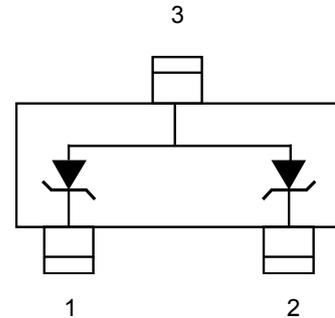


Description

The PESDLC23T5VU is a TVS designed to protect I/O or data lines from the damaging effects of ESD. It is low capacitance transient voltage suppressors 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. The SOT-23 is a very small package which allows space saving on high density printed circuit board and also gives the designer the flexibility to provide two I/O lines protection. All pins are rated to withstand 15kV ESD pulses using the IEC61000-4-2 air discharge method, which can meet the requirement of level 4.



Feature

- SOT-23 package
- Protect two data lines
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- 100W peak pulse power($t_p=8/20\mu s$)
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)

Applications

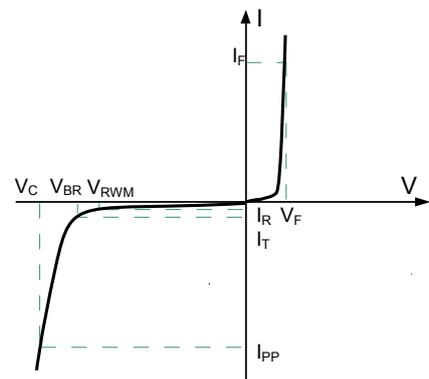
- High-definition multimedia interface(HDMI)
- Mobile display digital interface(MDDI)
- RF/Antenna circuits
- USB 2.0&firewire ports
- HBT power amp protection
- Transceiver protection

Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature: $260^{\circ}C$
- 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@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$	5.6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$			1	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$ pin1 to pin3			13.5	V
Junction Capacitance	C_j	$V_R=0V, f = 1MHz$ Pin1 to Pin2		1.5	3	pF
Junction Capacitance	C_j	$V_R=0V f = 1MHz$ pin1or pin2 to pin3		3	6	pF

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	100	W
Operating Temperature	T_J	-55 to +150	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Typical Characteristics

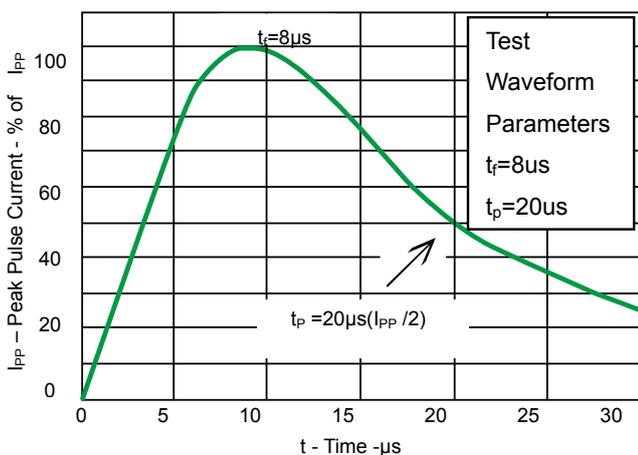


Fig 1.Pulse Waveform

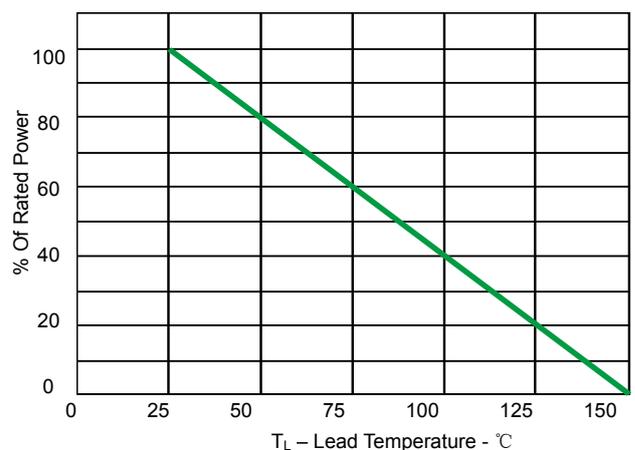


Fig 2.Power Derating Curve

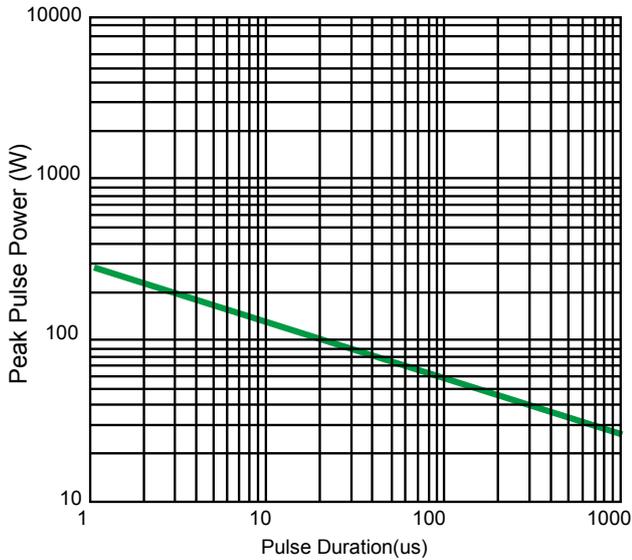
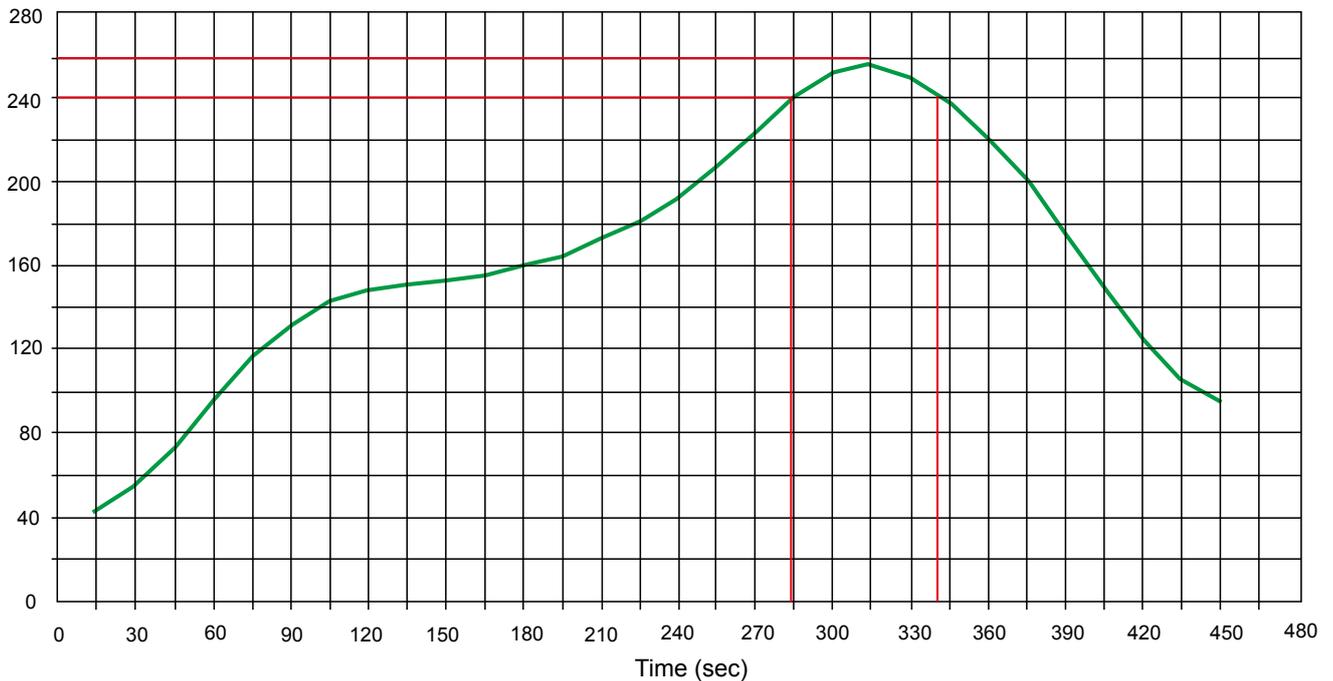


Fig 3. Non Repetitive Peak Pulse Power vs. Pulse time

Solder Reflow Recommendation

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

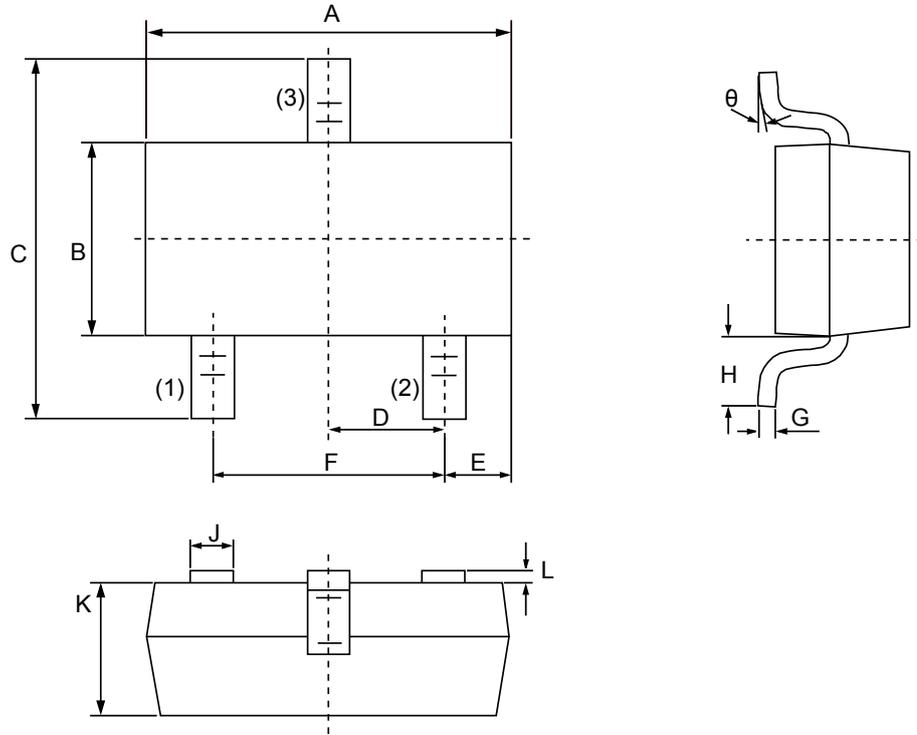


PCB Design

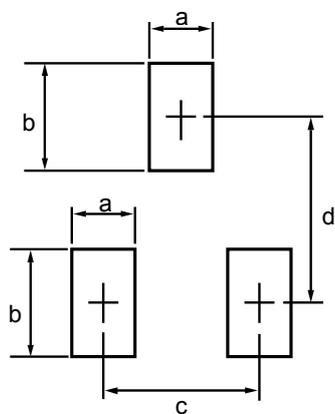
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- 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)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.80	3.00	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	2.10	2.50	0.0830	0.0984
D	0.89	1.02	0.0350	0.0401
E	0.45	0.60	0.0177	0.0236
F	1.78	2.04	0.0701	0.0807
G	0.085	0.177	0.0034	0.0070
H	0.45	0.60	0.0180	0.0236
J	0.37	0.50	0.0150	0.0200
K	0.89	1.11	0.0350	0.0440
L	0.013	0.100	0.0005	0.0040
θ	0°	10°	0°	10°



Dim	Millimeters	
	MIN	MAX
a	--	0.7
b	--	1.2
c	--	2.04
d	--	2.2

Ordering information

Device	Package	Shipping
PESDLC23T5VU	SOT-23 (Pb-Free)	3000 / Tape & Reel

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