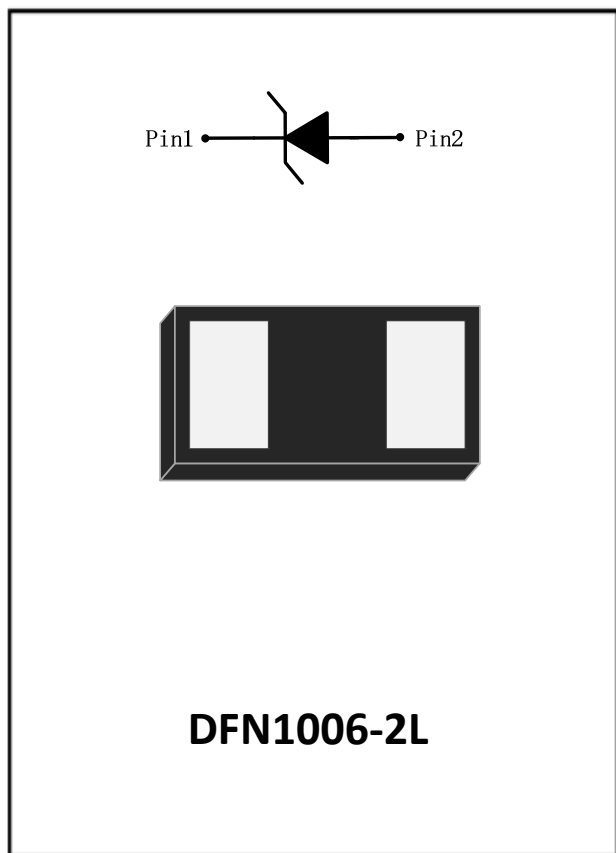


1-Line, Uni-directional, Low Capacitance Transient Voltage Suppressor



Features

- Stand-off voltage: 3.3V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 18A (8/20 μs)
- Low capacitance: $C_J = 2.5\text{pF}$ typ
- Ultra-low leakage current
- Low clamping voltage:
 $V_{CL} = 3.1\text{V}$ typ. @ IPP = 16A (TLP)
- Compliant

Applications

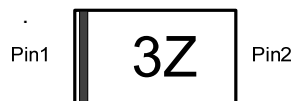
- USB 2.0
- HDMI 1.3, HDMI 1.4
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks

Caution:

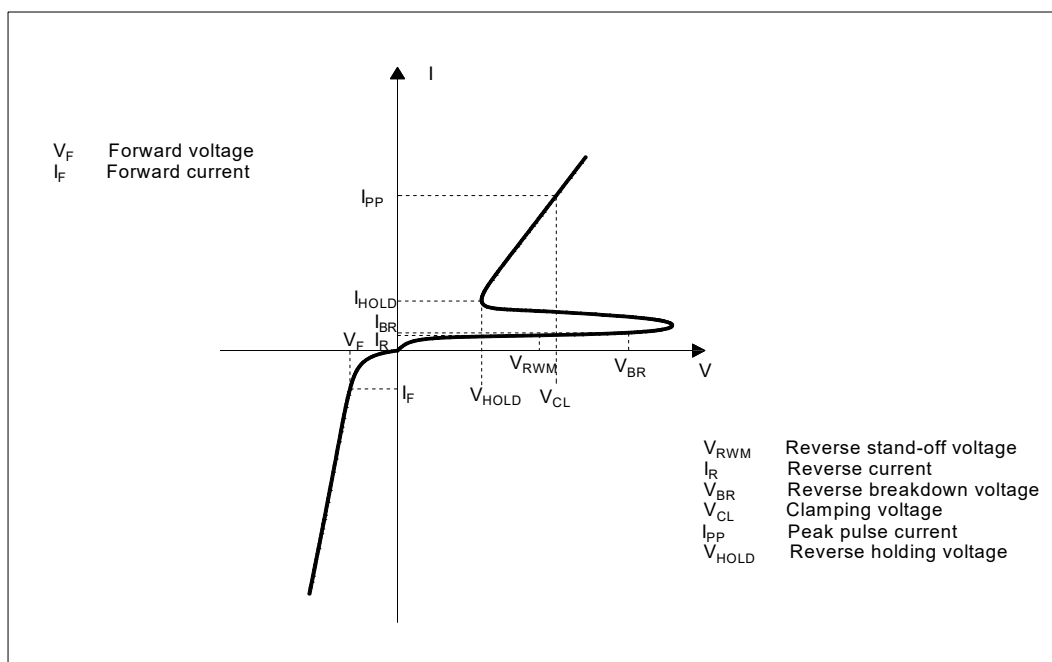
*This Device is designed for signal line protection only.
Not intended to be used under bias, not for application
with a power line.*

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 ($t_p = 8/20\mu s$)	P_{pk}	90	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	18	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 ($T_a=25^\circ C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				3.3
Reverse leakage current	I_R	nA	$V_{RWM} = 3.3V$			50
Reverse breakdown voltage	V_{BR}	V	$I_T = 1mA$	8.5		
Reverse holding voltage	V_{HOLD}	V	$I_{HOLD} = 50mA$	1.8		
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 16A$, $t_p = 100ns$		4.2	
Dynamic resistance ¹⁾	R_{DYN}	Ω			0.06	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} = 8kV$		5	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$		2.3	3.0
		V	$I_{PP} = 18A$, $t_p = 8/20\mu s$		3.6	5.0
Junction capacitance	C_J	pF	$V_R = 1.5V$, $f = 1MHz$		2.5	2.8

Notes:

(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	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD3V3LA	F1	Approximate 0.9	10000	100000	400000	7" reel

■ Characteristics (Typical)

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

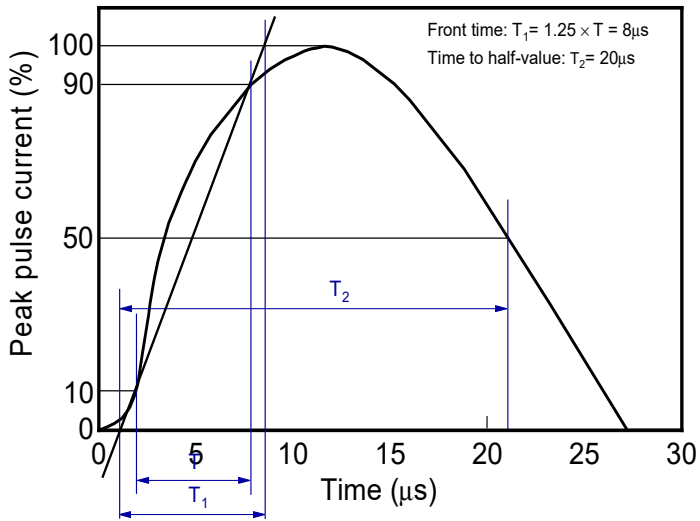


Fig.2 Contact discharge current waveform per IEC61000-4-2

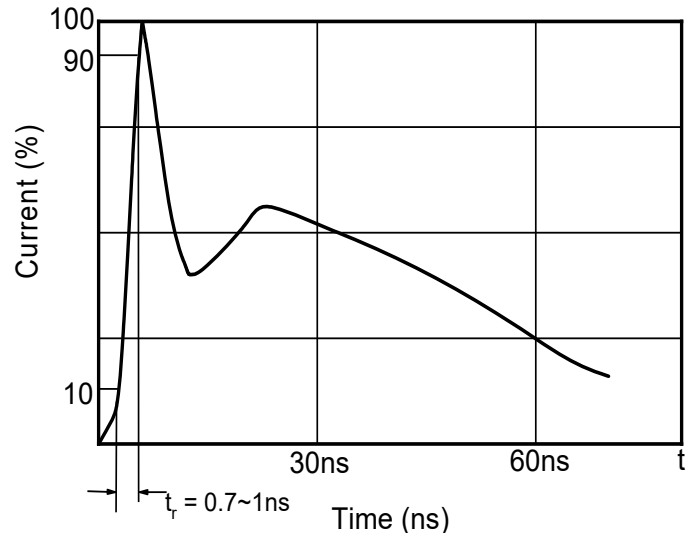


Fig.3 Clamping voltage vs. Peak pulse current

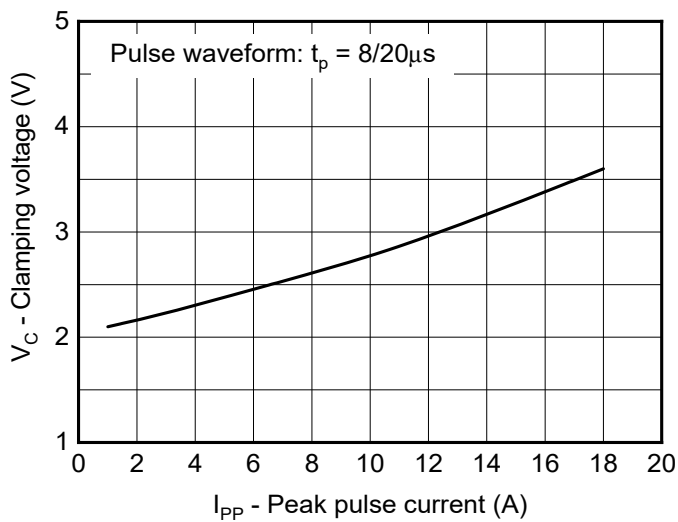


Fig.4 Capacitance vs. Reverse voltage

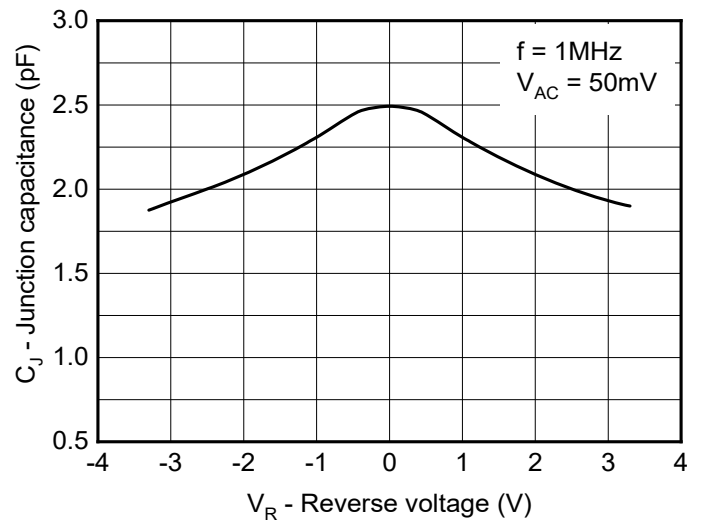


Fig.5 Non-repetitive peak pulse power vs. Pulse time

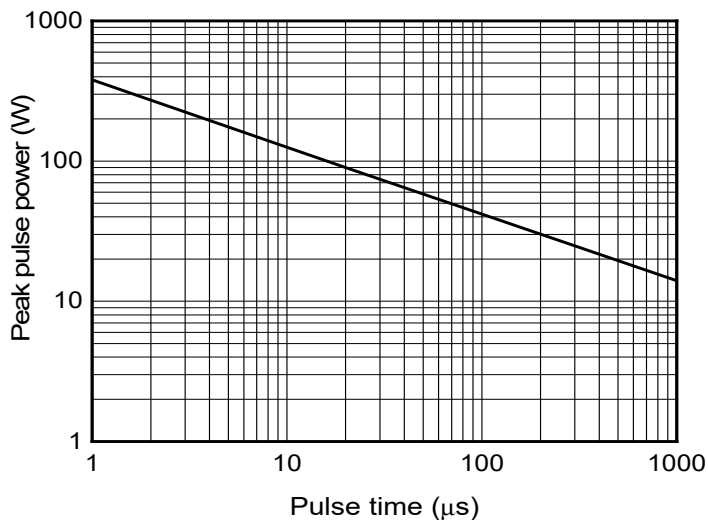


Fig.6 Power derating vs. Ambient temperature

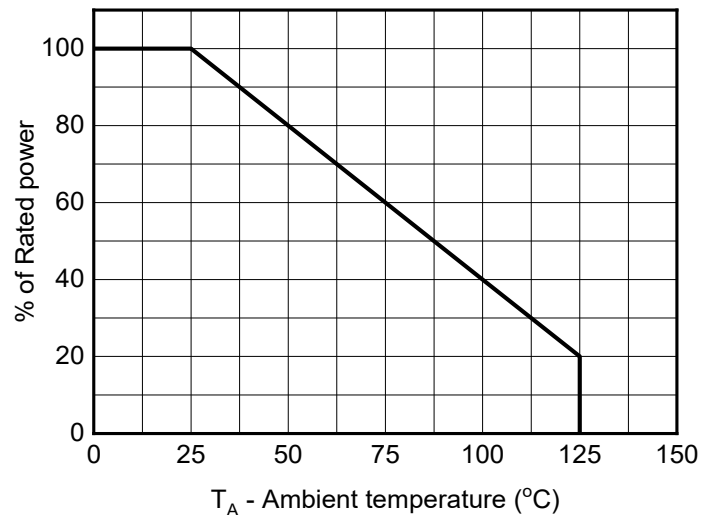


Fig.7 ESD clamping
(+8kV contact discharge per IEC61000-4-2)

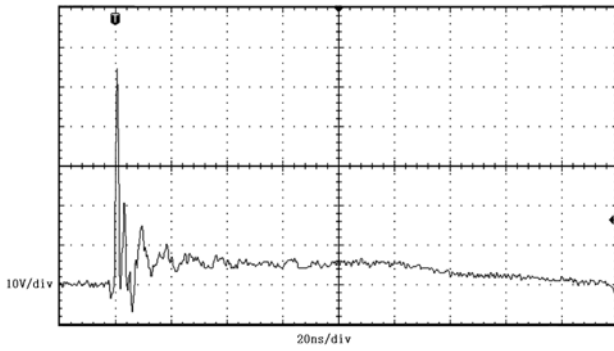


Fig.8 ESD clamping
(-8kV contact discharge per IEC61000-4-2)

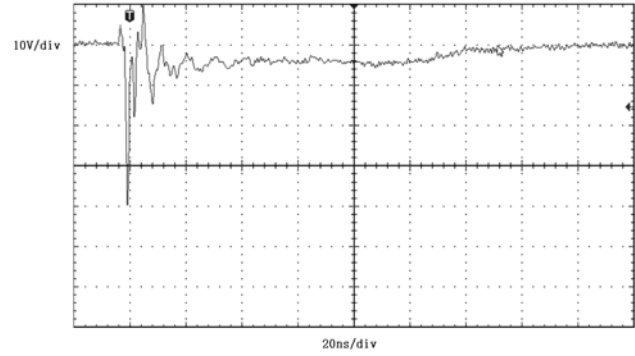
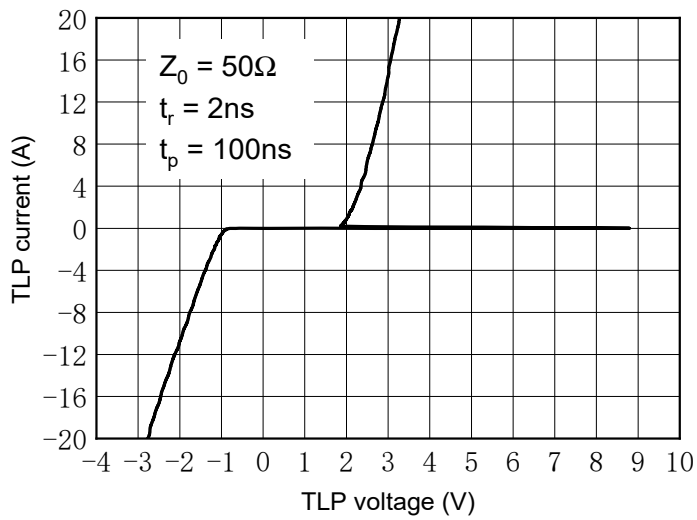
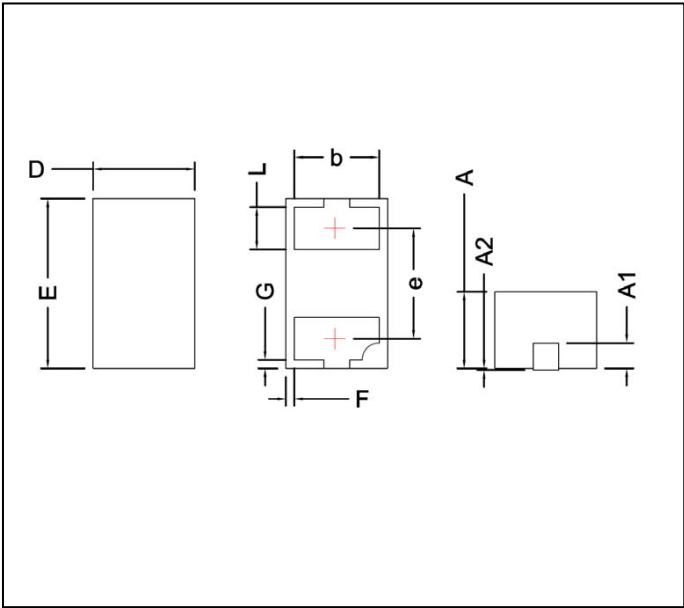


Fig.9 TLP Measurement

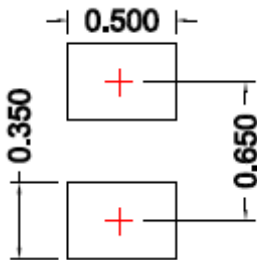


■ Outline Dimensions



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	0.15 BSC		
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

Disclaimer

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