

1.Description

The PESDUC5D5VB protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large crosssectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage.

3.Features

- 100W peak pulse power per line ($t_p=8/20\mu s$)
- Bidirectional configurations
- Response time is typically < 1ns
- High ESD protection

4.Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C

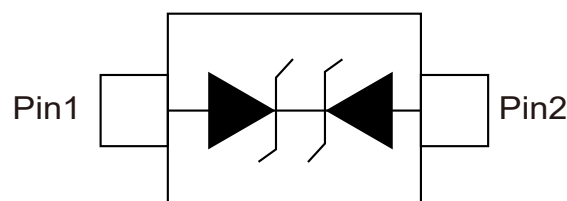
2.Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies
- Bidirectional configurations

- Low clamping voltage
- Transient protection for data lines to IEC 61000-4-2(ESD) $\pm 18kV$ (air), $\pm 15kV$ (contact); IEC 61000-4-4(EFT) 5A (5/50ns)

- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 μm
- Pin flatness: $\leq 3mil$

5.Pinning information



SOD-523



6. Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	100	W
Peak Pulse Current ($t_p=8/20\mu s$)	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}	±15	kV
ESD Protection-Air Discharge	V_{ESD}	±18	kV



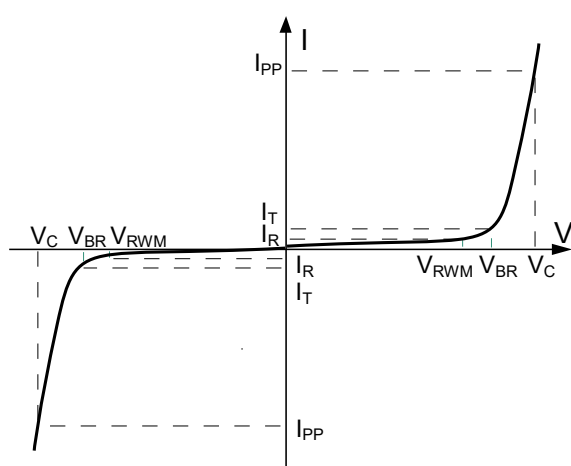
7. Electrical Characteristic (@25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Peak Reverse Working Voltage	V _{RWM}				5	V
Breakdown Voltage	V _{BR}	I _T =1mA	5.6		8.5	V
Reverse Leakage Current	I _R	V _{RWM} =5V, T=25°C			1	μA
Clamping Voltage ¹⁾	V _C	TLP=16A, t _p =100ns		28.1		V
Clamping Voltage ²⁾		I _{PP} =1A, t _p =8/20μs			12	V
		I _{PP} =5A, t _p =8/20μs			20	V
Junction Capacitance	C _J	V _R =0V, f=1MHz		0.4		pF

Notes:

1. TLP parameter: $Z_0=50\Omega$, $t_p=100ns$, $t_r=2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
2. Non-repetitive current pulse, according to IEC61000-4-5.

8. Electrical Parameters ($T_A=25^{\circ}C$ unless otherwise noted)



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

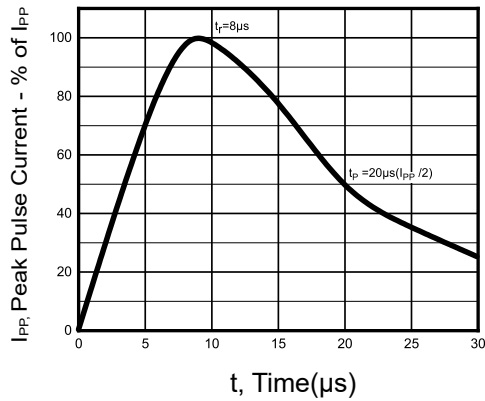


Figure 1: Pulse Waveform

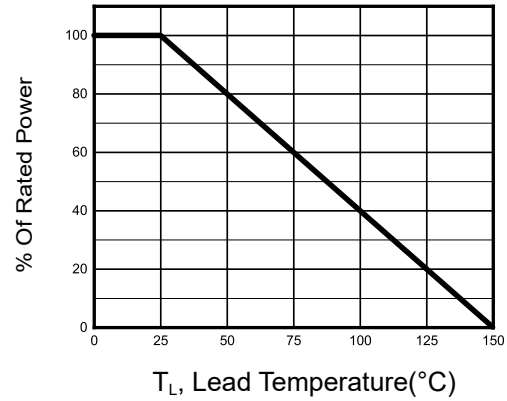


Figure 2: Power Derating Curve

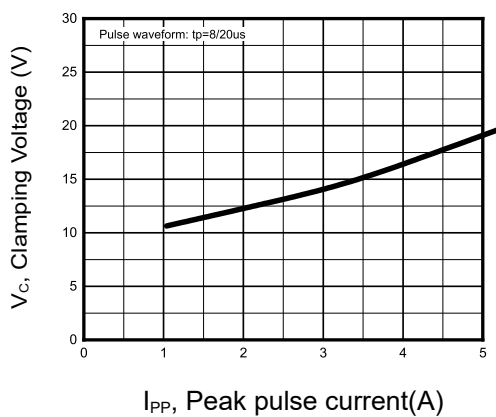


Figure 3: Clamping voltage vs. Peak pulse current

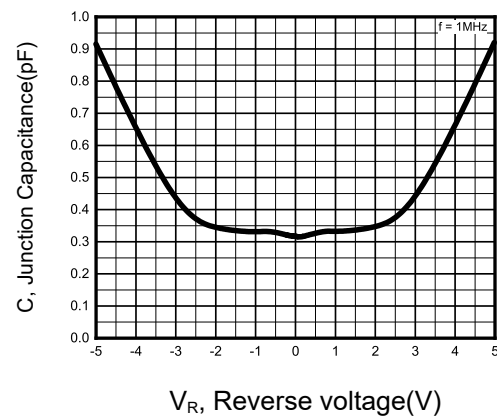


Figure 4: Capacitance vs. Reverse voltage

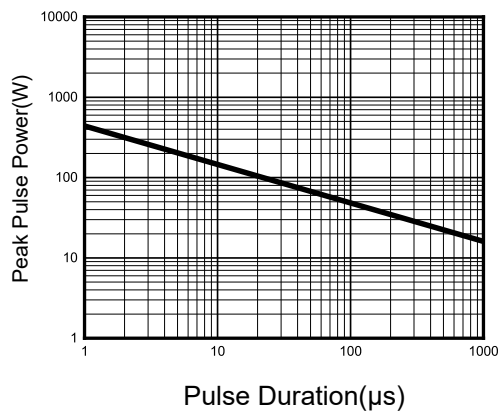


Figure 5: Non Repetitive Peak Pulse Power vs. Pulse time

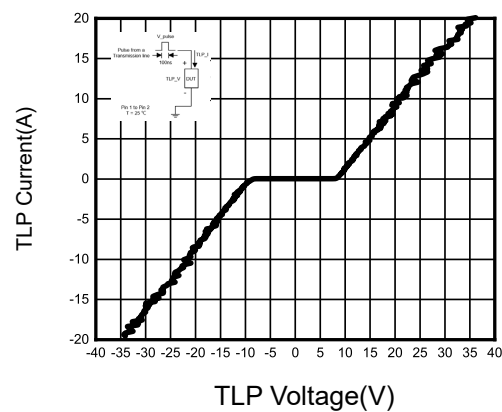
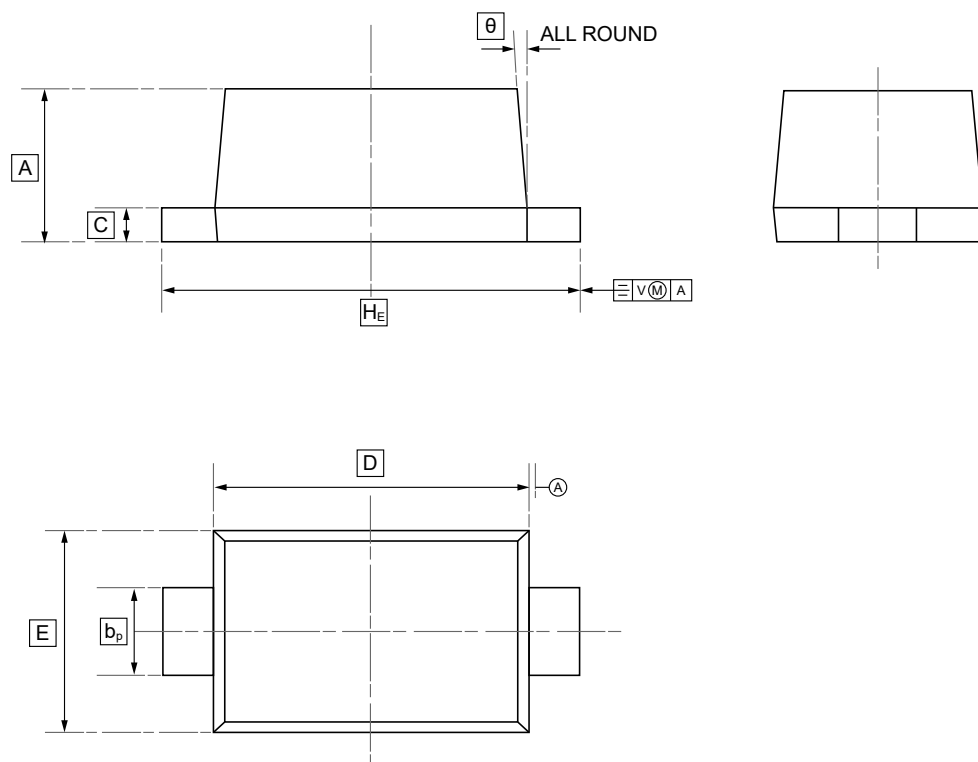


Figure 6: TLP Measurement



10.SOD-523 Package Outline Dimensions

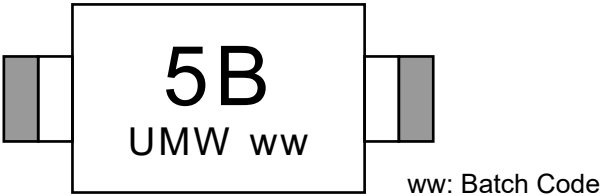


DIMENSIONS (mm are the original dimensions)

Symbol	A	b _p	C	D	E	H _E	θ
Min	0.58	0.3	0.100	1.15	0.75	1.5	5°
Max	0.68	0.4	0.135	1.25	0.85	1.7	



11.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW PESDUC5D5VB	SOD-523	3000	Tape and reel



12.Disclaimer

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