UMW PESDAWC236T5VU

Low Capactiance 4-Line TVS Array

1.Description

The PESDAWC236T5VU is low capacitance transient voltage suppressor array for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events.

2.Feature

- 150W peak pulse power (tP = 8/20μs)
- Working voltage: 5.0V
- Low clamping voltage
- Low capacitance
- Lines to IEC61000-4-2(ESD)±15kV(air) ±8kV(contact)
- RoHS Compliant Transient Protection for High Speed Data

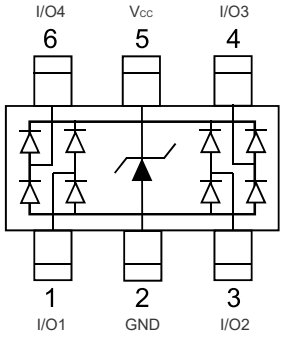
3.Applications

- USB 2.0 Power & Data Line Protection
- DVI & HDMI Port Protection
- Serial ATA Port Protection
- Mobile Handsets
- Digital Cameras and camcorders
- PDA & MP3 Players
- Digital TV and Set-top Boxes
- Other Portable Electronic Components

4.Mechanical Characteristics

- Lead finish:100% matte Sn(Tin) Mounting
- position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements Pure
- tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

5.Pinning information



SOT23-6

6.Absolute Maximum Ratings T_A= 25°C

Parameter	Symbol	Maximum	Units
Peak Pulse Power (t_P= 8/20us)	P_{PP}	150	W
Peak Pulse Current(t_P= 8/20μs)	I_{PP}	5	A
Lead Soldering Temperature	T_L	260 (10 sec.)	°C
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C
ESD Protection-Contact Discharge	V_{ESD}	±8	kV
ESD Protection-Air Discharge	V_{ESD}	±15	kV

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

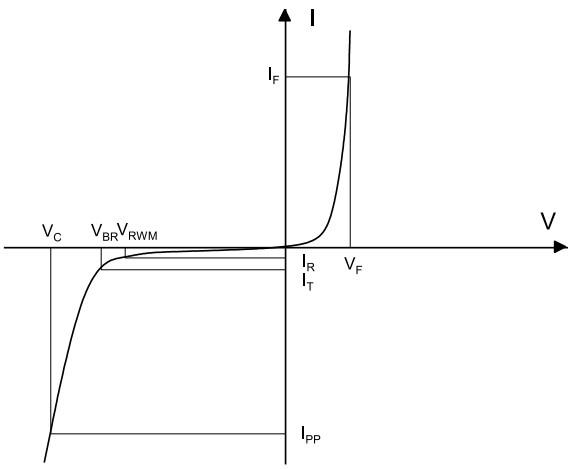
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T=1mA	6		8.5	V
Reverse Leakage Current	I_R	V_{RWM}=5V			1	μA
Clamping Voltage 1)	V_C	TLP=16A, t_P=100ns		17.5		V
Dynamic resistance 1)	R_{DYN}			0.6		Ω
Clamping Voltage 2)	V_C	I_{PP}=1A, t_P=8/20μs			11	V
		I_{PP}=5A, t_P=8/20μs			15	V
Capacitance Between IO and GND	C_J	V_R=0V, f=1MHz		0.75		pF
Capacitance Between IO and I/O	C_J	V_R=0V, f=1MHz		0.4		pF

Notes:

1.TLP parameter: Z_0=50Ω, t_p=100ns, t_r=2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.

2.Non-repetitive current pulse, according to IEC61000-4-5.

8.Electronics Parameter



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}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F

9.Typical characteristic

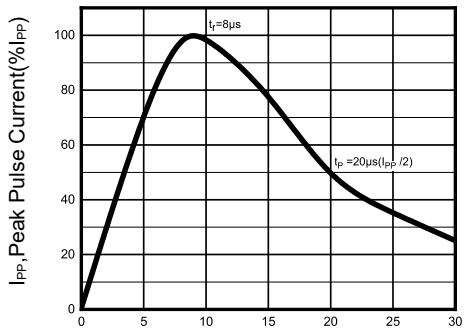


Figure 1: Pulse Waveform(8/20μs)

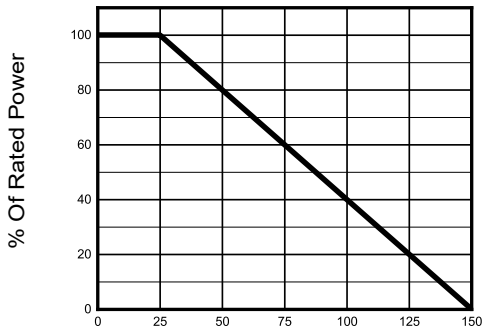


Figure 2: Power Derating Curve

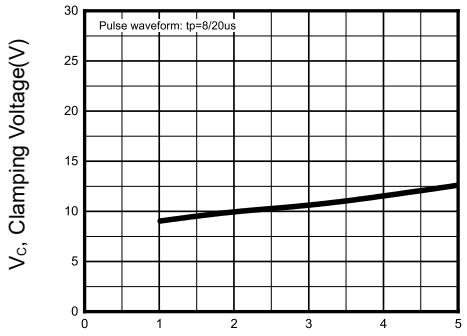


Figure 3: Clamping voltage vs. Peak pulse current

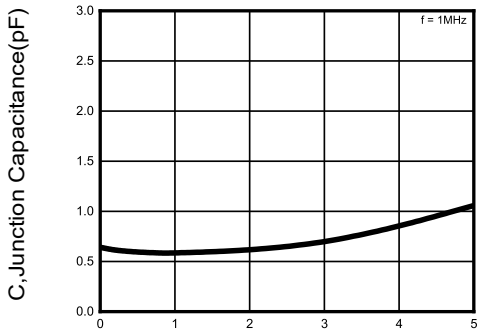


Figure 4: Capacitance vs. Reveres voltage

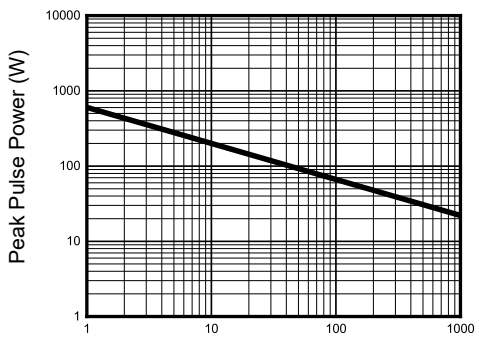


Figure 5: Non Repetitive Peak Pulse Power vs. Pulse time

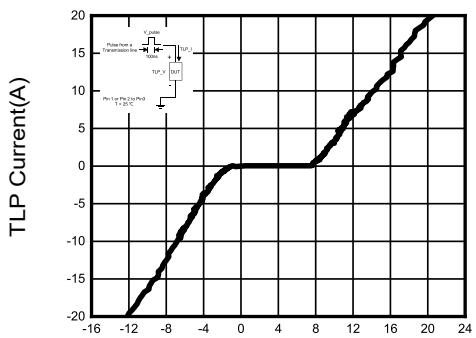
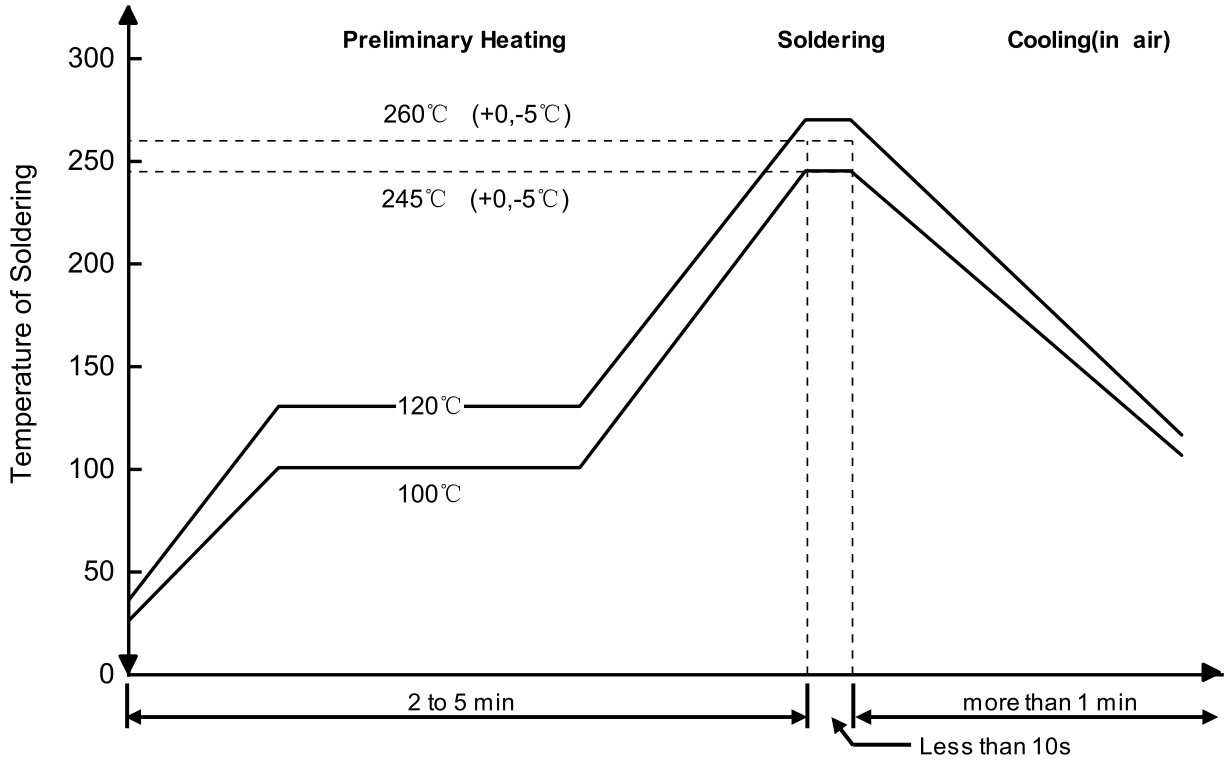


Figure 6: TLP Measurement

10.Solder Reflow Recommendation



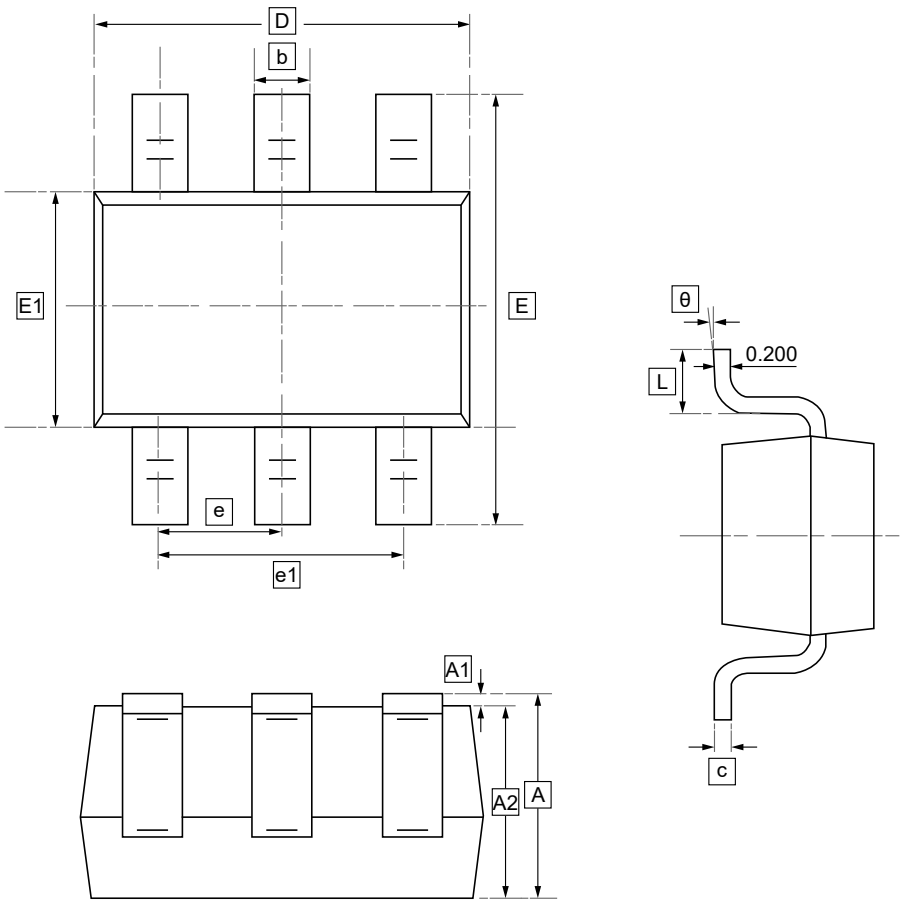
Remark: Pb free for 260℃; Pb for 245℃.

Notes:

For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- Do not make false economies and save copper for the ground connection.
- Place via holes to ground as close as possible to the anode of the TVS diode.
- Use as many via holes as possible for the ground connection.
- Keep the length of via holes in mind! The longer the more inductance they will have.

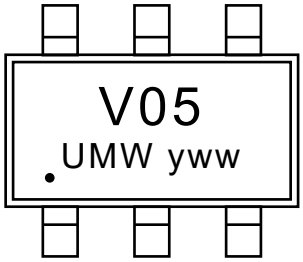
11.SOT-23-6 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E1	E	e	e1	L	θ
Min	1.050	0.000	1.050	0.300	0.100	2.820	1.500	2.650	0.950	1.800	0.300	0°
Max	1.250	0.100	1.150	0.500	0.200	3.020	1.700	2.950	BSC	2.000	0.600	8°

12.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW PESDAWC236T5VU	SOT23-6	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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