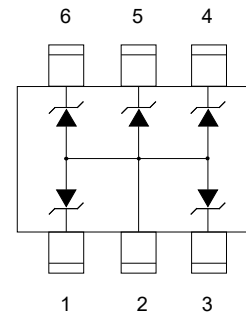


Description

The PESDNC563T5VU protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage. It gives designer the flexibility to provide five lines I/O protection. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 contact discharge method.



Feature

- 100W peak pulse power ($t_P = 8/20\mu s$)
- SOT-563 package
- Protects four bidirectional lines and five unidirectional lines
- Low clamping voltage
- Low capacitance
- Working voltage: 5V
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)

Applications

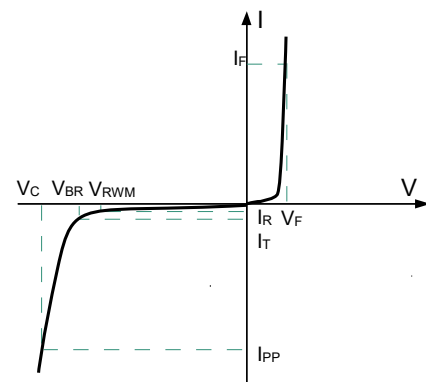
- Communication systems & cellular phones
- Printers
- Notebook and hand hold computers
- PDAs
- Video equipment

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@25°C (unless otherwise specified) *NOTE1

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$	6.1	6.7	7.1	V
Reverse Leakage Current	I_R	$V_{RWM} = 5V T=25^{\circ}C$			1	μA
Clamping Voltage	V_C	$I_{PP} = 1A t_p = 8/20\mu s$			8.8	V
Clamping Voltage	V_C	$I_{PP}=6A t_p = 8/20\mu s$			13	V
Junction Capacitance	C_j	$V_R=0V f = 1MHz$		33	50	pF

Absolute maximum rating@25°C *NOTE1

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	100	W
Forward Voltage(@1A, 8/20 μs)	V_F	1.5	V
Operating Temperature	T_J	-55 to +150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Note1: Pin 1, 3, 4, 5 or 6 to Pin 2

Typical Characteristics



Fig.1 Typical Clamping Voltage VS Peak Pulse Current for PESDNC563T5VU

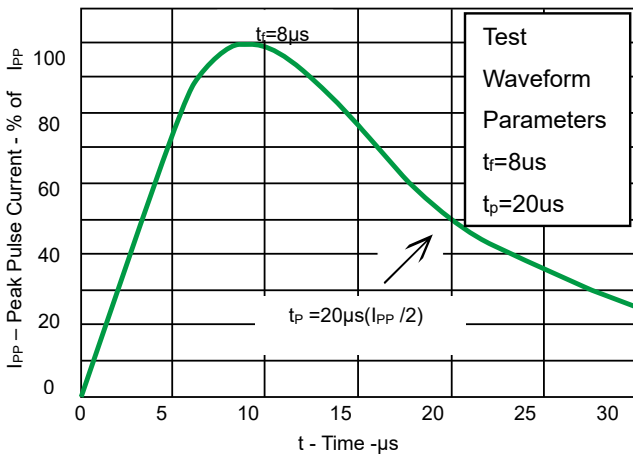


Fig 2. Pulse Waveform

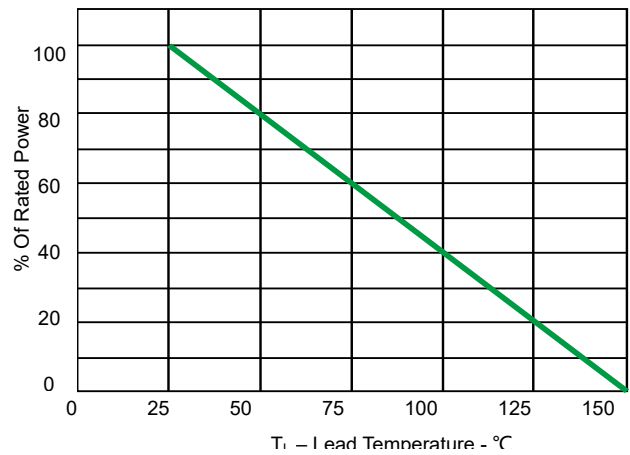
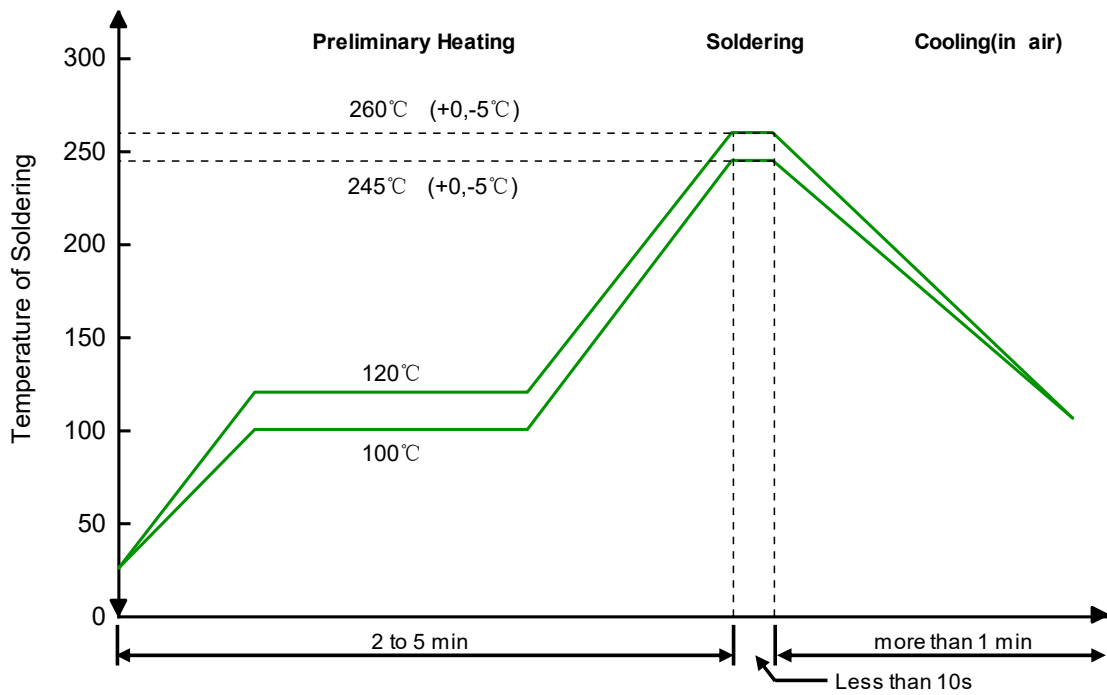


Fig 3. Power Derating Curve

Solder Reflow Recommendation



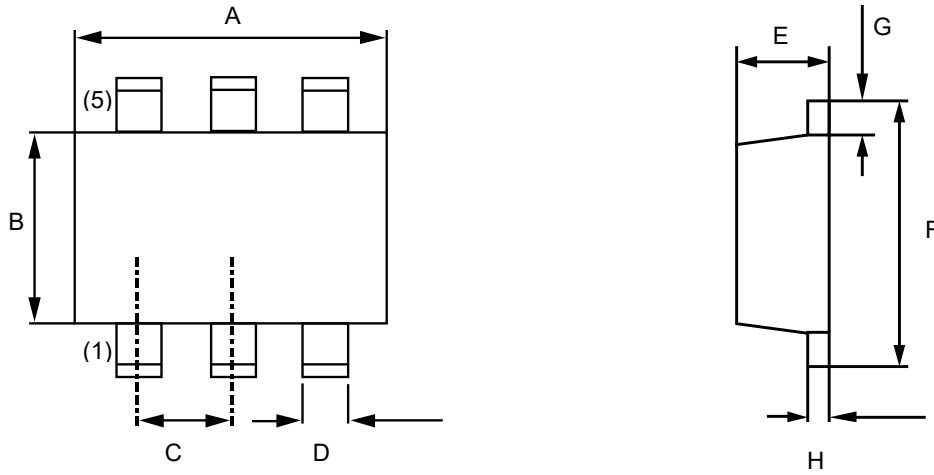
Remark: Pb free for 260°C; Pb for 245°C.

PCB Design

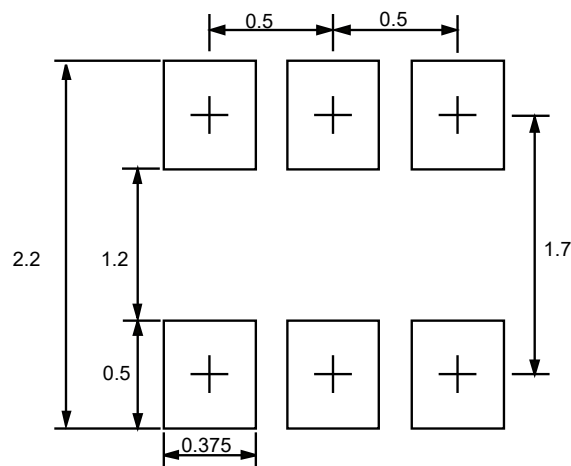
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not 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-563)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50BSC		0.020BSC	
D	0.17	0.27	0.007	0.011
E	0.50	0.60	0.020	0.024
F	1.50	1.70	0.059	0.067
G	0.10	0.30	0.004	0.012
H	0.08	0.16	0.003	0.006

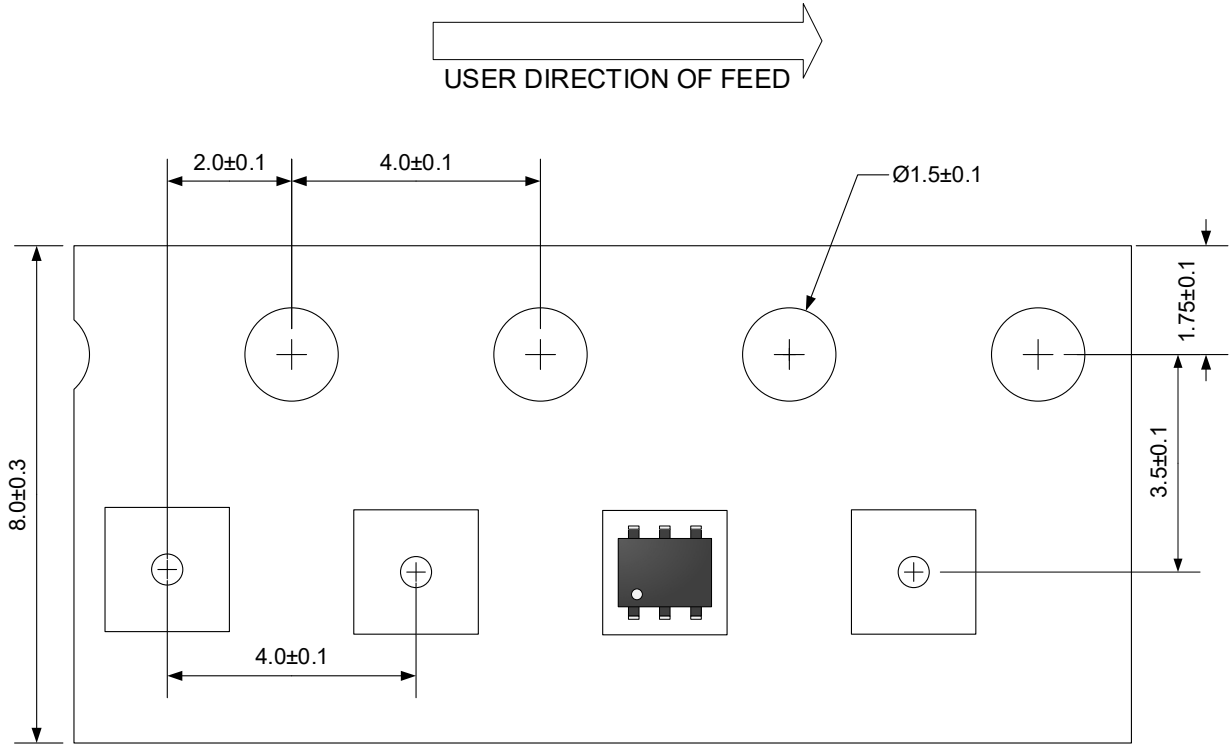


Unit:mm

Ordering information

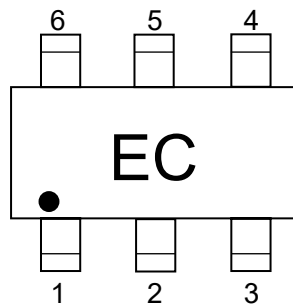
Device	Package	Shipping
PESDNC563T5VU	SOT-563 (Pb-Free)	3000 / Tape & Reel

Load with information




Unit:mm

Marking information




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