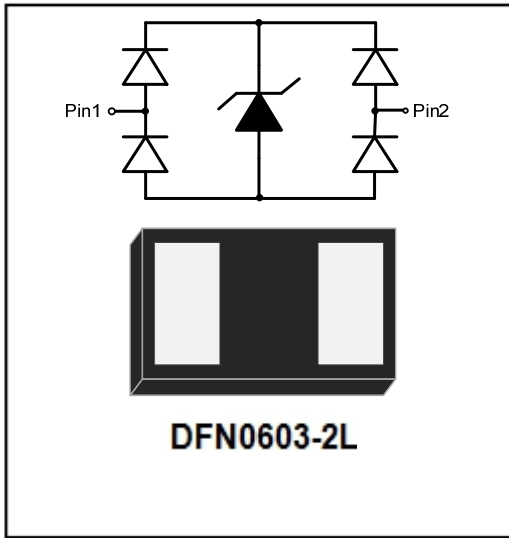


1-Line, Bi-directional, Ultra-low Capacitance Transient Voltage Suppressor



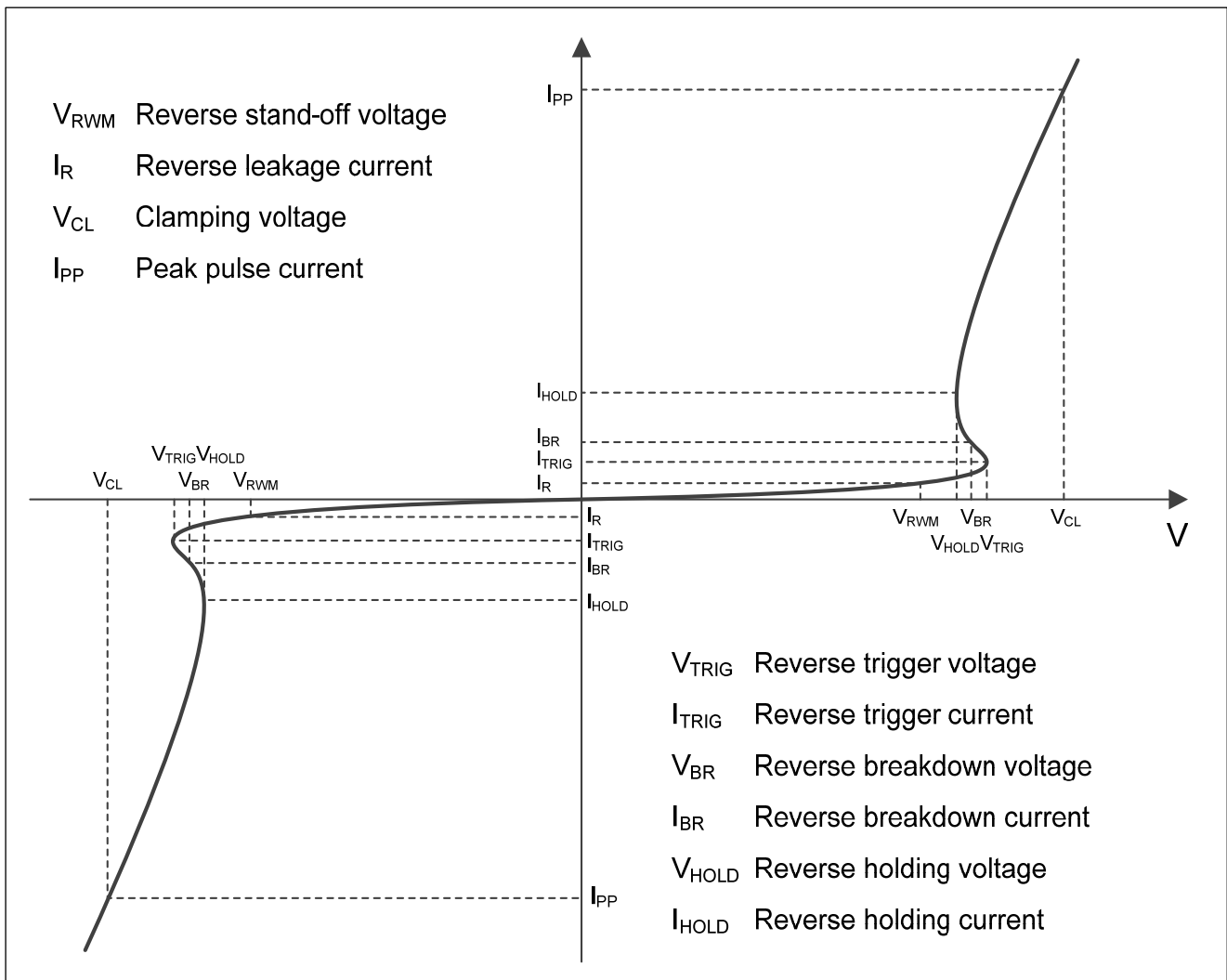
Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 15\text{kV}$ (contact)
IEC61000-4-5(surge): 4A (8/20 μs)
- Ultra-low capacitance: $C_J = 0.35\text{pF}$ typ
- Ultra-low leakage current: $I_R < 1\text{nA}$ typ
- Low clamping voltage: $V_{CL} = 14\text{V}$ typ. @ $I_{PP} = 16\text{A}$ (TLP)
- Solid-state silicon technology

Mechanical Data

- **Package:** DFN0603-2L
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:** U5

■ Definitions of Electrical Characteristics





ESDULC5V0LZB

■Maximum Ratings

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	44	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	4	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 15	KV
ESD according to IEC61000-4-2 contact discharge		± 15	KV
Junction temperature	T_J	125	$^{\circ}C$
Operating temperature	T_{OP}	-40~85	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

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

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5.0
Reverse leakage current	I_R	nA	$V_{RWM} = 5V$		<1	50
Reverse breakdown voltage	V_{BR}	V	$I_T = 1mA$	6.0	8.0	
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 16A, t_p = 100ns$		14	
Dynamic resistance ¹⁾	R_{DYN}	Ω			0.55	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} = 8kV$		14	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$		8.3	
		V	$I_{PP} = 4A, t_p = 8/20\mu s$		10	
Junction capacitance	C_J	pF	$V_R = 2.5V, f = 1MHz$		0.35	0.5

(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)

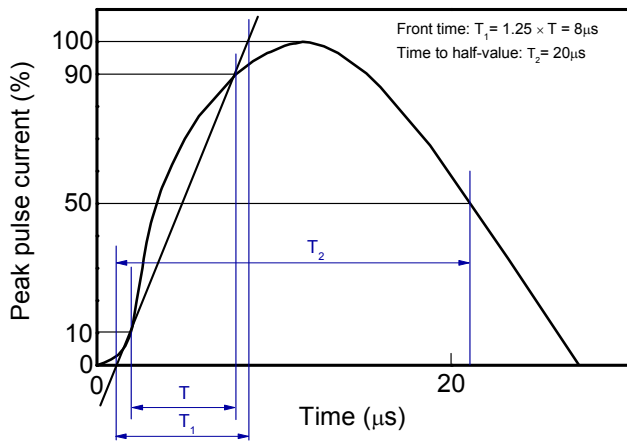
PREFERRED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDULC5V0LZB	Approximate 0.18	10000	100000	400000	Tape&reel



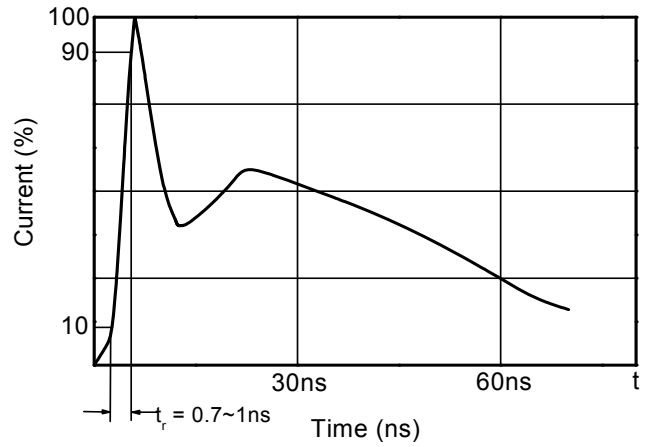
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■ Characteristics (Typical)

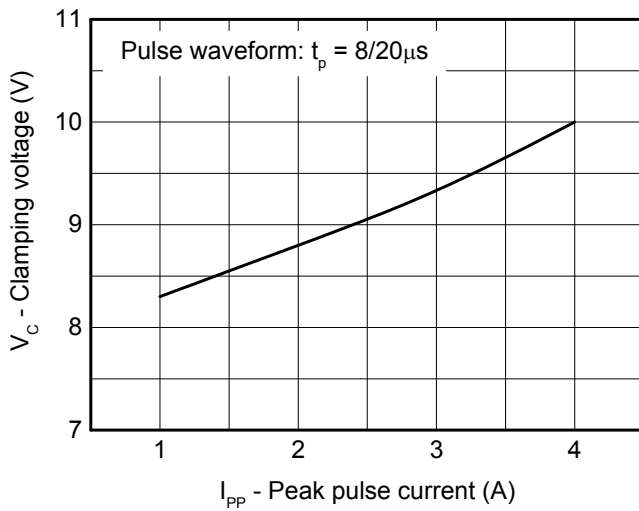
8/20 μ s waveform per IEC61000-4-5



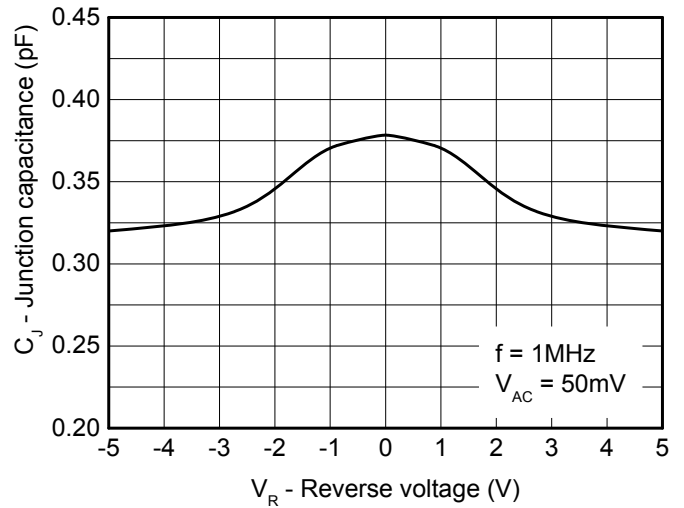
Contact discharge current waveform per IEC61000-4-2



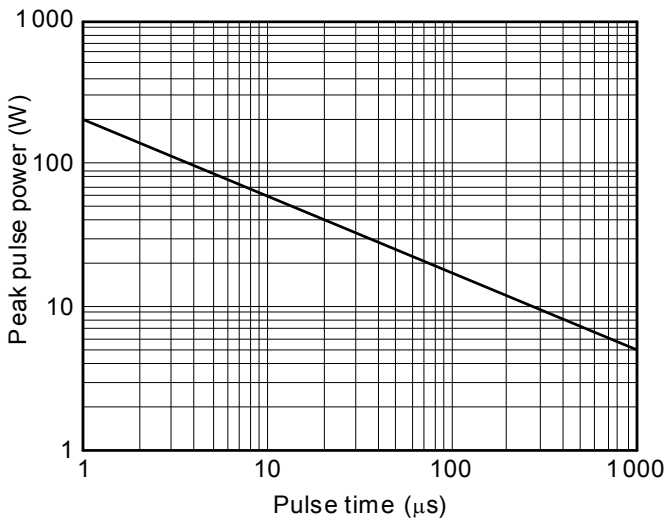
Clamping voltage vs. Peak pulse current



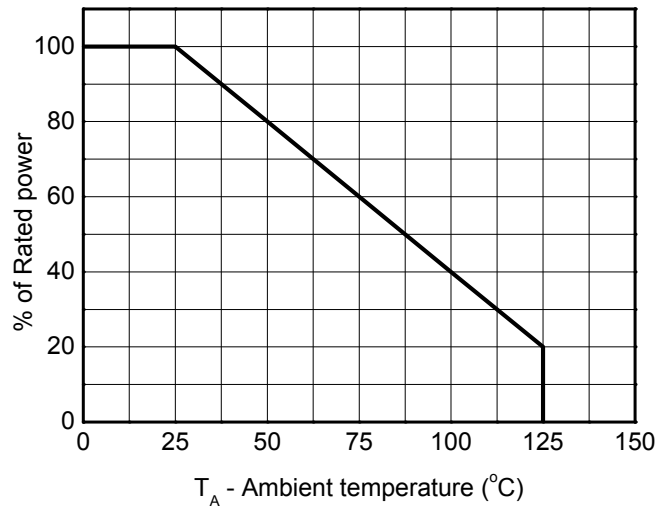
Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time



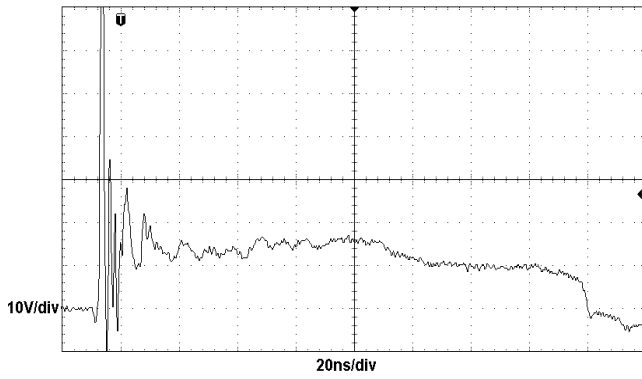
Power derating vs. Ambient temperature



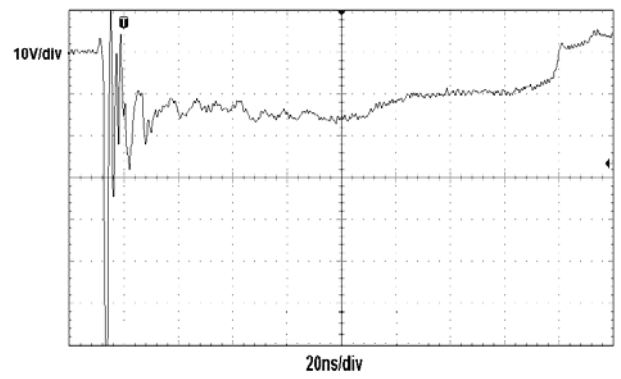


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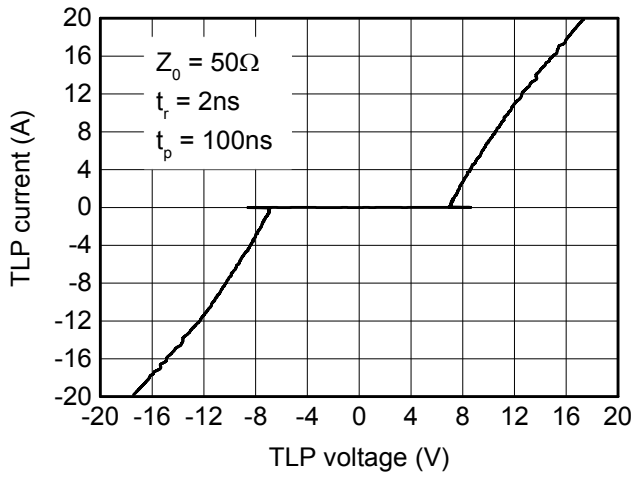
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



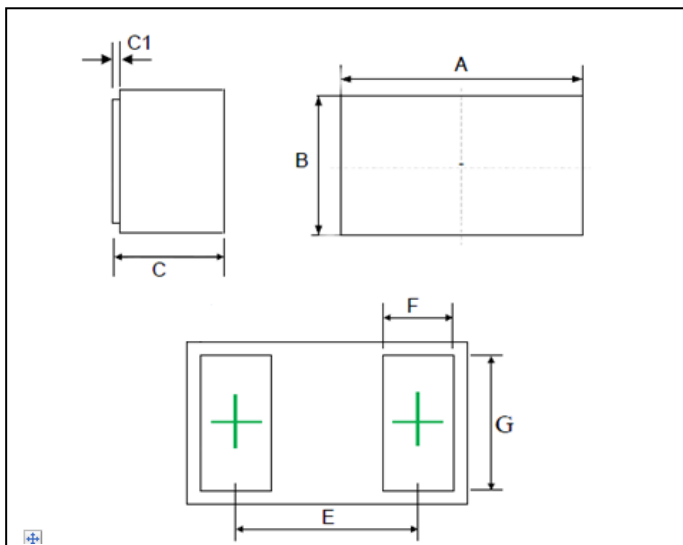
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement



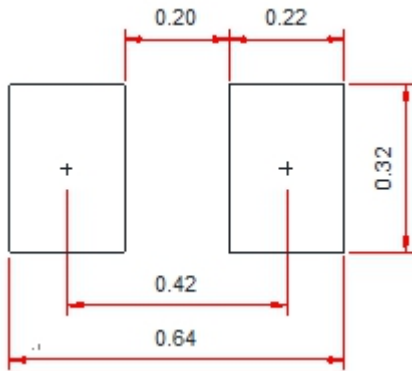
■ Outline Dimensions



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



ESDULC5V0LZB

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