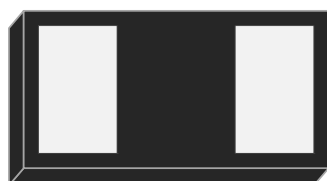


1-Line, Bi-directional, Ultra-low Capacitance Transient Voltage Suppressor



DFN0603-2L

Features

- Stand-off voltage: 3.3V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 14A (8/20 μs)
- Ultra-low leakage current
- Ultra low clamping voltage
- Low clamping voltage:
 $V_{CL} = 6.5\text{V typ. @ IPP} = 16\text{A (TLP)}$
- Compliant

Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI / MHL
- USB 2.0 / USB 3.0
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

Caution:

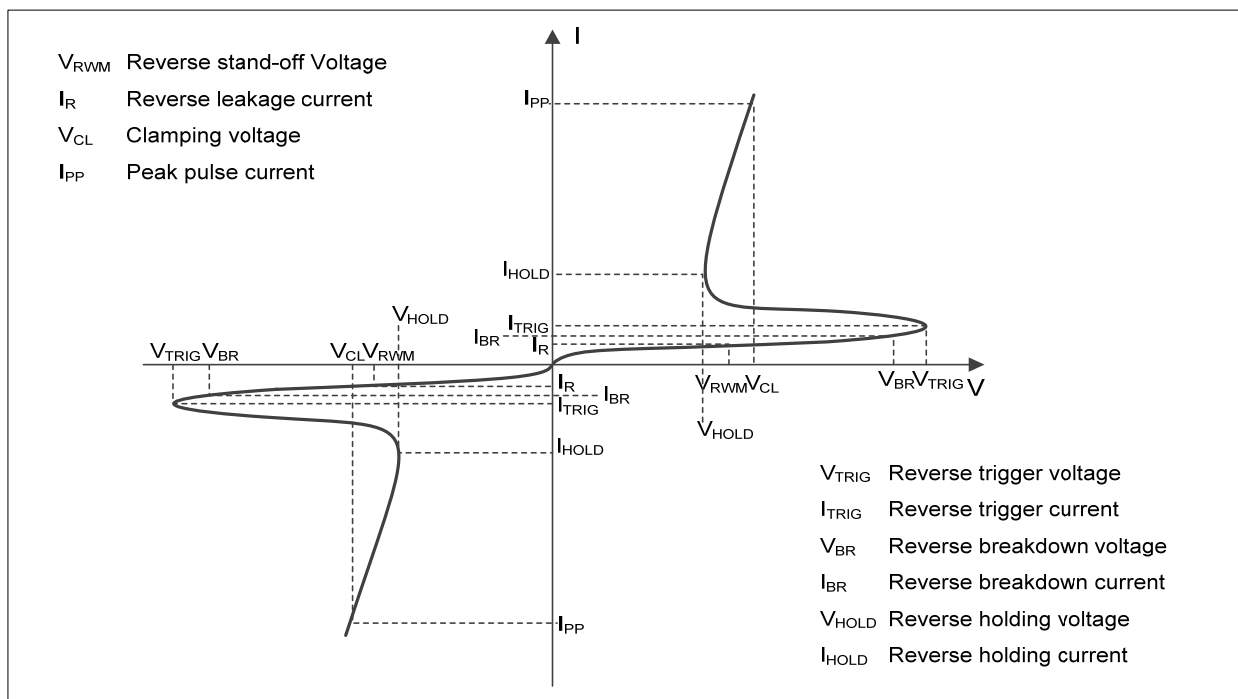
*This Device is designed for signal line protection only.
Not intended to be used under bias, not for application
with a power line.*

Mechanical Data

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

4S

Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	12	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	14	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}	-55~150	°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				3.3
Reverse leakage current	I_R	μA	$V_{RWM} = 3.3V$			0.5
Reverse Trigger Voltage	V_{TRIG}	V	$I_{TRIG} = 2\mu A$	3.5		
Reverse breakdown voltage	V_{BR}	V	$I_T = 1mA$	4		
Reverse holding voltage	V_{HOLD}	V	$I_{HOLD} = 50mA$,	2		
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 16A$, $t_p = 100ns$		6.5	
Dynamic resistance ¹⁾	R_{DYN}	Ω			0.22	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} = 8kV$		8	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$			8.3
		V	$I_{PP} = 14A$, $t_p = 8/20\mu s$			8.5
Junction capacitance	C_J	pF	$V_R = 0V$, $f = 1MHz$		0.6	

Notes:

(1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

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

■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSL3V3LZBA2	F1	Approximate 0.18	10000	100000	400000	7" reel

■ Characteristics (Typical)

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

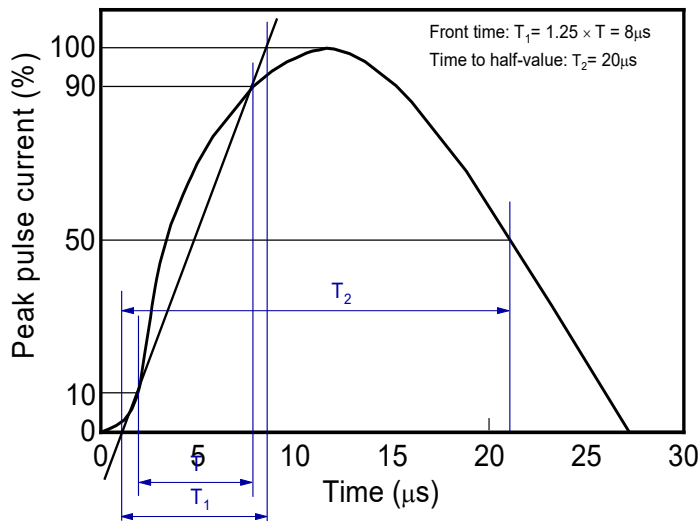


Fig.2 Contact discharge current waveform per IEC61000-4-2

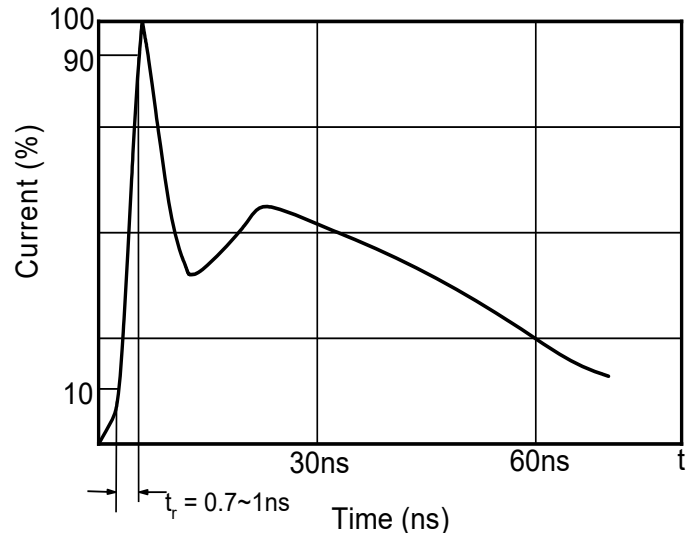


Fig.3 Clamping voltage vs. Peak pulse current

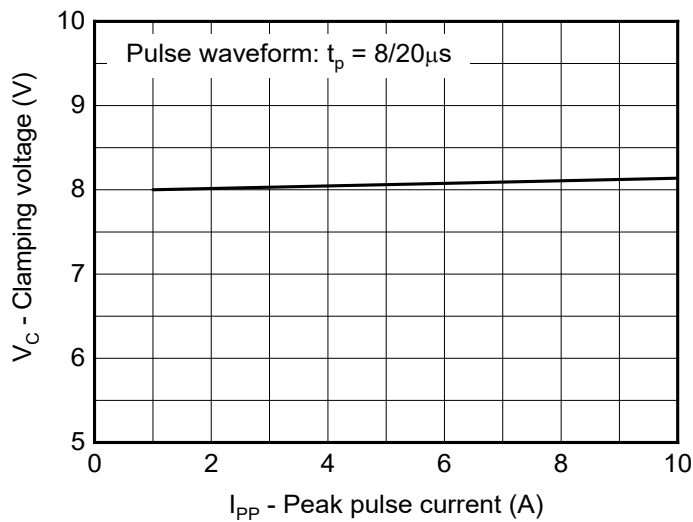


Fig.4 Capacitance vs. Reverse voltage

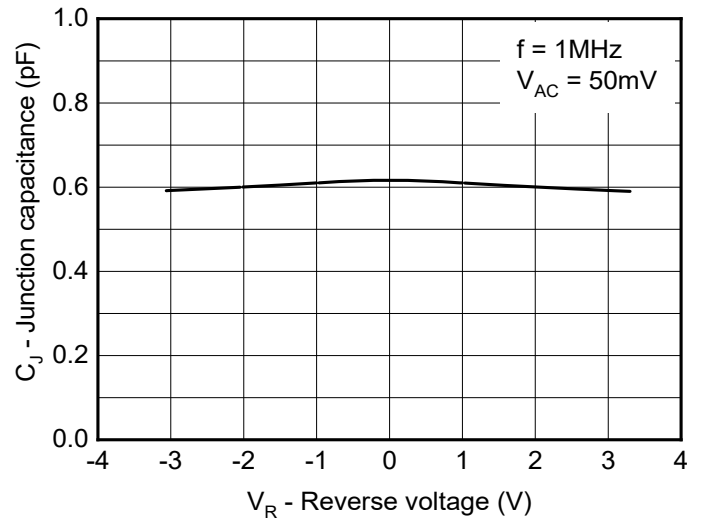


Fig.5 Non-repetitive peak pulse power vs. Pulse time

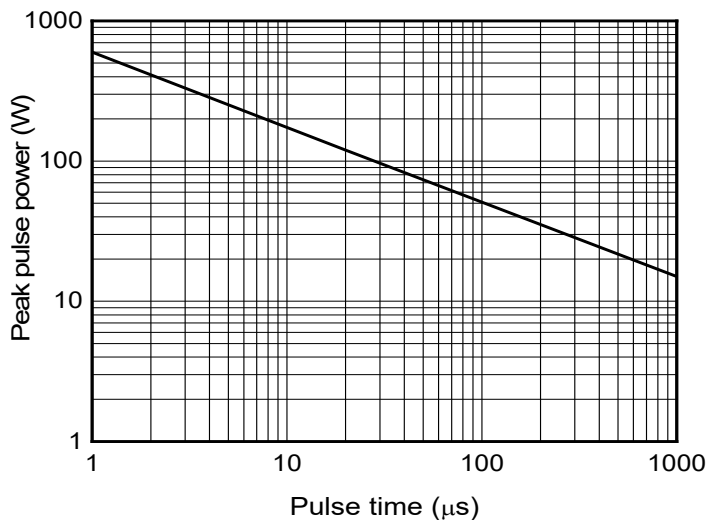


Fig.6 Power derating vs. Ambient temperature

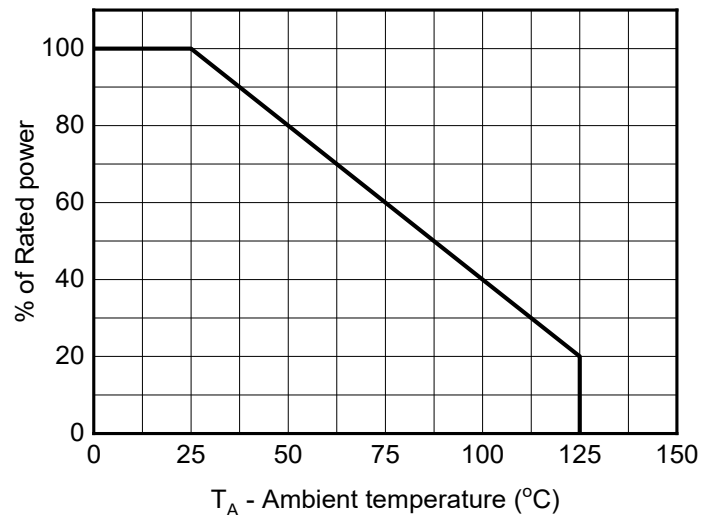
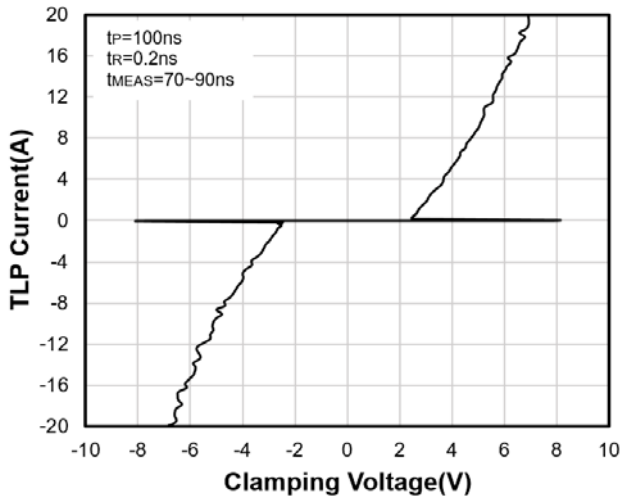
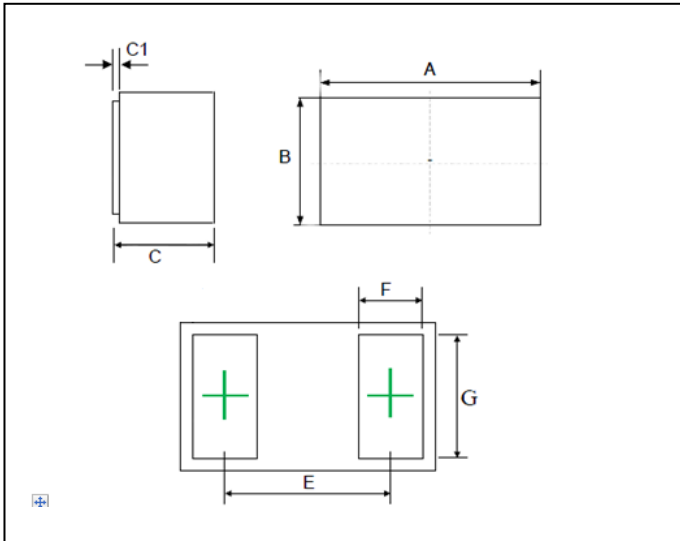


Fig.7 TLP Measurment

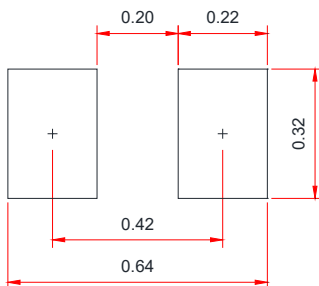


■ Outline Dimensions



Symbol	min. (mm)	Max. (mm)
A	0.55	0.67
B	0.25	0.37
C	0.23	0.34
C1		0.05
E		0.4
F	0.115	0.195
G	0.215	0.295

■ Recommended PCB Layout



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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