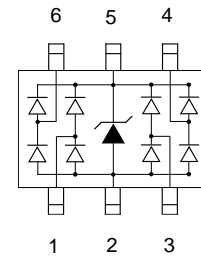


Description

The PESDALC236T5VU 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. All pins are rated to withstand 15kV ESD pulses using the IEC 61000-4-2 air discharge method, which can meet the requirement of level 4.



Feature

- 350W peak pulse power ($t_P = 8/20\mu s$)
- SOT-23-6L package
- Working voltage: 5.0V
- Low clamping voltage
- Low capacitance
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)

Applications

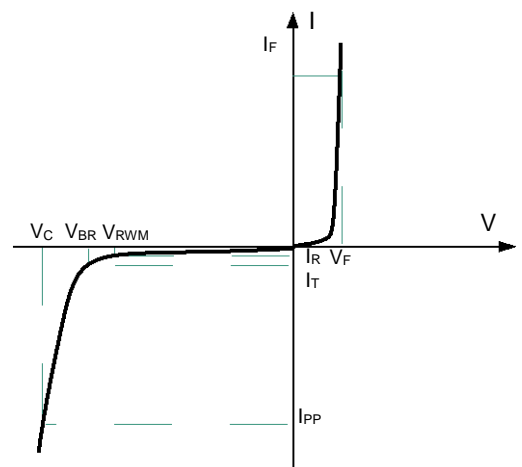
- USB 2.0 Power & data line protection
- DVI & HDMI port protection
- Serial ATA port protection
- Mobile handsets
- Digital cameras and camcorders
- PDA & MP3 players
- Digital TV and set-top boxes
- Other portable electronic components

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 μm
- Pin flatness: $\leq 3mil$

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



Electrical characteristics per line@(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0V, T = 25^{\circ}C$			1	μA
Clamping Voltage	V_C	$I_{PP} = 5A, t_P = 8/20\mu s$		11	14	V
Clamping Voltage	V_C	$I_{PP} = 15A, t_P = 8/20\mu s$		19	23	V
Junction Capacitance(IO to IO)	C_J	$V_R = 0V, f = 1MHz$		2	4	pF

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	350	W
Power Dissipation Typical	P_D	200	mW
Operating Temperature	T_J	-55 to +150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Typical Characteristics

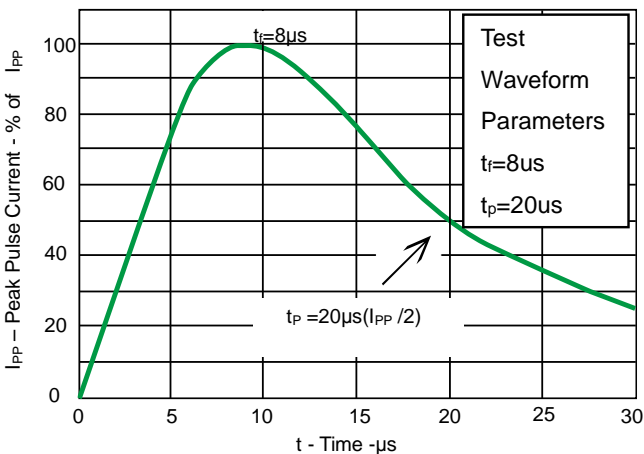


Fig 1.Pulse Waveform

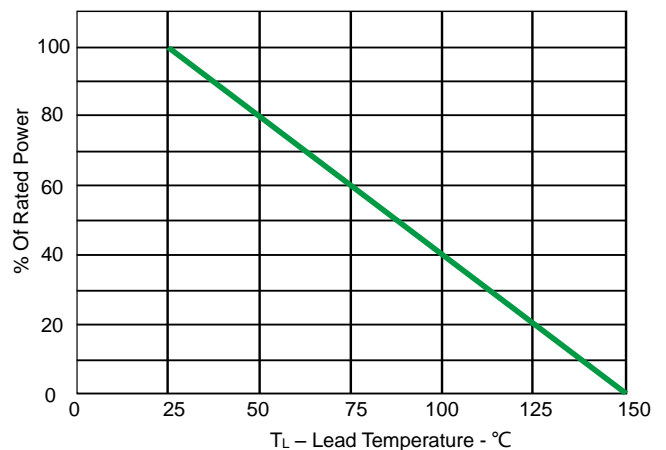


Fig 2.Power Derating Curve

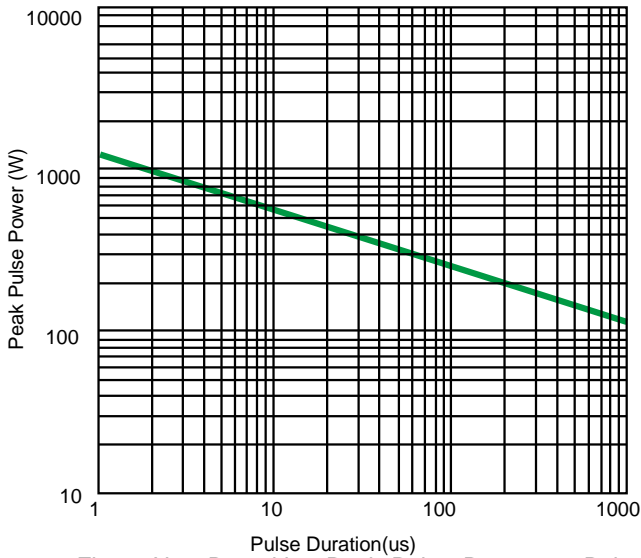


Fig 3. Non Repetitive Peak Pulse Power vs. Pulse time

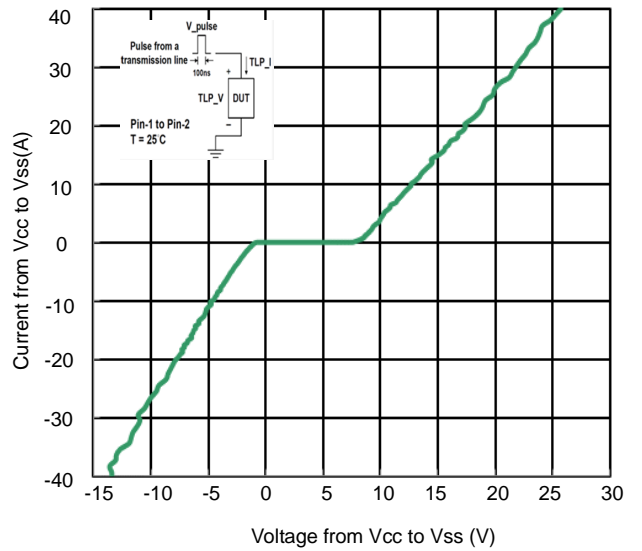


Fig4. Transmission line pulsing (TLP) measure current vs voltage

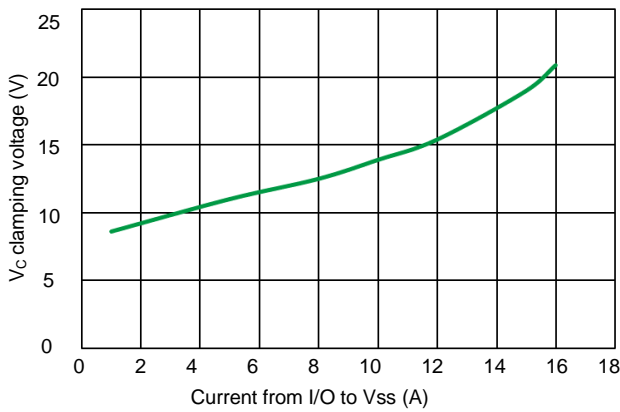
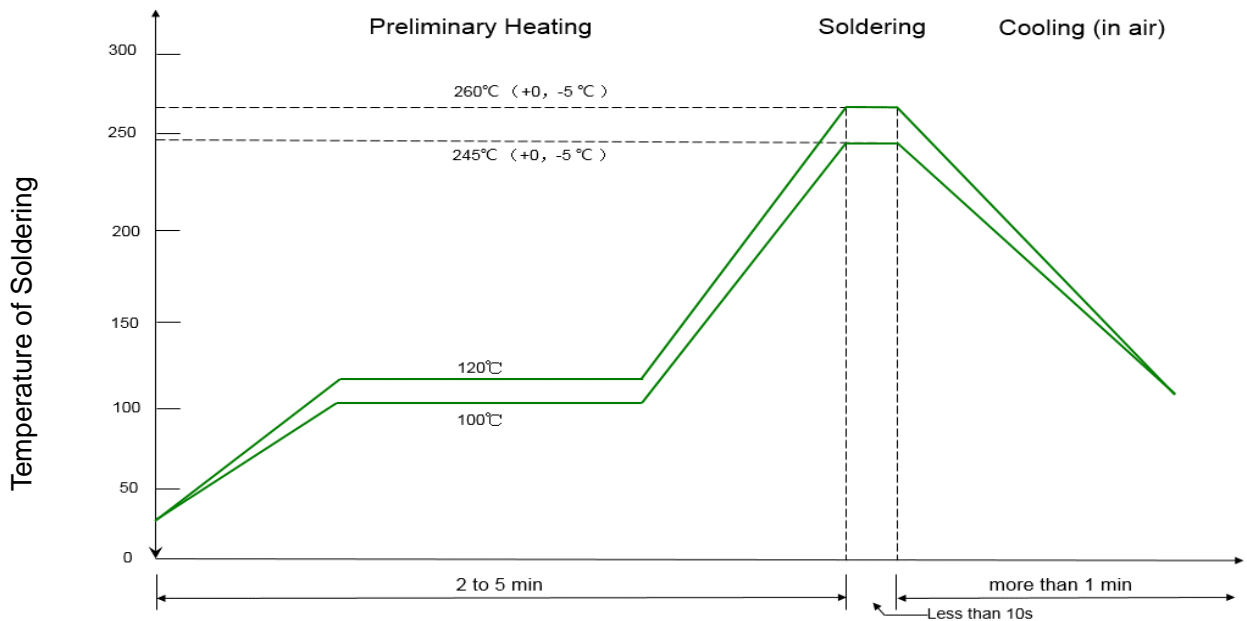


Fig 5. Clamping Voltage Characteristic

Solder Reflow Recommendation



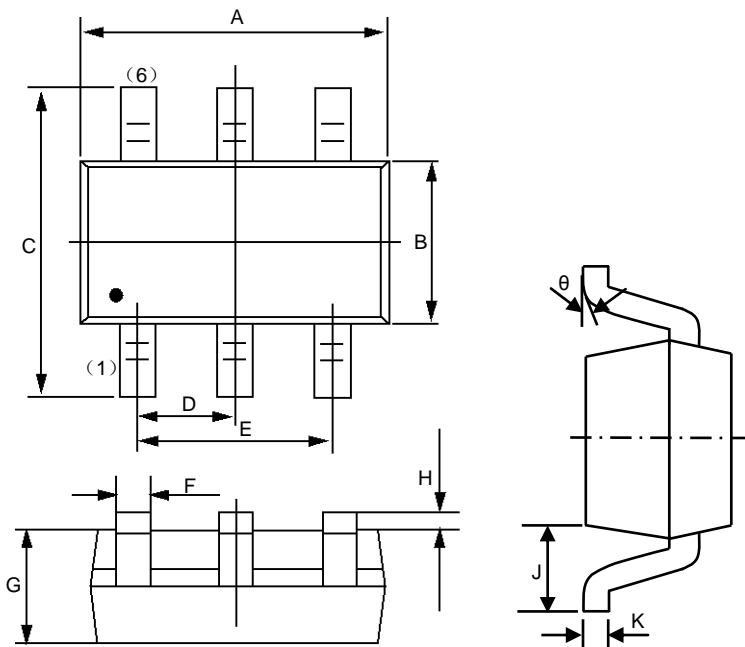
Remark: Pb free for 260°C; Pb for 245°C.

PCB Design

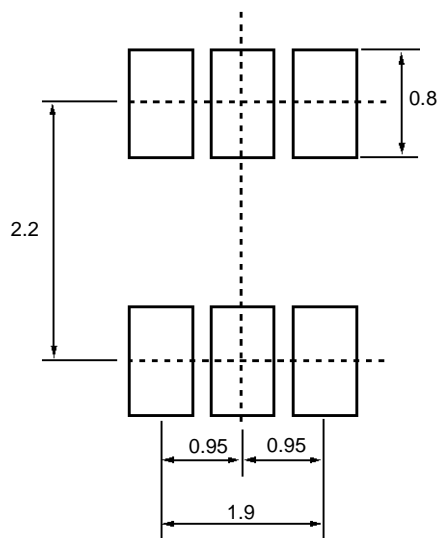
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not make false economies and save copper for the ground connection.
- Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- 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.

Product dimension (SOT-23-6L)



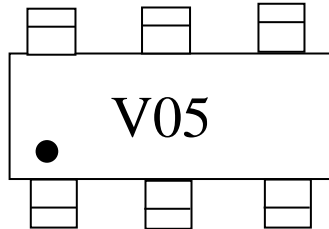
Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.820	3.020	0.111	0.119
B	1.500	1.700	0.059	0.067
C	2.650	2.950	0.104	0.116
D	0.950 (BSC)		0.037 (BSC)	
E	1.800	2.000	0.071	0.079
F	0.300	0.500	0.012	0.020
G	1.050	1.150	0.041	0.045
H	0.000	0.100	0.000	0.004
J	0.45	0.60	0.0180	0.0236
K	0.100	0.200	0.004	0.008
θ	0°	8°	0°	8°



Unit:mm

Suggested PCB Layout


Marking information



Ordering information

Device	Package	MPQ
PESDALC236T5VU	SOT-23-6L (Pb-Free)	3000 / Tape & Reel


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