

**Discription**

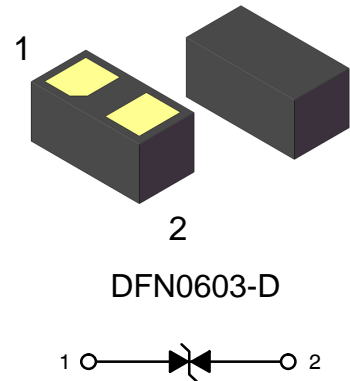
The ESDBL3V3AE1 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

**Applications**

- | Cellular phones audio
- | MP3 players
- | Digital cameras
- | Portable applications
- | mobile telephone

**Features**

- | Small Body Outline Dimensions: 0.61 mm x 0.31 mm
- | Low Body Height: 0.28 mm
- | Low Leakage
- | Response Time is Typically < 1 ns
- | ESD Rating of Class 3 (> 16 kV) per Human Body Model
- | IEC61000-4-2 Level 4 ESD Protection
- | These are Pb-Free Devices
- | We declare that the material of product compliance with RoHS requirements.



**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air discharge		±25	kV
Contact discharge		±20	kV
ESD Voltage Per Human Body Model		16	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

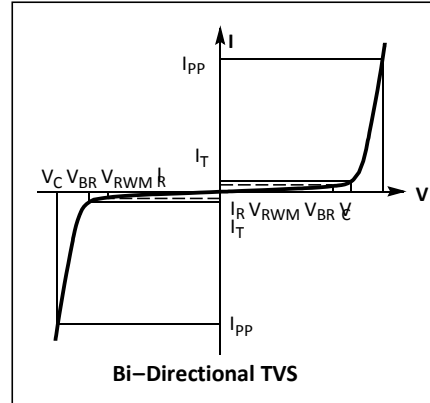
Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

**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 2)		I <sub>T</sub>	V <sub>C</sub> (V) @ I <sub>PP</sub> = 1 A (Note 3)	V <sub>C</sub> (V) @ MAX I <sub>PP</sub> (Note 3)	I <sub>PP</sub> (A) (Note 3)	P <sub>PK</sub> (W) (Note 3)	C (pF)
	Max	Max	Min	Max	mA	Max	Max	Max	Max	Max
ESDBL3V3AE1	3.3	0.1	5.0	6.5	1.0	7	10	6	60	16

Other voltage available upon request.

- V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C
- Surge current waveform per Figure 1.

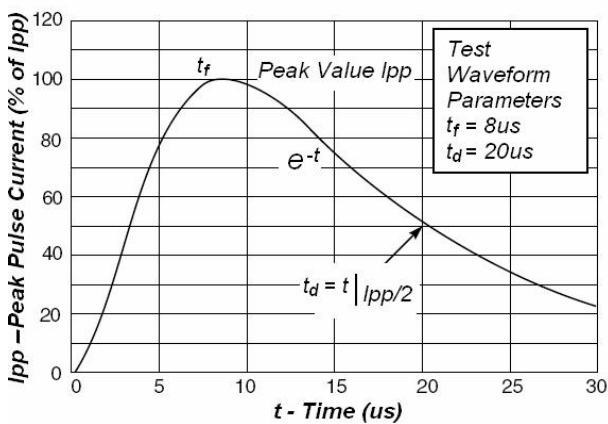


Fig1. Pulse Waveform

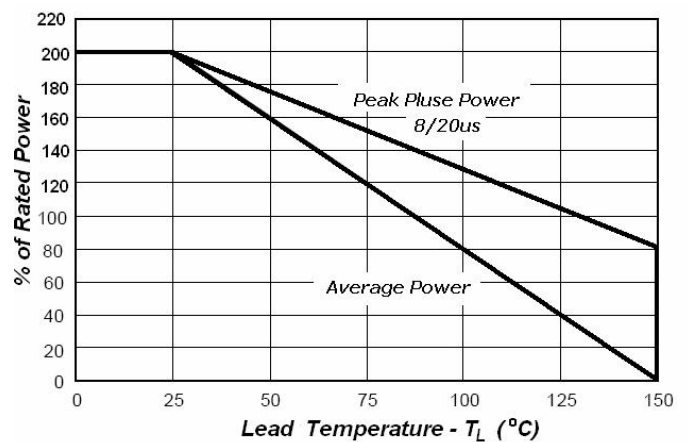


Fig2. Power Derating Curve

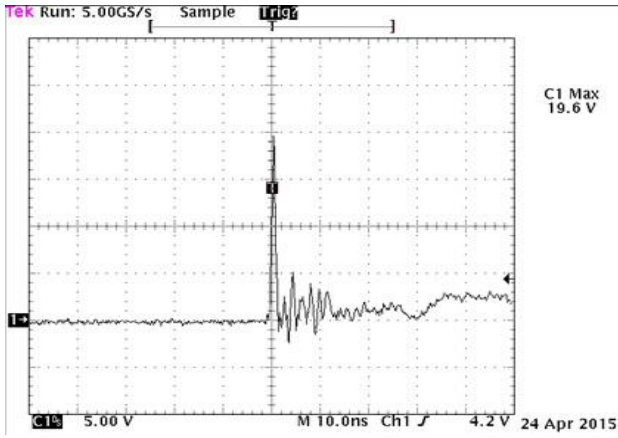


Fig4.Positive 8 kV Contact per IEC61000.4.2

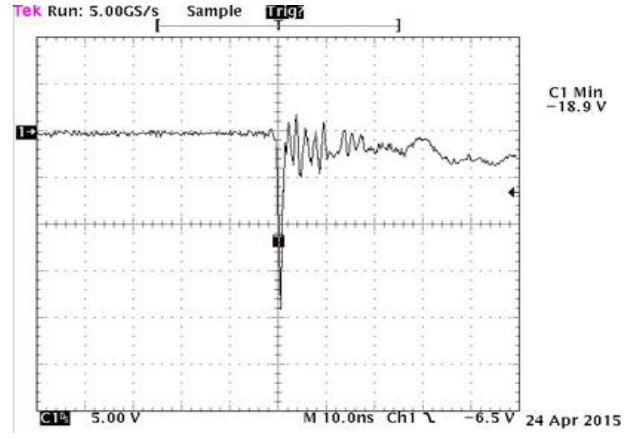
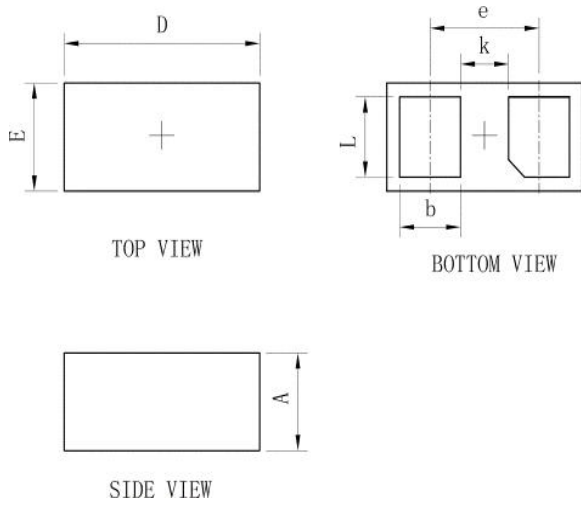


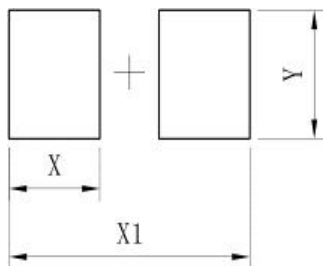
Fig5.Negative 8 kV Contact per IEC61000.4.2

**OUTLINE AND DIMENSIONS**



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			

**SOLDERING FOOTPRINT**



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