



DESCRIPTION

The ESD11D5.0C 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.

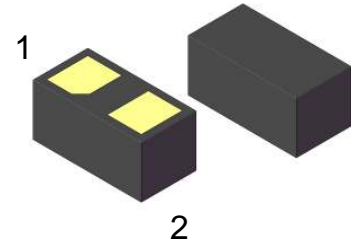
FEATURES

- ◆ 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.

APPLICATIONS

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

DFN0603-DL



PIN CONFIGURATION



Device	Marking	Shipping
ESD11D5.0C	A	15000/Tape&Reel

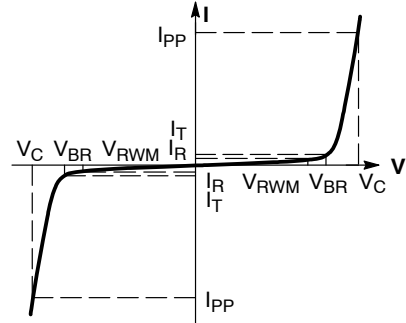
MAXIMUM RATINGS

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 _A =25°C	PD	200	mW
Junction and Storage Temperature Range	T _J ,T _{STG}	-55 to 150	°C
Lead Solder Temperature – Maximum (10Second Duration)	TL	260	°C



ELECTRICAL CHARACTERISTICS (TA = 25°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



Bi-Directional TVS

ELECTRICAL CHARACTERISTICS

Device	V _{RWM} (V)	I _R (μA) @ V _{RWM}	V _{BR} (V) @ I _T (Note 1)		I _T (mA)	I _{PP} (A)	V _C (V) @ Max I _{PP}	P _{PK} (W) (8*20 μs)	C (pF)		
	Max	Max	Min	Max		Max	Max	Max	Min	Typ	Max
ESD11D5.0C	5.0	1.0	5.6	8.5	1.0	5.5	12.5	69	8	11	14

Other voltage available upon request.

2.VBR is measured with a pulse test current I_T at an ambient temperature of 25°C

3.Surge current waveform per Figure 3.



CHARACTERISTIC CURVES

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

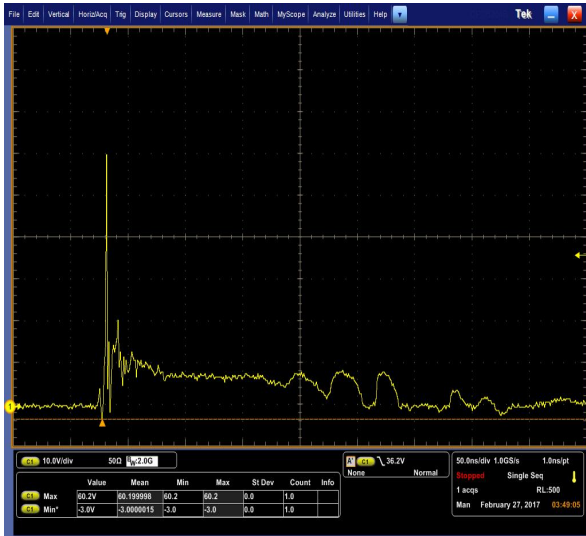


Fig2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

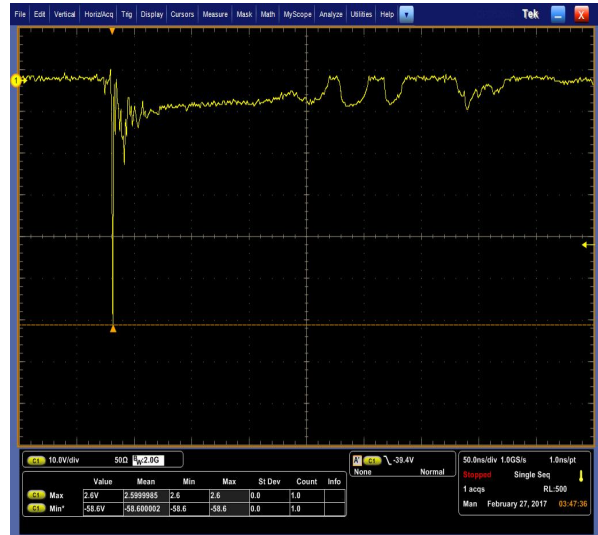


Fig3. Pulse Waveform

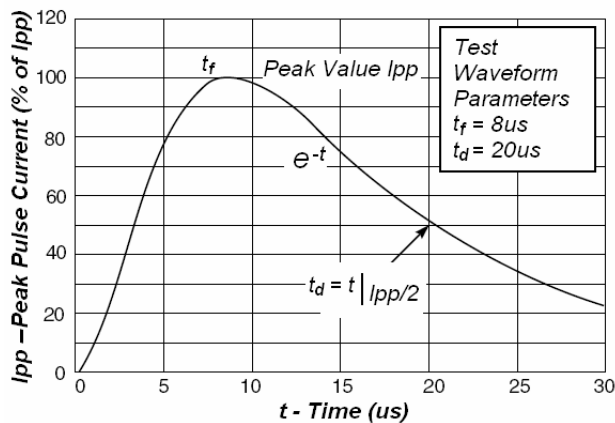
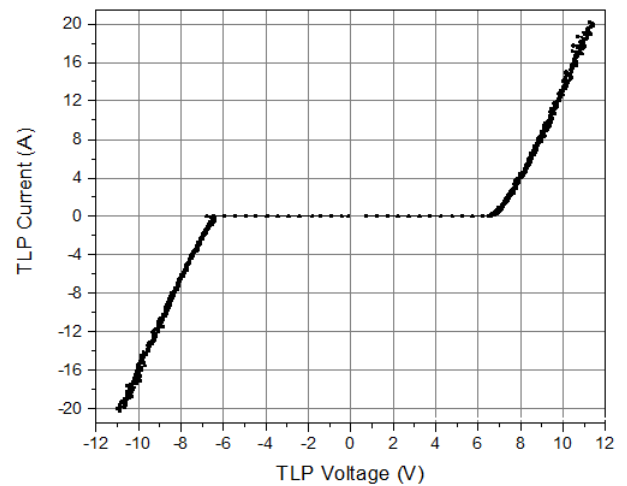


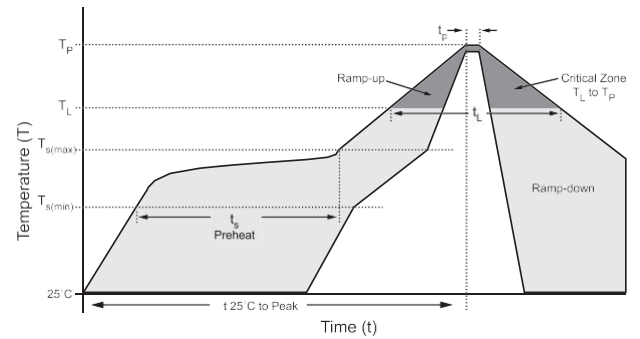
Fig4. TLP Measurement





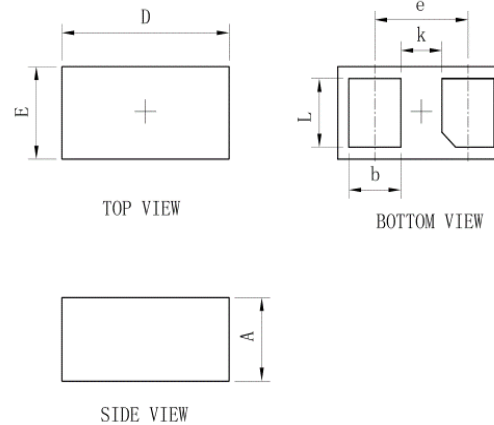
SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C



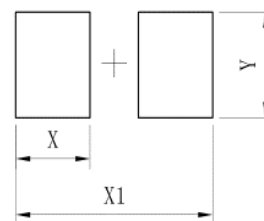
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Dim	Min	Typ.	Max
D	0.58	0.61	0.64
E	0.28	0.31	0.34
e	-	0.34	-
L	0.20	0.23	0.26
b	0.16	0.19	0.22
A	0.25	0.28	0.31
k	0.12	0.15	0.18
All Dimensions in mm			



SOLDERING FOOTPRINT

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





NOTICE

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