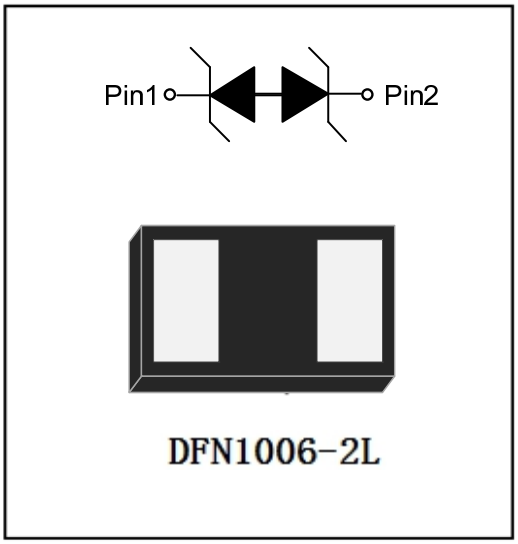
1-Line, Bi-directional, Transient Voltage Suppressor



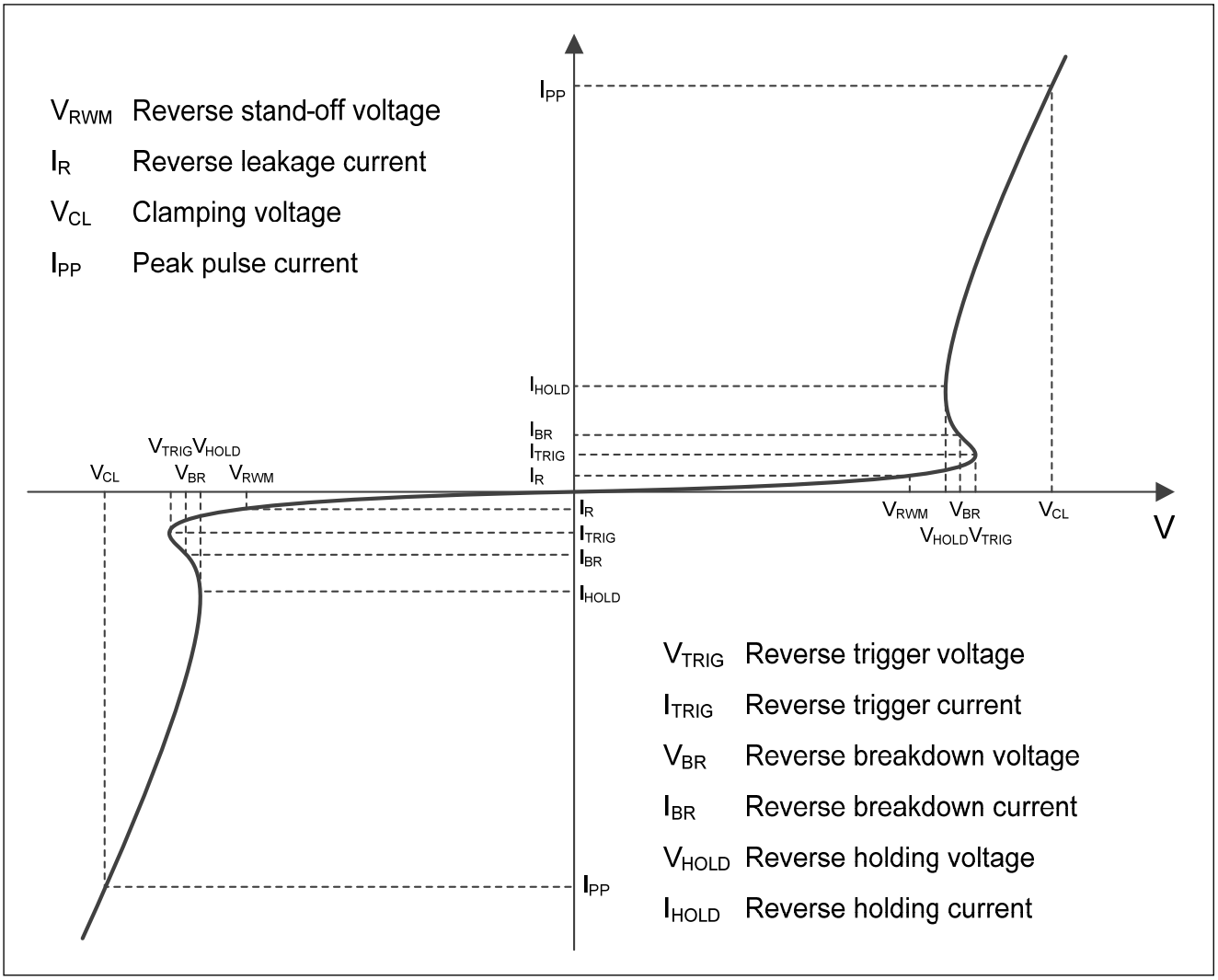
Features

- Stand-off voltage: ±7V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): ±30kV (contact)
IEC61000-4-4 (EFT): 40A (5/50ns)
IEC61000-4-5(surge): 6A (8/20μs)
- Ultra-low capacitance: C_J = 10pF typ
- Low leakage current
- Low clamping voltage: V_{CL} =12.0V typ. @ I_{PP} = 16A (TLP)
- Solid-state silicon technology

Mechanical Data

- **Package**: DFN1006-2L
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** No marking on bi-directional types
- **Marking:** 7A

■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	84	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	6	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				±7
Reverse leakage current	I_R	nA	V_{RWM} =7			100
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	7.7		10.5
Reverse holding voltage	V_{HOLD}	V	I_{HOLD} = 50mA	7.7		10.5
Clamping voltage *1)*	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		12.0	
Dynamic resistance *1)*	R_{DYN}	Ω			0.28	
Clamping voltage *2)*	V_{CL}	V	V_{ESD} = 8kV		12.0	
Clamping voltage *3)*	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		9	11
		V	I_{PP} = 6A, t_p = 8/20μs		12	14
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		10	13
		pF	V_R = 2.5V, f = 1MHz		8	11

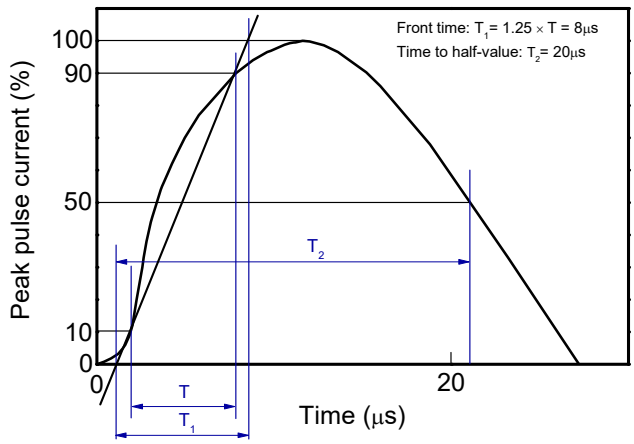
(1). TLP parameter: Z_0 = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
(2). Contact discharge mode, according to IEC61000-4-2.
(3). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

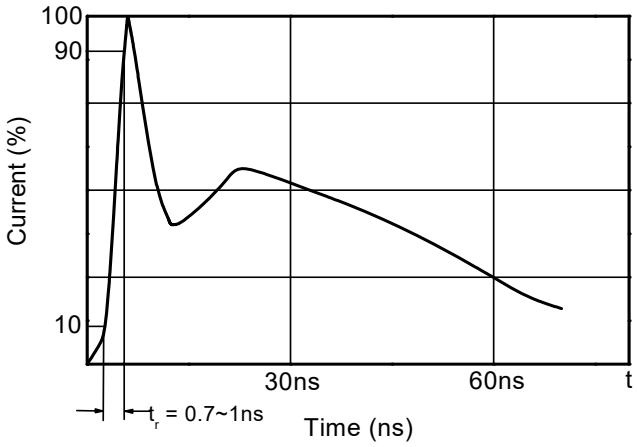
PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD7V0LB	Approximate 0.9	10000	100000	400000	Tape&reel

■ Characteristics (Typical)

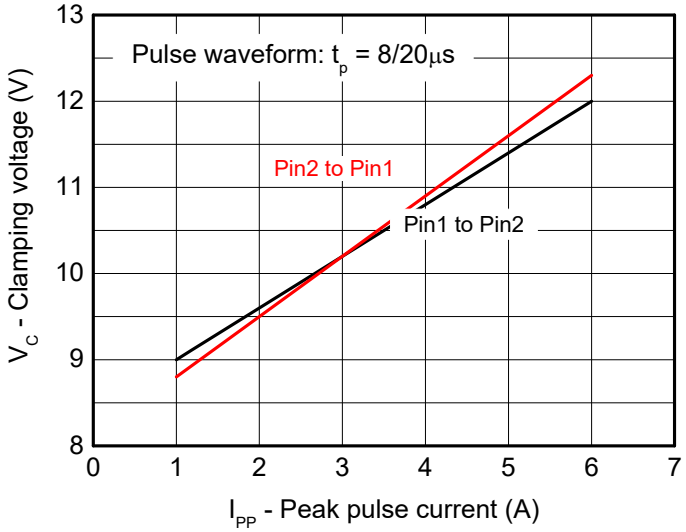
8/20μs waveform per IEC61000-4-5



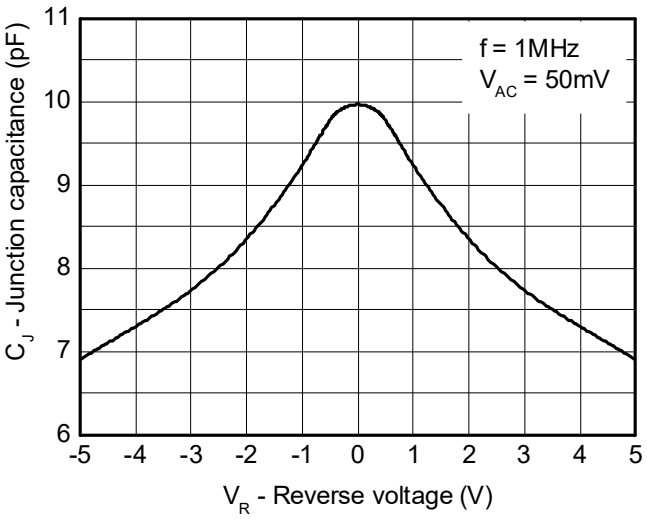
Contact discharge current waveform per IEC61000-4-2



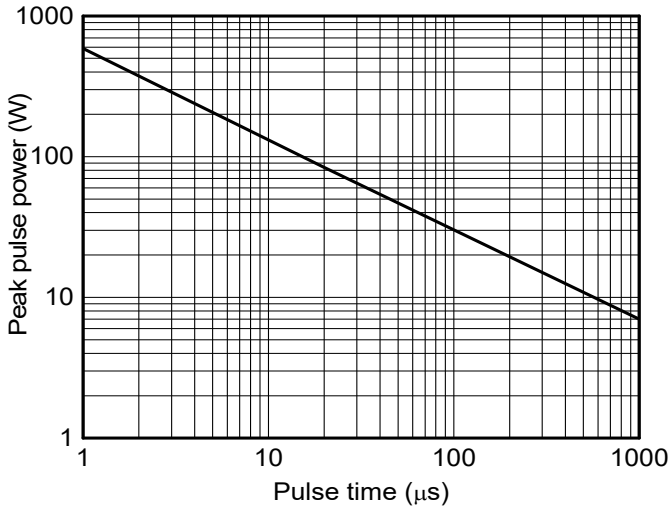
Clamping voltage vs. Peak pulse current



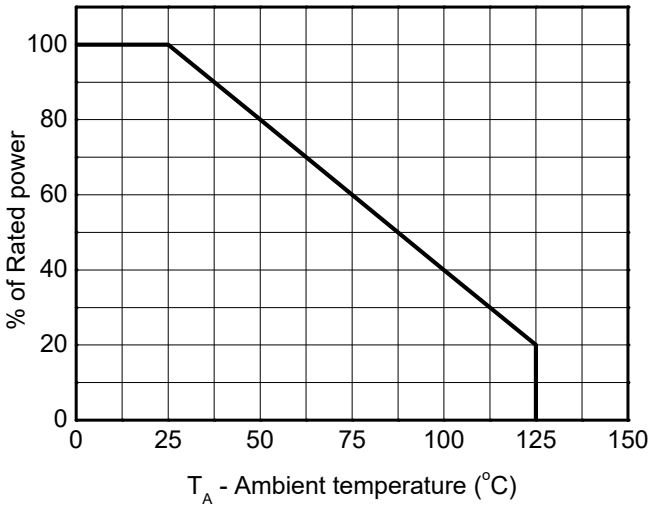
Capacitance vs. Reverse voltage



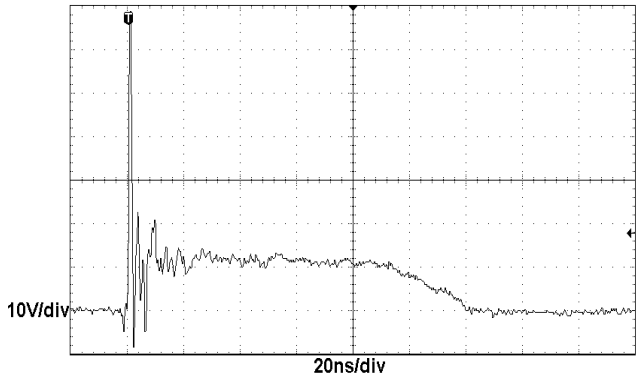
Non-repetitive peak pulse power vs. Pulse time



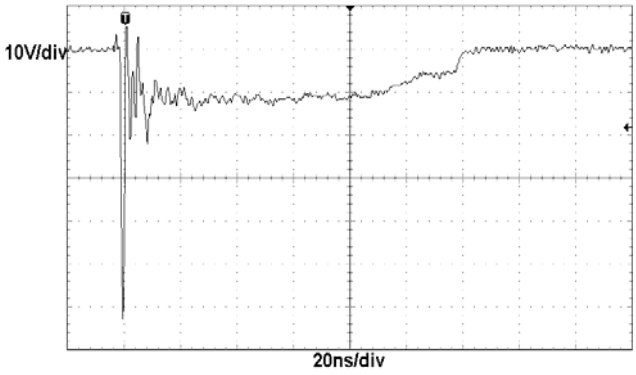
Power derating vs. Ambient temperature



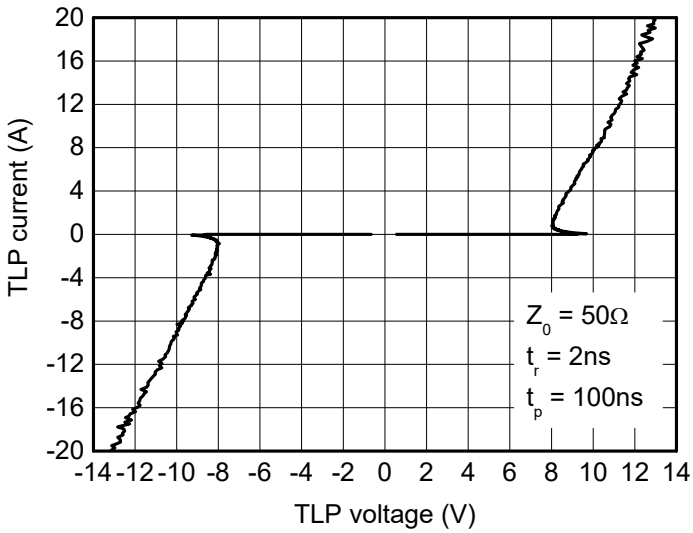
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



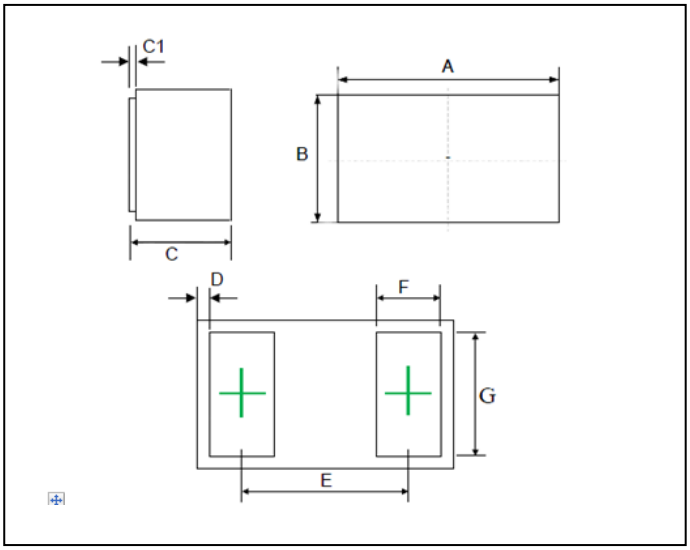
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

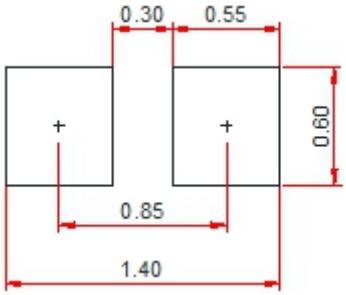


■ Outline Dimensions



Symbol	min. (mm)	Max. (mm)
A	0.95	1.05
B	0.55	0.65
C	0.4	0.5
C1		0.05
D	0.01	0.08
E		0.65
F	0.2	0.3
G	0.45	0.55

■ 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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