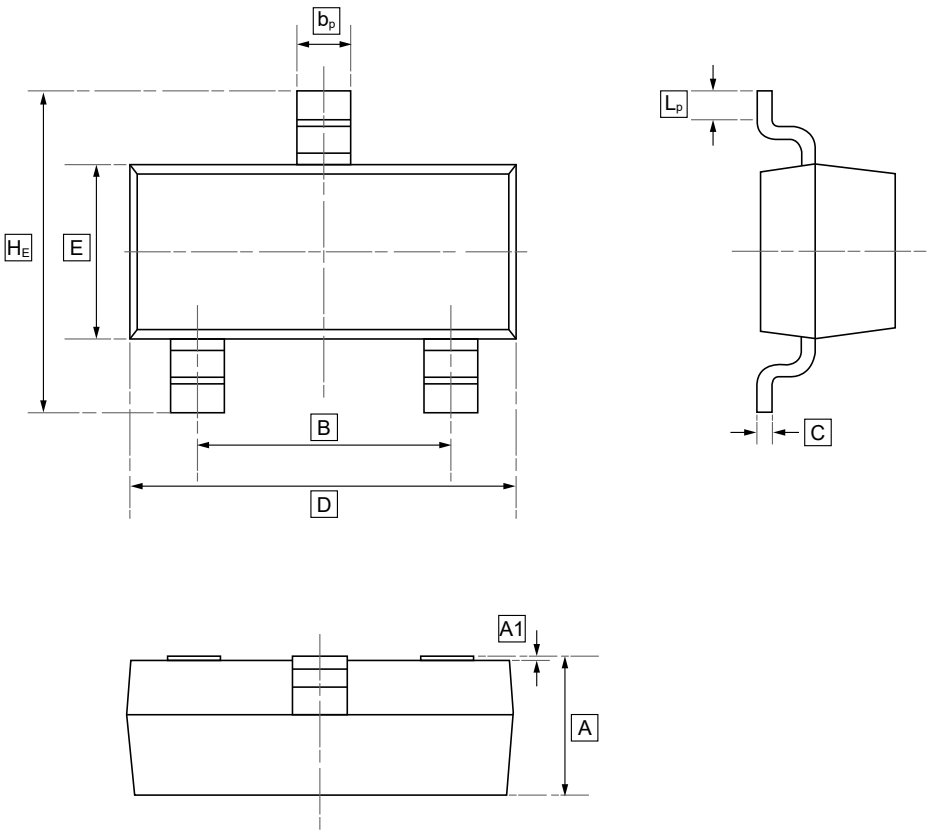
8. Recommended Soldering Conditions

Profile Feature		Pb-Free Assembly
Average ramp-up rate (T_L to T_P)		3°C/second max.
Preheat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (Min to Max) (t_s)	60-180 secs.
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Time maintained above	-Temperature (T_L)	217°C
	-Time (T_L)	60-150 secs.
Peak Temperature (T_P)		260°C
Time within 5°C of actual Peak Temperature (T_P)		20-40 seconds
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temperature		8 min. Max





9.SOT-23 Package Outline Dimensions

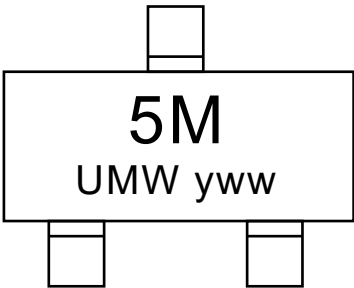


DIMENSIONS (mm are the original dimensions)

Symbol	A	B	b _p	C	D	E	H _E	A1	L _p
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50



10.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW 23BA05UL	SOT-23	3000	Tape and reel



11.Disclaimer

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