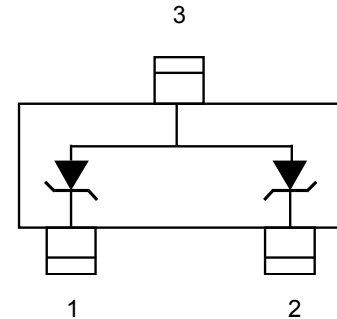


Description

The PESDLC723T5VU is a TVS array designed to protect I/O or data lines from the damaging effects of ESD. It is a low capacitance transient voltage suppressor for high speed data interface that is designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. The SOT-723 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 contact discharge method, which can meet the requirement of level 4.



Feature

- SOT-723 package
- Protect up to two data lines
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- 110 watts peak pulse power (tp=8/20us)
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)±15kV(air),±8kV(contact)

Applications

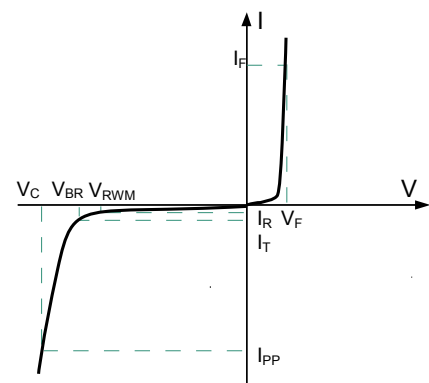
- High-Definition multimedia interface(HDMI)
- Mobile display digital interface(MDDI)
- RF/Antenna circuits
- USB 2.0&firewire ports
- HBT power amp protection
- Transceiver protection

Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- 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@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 pin2			13.5	V
Clamping Voltage	V_C	$I_{PP} = 5A, t_P = 8/20\mu s$ pin1 or pin2 to pin3			20.0	V
Clamping Voltage	V_C	$I_{PP} = 5A, t_P = 8/20\mu s$ pin1 to pin2			23.0	V
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$ Pin1 to Pin2		1.4	2	pF
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$ pin1 or pin2 to pin3		2.8	3.5	pF

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	110	W
Peak Pulse Power ($t_p=8/20\mu s$)	I_{pp}	5.5	A
Operating Temperature	T_J	-55 to +150	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Typical Characteristics

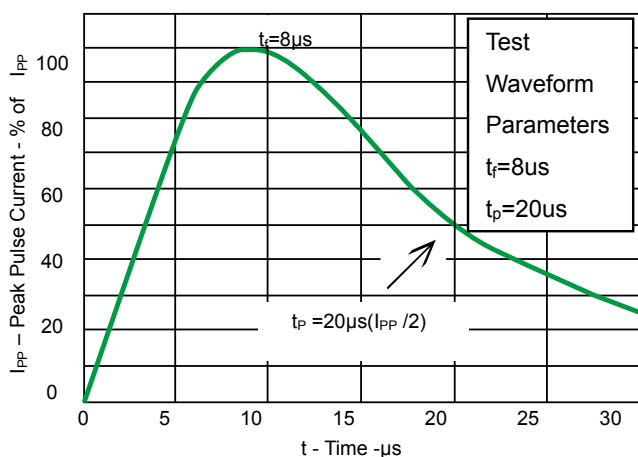


Fig 1.Pulse Waveform

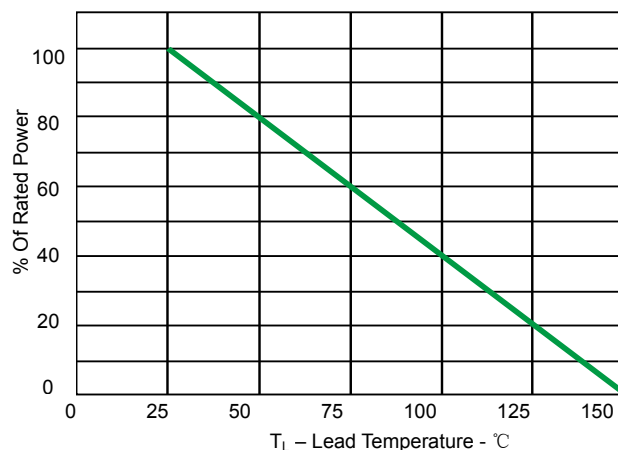


Fig 2.Power Derating Curve

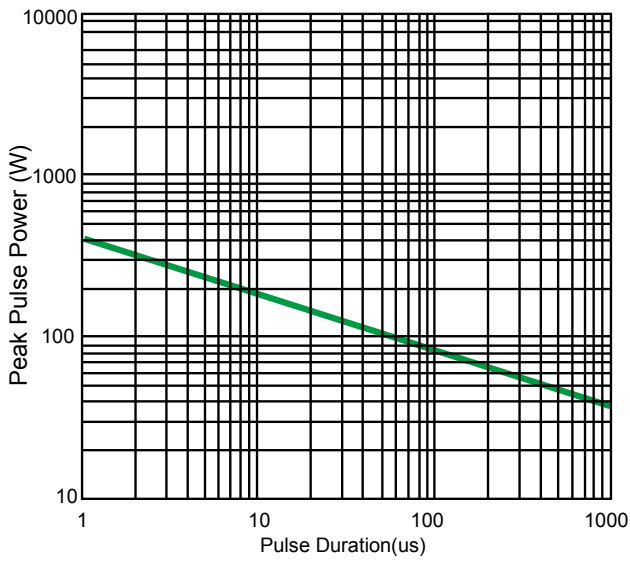


Fig 3. Non Repetitive Peak Pulse Power vs. Pulse time

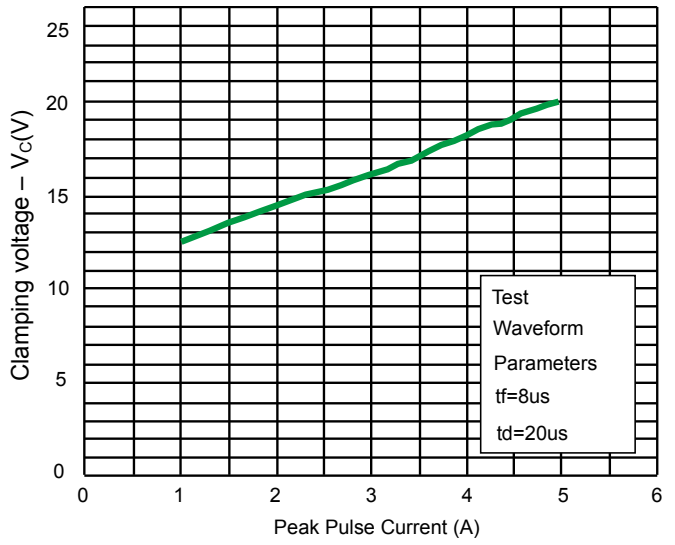


Fig 4. Clamping Voltage vs. Peak Pulse Current (Pin 1 to Pin 2)

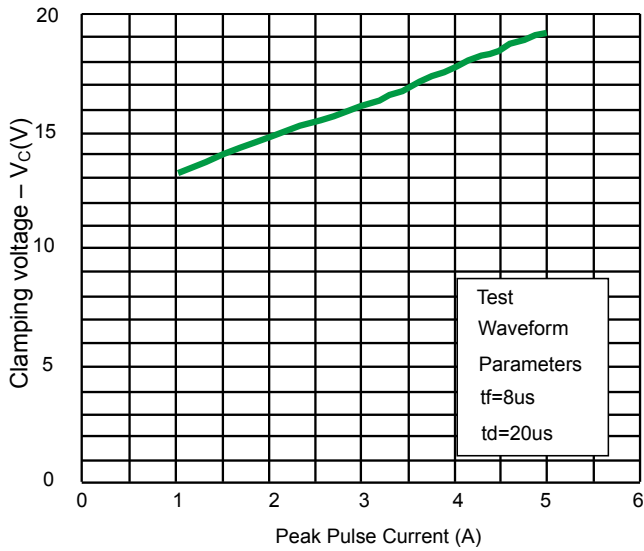
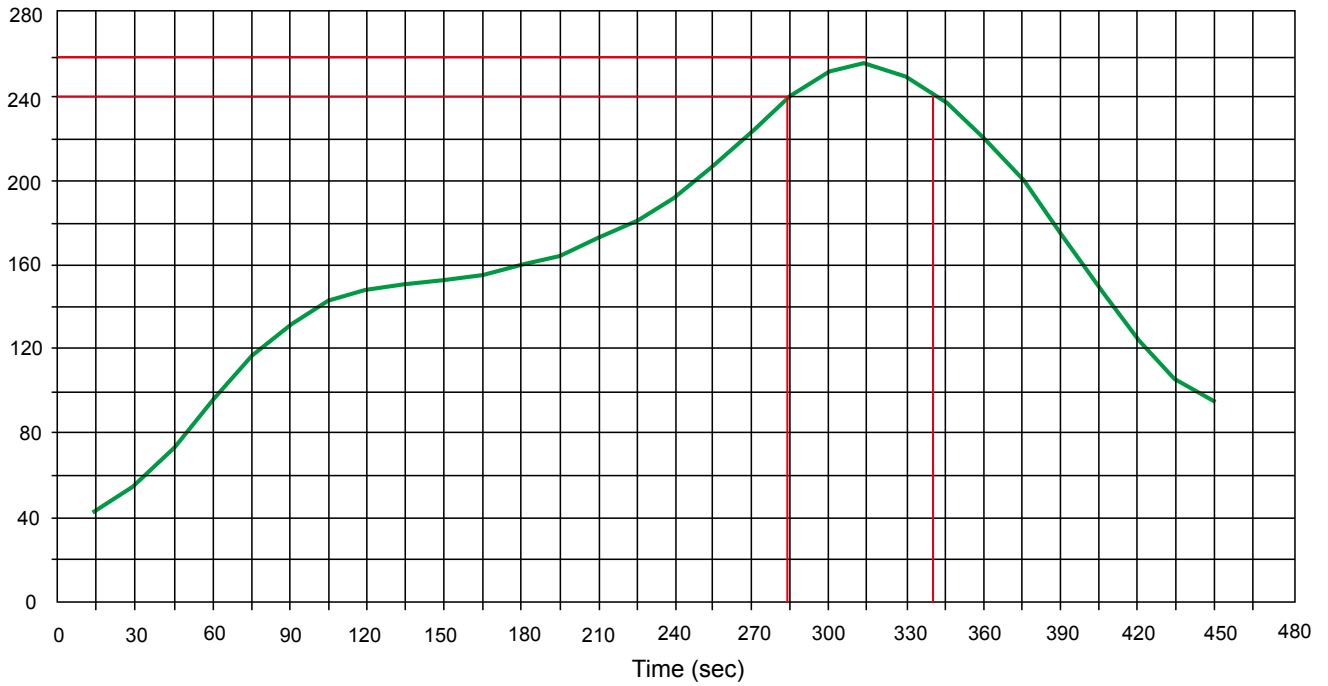


Fig.5 Clamping Voltage vs. Peak Pulse Current (Pin 1 or Pin 2 to Pin 3)

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.


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