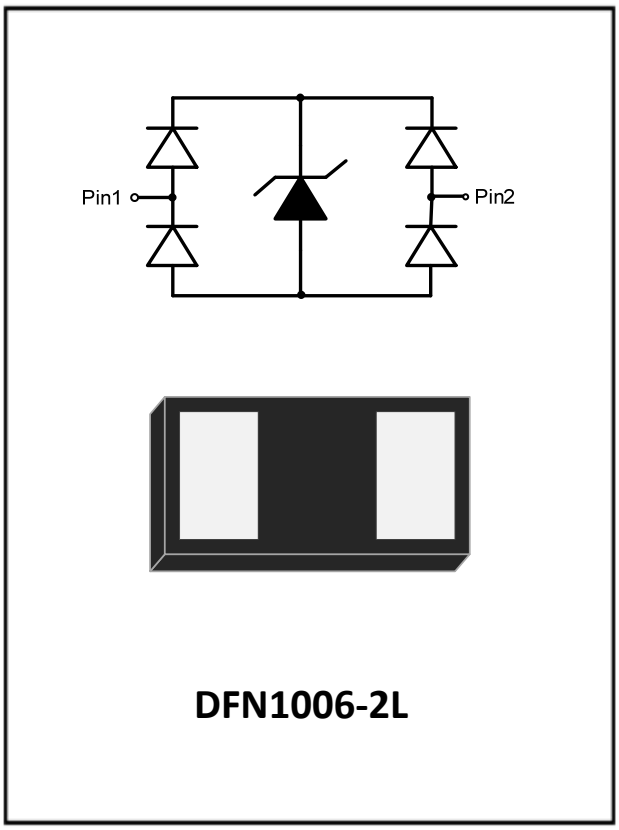
1- Line, Bi-directional, Ultra-low Capacitance Transient Voltage Suppressor



DFN1006-2L

Features

- Stand-off voltage: 5.5V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±15kV (contact)
  IEC61000-4-5(surge): 4A (8/20μs)
- Ultra-low leakage current: IR < 1nA typ
- Ultra low clamping voltage
- Low clamping voltage:

V_{CL} = 14.0V typ. @ IPP = 16A (TLP)

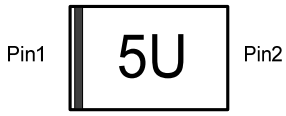
- RoHS Compliant

Applications

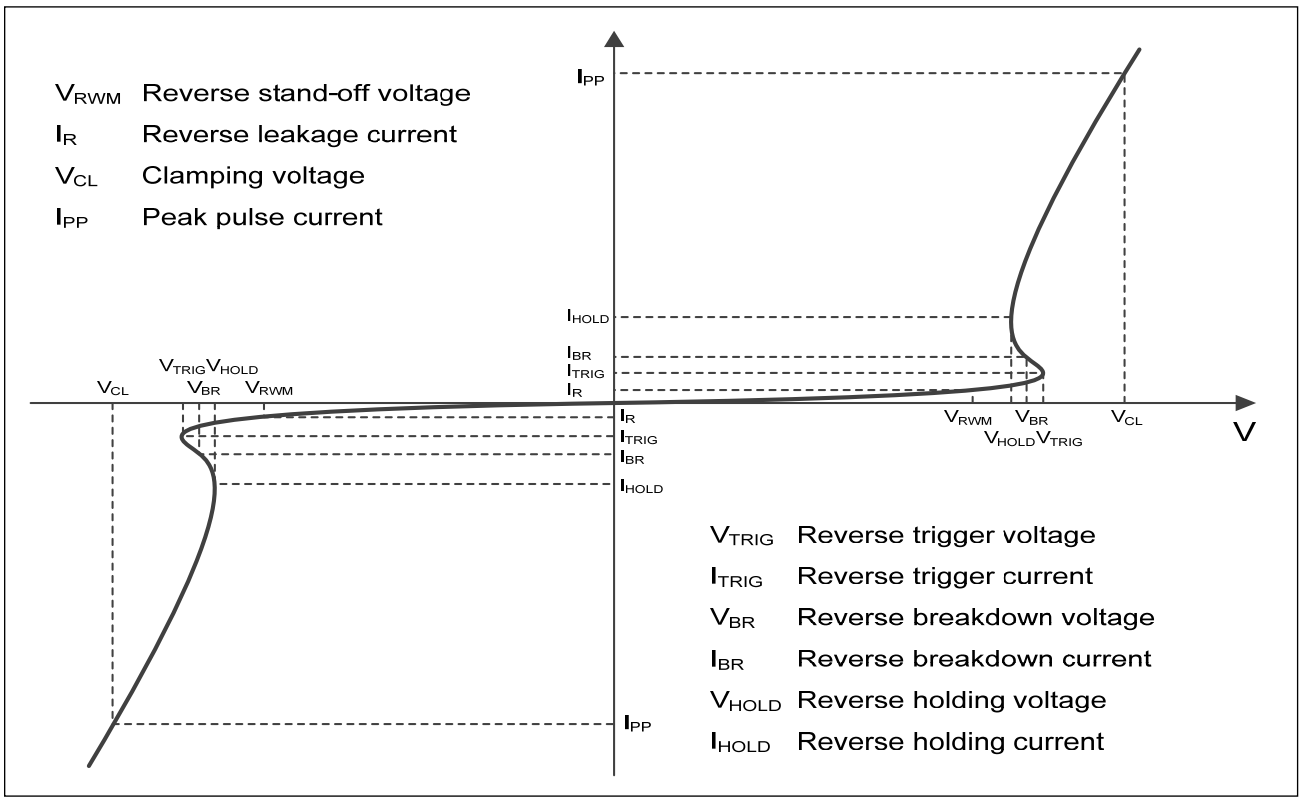
- USB 2.0 and USB 3.0
- HDMI 1.3, HDMI 1.4 and HDMI 2.0
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks

Mechanical Data

- Package: DFN1006-2L
- Lead Finish: Matte Tin
- 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	Rating	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	44	W
Peak pulse current (t_p = 8/20μs)	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	℃
Storage temperature	T_{STG}	-55~150	℃

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

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5.5
Reverse leakage current	I_R	nA	V_{RWM} =5.5V		2	100
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 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 = 8/20μs		8.3	
		V	I_{PP} = 4A,t_p = 8/20μs		10	
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		0.35	0.5

(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
ESDSLC5V5LBS	Approximate 0.9	10000	100000	400000	Tape& reel

■ Characteristics (Typical)

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

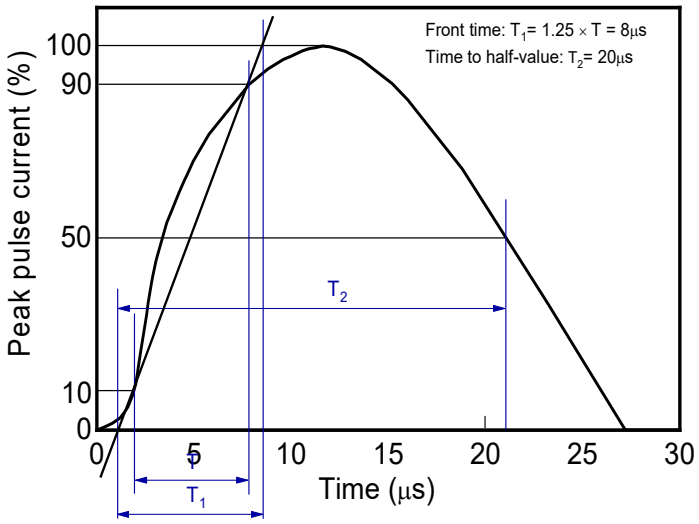


Fig.2 Contact discharge current waveform per IEC61000-4-2

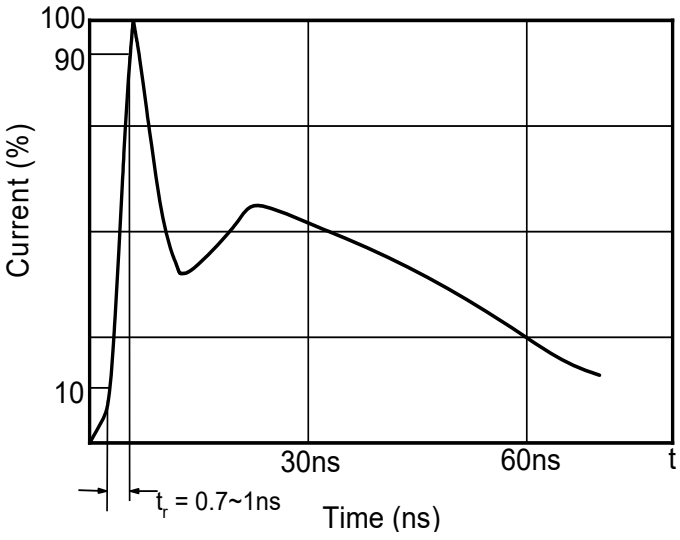


Fig.3 Clamping voltage vs. Peak pulse current

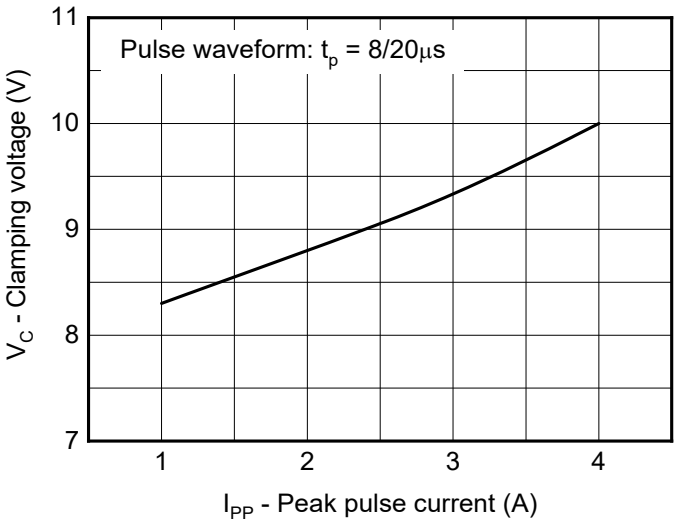


Fig.4 Capacitance vs. Reverse voltage

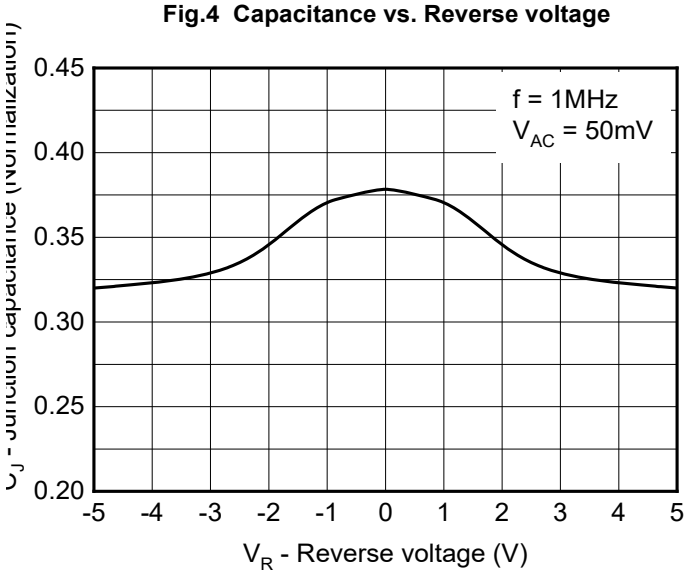


Fig.5 Non-repetitive peak pulse power vs. Pulse time

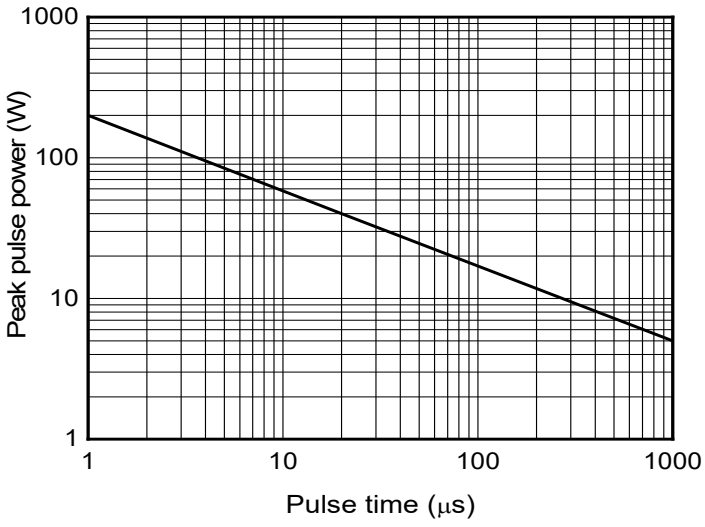


Fig.6 Power derating vs. Ambient temperature

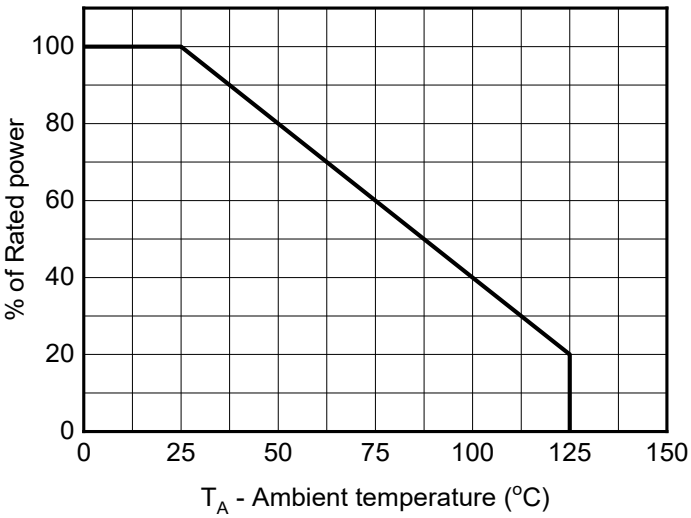


Fig.7 ESD clamping
(+8kV contact discharge per IEC61000-4-2)

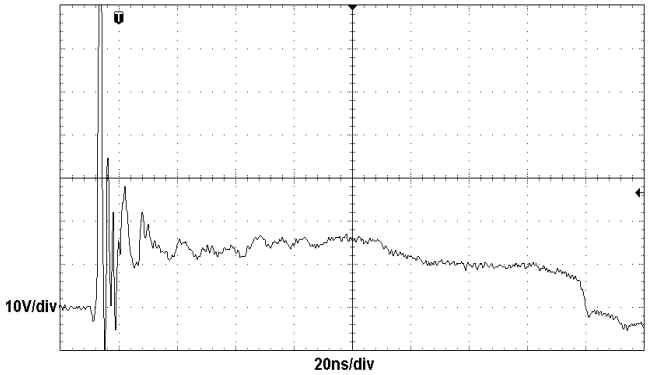


Fig.8 ESD clamping
(-8kV contact discharge per IEC61000-4-2)

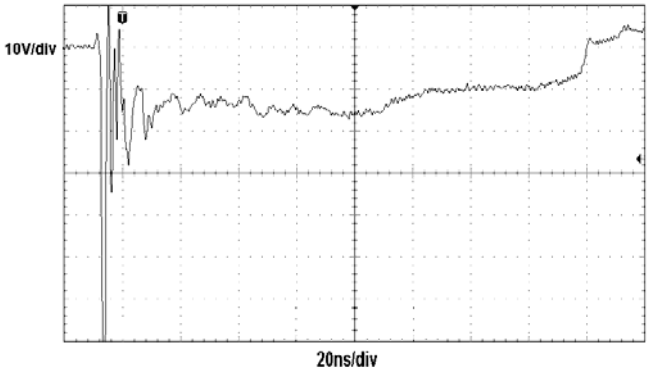
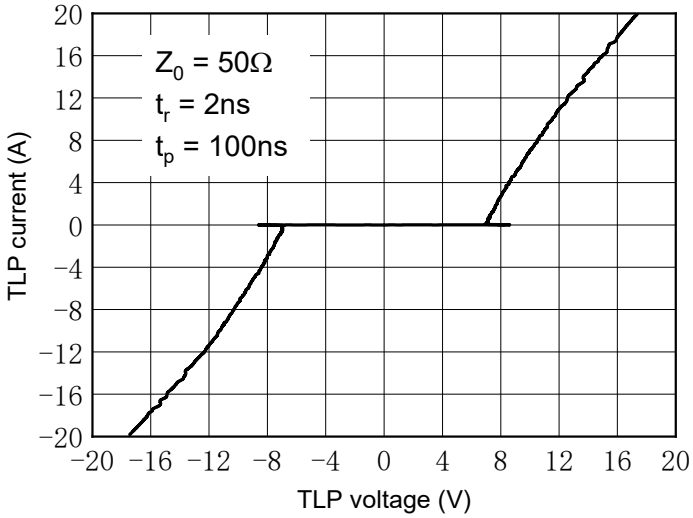
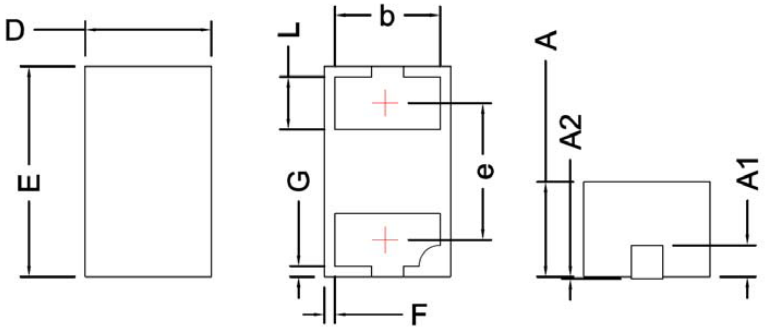


Fig.9 TLP Measurement

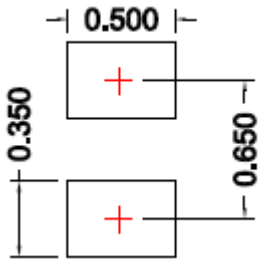


■ Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	0.50	0.60	0.70
E	0.90	1.00	1.10
A	0.35	0.45	0.55
A1		/	
A2			0.10
F	0.005		
G	0.005		
L	0.15	0.25	0.35
b	0.41	0.50	0.59
e		0.65 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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