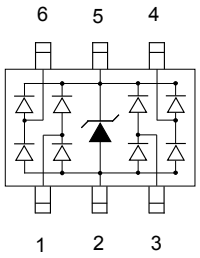
PESDAUC236T5VU

Low Capacitance TVS Array

Description

The PESDAUC236T5VU 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 = 8/20μs)
- 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)±15kV(air),±8kV(Contact)

Applications

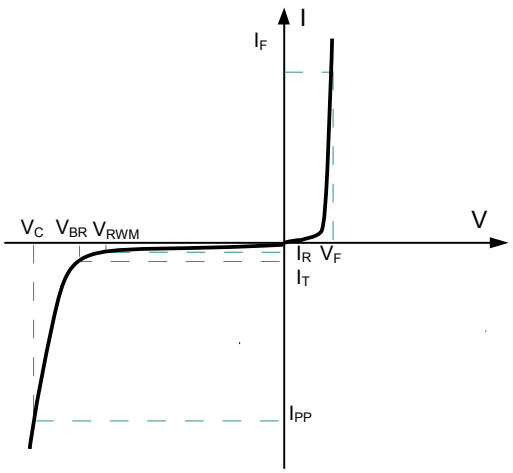
- USB 2.0 Power & data line protection
- DVI & HDMI port protection
- Serial ATA port protection
- Mobile handsets
- Digital cameras and camcorders
- PDA & MP3 players
- Digital TV and set-top boxes
- Other portable electronic components

Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness：≤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		8	V
Reverse Leakage Current	I_R	V_{RWM} =5.0V, T=25℃			1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			12.5	V
Clamping Voltage	V_C	I_{PP}=5A, t_P = 8/20μs			28.0	V
Capacitance Between IO and GND	C_J	V_R=0V, f = 1MHz		1.5		pF
Capacitance Between IO and I/O	C_J	V_R=0V, f = 1MHz		0.7		pF

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs)	P_{pp}	350	W
Operating Temperature	T_J	-55 to +150	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Typical Characteristics

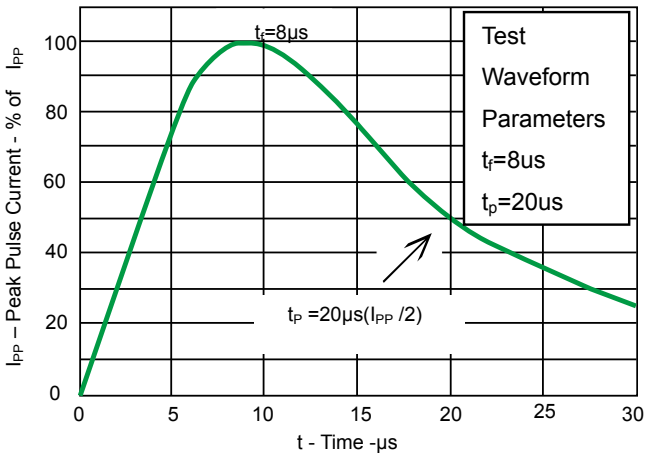


Fig 1.Pulse Waveform

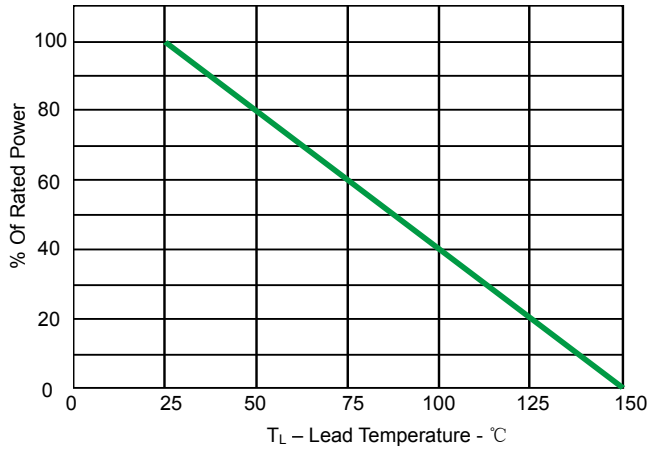


Fig 2.Power Derating Curve

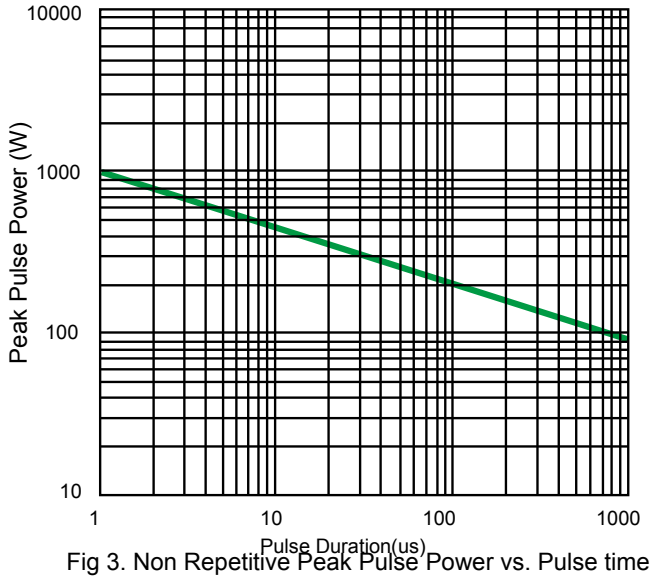
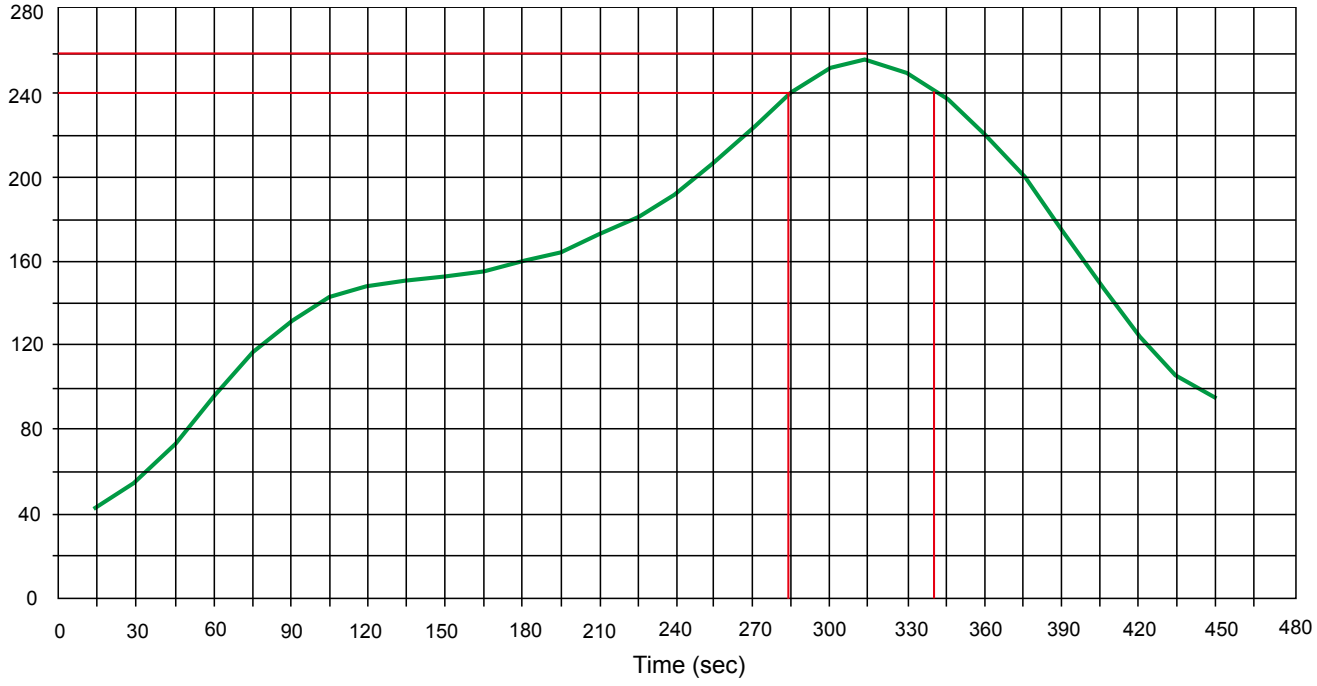


Fig 3. Non Repetitive Peak Pulse Power vs. Pulse time

Solder Reflow Recommendation

Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec

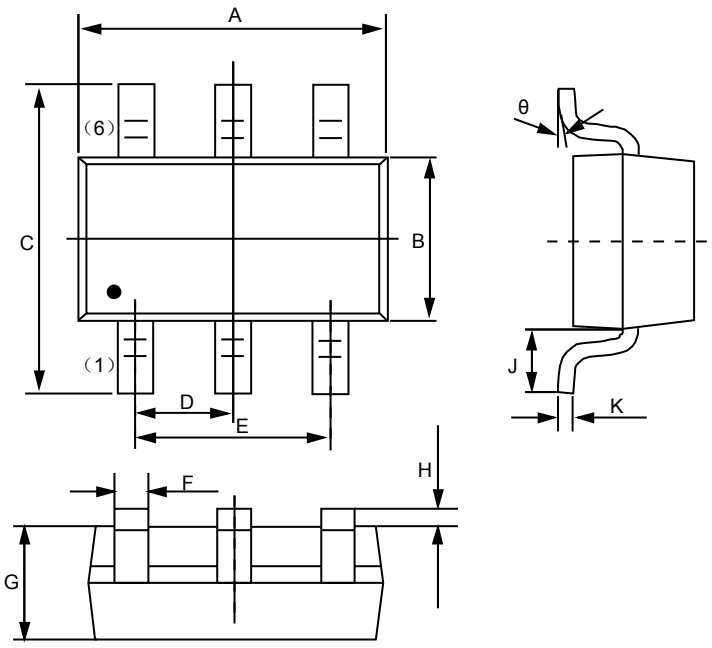


PCB Design

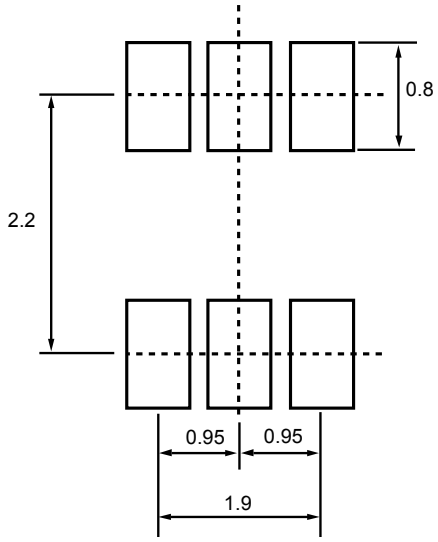
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not 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.

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

Ordering information

Device	Package	Shipping
PESDAUC236T5VU	SOT-23-6L (Pb-Free)	3000 / Tape & Reel

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