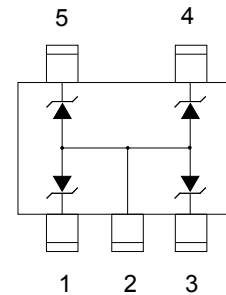


## Description

The PESDNC353T5VU 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 four lines I/O protection. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 air discharge method.



## Feature

- SOT-353 package
- Protects three bidirectional lines and four Unidirectional lines
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- ESD protection > 15 kV
- 100W peak pulse power per line ( $t_P = 8/20\mu s$ )
- RoHS compliant
- Complies with the following standards: IEC 61000-4-2(ESD)air $\pm$ 30kv,contact $\pm$ 30kv

## Applications

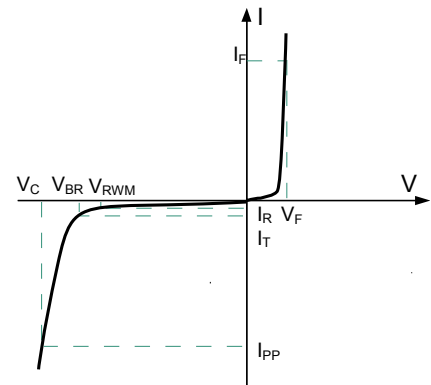
- Cellular phones
- MP3 players
- Notebook
- PDAs
- Digital cameras
- Cellular phone base stations

## 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  $\mu m$
- 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	$V_{BR}$	$I_t = 1mA$	6.2	6.6	7.1	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$ $T=25^{\circ}C$			5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A$ $t_p = 8/20\mu S$			8.7	V
Clamping Voltage	$V_C$	$I_{PP}=5A$ $t_p = 8/20\mu S$			11.0	V
Junction Capacitance	$C_j$	$V_R=0V$ $f = 1MHz$		15	22	pF

Absolute maximum rating@25°C

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

Typical Characteristics

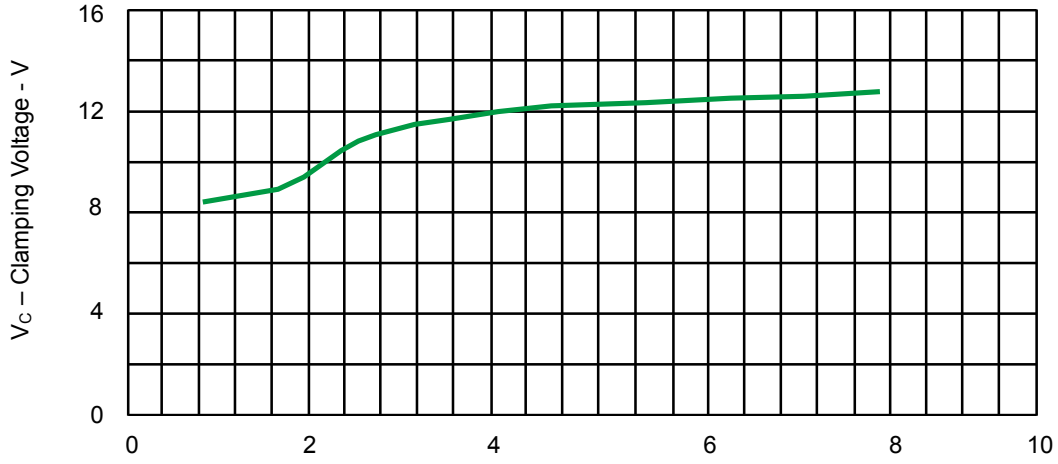


Fig.1 Typical Clamping Voltage VS Peak Pulse Current for PESDNC353T5VU

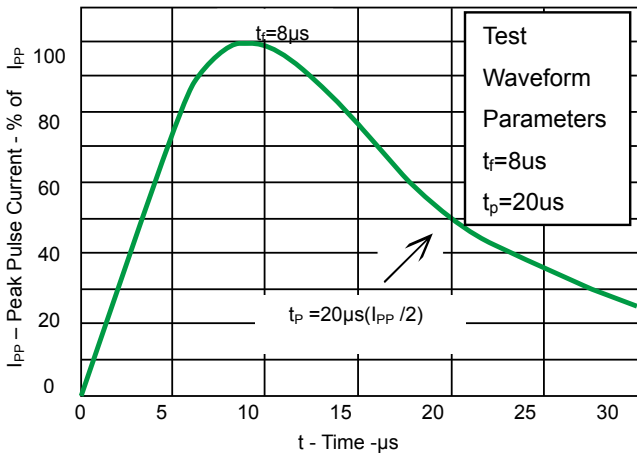


Fig 2.Pulse Waveform

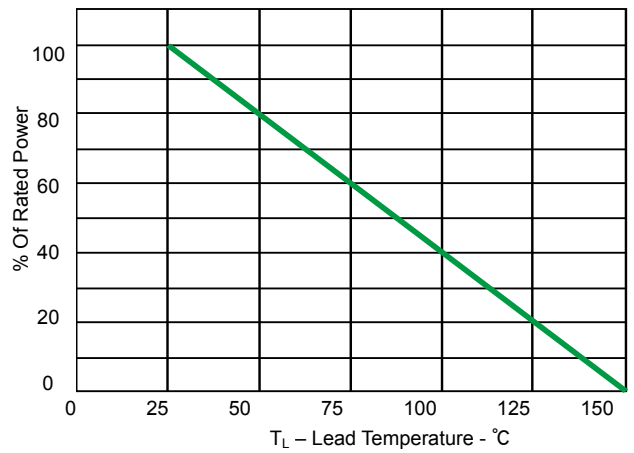
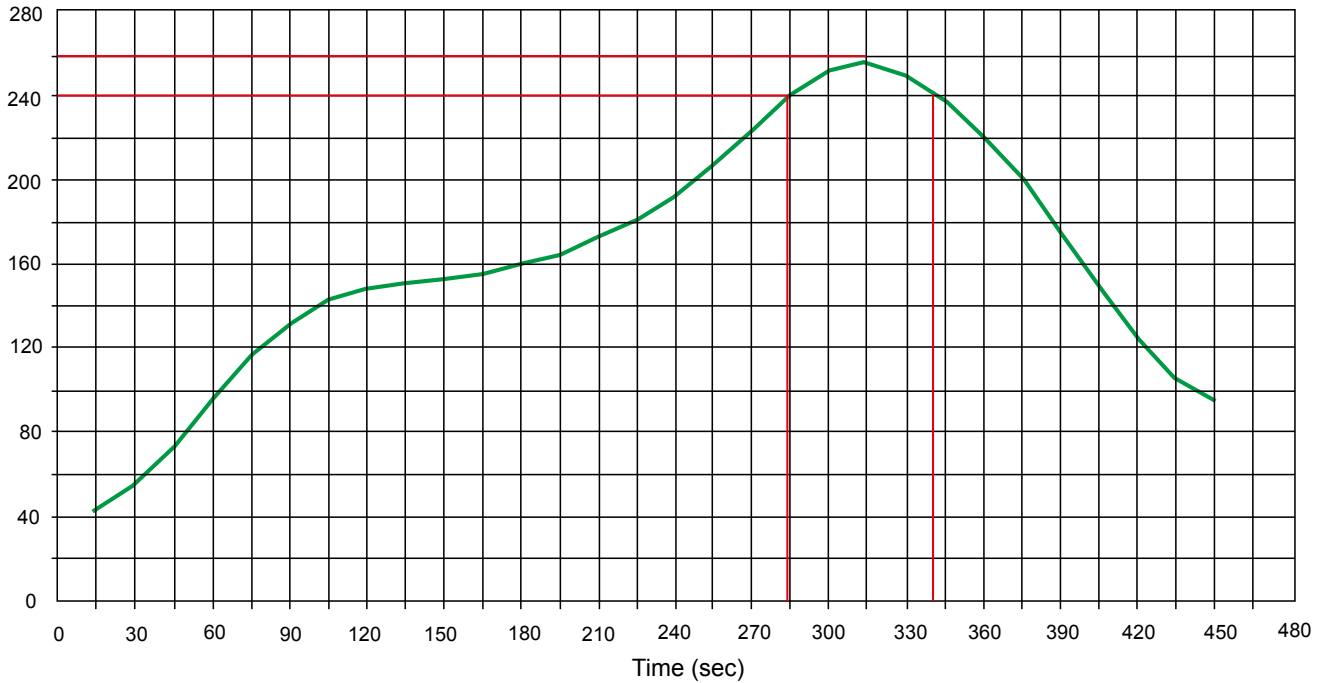


Fig 3.Power Derating Curve

### Solder Reflow Recommendation

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

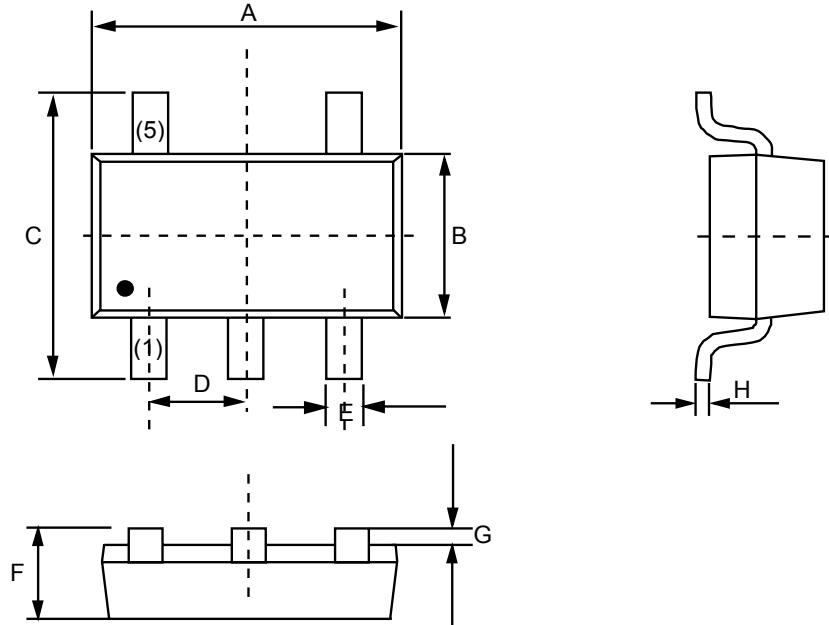


### PCB Design

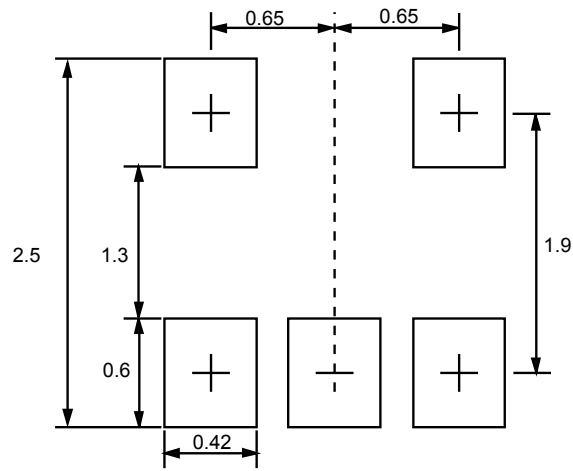
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- 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-353)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.0	2.2	0.079	0.087
B	1.15	1.35	0.045	0.053
C	2.15	2.45	0.085	0.096
D	0.65BSC		0.026BSC	
E	0.15	0.35	0.006	0.014
F	0.90	1.10	0.035	0.043
G	0.00	0.10	0.000	0.004
H	0.08	0.15	0.003	0.006




Unit:mm

**Ordering information**

Device	Package	Shipping
PESDNC353T5VU	SOT-353 (Pb-Free)	3000 / Tape & Reel


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