

DESCRIPTION

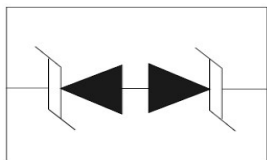
PESDNC2FD5VB is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power line. With maximum capacitance of 12pF, PESDNC2FD5VB is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

PESDNC2FD5VB uses ultra-small DFN1006 package. Each PESDNC2FD5VB device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

ORDERING INFORMATION

- ✧ Device: PESDNC2FD5VB
- ✧ Package: DFN1006-2L
- ✧ Marking: PB
- ✧ Material: RoHS compliant, Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs

CIRCUIT DIAGRAM



- ✧ Transient protection for high-speed data lines
 - IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air)
 - $\pm 30\text{kV}$ (Contact)
 - IEC 61000-4-4 (EFT) 40A (5/50 ns)
 - Cable Discharge Event (CDE)
- ✧ Package optimized for high-speed lines
- ✧ Ultra-small package (1.0mm $\times$ 0.6mm $\times$ 0.4mm)
- ✧ Protects one data, control or power line
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Low clamping voltage
- ✧ Each I/O pin can withstand over 1000 ESD strikes for $\pm 8\text{kV}$ contact discharge

MACHANICAL DATA

- ✧ DFN1006-2L package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed:
 - 260 $^{\circ}\text{C}$ /10s
- ✧ Reel size: 7 inch
- ✧ MSL3

APPLICATIONS

- ✧ Portable Electronics
- ✧ Desktops, Servers and Notebooks
- ✧ Cellular Phones
- ✧ MP3 Ports
- ✧ Digital Ports
- ✧ Subscriber Identity Module (SIM) card

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20 μ s)	105	W
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 30 ± 30	kV
T_j	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Stand-Off Voltage				5.0	V
V_{BR}	Reverse Breakdown voltage	$I_T=1mA$	5.6			V
I_R	Reverse leakage current.	$V_{RWM}=5V$			0.3	μA
I_{PP}	Peak Pulse Current	$t_p=8/20\mu s$			8	A
V_C	Clamping Voltage	$I_{PP}=1A, t_p=8/20\mu s$ $I_{PP}=8A, t_p=8/20\mu s$			8 15	V
C_J	Junction Capacitance	$V_R=0V, f=1MHz$		12		pF

ELECTRICAL CHARACTERISTICS CURVE

Figure 1: Peak Pulse Power Vs Pulse Time

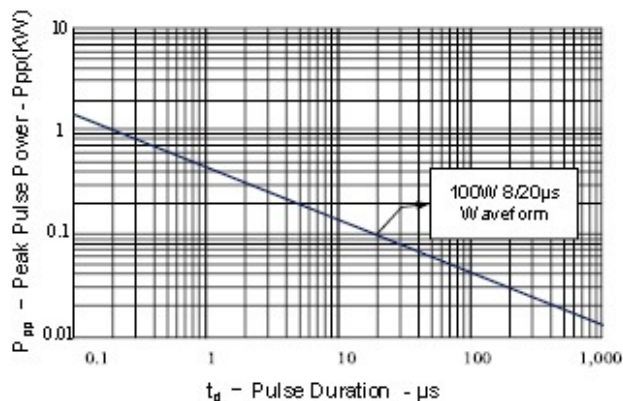


Figure 2: Power Derating Curve

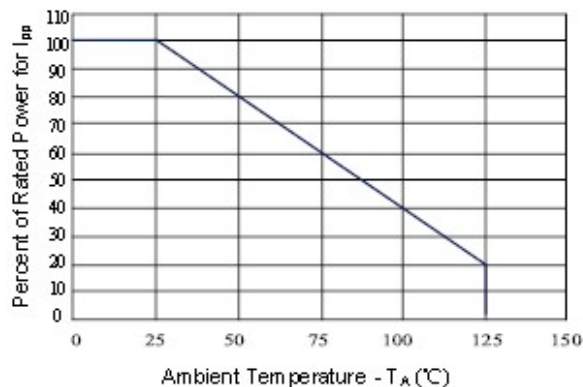


Figure 3: Clamping Voltage vs. Peak Pulse Current

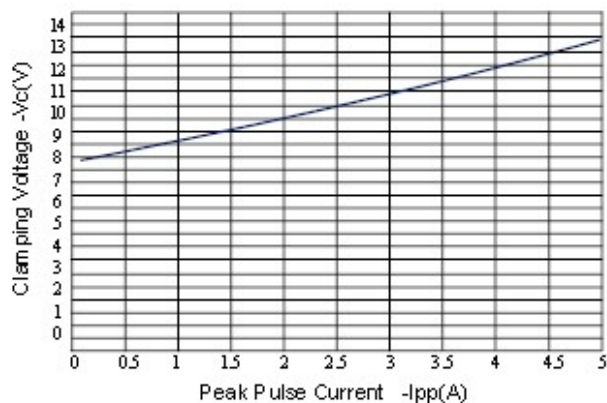


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

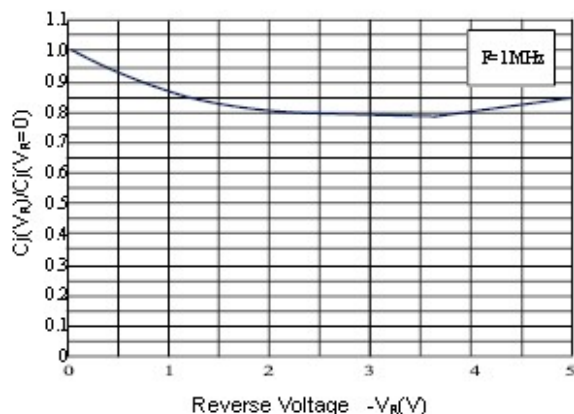


Figure 5: Pulse Waveform

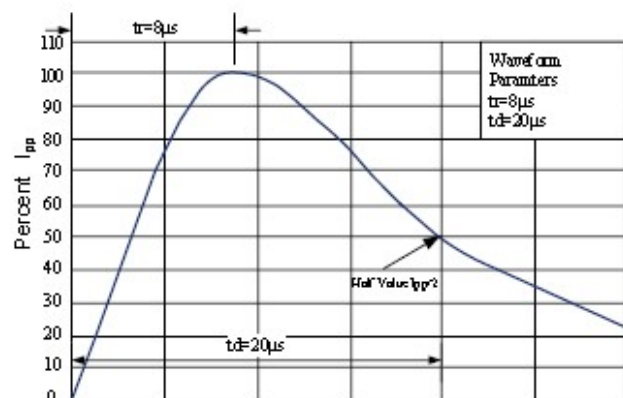
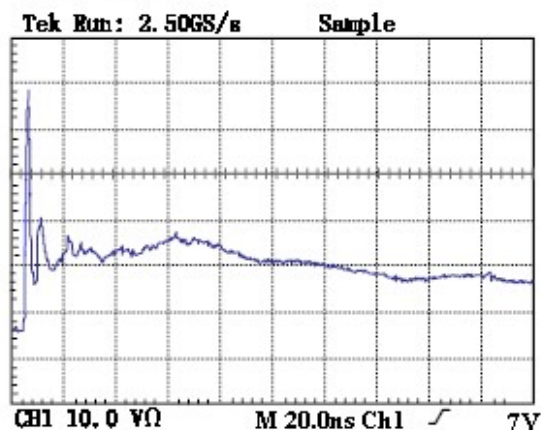
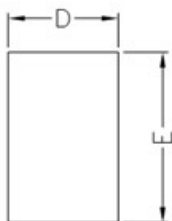
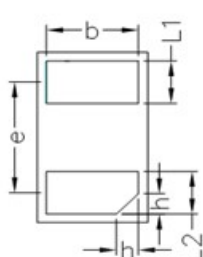


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)



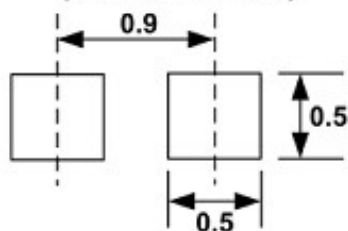
DFN1006-2L PACKAGE OUTLINE



Unit: mm

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
b	0.45	0.50	0.55
e	0.65BSC		
A	0.45	0.50	0.55
h	0.07	0.12	0.17

Dimension: Millimeter
(Stencil thickness: 0.1)



Soldering Footprint