

1-Line, Bi-directional, Transient Voltage Suppressor



DFN0603-2L

Features

- Stand-off voltage: 20 V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): ± 30 kV (contact)
IEC61000-4-5(surge): 5 A (8/20 μ s)
- Low leakage current
- Low clamping voltage
- Low clamping voltage:
- Compliant

Applications

- Smartphones, mobile phones and accessories
Notebooks and Handhelds
- Tablet, PC, netbooks and notebooks
- Digital cameras and camcorders
- Communication and highly integrated systems

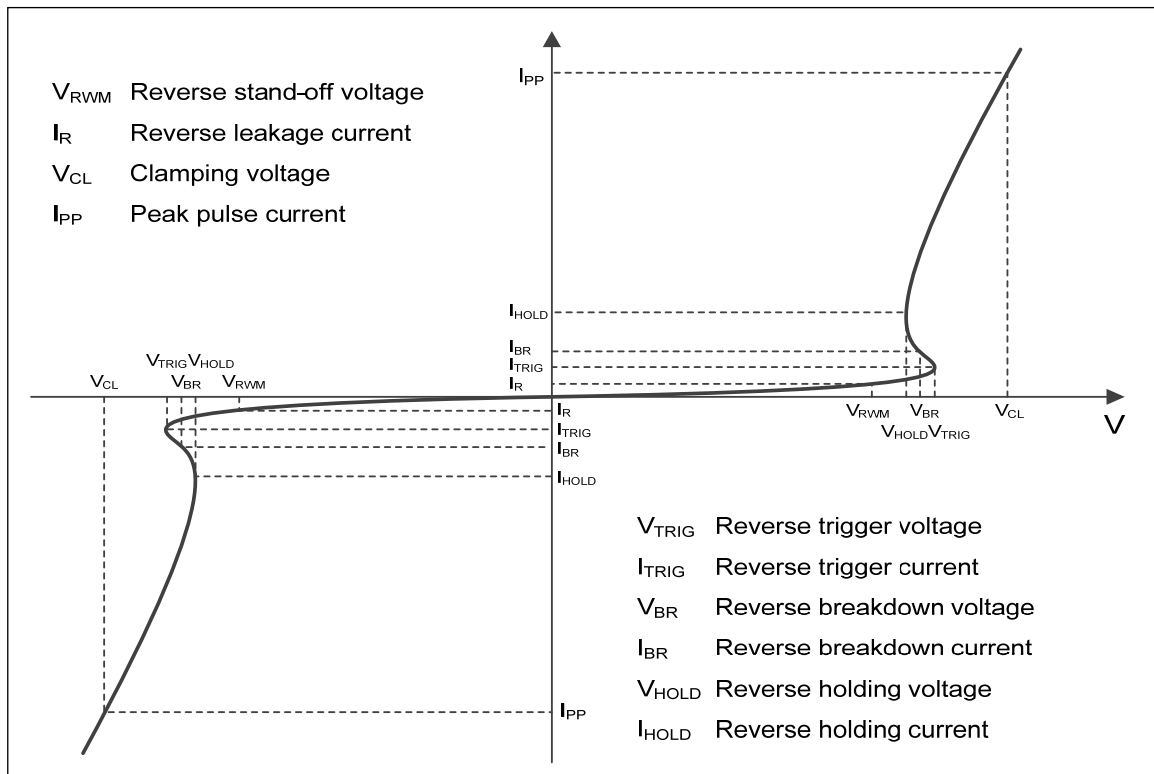
Mechanical Data

- Package: DFN0603-2L
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below

DL

DL = Device Marking Code

■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	160	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{pp}	5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	-40~125	°C
Storage temperature	T_{STG}	-65~150	°C

■Electrical Characteristics ($T_a=25^\circ C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				20
Reverse leakage current	I_R	μA	$V_{RWM} = 5V$			0.5
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	22		
Clamping voltage ¹⁾	V_{CL}	V	$I_{pp} = 4A, t_p = 0.2/100ns(TLP)$		25.6	
Clamping voltage ¹⁾	V_{CL}	V	$I_{pp} = 16A, t_p = 0.2/100ns(TLP)$		29.1	
Dynamic resistance ¹⁾	R_{DYN}	Ω	$t_p = 0.2/100ns(TLP)$		0.29	
Clamping voltage ¹⁾	V_{CL}	V	$I_{pp} = 5A, t_p = 8/20\mu s$			32
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		5	

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDLC20VLZB	F1	Approximate 0.18	10000	100000	400000	7" reel

■ Characteristics (Typical)

Fig.1 8/20 μ s waveform per IEC61000-4-5

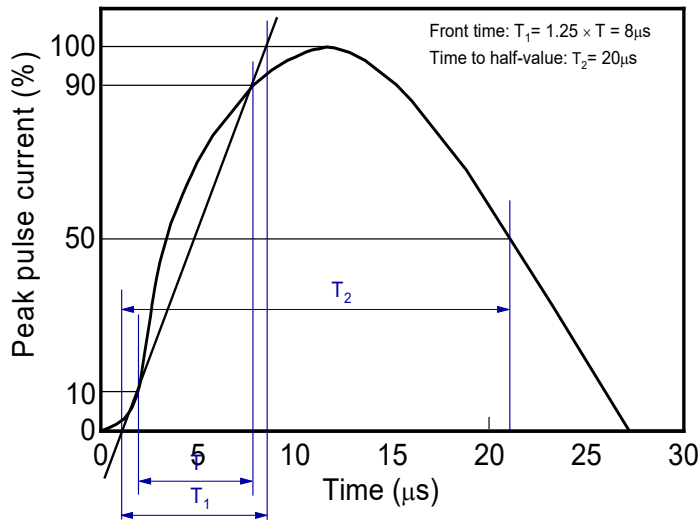


Fig.2 Contact discharge current waveform per IEC61000-4-2

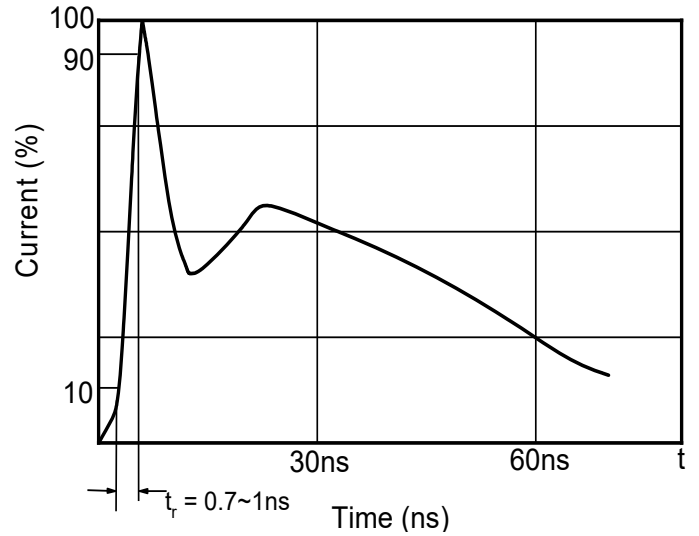


Fig.3 Clamping voltage vs. Peak pulse current

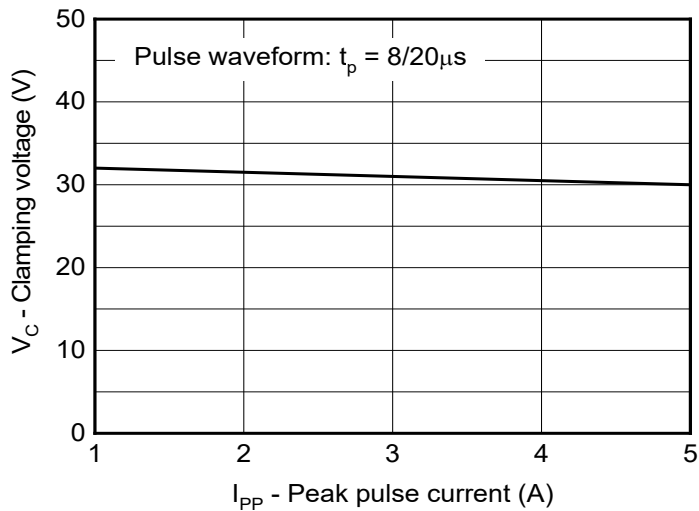


Fig.4 Capacitance vs. Reverse voltage

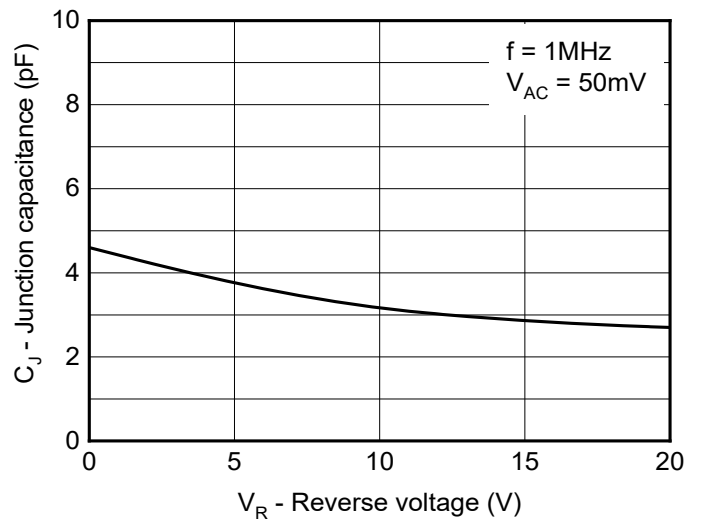


Fig.5 Non-repetitive peak pulse power vs. Pulse time

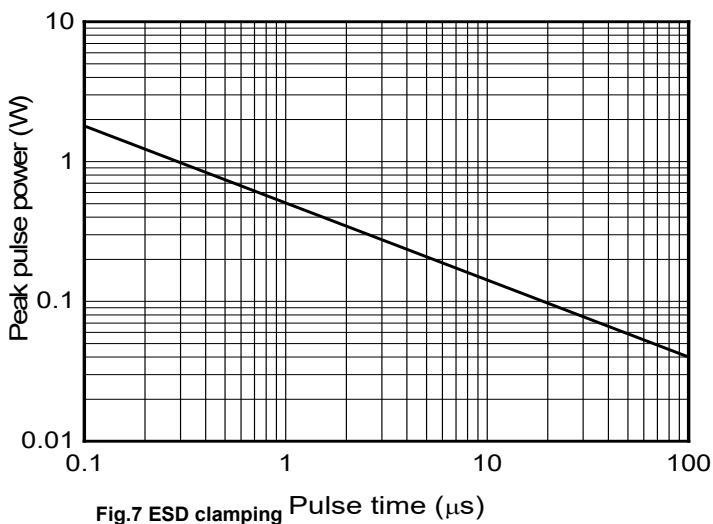
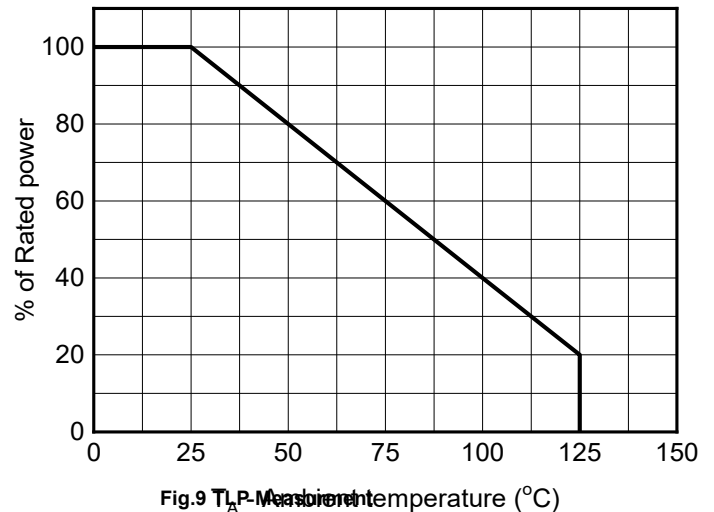
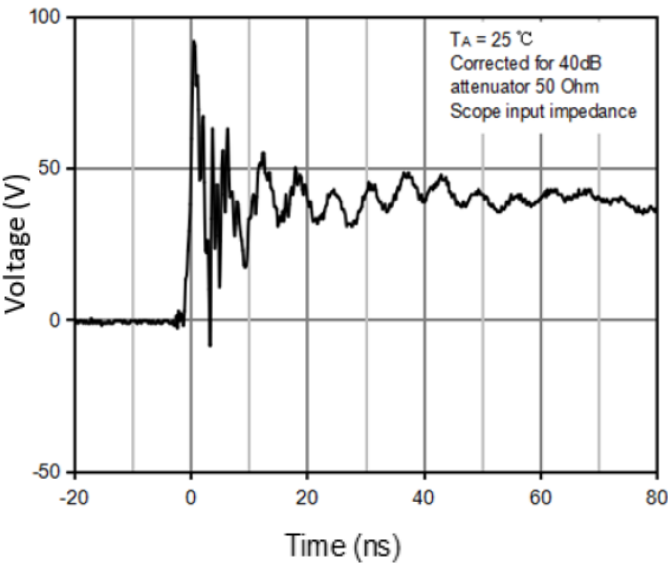
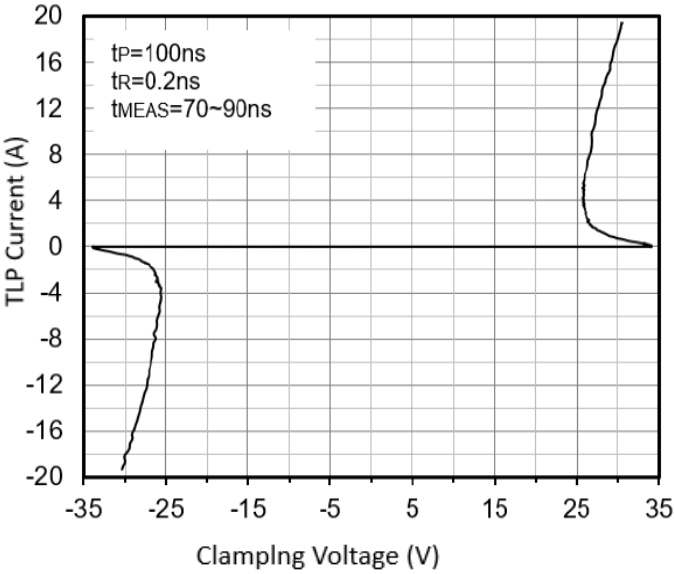


Fig.6 Power derating vs. Ambient temperature

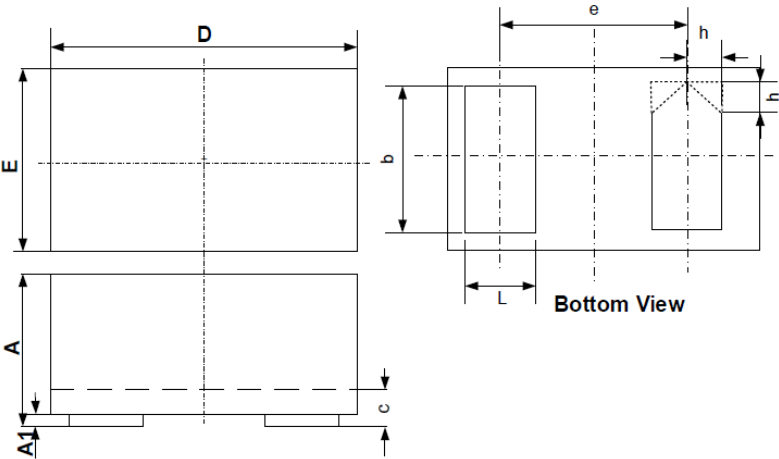




(+8kV contact discharge per IEC61000-4-2)

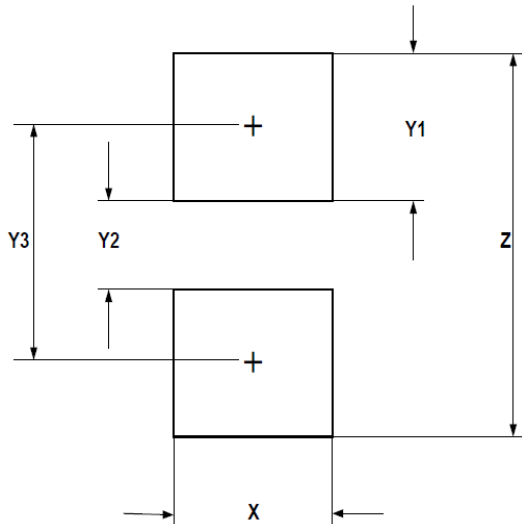


■ Outline Dimensions



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

■ Recommended PCB Layout



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026

Unit:mm

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met

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