

# LESD11D5.0CBT5G ESD PROTECTION DIODE

## Discription

The LESD11D5.0CBT5G is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, digital cameras and many other portable applications where board space is at a premium.

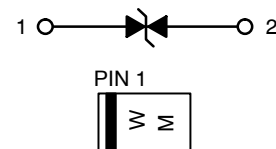
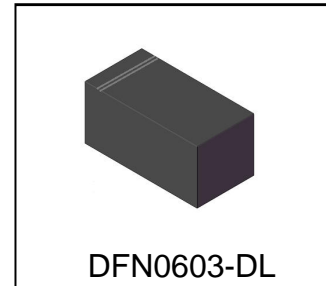
## Applications

- I Cellular phones audio
- I Digital cameras
- I Portable applications
- I Mobile telephone

## Features

- I Small Body Outline Dimensions: 0.61 mm x 0.31 mm
- I Low Body Height: 0.28 mm
- I Low Leakage
- I Response Time is Typically < 1 ns
- I IEC61000-4-2 Level 4 ESD Protection
- I These are Pb-Free Devices
- I We declare that the material of product compliance with RoHS requirements.

LESD11D5.0CBT5G



W= Specific Device Code  
M = Month Code

## Ordering information

Device	Marking	Shipping
LESD11D5.0CBT5G	W(CCW90°)	15000/Tape&Reel

## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air discharge Contact discharge		±30 ±30	kV kV
Total Power Dissipation on FR-5 Board (Note 1) @ T <sub>A</sub> =25°C	PD	200	mW
Junction and Storage Temperature Range	T <sub>J</sub> ,T <sub>STG</sub>	-55 to 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	°C

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.

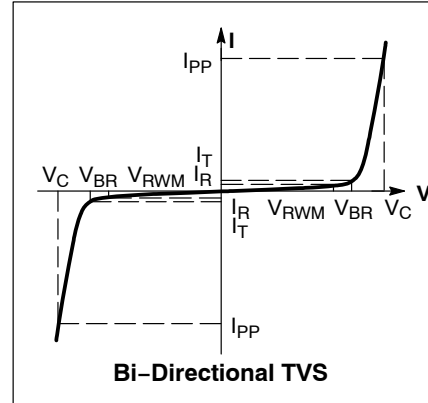
1. FR-5 = 1.0\*0.75\*0.62 in.

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## ELECTRICAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$P_{pk}$	Peak Power Dissipation
C	Capacitance @ $V_R = 0$ and $f = 1.0$ MHz



## ELECTRICAL CHARACTERISTICS

Device	$V_{RWM}$ (V)	$I_R$ ( $\mu\text{A}$ ) @ $V_{RWM}$	$V_{BR}$ (V) @ $I_T$ (Note 2)		$I_T$	$V_C$ (V) @ $I_{PP} = 1$ A (Note 3)	$V_C$ (V) @ MAX $I_{PP}$ (Note 3)	$I_{PP}$ (A) (Note 3)	$P_{PK}$ (W) (Note 3)	$V_{Clamp}$ @ $I_{TLP} = 16$ A (V)	C (pF)
	Max	Max	Min	Max	mA	Max	Max	Max	Max	Typ	Max
LESD11D5.0CBT5G	5.0	0.1	5.6	8	1.0	8.4	9.5	10	85	8.5	25

Other voltage available upon request.

- $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^\circ\text{C}$
- Surge current waveform per Figure 3.

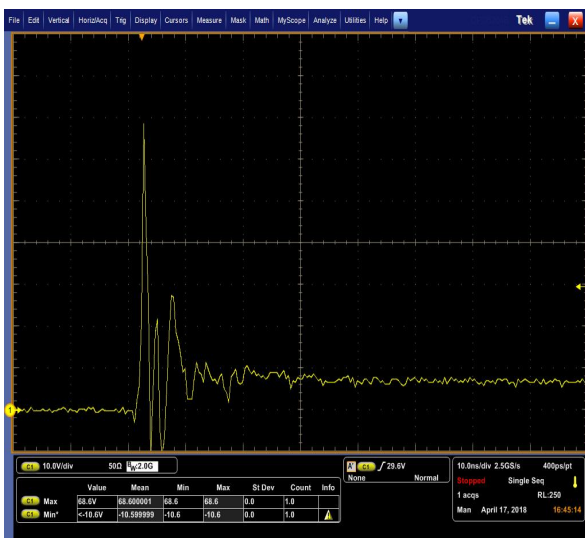


Fig1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

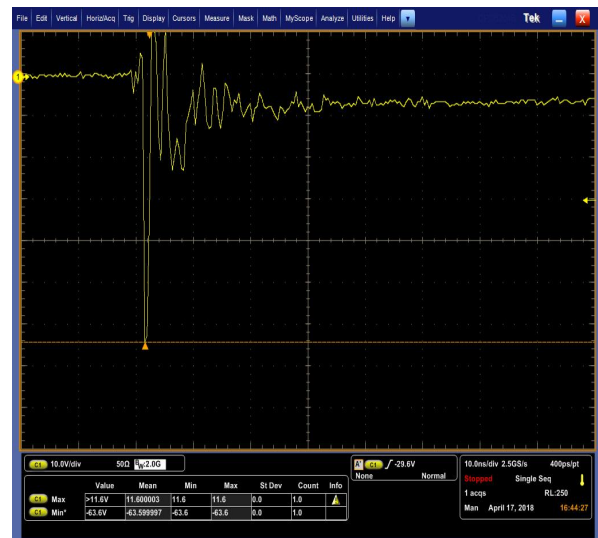


Fig2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

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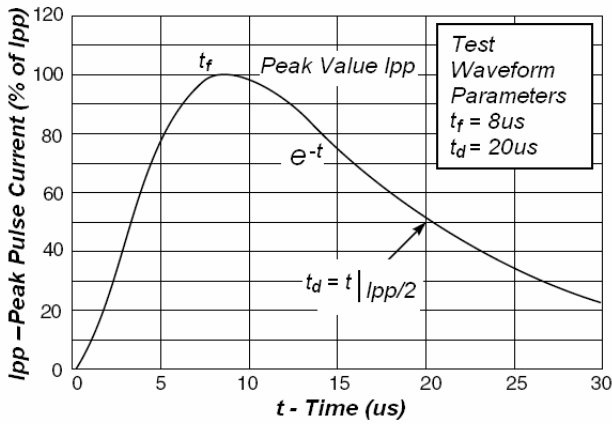


Fig3. Pulse Waveform

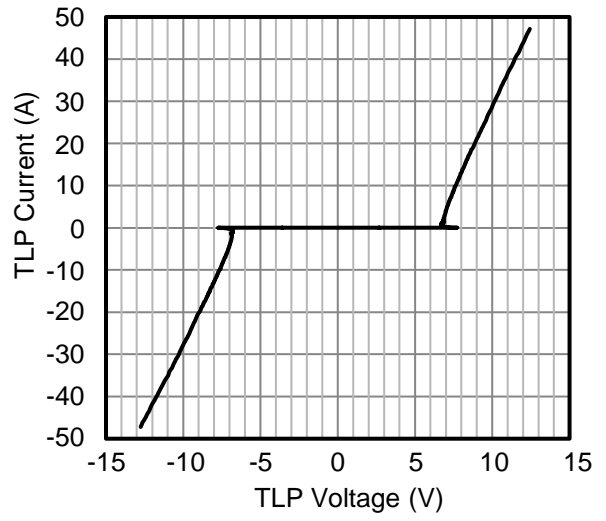


Fig4. TLP Measurement

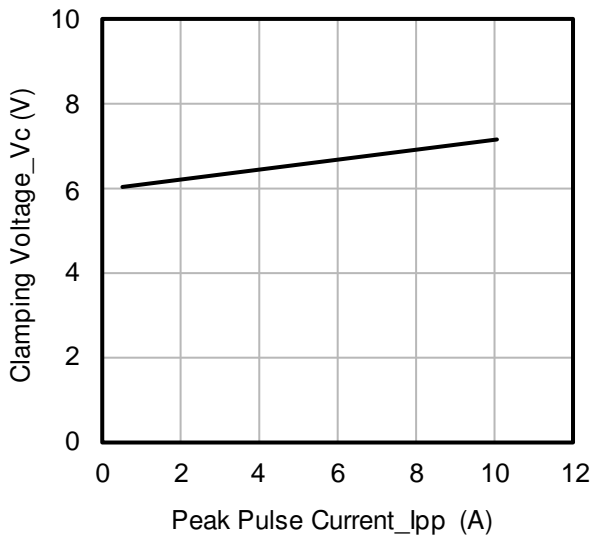
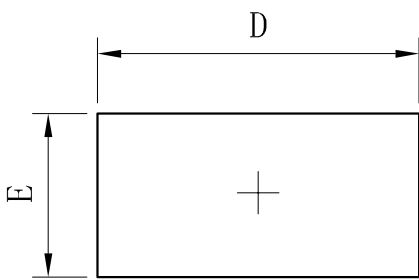


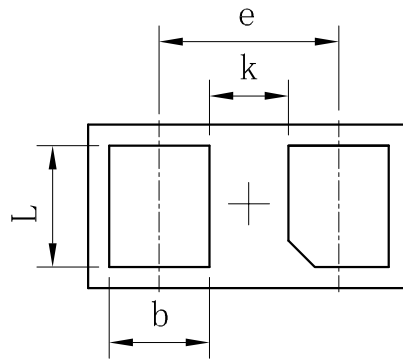
Fig5. Clamping Voltage vs. Peak Pulse Current

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## OUTLINE AND DIMENSIONS

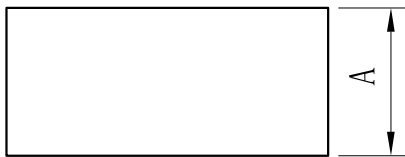


TOP VIEW



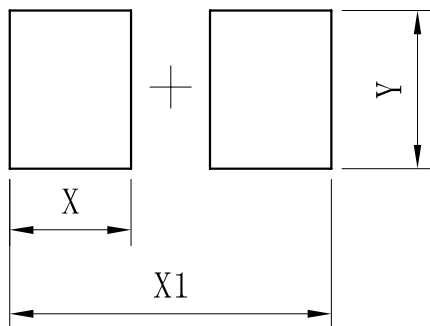
BOTTOM VIEW

DFN0603-DL			
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			



SIDE VIEW

## SOLDERING FOOTPRINT



DFN0603-DL	
DIM	(mm)
X	0.23
X1	0.61
Y	0.30

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