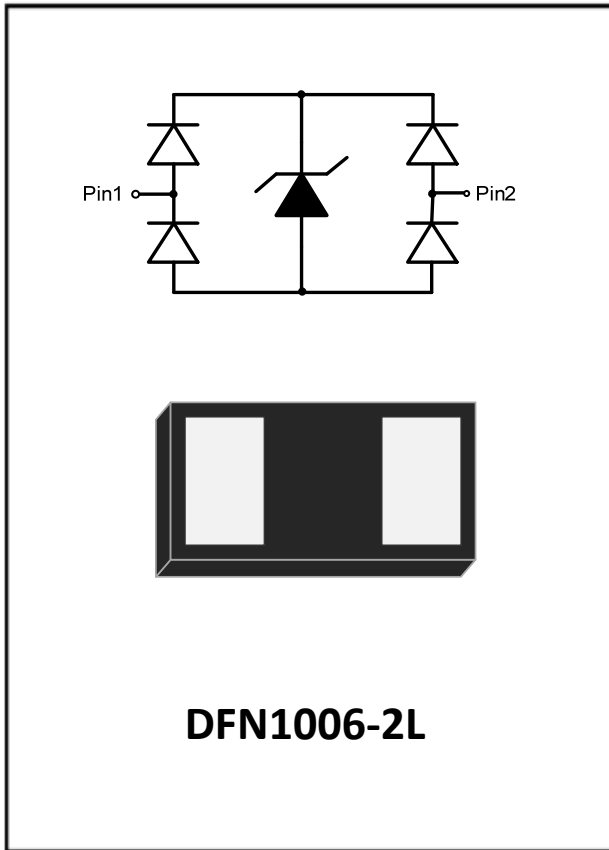


## 1-Line, Bi-directional, Ultra-low Capacitance Transient Voltage Suppressor



### Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 15\text{kV}$  (contact)  
IEC61000-4-5(surge): 4A (8/20 $\mu\text{s}$ )
- Low capacitance:  $C_J = 0.4\text{pF}$  typ
- Ultra-low leakage current
- Low clamping voltage:  
 $V_{CL} = 9.0\text{V}$  typ. @  $I_{PP} = 16\text{A}$  (TLP)
- RoHS Compliant

### Applications

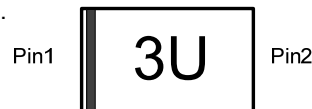
- USB 2.0 and USB 3.0
- HDMI 1.3, HDMI 1.4 and HDMI 2.0
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks

#### Caution:

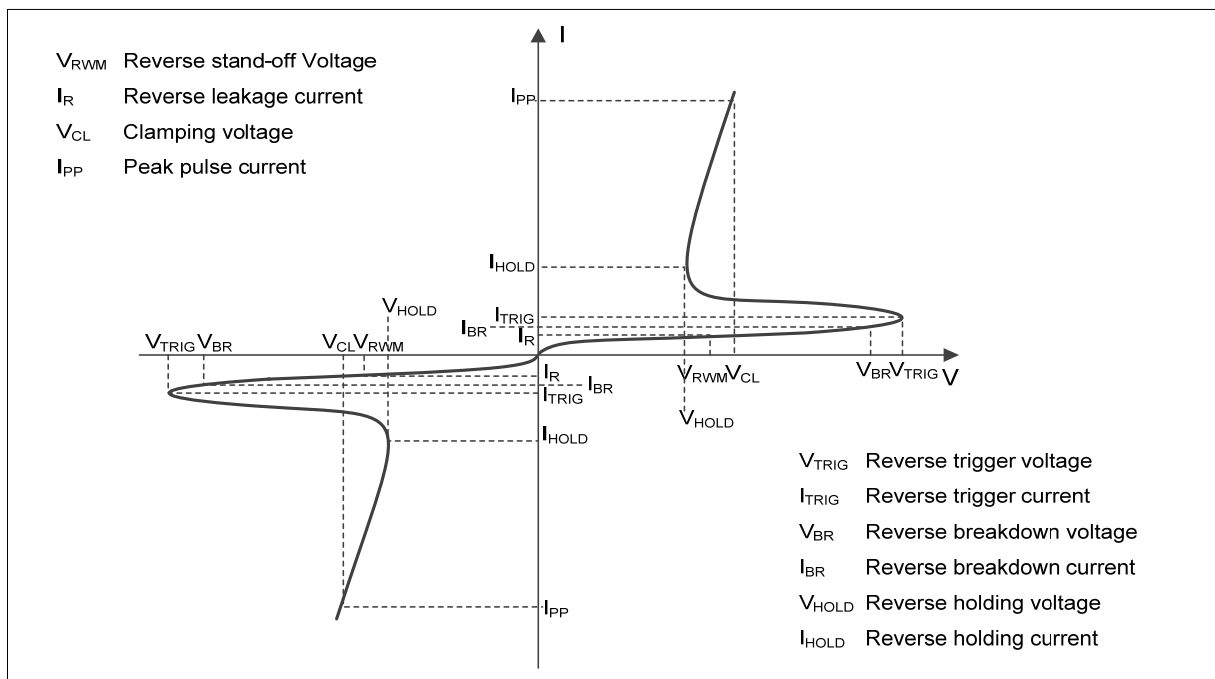
*This Device is designed for signal line protection only.  
Not intended to be used under bias, not for application  
with a power line.*

### 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





# SESDSLC5V0LB

## ■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	32	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	4	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 15$	kV
ESD according to IEC61000-4-2 contact discharge		$\pm 15$	
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				5.0
Reverse leakage current	$I_R$	nA	$V_{RWM} = 5.0V$			50
Reverse breakdown voltage	$V_{BR}$	V	$I_T = 1mA$	7.0	10.0	
Reverse holding voltage	$V_{HOLD}$	V	$I_{HOLD} = 50mA$ ,	2.0		
Clamping voltage <sup>1)</sup>	$V_{CL}$	V	$I_{PP} = 16A, t_p = 100ns$		9.0	
Dynamic resistance <sup>1)</sup>	$R_{DYN}$	$\Omega$			0.3	
Clamping voltage <sup>2)</sup>	$V_{CL}$	V	$V_{ESD} = 8kV$		9.0	
Clamping voltage <sup>3)</sup>	$V_{CL}$	V	$I_{PP} = 1A, t_p = 8/20\mu s$		3.6	5.5
		V	$I_{PP} = 4A, t_p = 8/20\mu s$		5.6	8.0
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		0.4	0.55

### 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
SESDSLC5V0LB	F1	Approximate 0.9	10000	100000	400000	7" reel



## ■ Characteristics (Typical)

Fig.1 8/20 $\mu$ s waveform per IEC61000-4-5

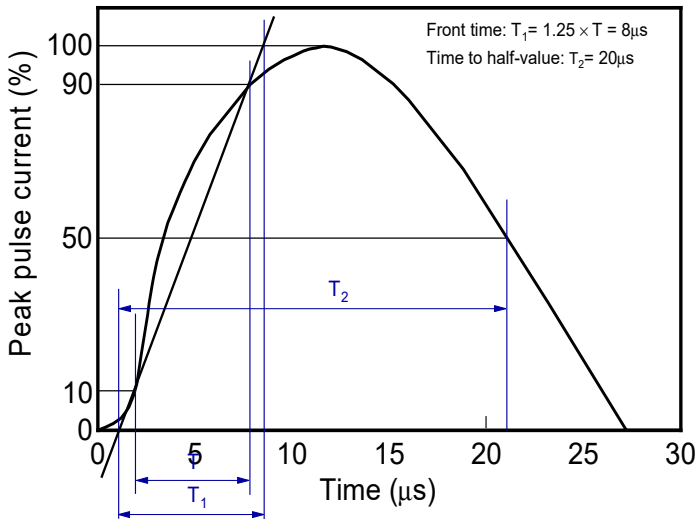


Fig.2 Contact discharge current waveform per IEC61000-4-2

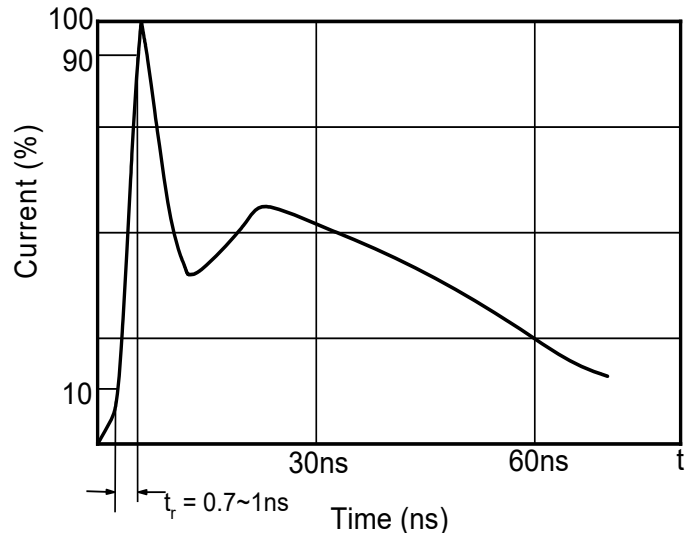


Fig.3 Clamping voltage vs. Peak pulse current

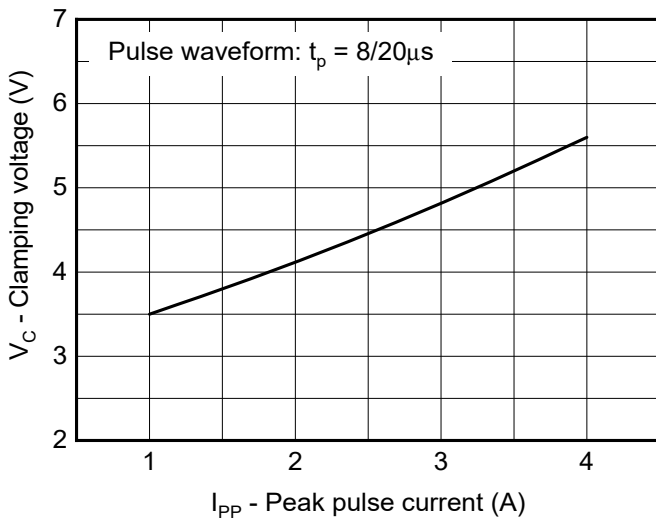


Fig.4 Capacitance vs. Reverse voltage

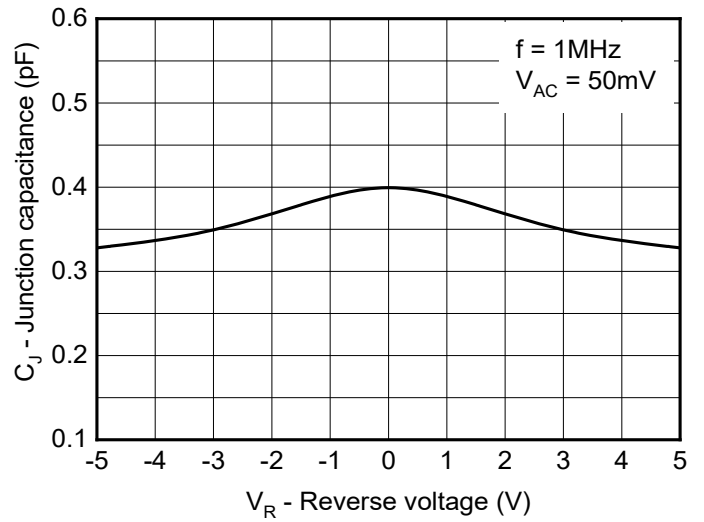


Fig.5 Non-repetitive peak pulse power vs. Pulse time

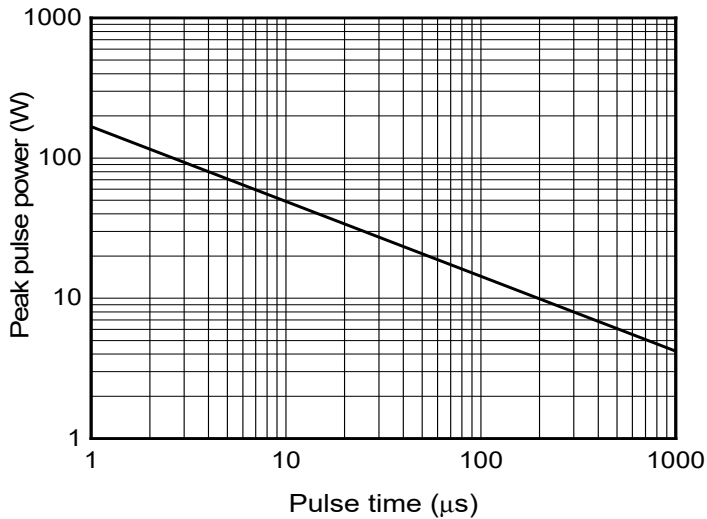
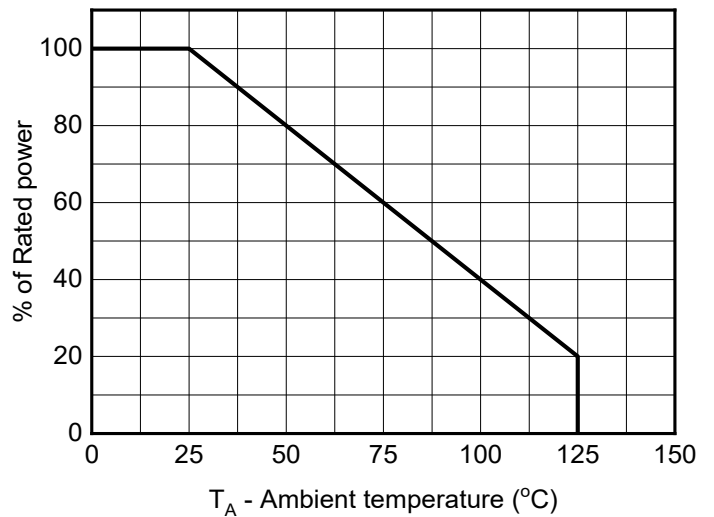


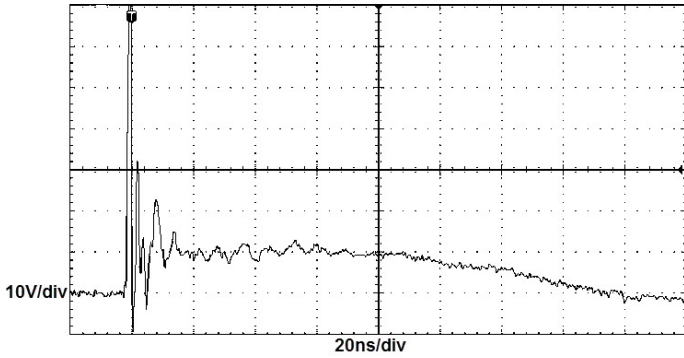
Fig.6 Power derating vs. Ambient temperature



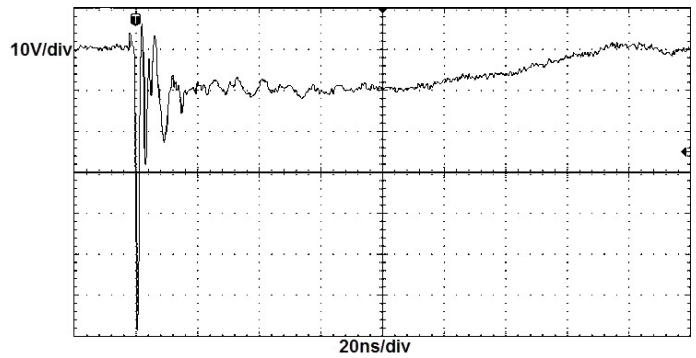


# SESDSLC5V0LB

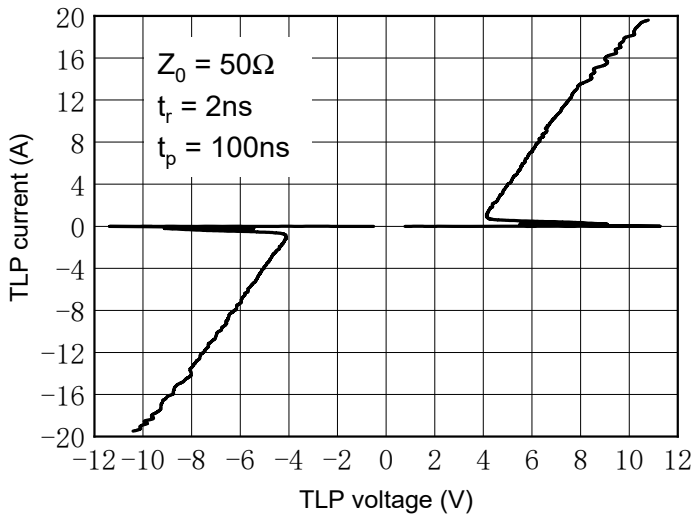
**Fig.7 ESD clamping**  
(+8kV contact discharge per IEC61000-4-2)



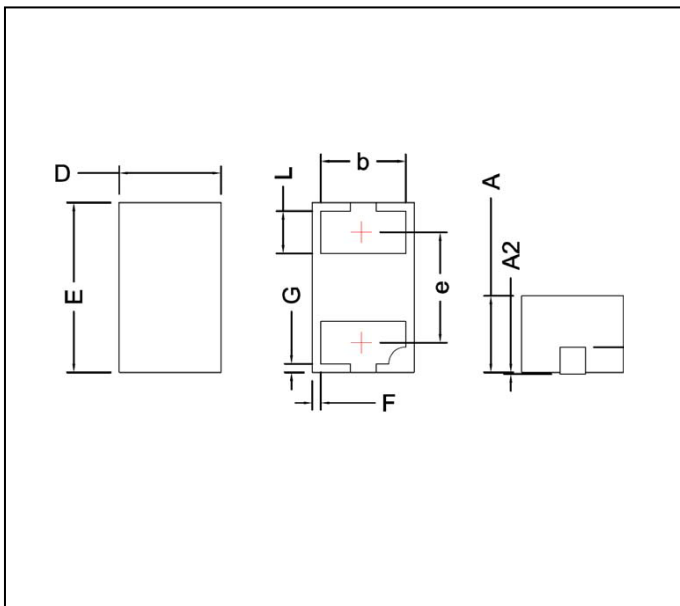
**Fig.8 ESD clamping**  
(-8kV contact discharge per IEC61000-4-2)



**Fig.9 TLP Measurement**



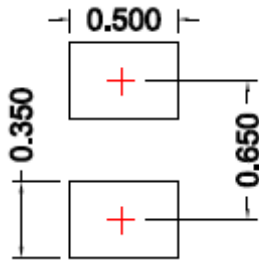
## ■ Outline Dimensions



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
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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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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