

1- Line, Bi-directional, Transient Voltage Suppressor



DFN1006-2L

Features

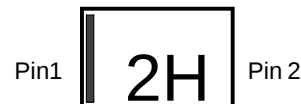
- Stand-off voltage: 1.8V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 15A (8/20 μs)
- Low leakage current
- Ultra-low capacitance: $C_J = 25\text{pF}$ typ
- Low clamping voltage
- RoHS Compliant

Applications

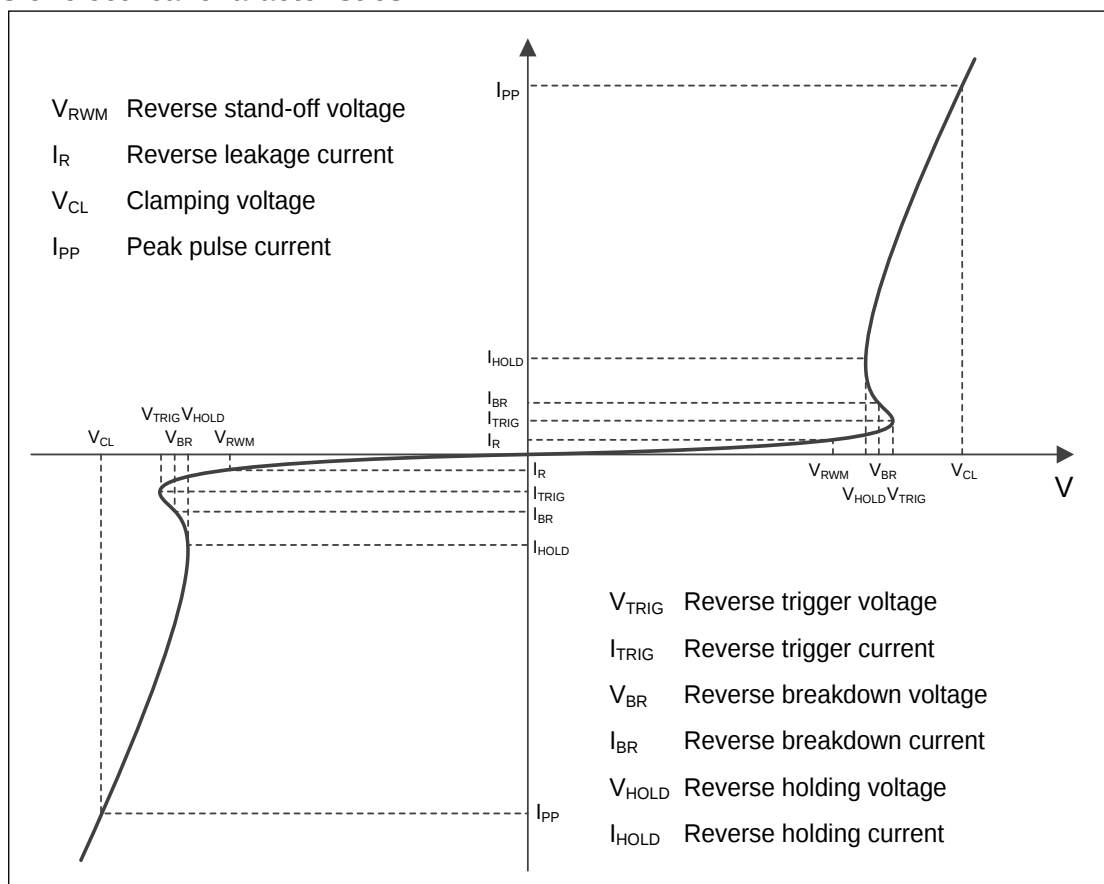
- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

Mechanical Data

- **Package:** DFN1006-2L
- **Case Material:** "Green" Molding Compound
- **Marking Information:** See Below



■Definitions of electrical characteristics





ESD1V8LB

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	150	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	15	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	-55~125	$^{\circ}C$
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				1.8
Reverse leakage current	I_R	μA	$V_{RWM} = 1.8V$,			0.1
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$,	2.5		
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 16A$, $t_p = 100ns$		7	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} = 8kV$		7	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$			4
			$I_{PP} = 12A$, $t_p = 8/20\mu s$			8.5
		V	$I_{PP} = 15A$, $t_p = 8/20\mu s$			10
Junction capacitance	CJ	pF	$V_R = 0V$, $f = 1MHz$		25	

Notes:

(1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. RDYN 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

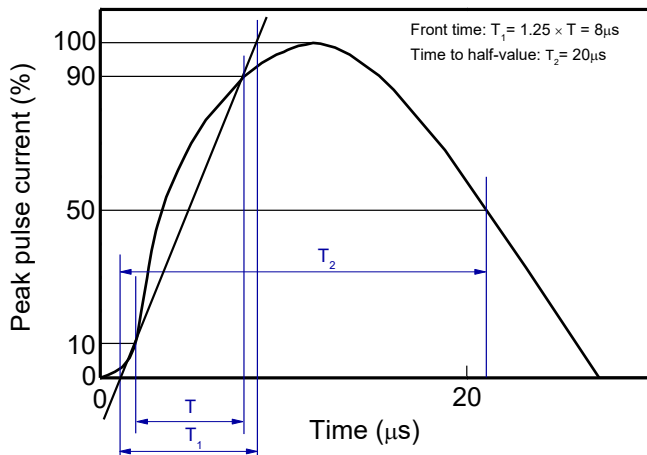
■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD1V8LB	F1	Approximate 0.9	10000	100000	400000	7 reel

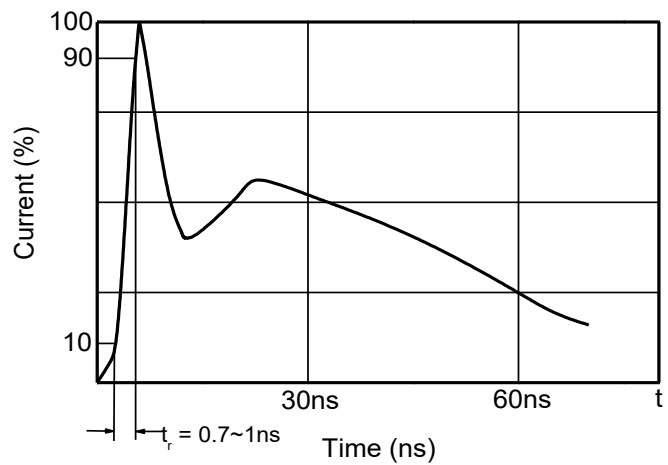


■ Characteristics (Typical)

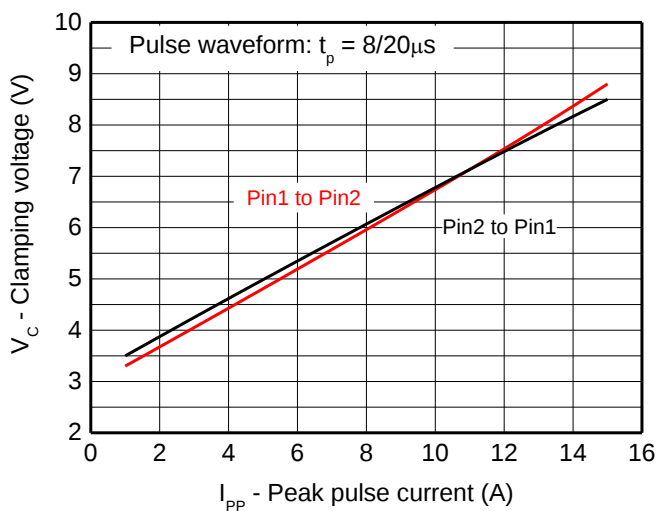
8/20 μ s waveform per IEC61000-4-5



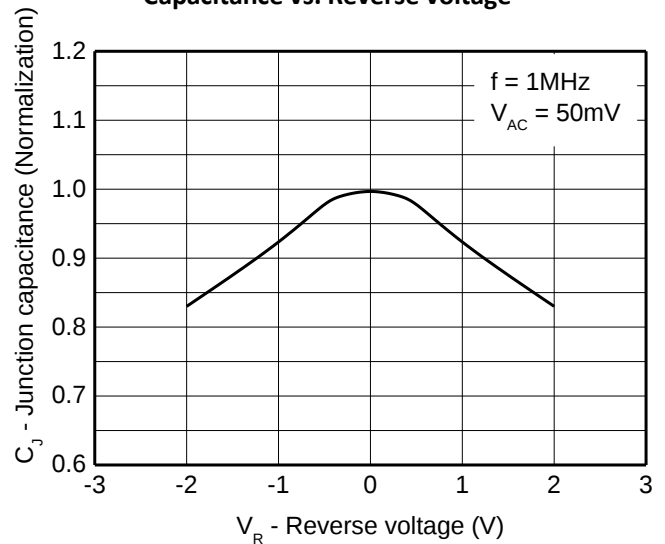
Contact discharge current waveform per IEC61000-4-2



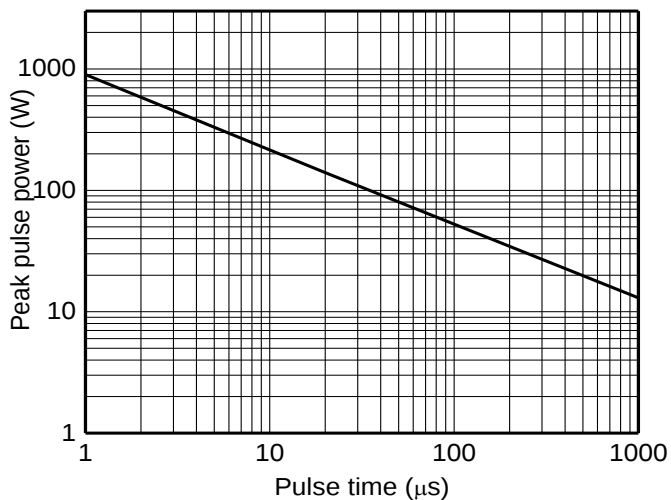
Clamping voltage vs. Peak pulse current



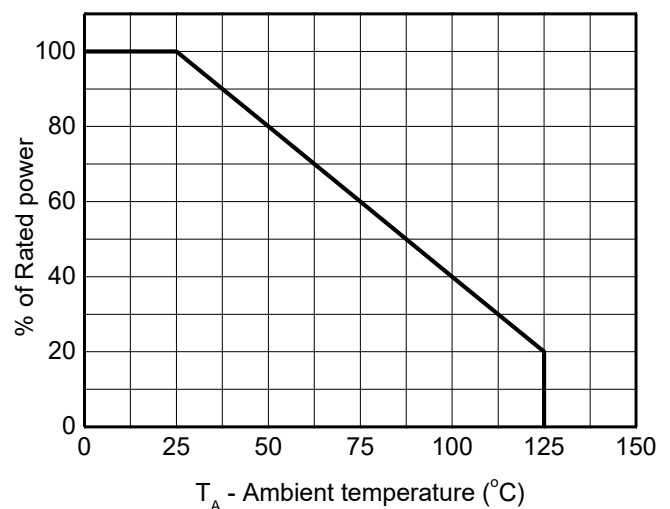
Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time



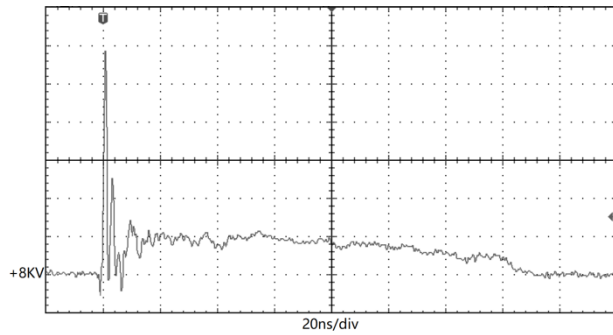
Power derating vs. Ambient temperature



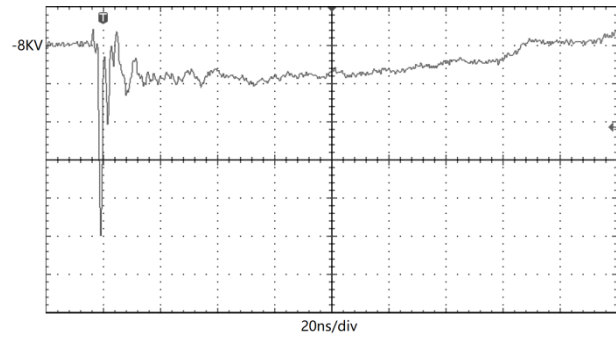


ESD1V8LB

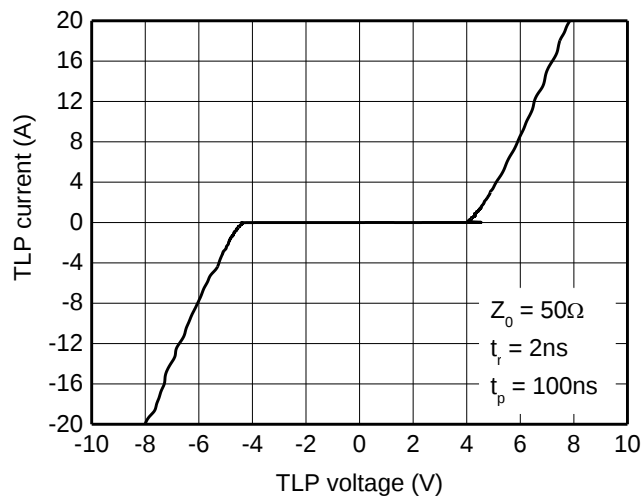
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



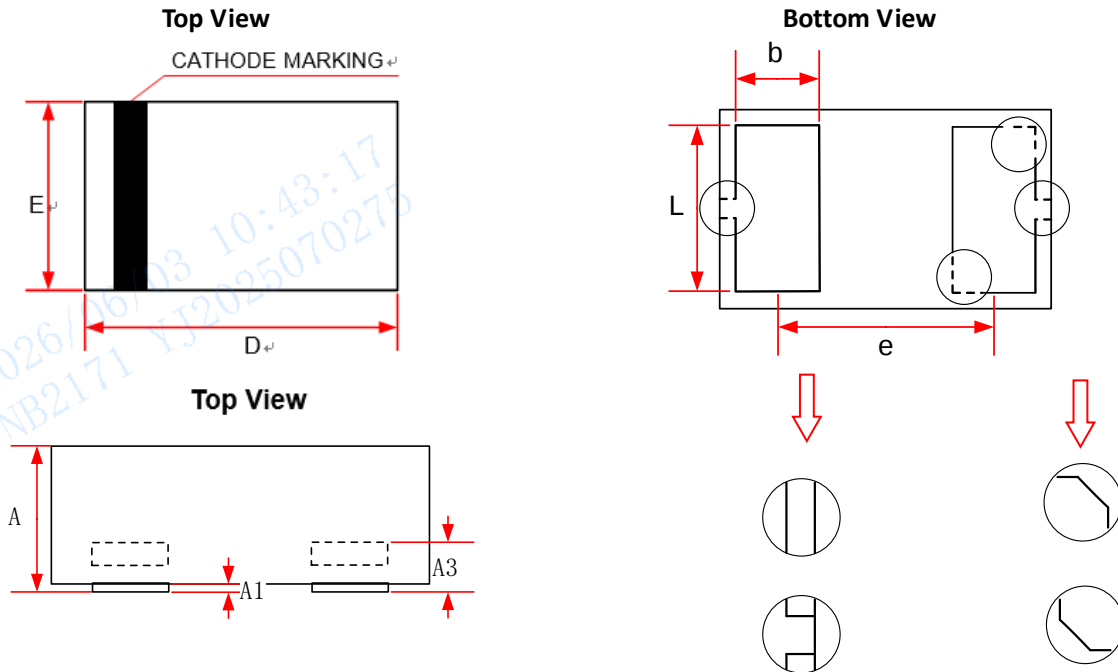
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

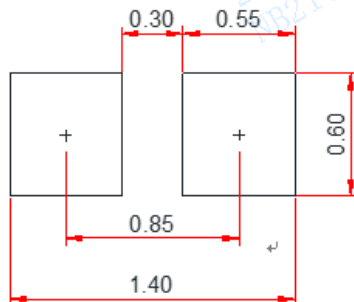


■ Outline Dimensions



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.340	0.450	0.550
A1	0.000	0.020	0.050
A3	0.125 Ref.		
D	0.950	1.000	1.080
E	0.550	0.600	0.680
b	0.200	0.250	0.300
L	0.450	0.500	0.550
e	0.650 BSC		

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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