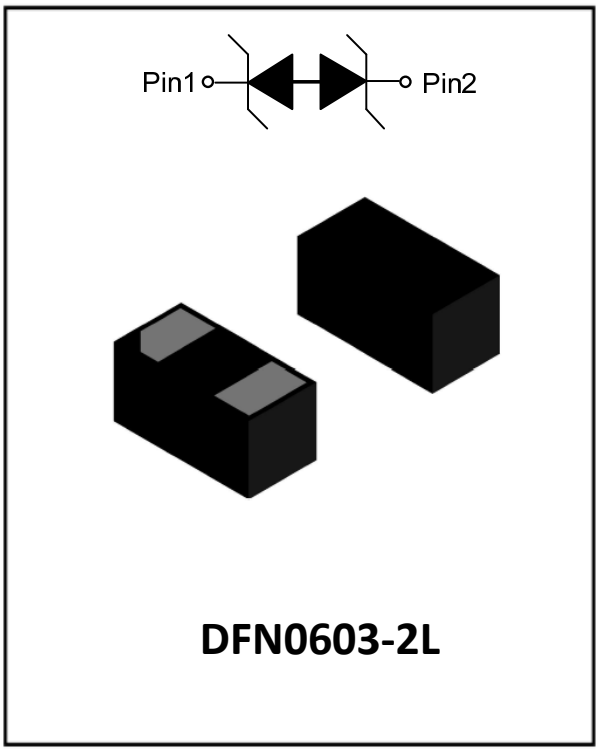
1-Line, Bi-directional, Transient Voltage Suppressor



DFN0603-2L

Features

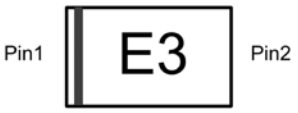
- Ultra small package
- Stand-off voltage: ±3.3V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-4 (EFT): 80A (5/50ns)
  IEC61000-4-5(surge): 20A (8/20μs)
- Ultra-low capacitance: CJ = 35pF typ
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

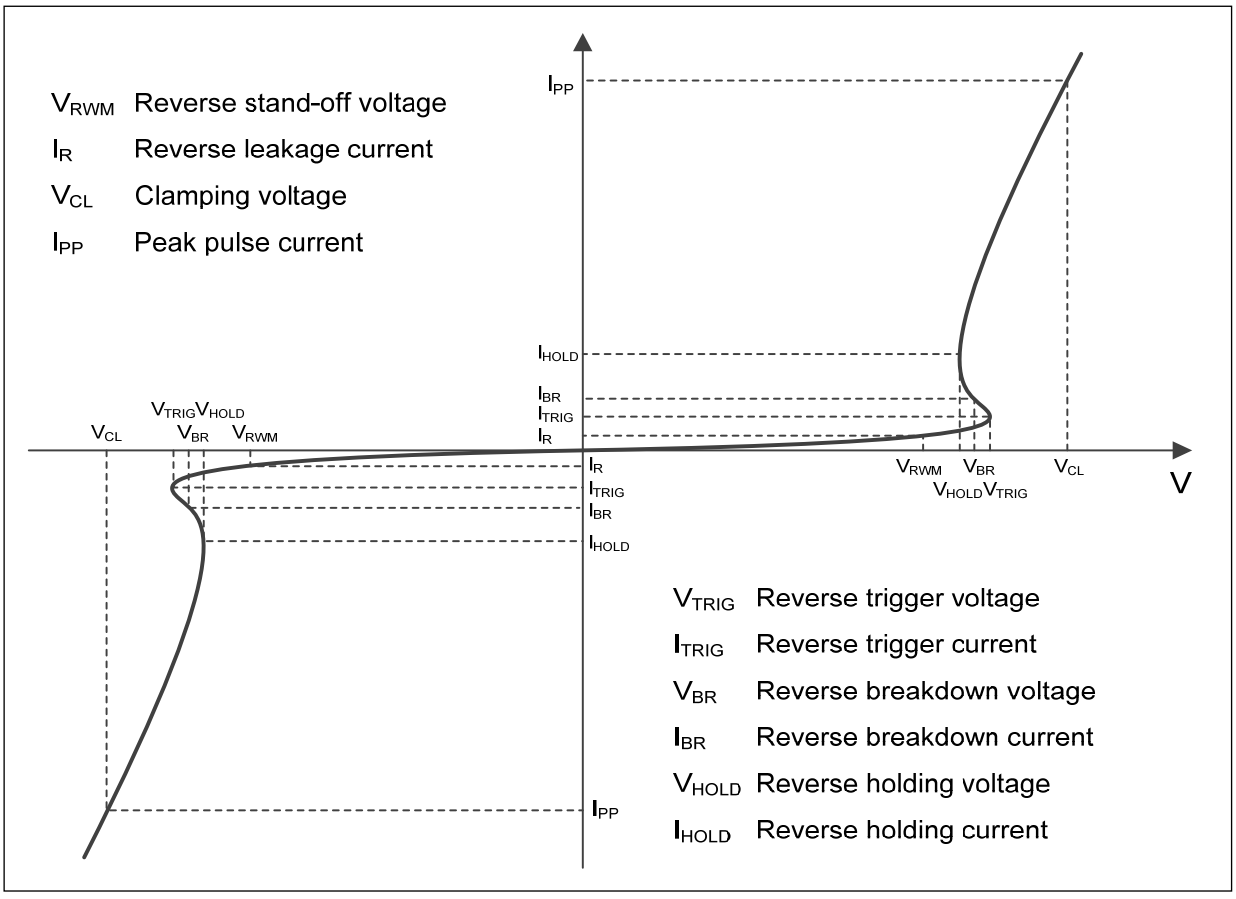
- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

Mechanical Characteristics

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



■Definitions of electrical characteristics



■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	170	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	20	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	KV
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Storage temperature	T_{STG}	-55~150	°C

■Electrical Characteristics (T_a=25℃ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				±3.3
Reverse leakage current	I_R	nA	V_{RWM} =3.3V			100
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	3.5	4	
Reverse holding voltage	V_{HOLD}	V	I_{HOLD} = 50mA	3.5	4	
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		5.6	
Dynamic resistance 1)	R_{DYN}	Ω			0.1	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = 8kV		8	
Clamping voltage 3)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		4.3	5.5
		V	I_{PP} = 10A, t_p = 8/20μs		5.5	7
		V	I_{PP} = 20A, t_p = 8/20μs		6.5	8.5
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		35	45
		pF	V_R = 2.5V, f = 1MHz		25	35

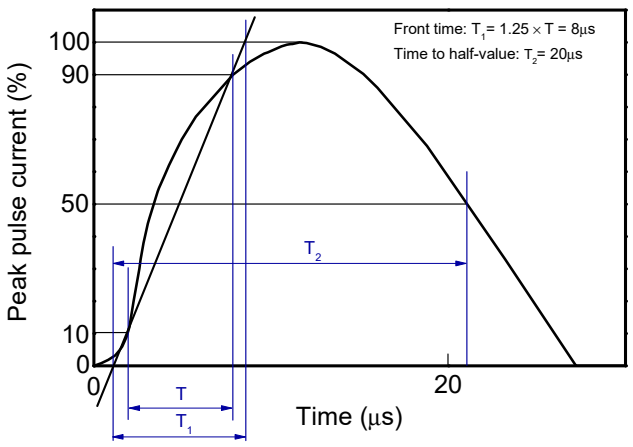
(1). TLP parameter: Z_0 = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
(2). Contact discharge mode, according to IEC61000-4-2.
(3). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

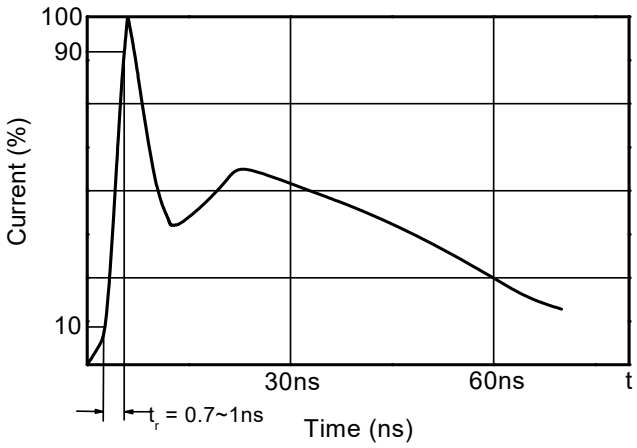
PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD3V3LZBA1	Approximate 0.18	10000	100000	400000	Tae& reel

■ Typical Performance Characteristics (Ta=25℃ unless otherwise Specified)

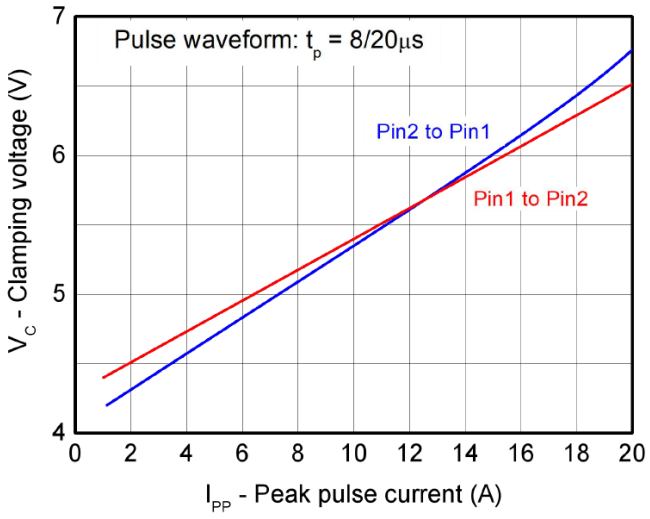
8/20μs waveform per IEC61000-4-5



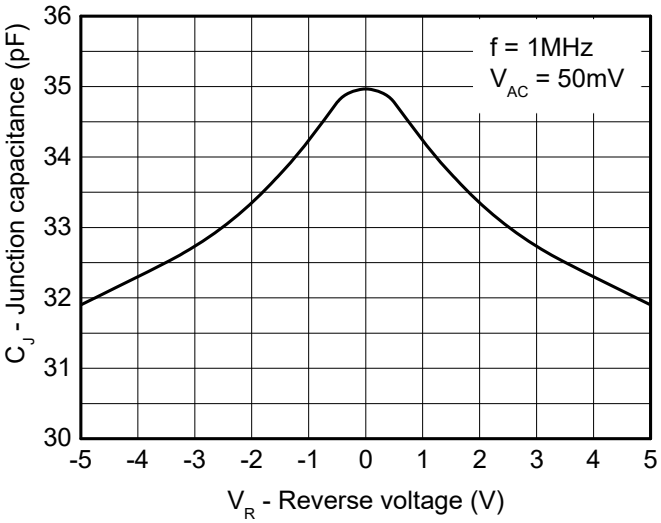
Contact discharge current waveform per IEC61000-4-2



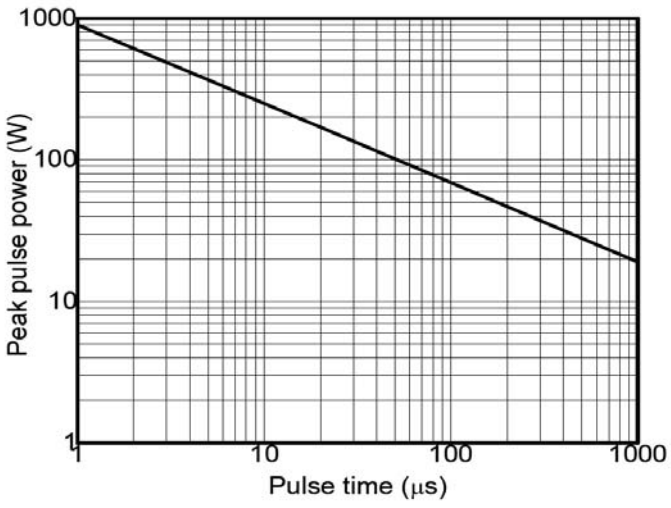
Clamping voltage vs. Peak pulse current



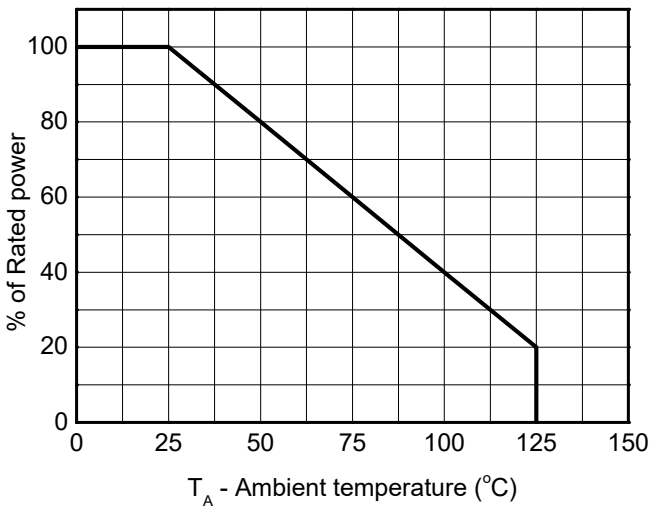
Capacitance vs. Reverse voltage



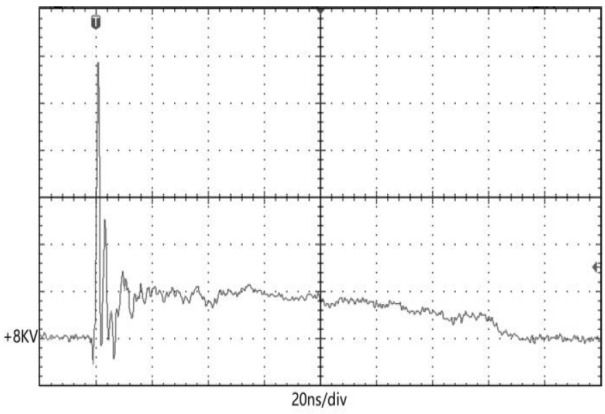
Non-repetitive peak pulse power vs. Pulse time



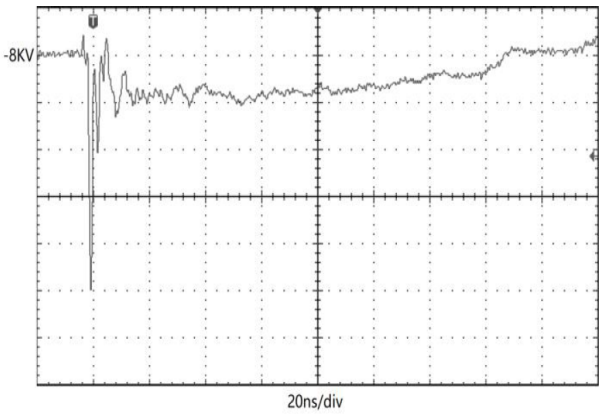
Power derating vs. Ambient temperature



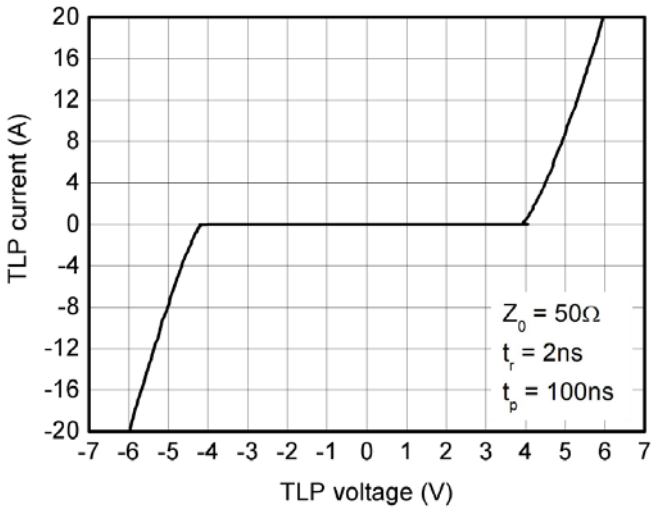
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



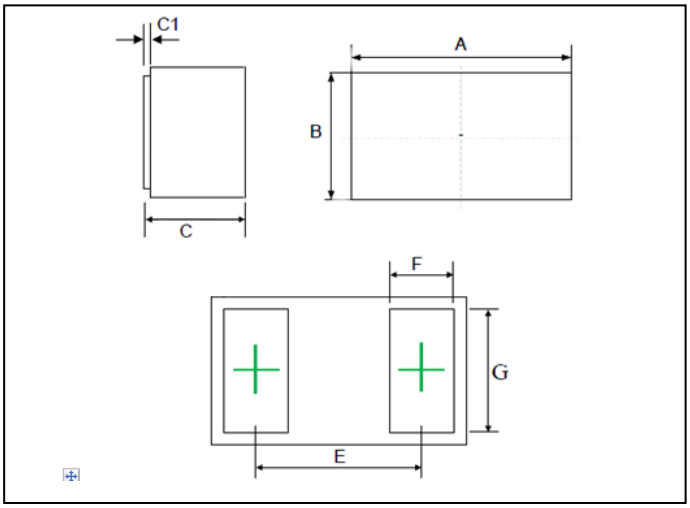
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

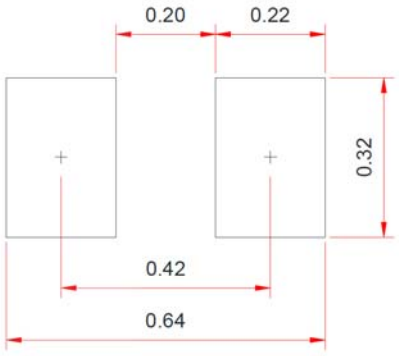


■ Outline Dimensions



Symbol	min. (mm)	Max. (mm)
A	0.55	0.67
B	0.25	0.37
C	0.23	0.35
C1		0.05
E		0.4
F	0.100	0.205
G	0.200	0.295

■ Recommend land pattern (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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