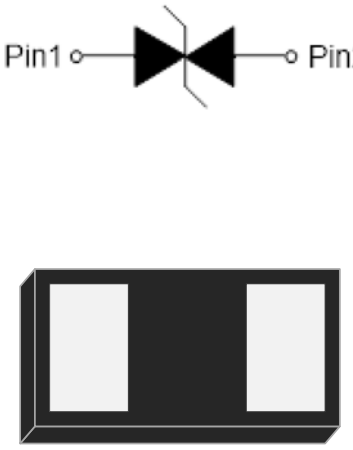
1-Line, Bi-directional, Transient Voltage Suppressor



DFN1006-2L

Features

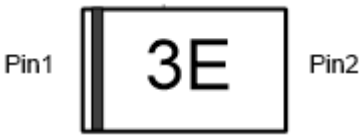
- Stand-off voltage: ±3.3V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-4 (EFT): 80A (5/50ns)
  IEC61000-4-5(surge): 20A (8/20μs)
- Low leakage current
- Ultra-low capacitance: CJ = 35pF typ
- Low clamping voltage:
  VCL =5.6V typ. @ IPP = 16A (TLP)
- RoHS Compliant

Applications

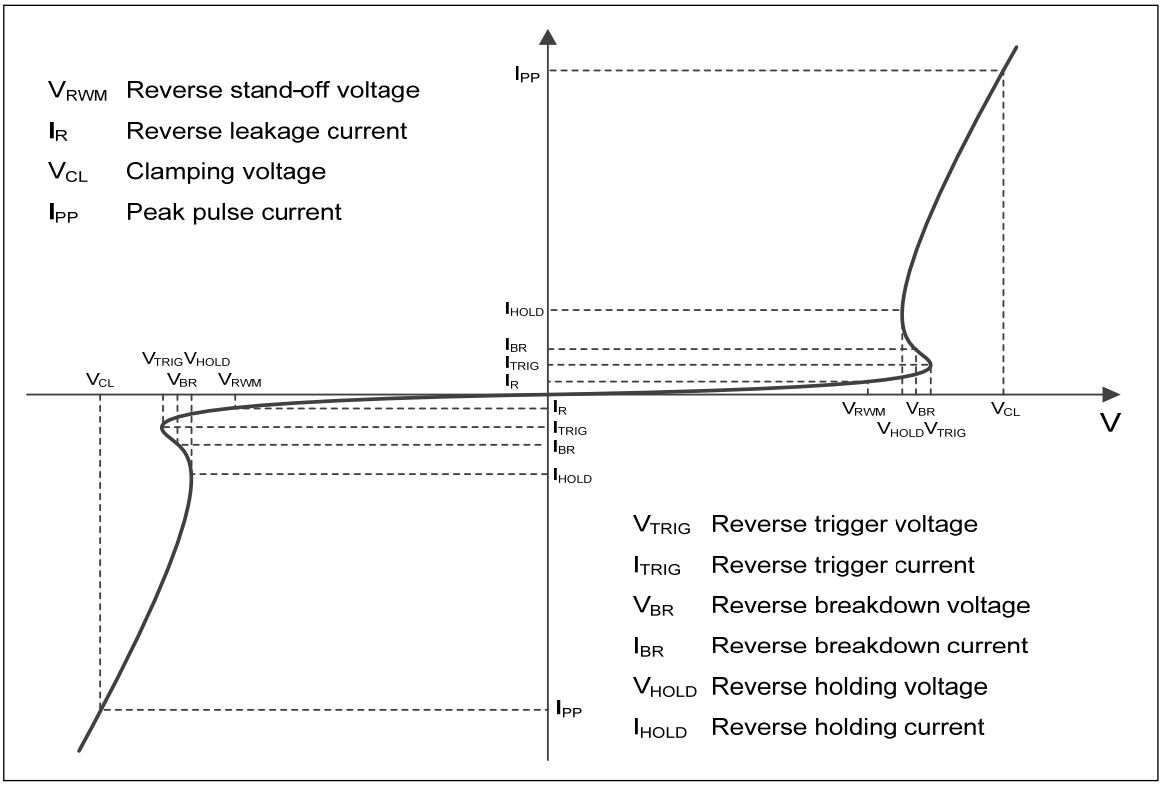
- Cellular Handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

Mechanical Data

- Package: DFN1006-2L
- Case Material: “Green” Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	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	
Junction temperature	T_J	-55~125	°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	uA	V_{RWM} = 3.3V			0.1
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	3.63	4	
Reverse holding voltage	V_{HOLD}	V	I_{HOLD} = 50mA	3.63	4	
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 0.2/100ns(TLP)		5.6	
Dynamic resistance 1)	R_{DYN}	Ω			0.1	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = 8kV		8	
Clamping voltage 1)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		4.3	5.5
		V	I_{PP} = 10A, t_p = 8/20μs		6	7.5
		V	I_{PP} = 20A, t_p = 8/20μs		7.5	9
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		35	45
Junction capacitance	C_J	pF	V_R = 2.5V, f = 1MHz		25	35

Notes:

1) TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 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
ESD3V3LBA4	F1	Approximate 0.9	10000	100000	400000	7” reel

■ Characteristics (Typical)

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

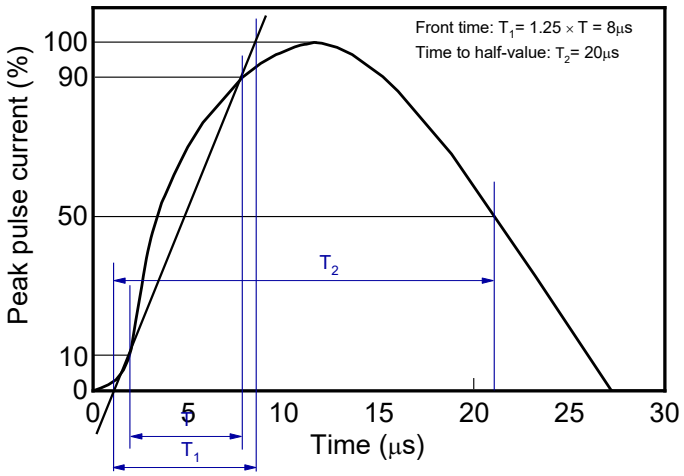


Fig.2 Contact discharge current waveform per IEC61000-4-2

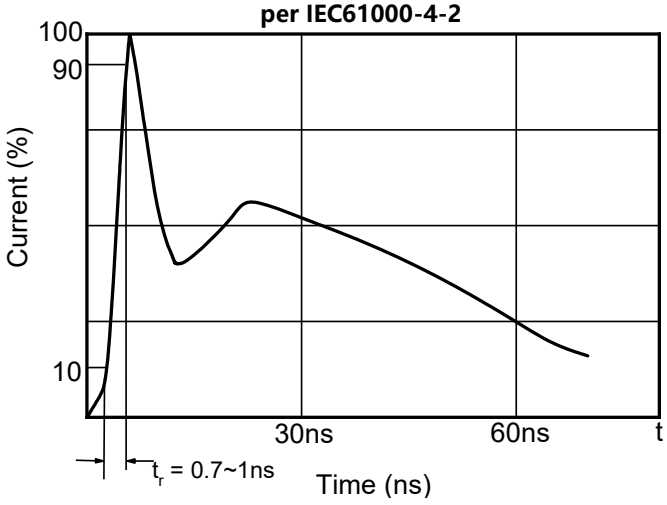


Fig.3 Clamping voltage vs. Peak pulse current

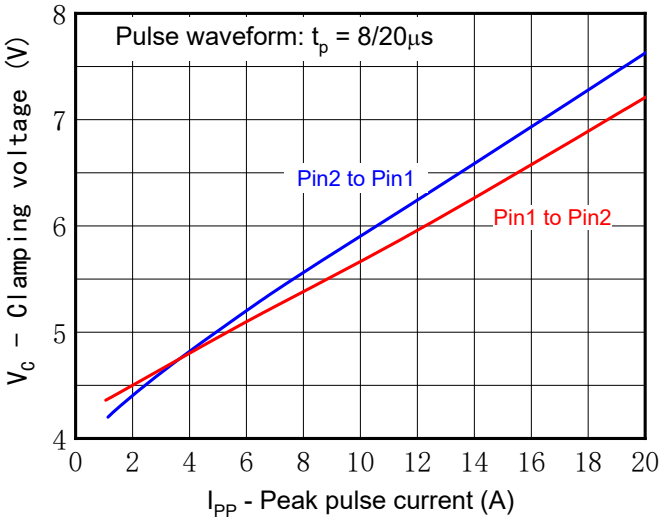


Fig.4 Capacitance vs. Reverse voltage

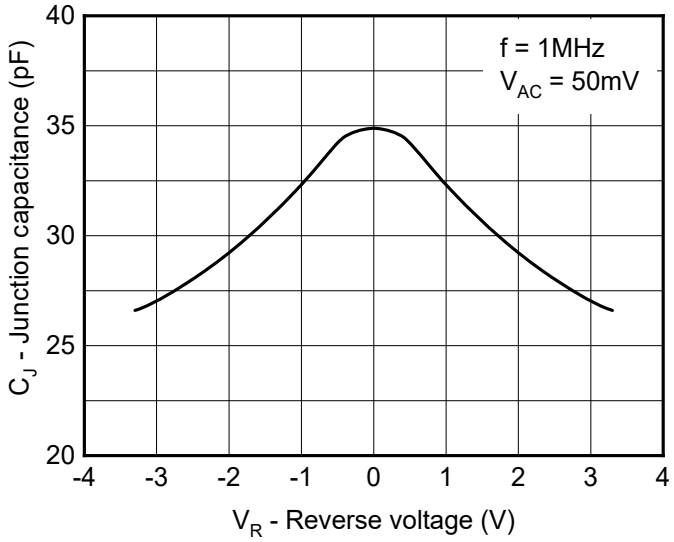


Fig.5 Non-repetitive peak pulse power vs. Pulse time

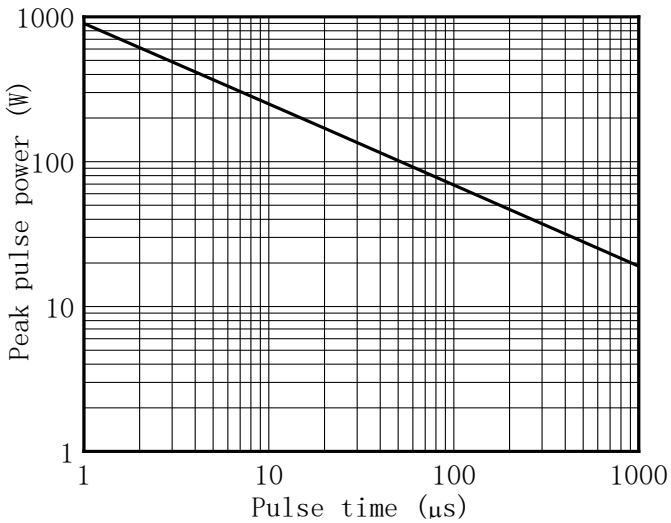


Fig.6 Power derating vs. Ambient temperature

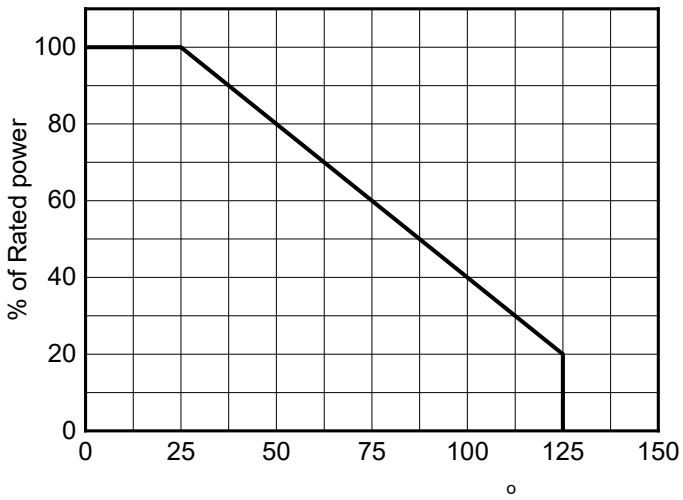
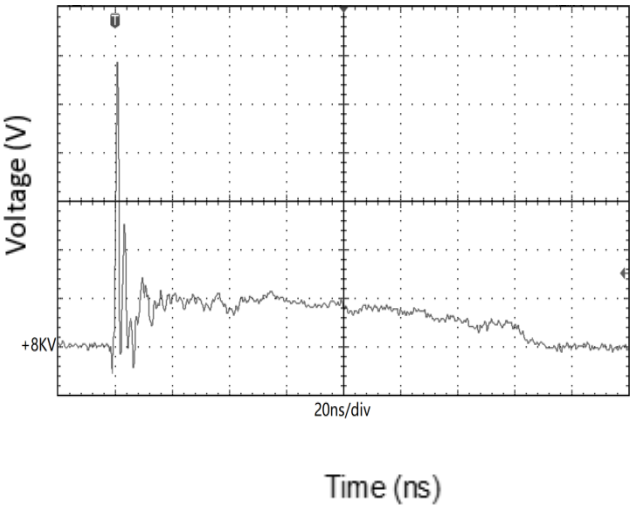
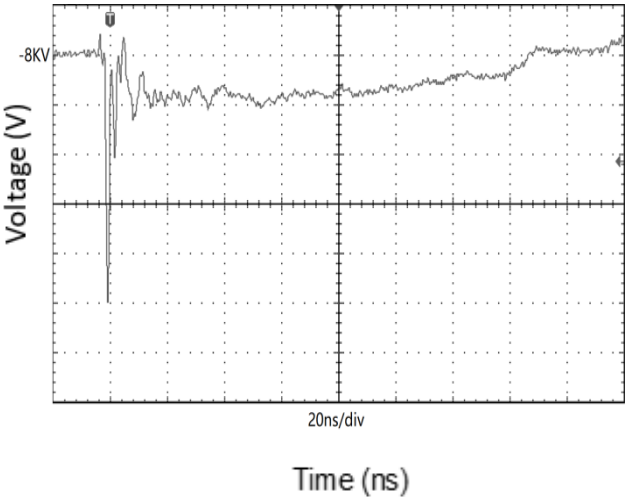


Fig.7 ESD clamping



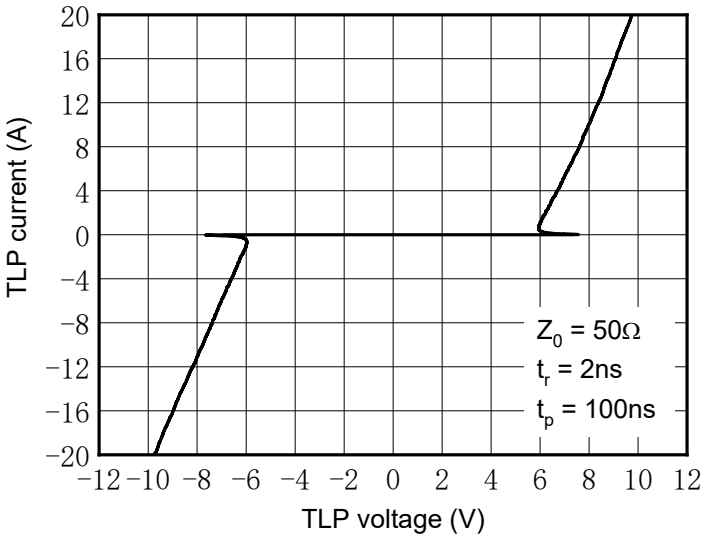
(+8kV contact discharge per IEC61000-4-2)

Fig.8 ESD clamping t

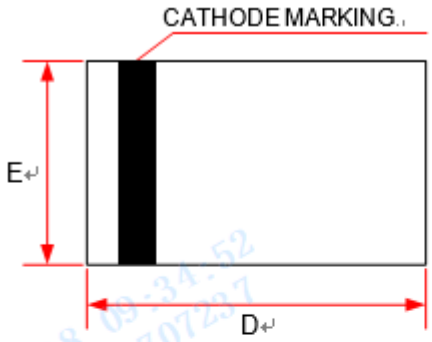


(-8kV contact discharge per IEC61000-4-2)

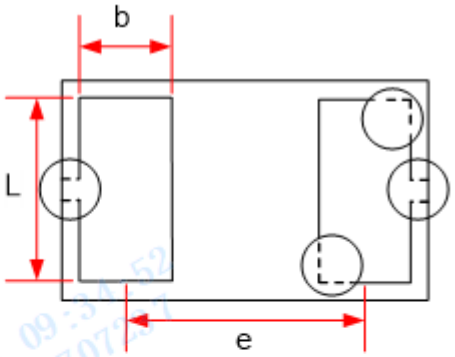
Fig. 9 TLP Measurment



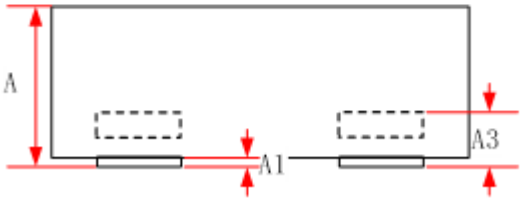
■ Outline Dimensions



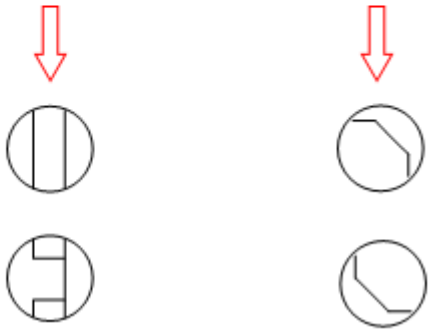
Top View



Bottom View

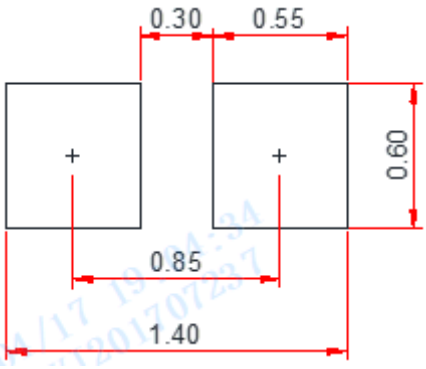


Side View



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.340	0.450	0.530
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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