RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

TEP0801PBV

TVS/ESD Protection Diode

DESCRIPTION

TEP0801PB is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With typical capacitance of 8pF only, TEP0801PB 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 (±15kV air, ±8kV 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.

TEP0801PB uses ultra-small DFN1006 package. Each TEP0801PB device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

FEATURES

✧Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) ±15kV (Air)
±8kV (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×0.6mm×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 ±8kV contact discharge
✧P/N suffix V means AEC-Q101qualified, e.g:TEP0801PBV
✧P/N suffix V means Halogen-free

MACHANICAL DATA

✧DFN1006 package
✧Flammability Rating: UL 94V-0
✧Packaging: Tape and Reel
✧High temperature soldering guaranted:260℃/10s
✧Reel size: 7 inch

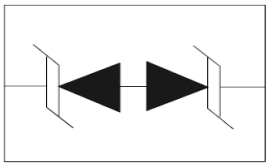
ORDERING INFORMATION

✧Device: TEP0801PB
✧Package: DFN1006
✧Marking: PB
✧Material: RoHS compliant, Halogen free
✧Packing: Tape & Reel
✧Quantity per reel: 10,000pcs

APPLICATIONS

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

CIRCUIT DIAGRAM



PIN CONFIGURATION

ABSOLUTE MAXIMUM RATING			
Symbol	**Parameter**	**Value**	**Units**
P_{PP}	Peak Pulse Power (8/20μs)	100	W
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**
$\mathbf{V_{RWM}}$	Reverse Stand-Off Voltage				5.0	V
$\mathbf{V_{BR}}$	Reverse Breakdown voltage	I_T=1mA	6.0			V
$\mathbf{I_R}$	Reverse leakage current.	V_{RWM}=5V			1	μA
$\mathbf{I_{PP}}$	Peak Pulse Current	t_P=8/20us			5	A
$\mathbf{V_C}$	Clamping Voltage	I_{PP}=1A, t_P=8/20us I_{PP}=5A, t_P=8/20us		 13	9.5 15	V
$\mathbf{C_J}$	Junction Capacitance	V_R=0V,f=1MHz		8	15	pF

RATING AND CHARACTERISTICS CURVES (TEP0801PBV)

Figure 1: Peak Pulse Power Vs Pulse Time

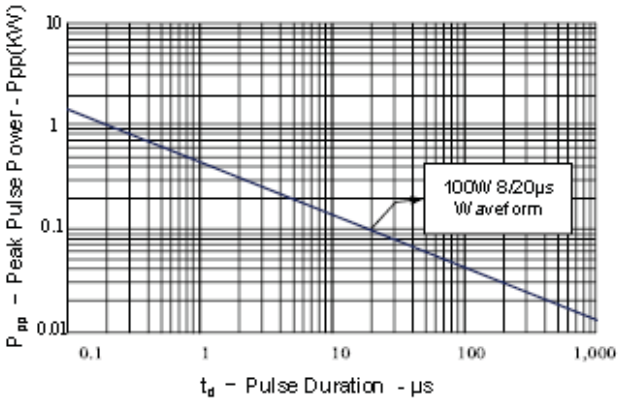


Figure 2: Power Derating Curve

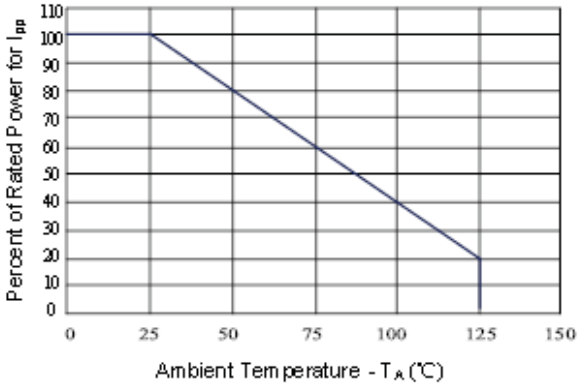


Figure 3: Clamping Voltage vs. Peak Pulse Current

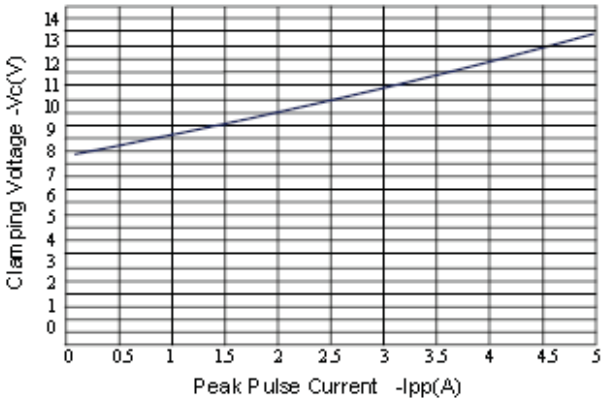


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

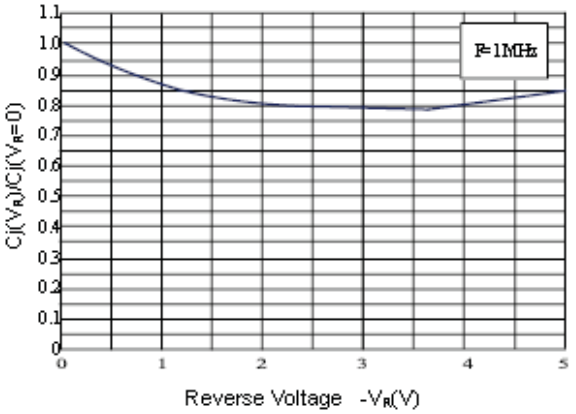


Figure 5: Pulse Waveform

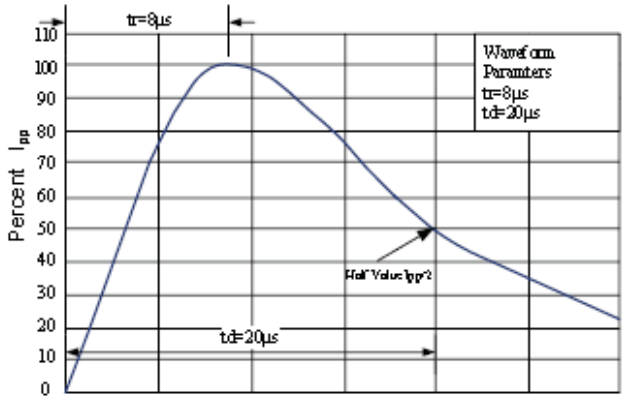
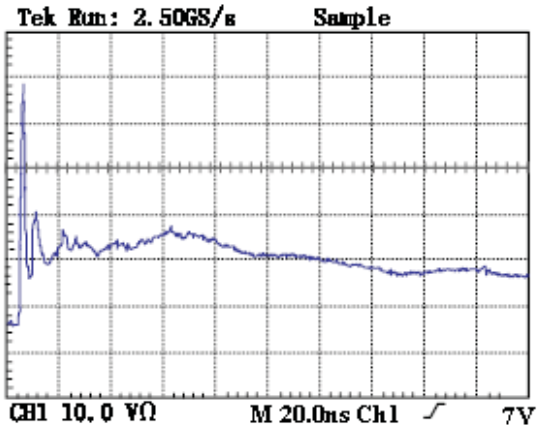
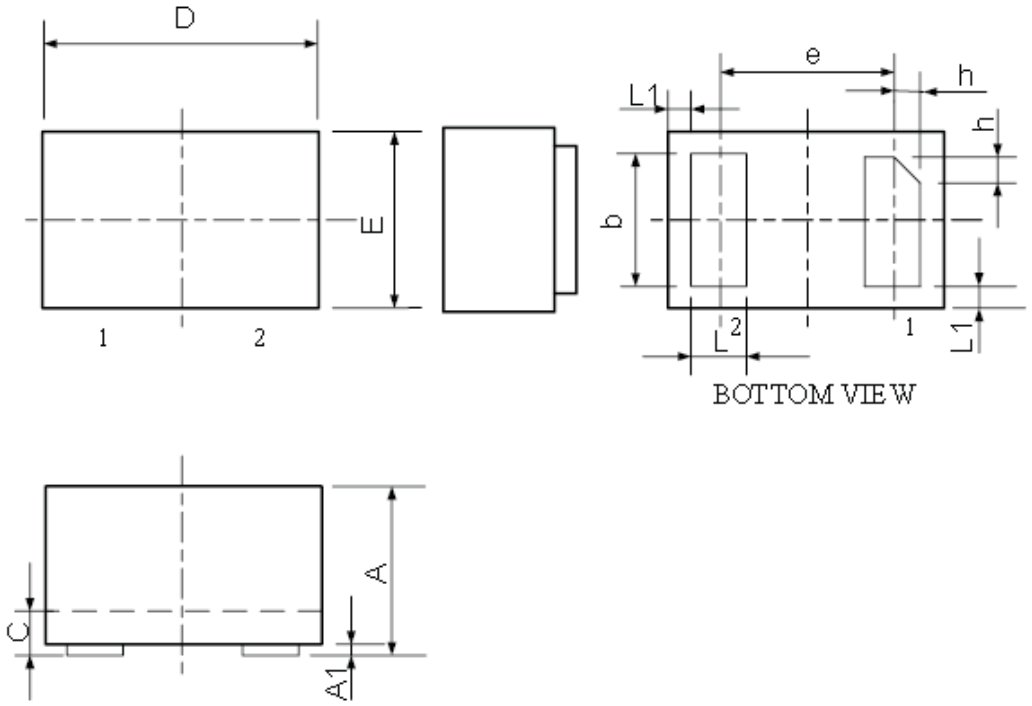


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)

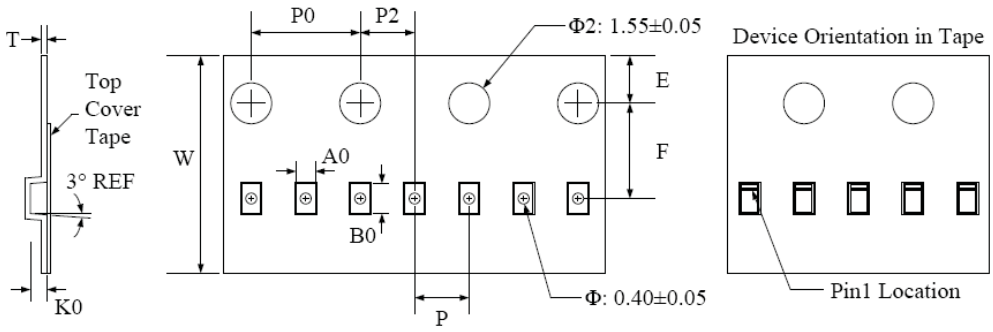


DFN1006 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Minimum	Maximum
A	0.450	0.550
A1	0.000	0.050
b	0.45	0.55
C	0.12	0.18
D	0.950	1.050
e	0.65BSC	
E	0.550	0.650
L	0.200	0.300
L1	0.05REF	
h	0.07	0.17

Carrier Tape



Symbol	W	A0	B0	K0	E	F	P	P0	P2	T
Dimensions (mm)	8.00±0.1	0.7±0.05	1.15±0.05	0.55±0.05	1.75±0.1	3.5±0.05	2.0±0.1	4.0±0.1	2.0±0.05	0.2±0.05

Packing Quantity

Reel		Inner Box		Carton	
Size	Quantity Per Reel	Size	Quantity Per Reel	Size	Quantity Per Reel
7 (inch)	10,000pcs	210*208*203 (mm)	150,000pcs	440*440*230 (mm)	600,000pcs
7 (inch)	10,000pcs	183*188*80 (mm)	60,000pcs	386*265*215 (mm)	360,000pcs

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