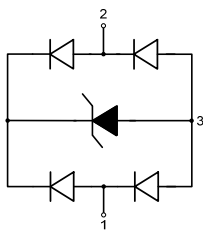


2-Lines, Uni-directional, Low Capacitance Transient Voltage Suppressor



DFN1006-3L

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): 9A (8/20 μs)
- Ultra-low capacitance: $C_J = 1.2\text{pF}$ typ
- Ultra-low leakage current
- Low clamping voltage:
 $V_{CL} = 3.1\text{V}$ typ. @ $I_{PP} = 16\text{A}$ (TLP)
- Compliant

Applications

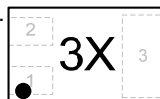
- USB 2.0
- HDMI 1.3, HDMI 1.4
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks

Caution:

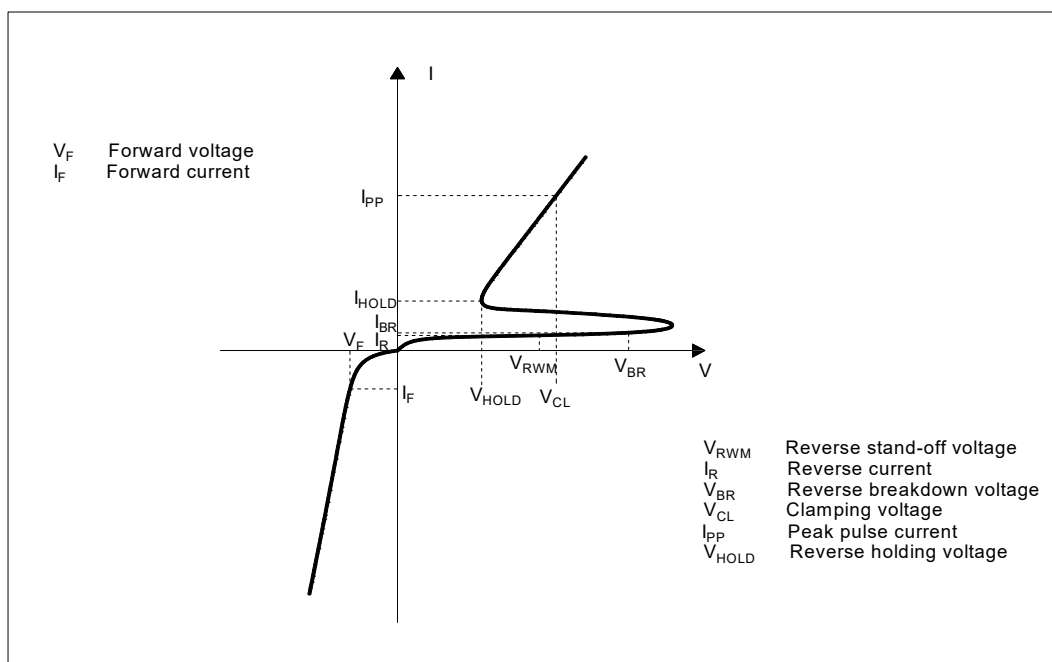
*This Device is designed for signal line protection only.
Not intended to be used under bias, not for application
with a power line.*

Mechanical Data

- Package: DFN1006-3L
- 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}	45	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	9	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				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			0.1	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} = 8kV$		5.5	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$		2.1	3.0
		V	$I_{PP} = 9A$, $t_p = 8/20\mu s$		3.2	5.0
Junction capacitance	C_J	pF	$V_R = 1.5V$, $f = 1MHz$		1.2	1.5

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
ESDSL3V3LT	F1	Approximate 0.9	10000	100000	400000	7" reel

■ Characteristics (Typical)

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

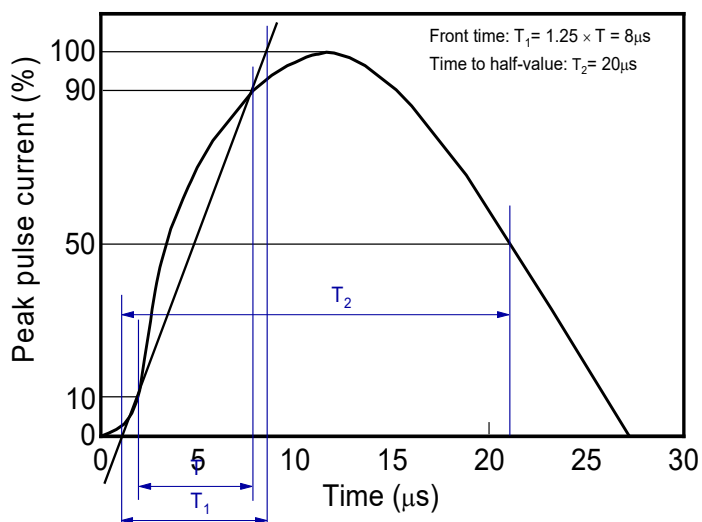


Fig.2 Contact discharge current waveform per IEC61000-4-2

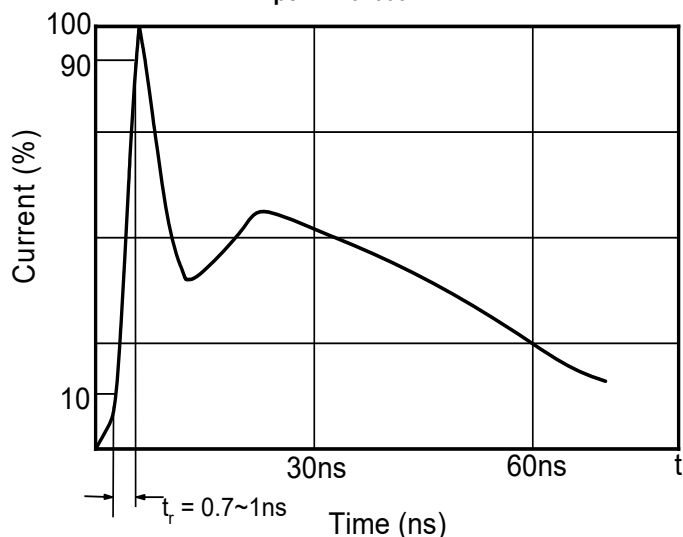


Fig.3 Clamping voltage vs. Peak pulse current

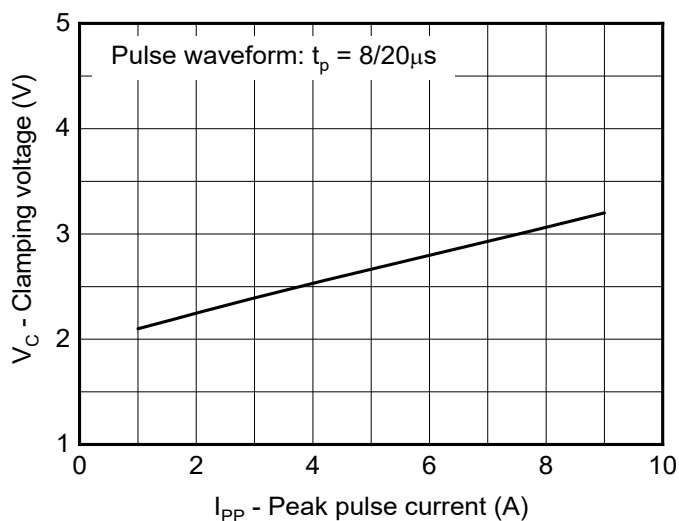


Fig.4 Capacitance vs. Reverse voltage

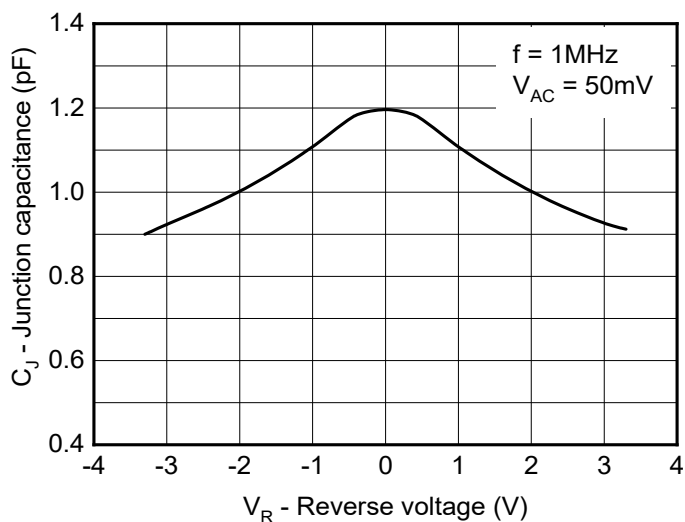


Fig.5 Non-repetitive peak pulse power vs. Pulse time

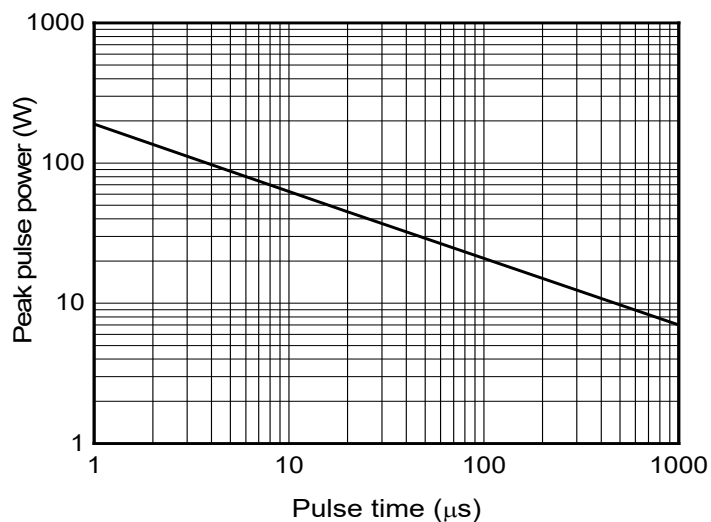


Fig.6 Power derating vs. Ambient temperature

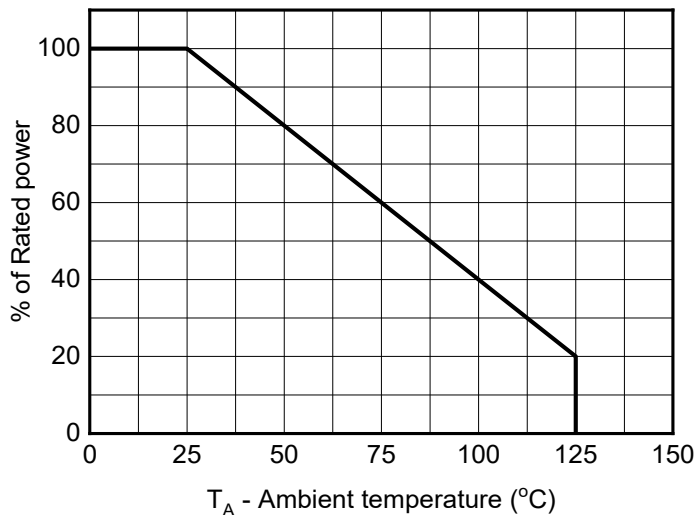


Fig.7 ESD clamping
(+8kV contact discharge per IEC61000-4-2)

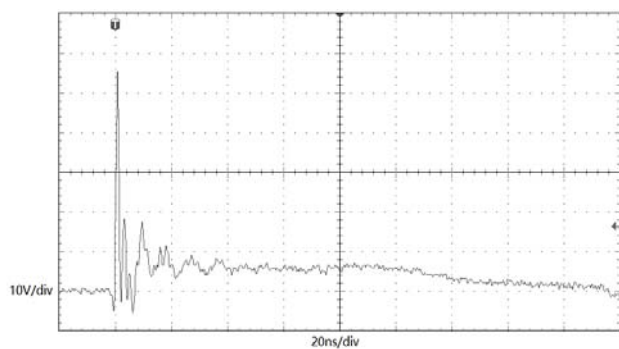


Fig.8 ESD clamping
(-8kV contact discharge per IEC61000-4-2)

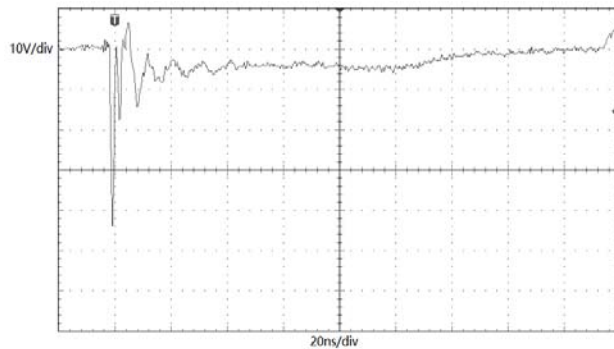
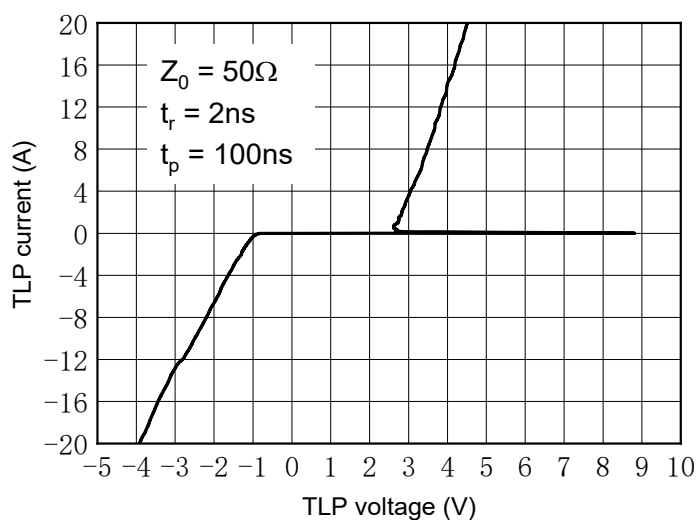
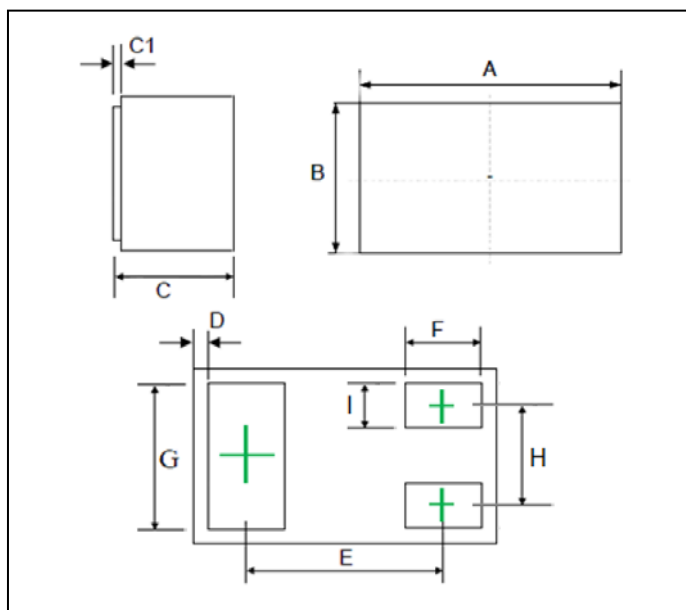


Fig.9 TLP Measurement

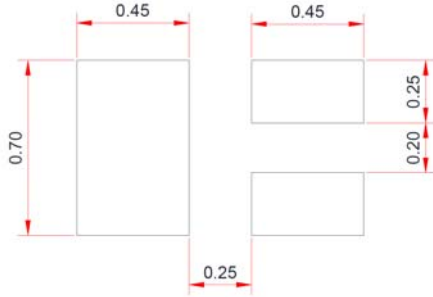


■ Outline Dimensions



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.95	1.05
B	0.55	0.65
C	0.40	0.55
C1		0.05
D	0.01	0.08
E	0.675 BSC	
F	0.20	0.40
G	0.40	0.60
H	0.35 BSC	
I	0.10	0.20

■ 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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