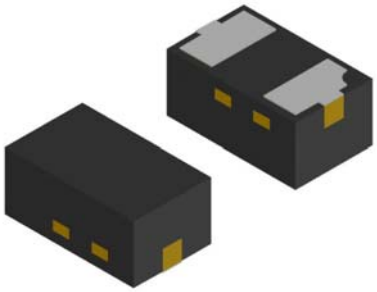
# 1- Line, Bi-directional, Transient Voltage Suppressor

**DFN1006-2L**

## Features

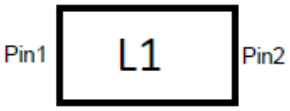
- Ultra small package
- Stand-off voltage: 1.5V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): 12kV (contact)
  IEC61000-4-5(surge): 4A (8/20μs)
- Low leakage current
- Low clamping voltage
- RoHS Compliant

## Applications

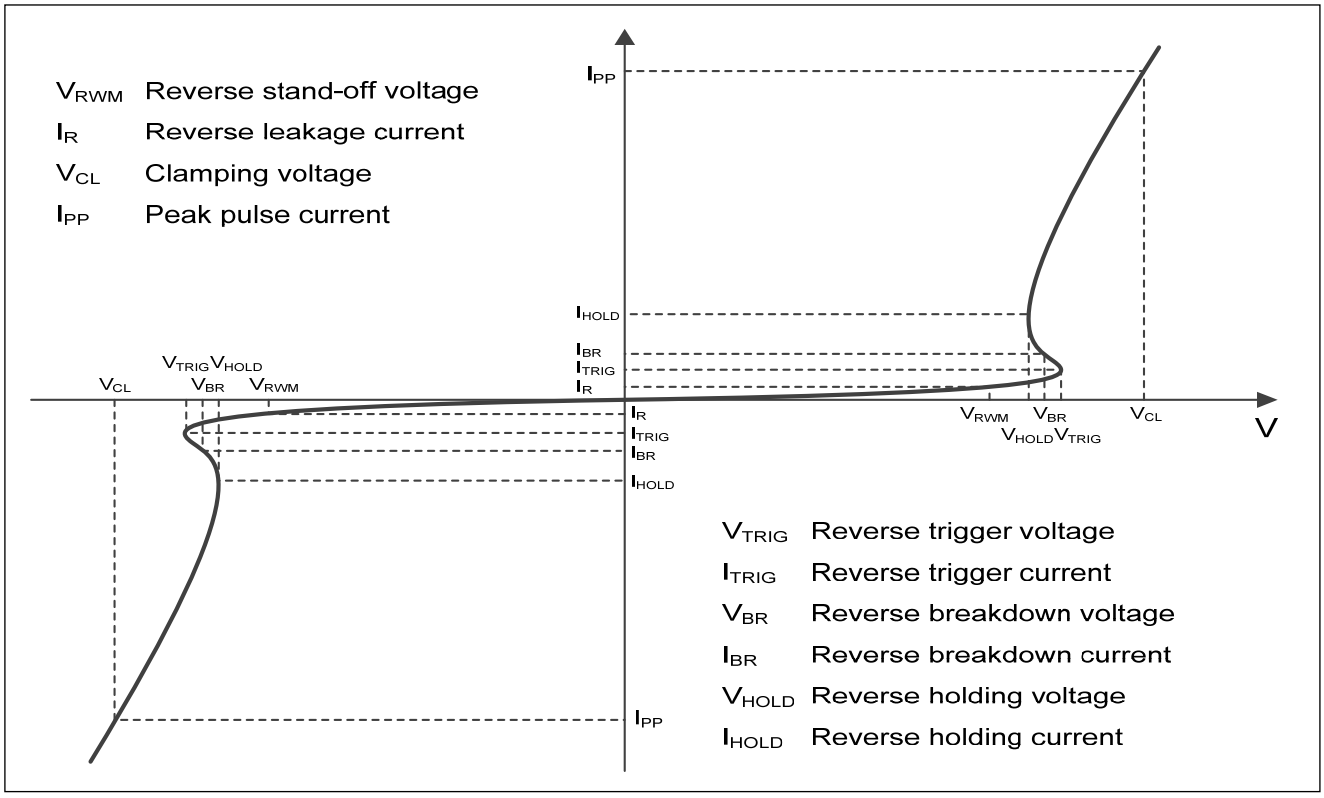
- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

## Mechanical Characteristics

- Package: DFN1006-2L
- Case Material: “Green” Molding Compound.
- Marking Information: See Below




## ■Definitions of electrical characteristics



## ■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

| PARAMETER | SYMBOL | Rating | UNIT |
|---|---|---|---|
| Peak pulse power ($t_p$ = 8/20μs) | $P_{pk}$ | 13 | 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 | | ±12 | KV |
| 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 | | | | 1.5 |
| Reverse breakdown voltage | $V_{BR}$ | V | $I_{BR}$ = 1mA | 4.5 | | 8 |
| Reverse leakage current | $I_R$ | uA | $V_{RWM}$ =2.1V | | | 0.1 |
| Clamping voltage [3] | $V_{CL}$ | V | $I_{PP}$ = 1A, $t_p$ = 8/20μs | | 1.75 | |
| | | V | $I_{PP}$ = 4A, $t_p$ = 8/20μs | | 2.9 | |
| Junction capacitance | $C_J$ | pF | $V_R$ = 1V, f = 1MHz | | 0.2 | |

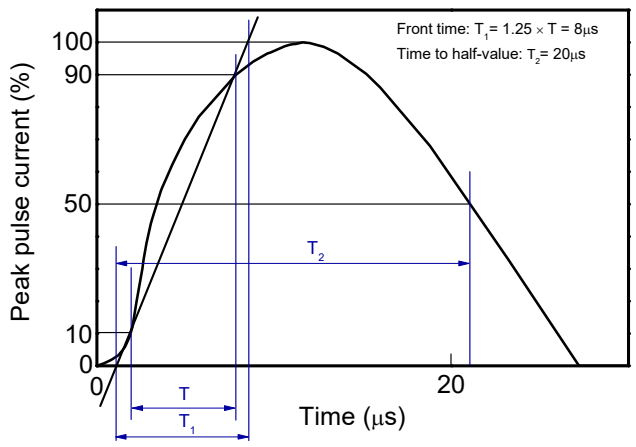
(1). TLP parameter: $Z_0$ = 50Ω, $t_p$ = 100ns, $t_r$ = 2ns, averaging window from 60ns to 80ns. $R_{DYN}$ is calculated from 4A to 16A.
(2). Contact discharge mode, according to IEC61000-4-2.
(3). Non-repetitive current pulse, according to IEC61000-4-5.

## ■Ordering Information (Example)

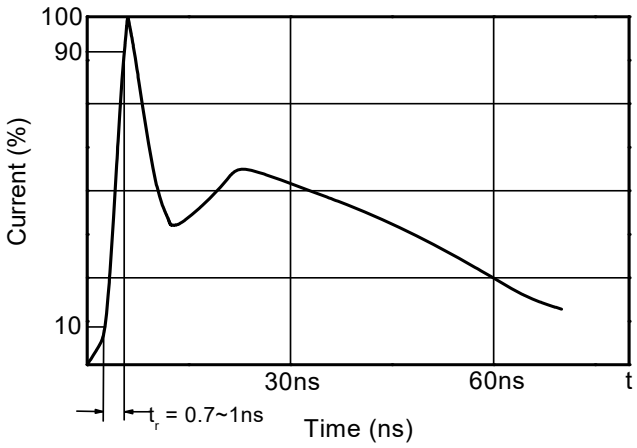
| PREFERED P/N | UNIT WEIGHT(mg) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|
| SESDULC1V5LB | Approximate 0.9 | 10000 | 100000 | 400000 | Tae& reel |

## ■ Typical Performance Characteristics (Ta=25℃ unless otherwise Specified)

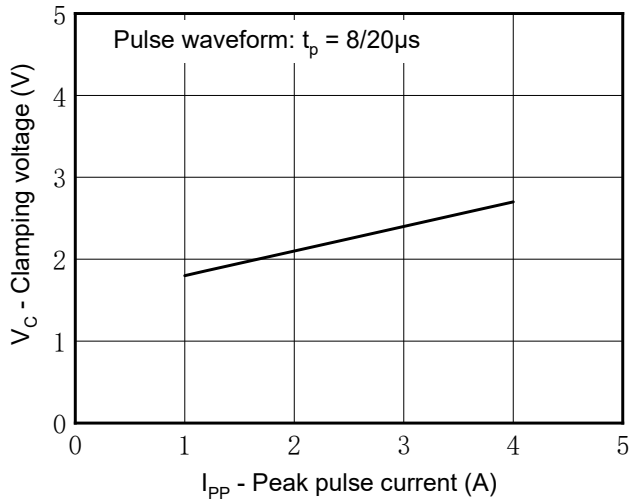
**8/20μs waveform per IEC61000-4-5**



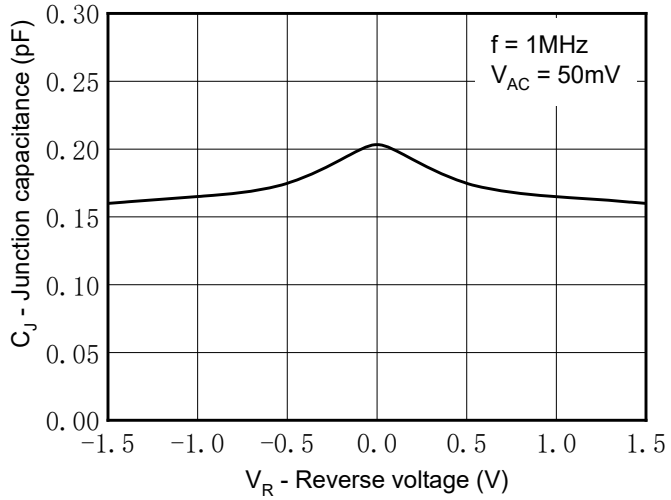

**Contact discharge current waveform per IEC61000-4-2**



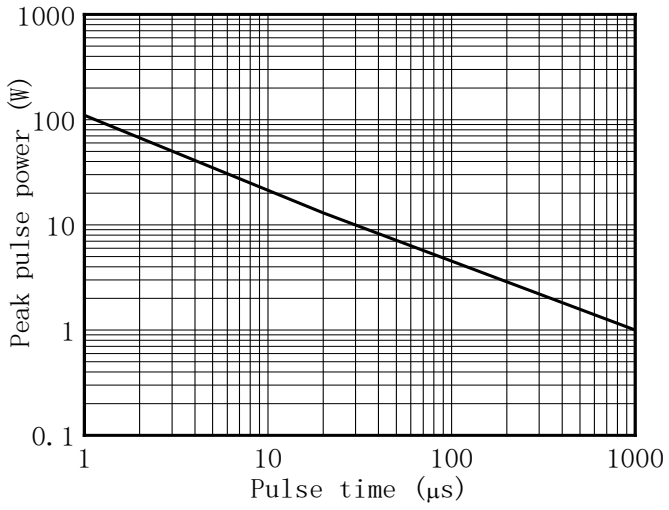

**Clamping voltage vs. Peak pulse current**



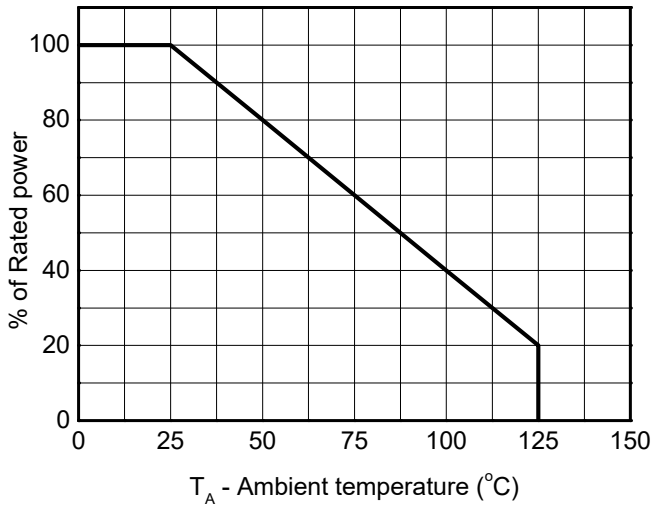

**Capacitance vs. Reverse voltage**



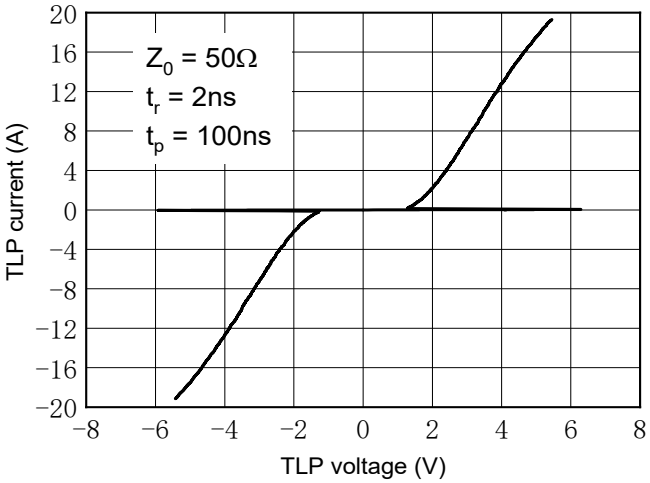

**Non-repetitive peak pulse power vs. Pulse time**



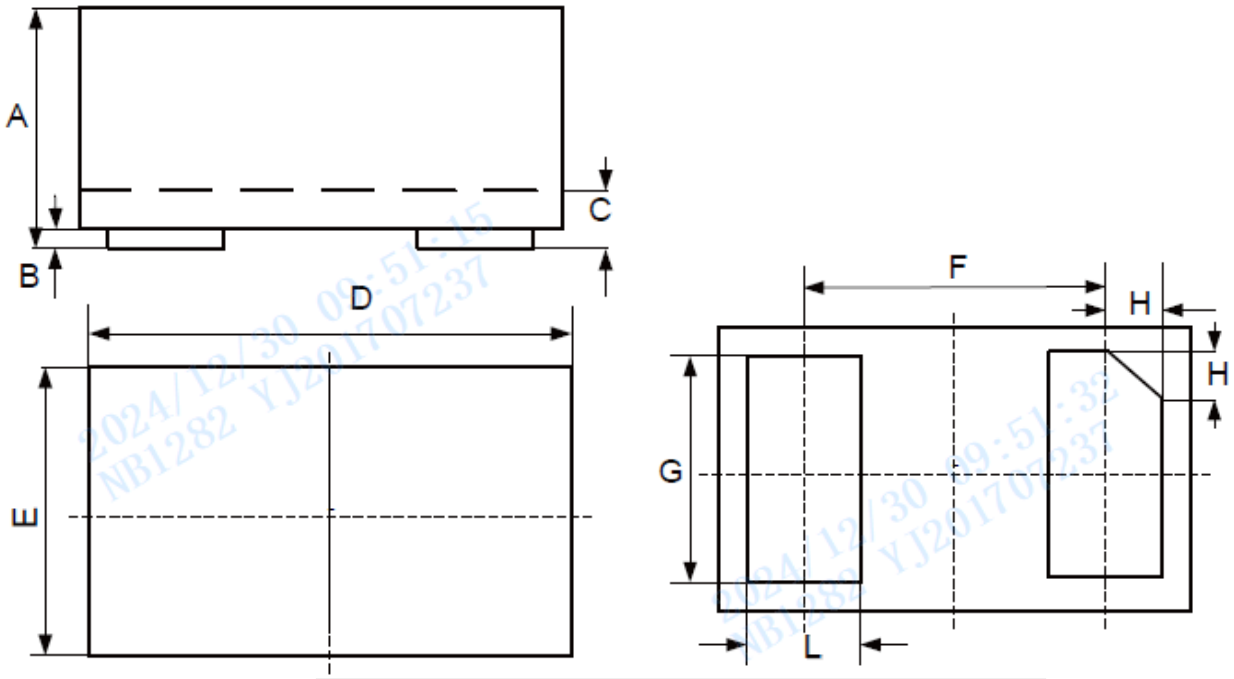

**Power derating vs. Ambient temperature**



**TLP Measurement**

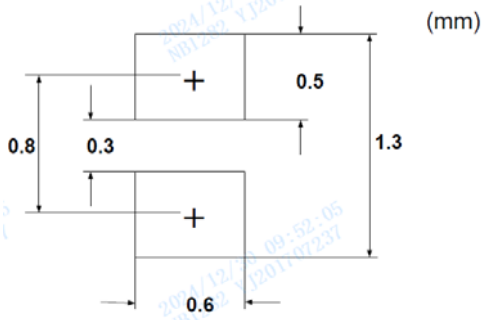


## ■ Outline Dimensions




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | 0.016 | 0.022 | 0.40 | 0.55 | |
| B | 0.000 | 0.002 | 0.00 | 0.05 | |
| C | 0.005 | 0.007 | 0.12 | 0.18 | |
| D | 0.037 | 0.041 | 0.95 | 1.05 | |
| E | 0.022 | 0.026 | 0.55 | 0.65 | |
| F | 0.026 | | 0.650 | | TYP. |
| G | 0.018 | 0.022 | 0.45 | 0.55 | |
| H | 0.003 | 0.007 | 0.07 | 0.17 | |
| L | 0.008 | 0.012 | 0.20 | 0.30 | |

## ■ Recommend land pattern (Unit:mm)




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

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

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 with 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.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website http:// www.21yangjie.com , or consult your nearest Yangjie's sales office for further assistance.