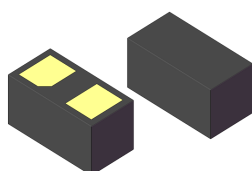


## Transient Voltage Suppressors for ESD Protection

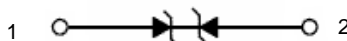
### FEATURES:

- ▮ Low Leakage
- ▮ Response Time is Typically < 1 ns
- ▮ IEC61000-4-2 Level 4 ESD Protection
- ▮ These are Pb-Free Devices
- ▮ We declare that the material of product compliance with RoHS requirements and Halogen Free.

### Circuit Diagram & Pin Configuration:



DFN-0603



### DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
TESDN051BD06	A	15000/Tape&Reel

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air discharge Contact discharge		±25 ±20	kV kV
ESD Voltage Per Human Body Model		16	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T <sub>A</sub> =25	PD	200	mW
Junction and Storage Temperature Range	T <sub>J</sub> ,T <sub>STG</sub>	-55 to 150	
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	

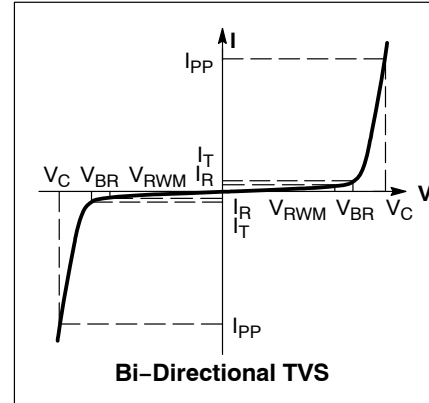
Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0\*0.75\*0.62 in.

### ELECTRICAL CHARACTERISTICS

(T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
P <sub>pk</sub>	Peak Power Dissipation
C	Capacitance @ V <sub>R</sub> = 0 and f = 1.0 MHz



### ELECTRICAL CHARACTERISTICS

Device	V <sub>RWM</sub> (V)	I <sub>R</sub> (μA) @ V <sub>RWM</sub>	V <sub>BR</sub> (V) @ I <sub>T</sub> (Note 1)		I <sub>T</sub> (mA)	I <sub>PP</sub> (A)	V <sub>C</sub> (V) @ Max I <sub>PP</sub>	P <sub>PK</sub> (W) (8*20 μs)	C (pF)		
	Max	Max	Min	Max		Max	Max	Max	Min	Typ	Max
TESDN051BD06	5.0	1.0	5.6	8.5	1.0	5.5	12.5	69	8	11	14

Other voltage available upon request.

2. V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25
3. Surge current waveform per Figure 3.

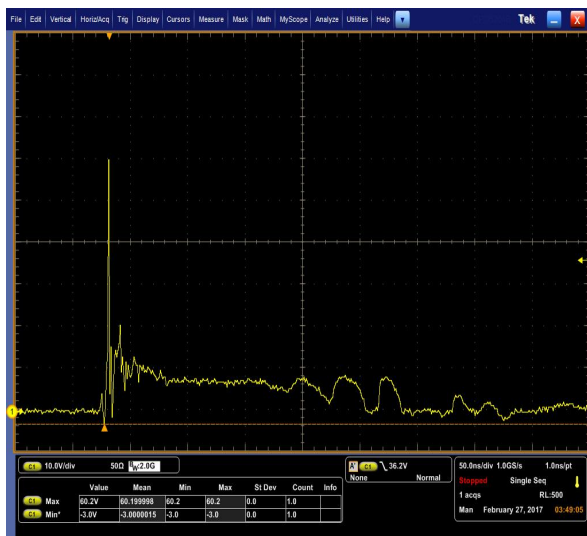


Fig1. ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC61000-4-2



Fig2. ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC61000-4-2

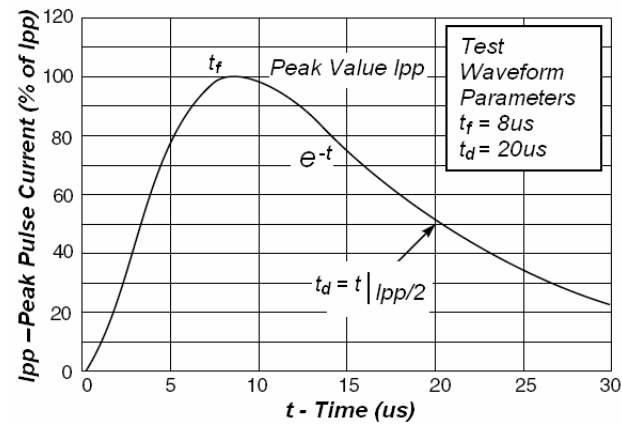
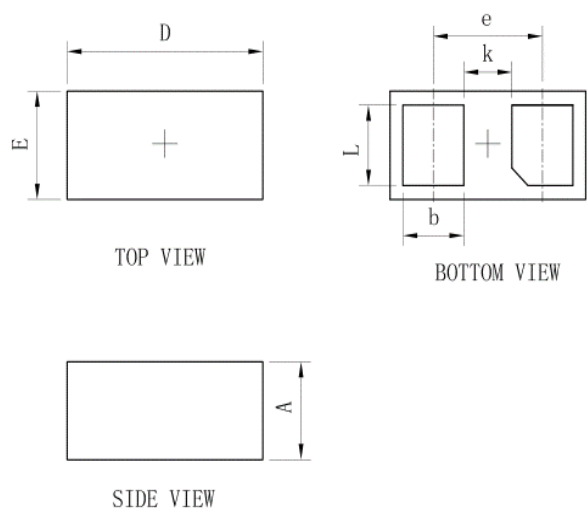


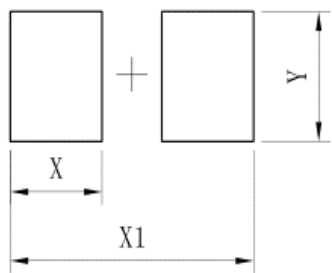
Fig3. Pulse Waveform

OUTLINE AND DIMENSIONS



DFN-0603			
Dim	Min	Typ.	Max
D	0.58	0.61	0.64
E	0.28	0.31	0.34
e	-	0.34	-
L	0.20	0.23	0.26
b	0.16	0.19	0.22
A	0.25	0.28	0.31
k	0.12	0.15	0.18
All Dimensions in mm			

SOLDERING FOOTPRINT



DFN-0603	
DIM	(mm)
X	0.23
X1	0.61
Y	0.30

## NOTICE

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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tinysemi elec Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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