

TVS/ESD Protection Diode

DESCRIPTION

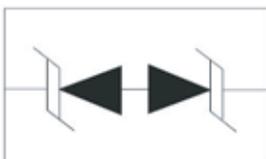
TEP0801PBLC is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With maximum capacitance of 15pF, TEP0801PBLC is designed to protect parasitic-sensitive systems against over-voltage and over-current transient 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.

TEP0801PBLC uses ultra-small DFN1006 package. Each TEP0801PBLC 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: TEP0801PBLC
- ✧ Package: DFN1006
- ✧ Marking: PB
- ✧ Material: RoHS compliant
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs

CIRCUIT DIAGRAM



FEATURES

- ✧ Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (Air)
 $\pm 8\text{kV}$ (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
- ✧ P/N suffix V means AEC-Q101 qualified, e.g: TEP0801PBLCV
- ✧ Halogen-free

MACHANICAL DATA

- ✧ DFN1006 package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed: $260^\circ\text{C}/10\text{s}$
- ✧ 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)	68	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	$^{\circ}$ C
T_{STG}	Storage Temperature	-55/+150	$^{\circ}$ C

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}$ C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Stand-Off Voltage				5.0	V
V_{BR}	Reverse Breakdown voltage	$I_T=1mA$	6.0			V
I_R	Reverse leakage current.	$V_{RWM}=5V$			1	μ A
I_{PP}	Peak Pulse Current	$t_p=8/20\mu s$			4	A
V_C	Clamping Voltage	$I_{PP}=1A, t_p=8/20\mu s$ $I_{PP}=4A, t_p=8/20\mu s$			9.5 17	V
C_J	Junction Capacitance	$V_R=0V, f=1MHz$		8	15	pF

RATING AND CHARACTERISTICS CURVES (TEP0801PBLC)

Figure 1: Peak Pulse Power Vs Pulse Time

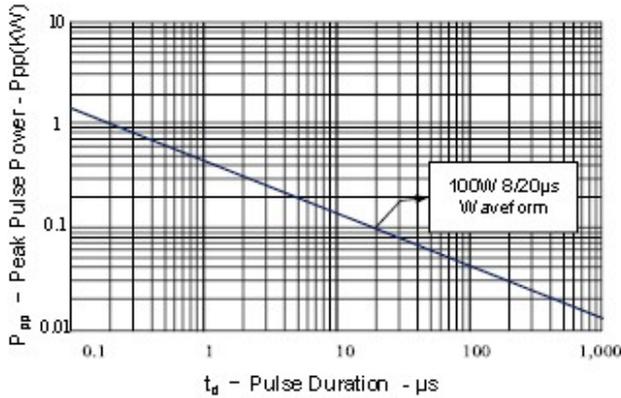


Figure 2: Power Derating Curve

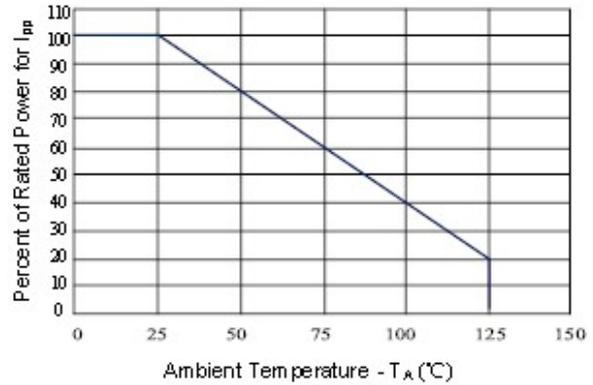


Figure 3: Clamping Voltage vs. Peak Pulse Current

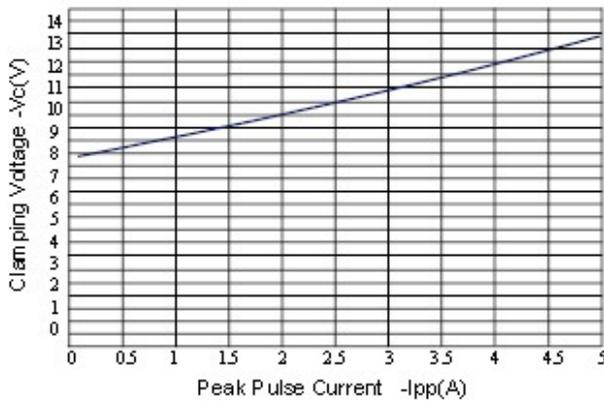


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

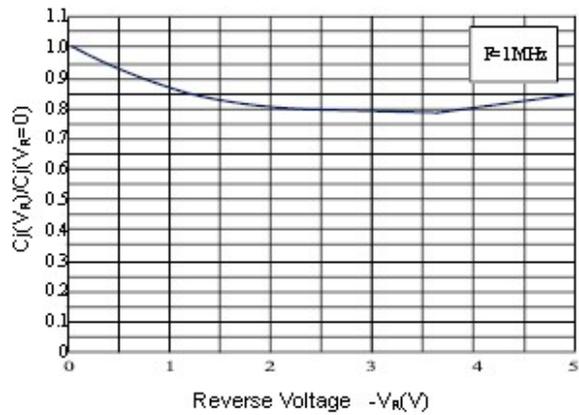


Figure 5: Pulse Waveform

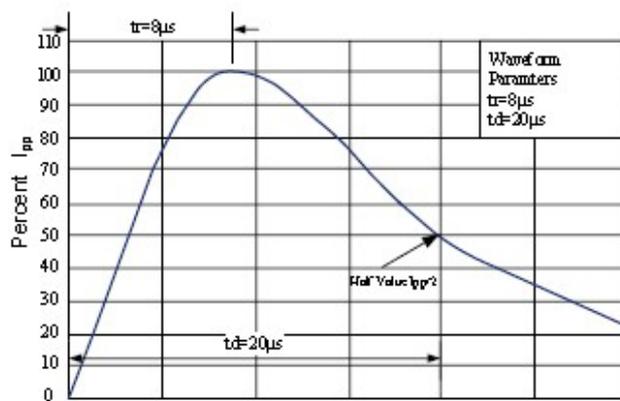
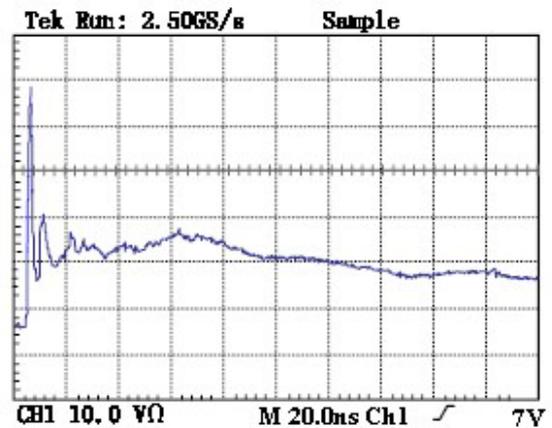
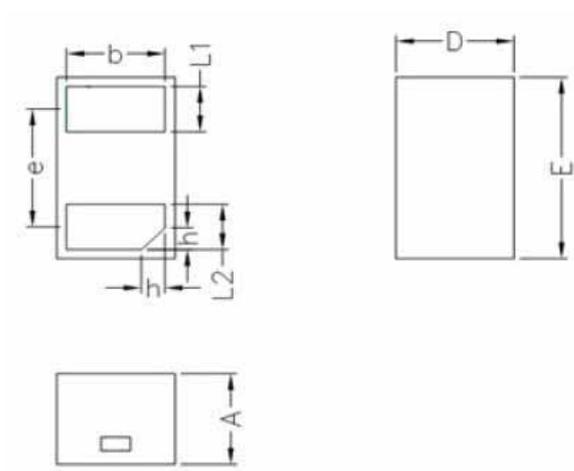


Figure 6: ESD Clamping (8kV Contact per IEC 61000-4-2)

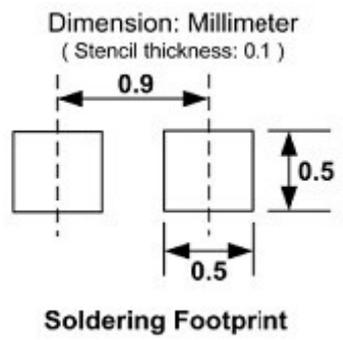


DFN1006 PACKAGE OUTLINE DIMENSIONS

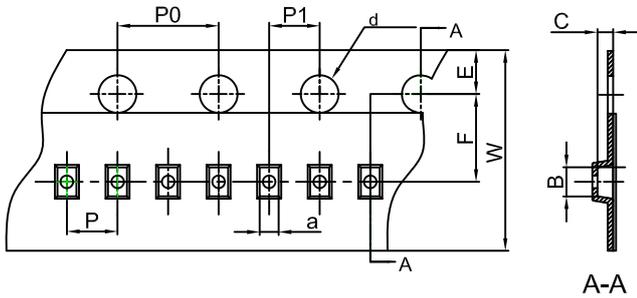


Unit: mm

	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



DFN/FBP(1.0×0.6) Embossed Carrier Tape

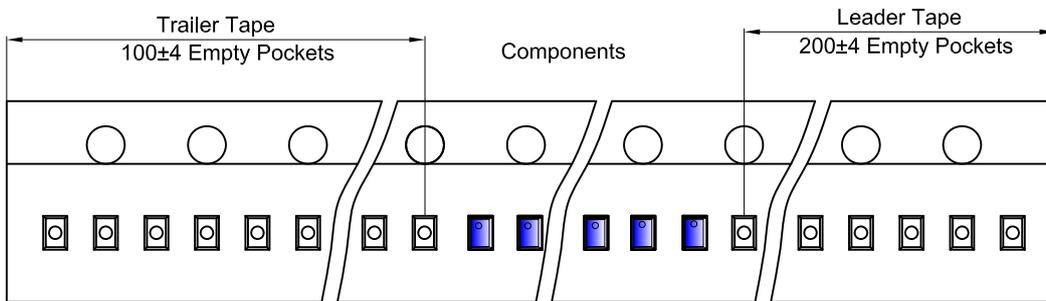


Packaging Description:

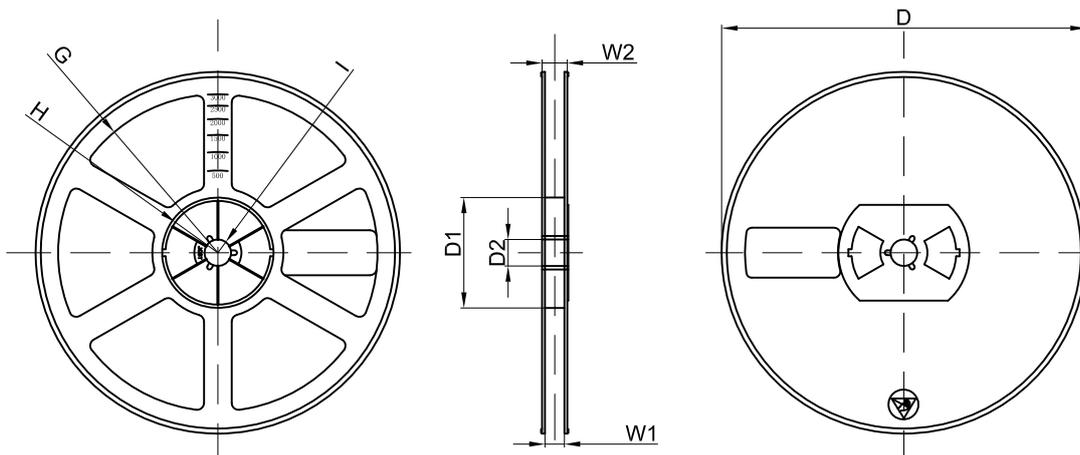
DFN/FBP(1.0×0.6) parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 10,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFN/FBP(1.0×0.6)	0.66	1.15	0.66	∅1.50	1.75	3.50	4.00	2.00	2.00	8.00

DFN/FBP(1.0×0.6) Tape Leader and Trailer



DFN/FBP(1.0×0.6) Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	∅178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
10000 pcs	7 inch	150,000 pcs	203×203×195	600,000 pcs	438×438×220	

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