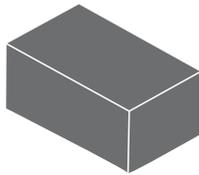
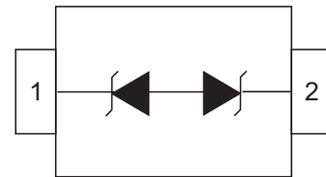


# Electro-Static Discharge TESD07CBV Bidirectional TVS Diode/Low Clamping Voltage

## DFN1006



## Pin Configuration



## Features

- 84 Watts Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- Protects one bidirectional I/O line
- Low clamping voltage
- Working voltages : 7V
- Low leakage current

## IEC Compatibility

- IEC61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (surge) 6A (8/20 $\mu s$ )

## Applications

- Cellular handsets
- USB Vbus and CC line Protection
- GPIO Protection
- Other portable devices
- Network communication devices

## Mechanical Characteristics

- JEDEC DFN1006 Package
- Molding Compound Flammability Rating : UL 94V-0
- Quantity Per Reel : 10,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

**Maximum Ratings( $T_A=25^{\circ}\text{C}$  unless otherwise specified )**

Parameter	Symbol	Value	Units
Peak Pulse Power( $t_p=8/20\mu\text{s}$ )	$P_{PP}$	84	Watts
Lead Soldering Temperature	$T_L$	260(10 sec.)	$^{\circ}\text{C}$
Operating Temperature Range	$T_{OP}$	-40~85	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55~150	$^{\circ}\text{C}$

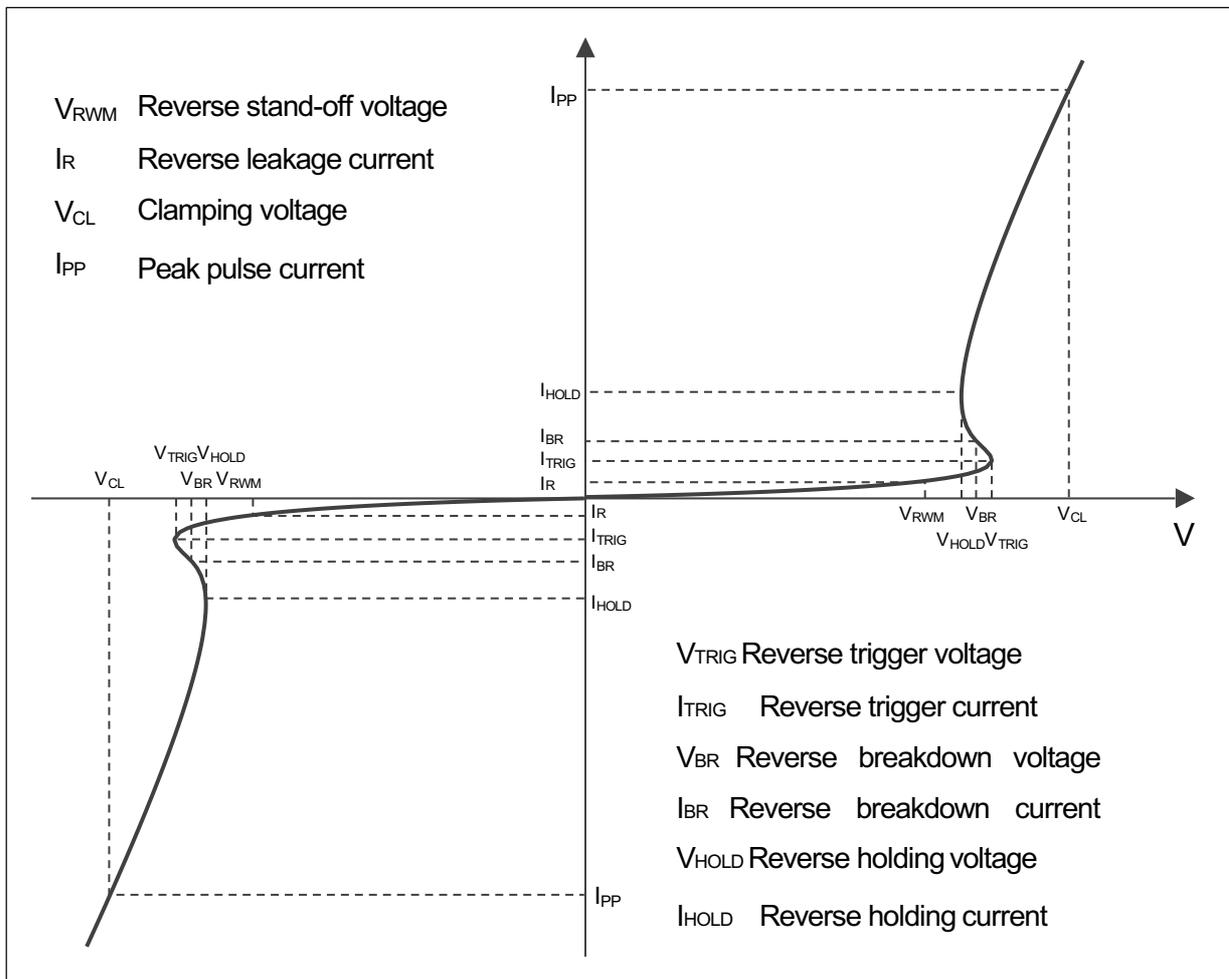
**Electrical Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise specified )**
**TESD07CBV(Marking:7A)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				7	V
Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	7.2			V
Clamping Voltage <sup>1)</sup>	$V_C$	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$		9	11	V
		$I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$		12	14	V
Clamping Voltage <sup>2)</sup>	$V_C$	$V_{ESD}=8\text{kV}$		12		V
Clamping Voltage <sup>3)</sup>	$V_C$	$I_{PP}=16\text{A}, t_P=100\text{ns}$		12		V
Reverse Leakage Current	$I_R$	@ $V_{RWM}$			1	$\mu\text{A}$
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz		10	13	pF
		2.5Vdc, f=1MHz		8	11	pF

Notes:

- 1) Contact discharge mode, according to IEC61000 -4-2.
- 2) Non -repetitive current pulse, according to IEC61000 -4-5.
- 3) TLP parameter:  $Z_0=50\ \Omega$ ,  $t_p=100\text{ns}$ ,  $t_r=2\text{ns}$ , averaging window from 60ns to 80ns.  $R_{DYN}$ s calculated from 4A to 16A.

Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)



Ratings and Characteristic Curves

Fig.1 Non-Repetitive Pulse Power vs. Pulse Time

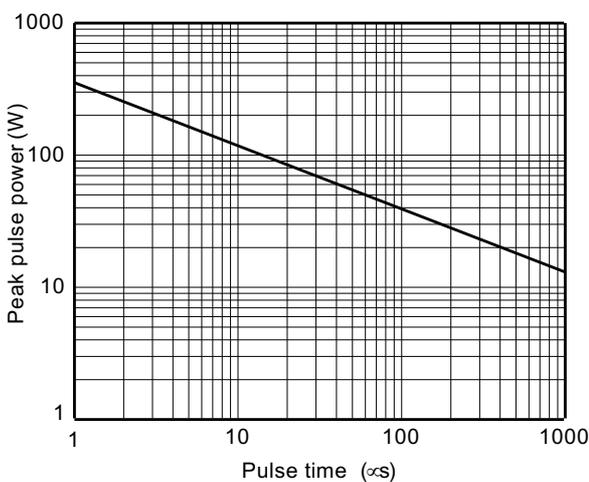


Fig.2 Pulse Waveform

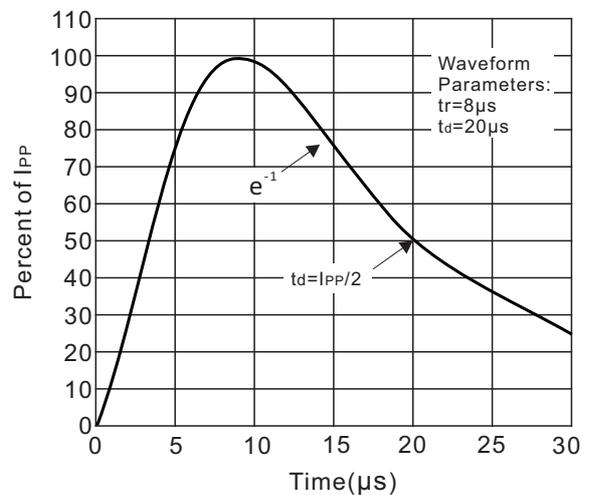


Fig.3 Power Derating Curve

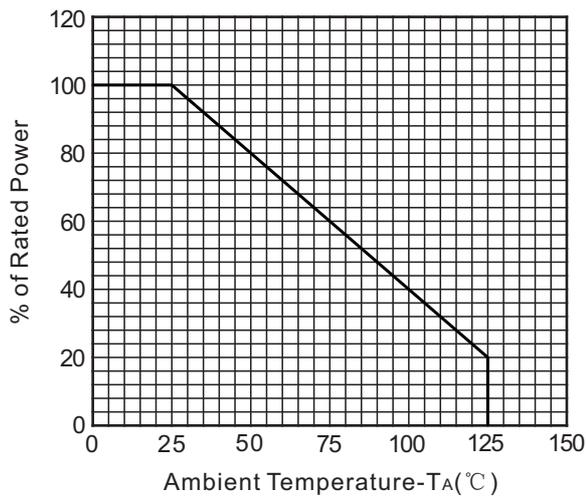


Fig.4 Contact discharge current waveform per IEC61000-4-2

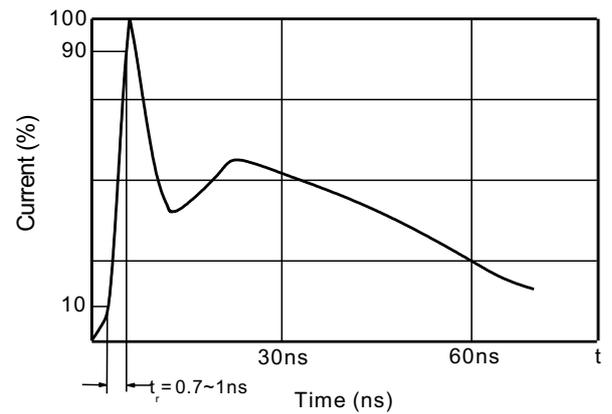


Fig.5 Clamping voltage vs. Peak pulse current

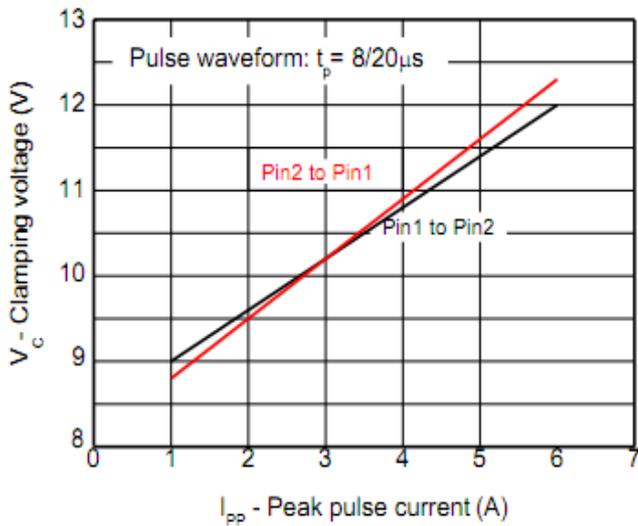


Fig.6 Capacitance vs.Reverse voltage

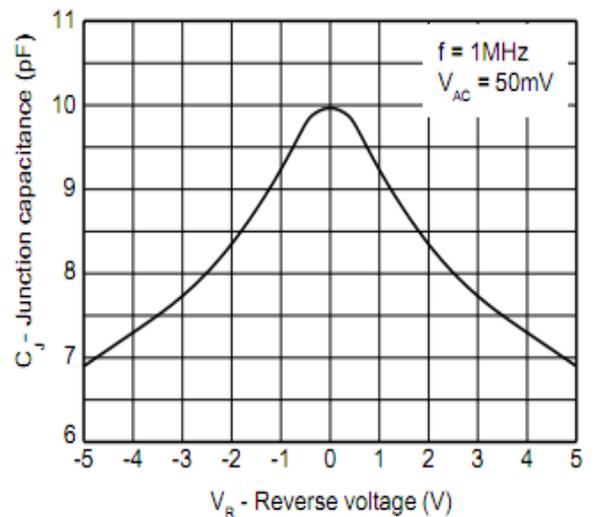
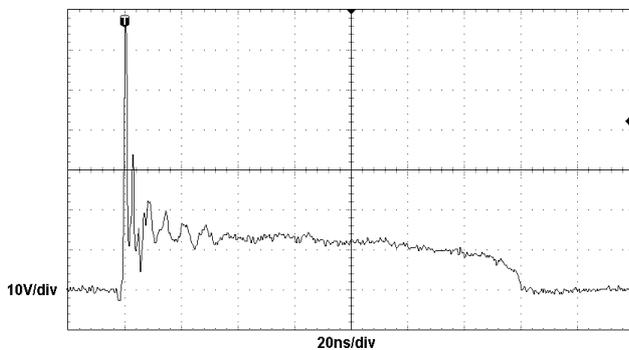
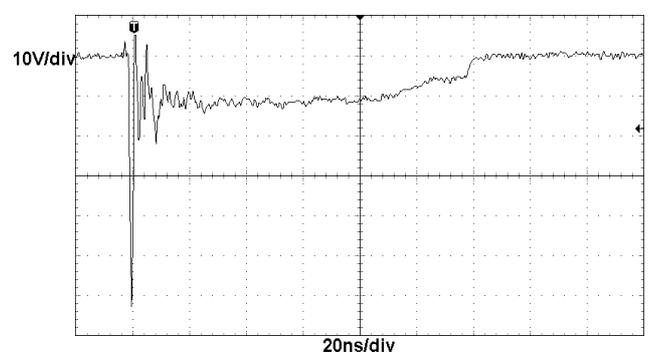


Fig.7 ESD clamping (+8kv contact discharge per IEC61000-4-2)



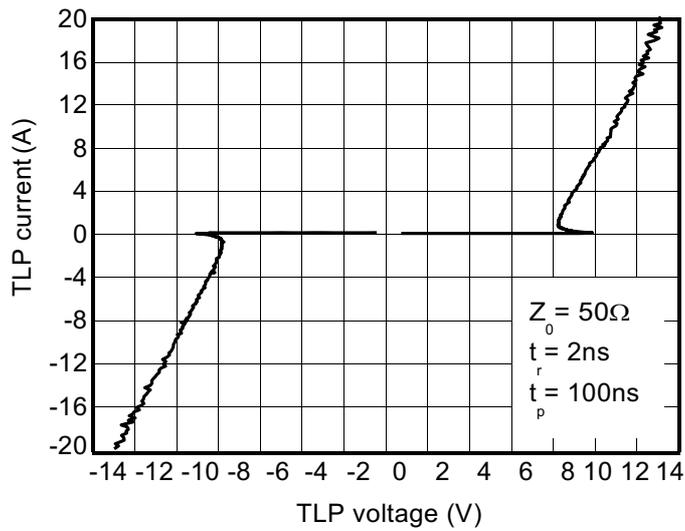
ESD clamping (+8kV contact discharge per IEC61000-4-2)

Fig.8 ESD clamping (-8kv contact discharge per IEC61000-4-2)

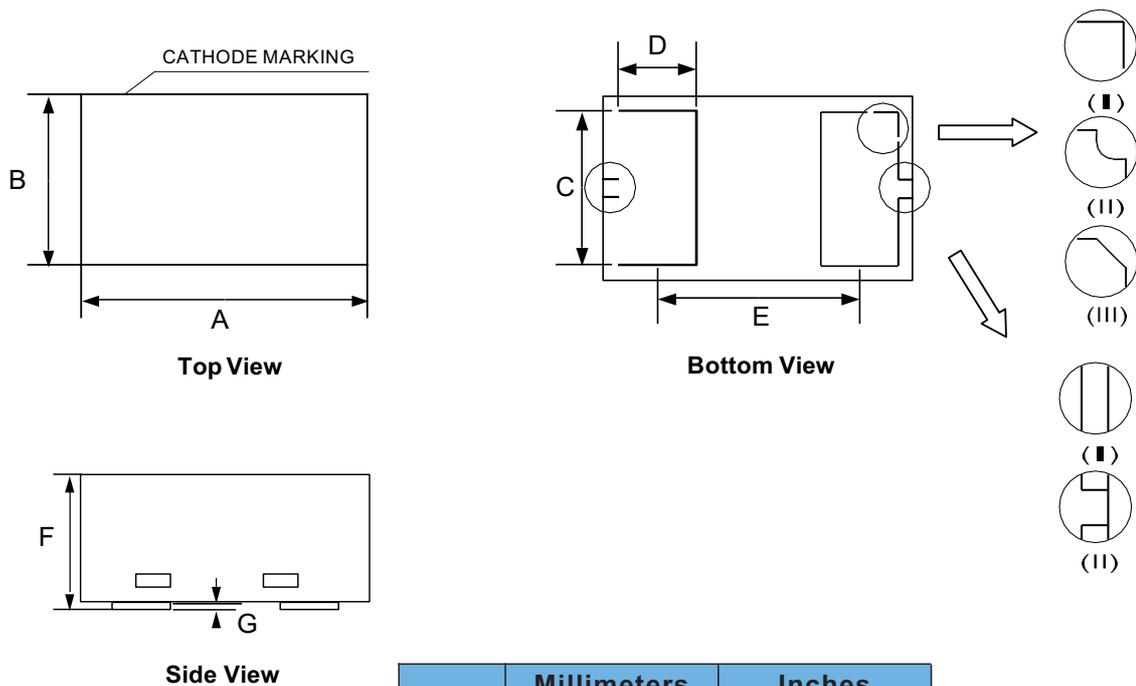


ESD clamping (-8kV contact discharge per IEC61000-4-2)

Fig.9 TLP Measurement



Dimensions(DFN1006)



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.95	1.08	0.037	0.043
B	0.55	0.68	0.022	0.027
C	0.45	0.55	0.017	0.022
D	0.20	0.40	0.008	0.016
E	0.65BSC		0.026BSC	
F	0.34	0.55	0.013	0.022
G	0.00	0.10	0.000	0.004