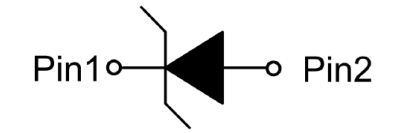
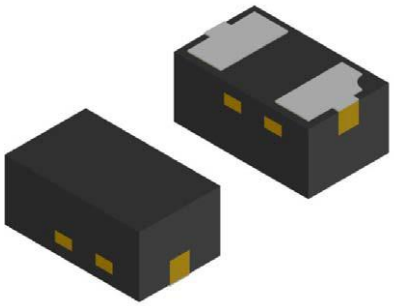
# 1-Line, Uni-directional, Transient Voltage Suppressor



**DFN1006-2L**

## Features

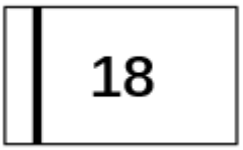
- Ultra small package
- Stand-off voltage: 18 V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-5(surge): 8A (8/20μs)
- Ultra-low capacitance: CJ = 31 pF typ
- Low leakage current
- Low clamping voltage
- RoHS Compliant

## Applications

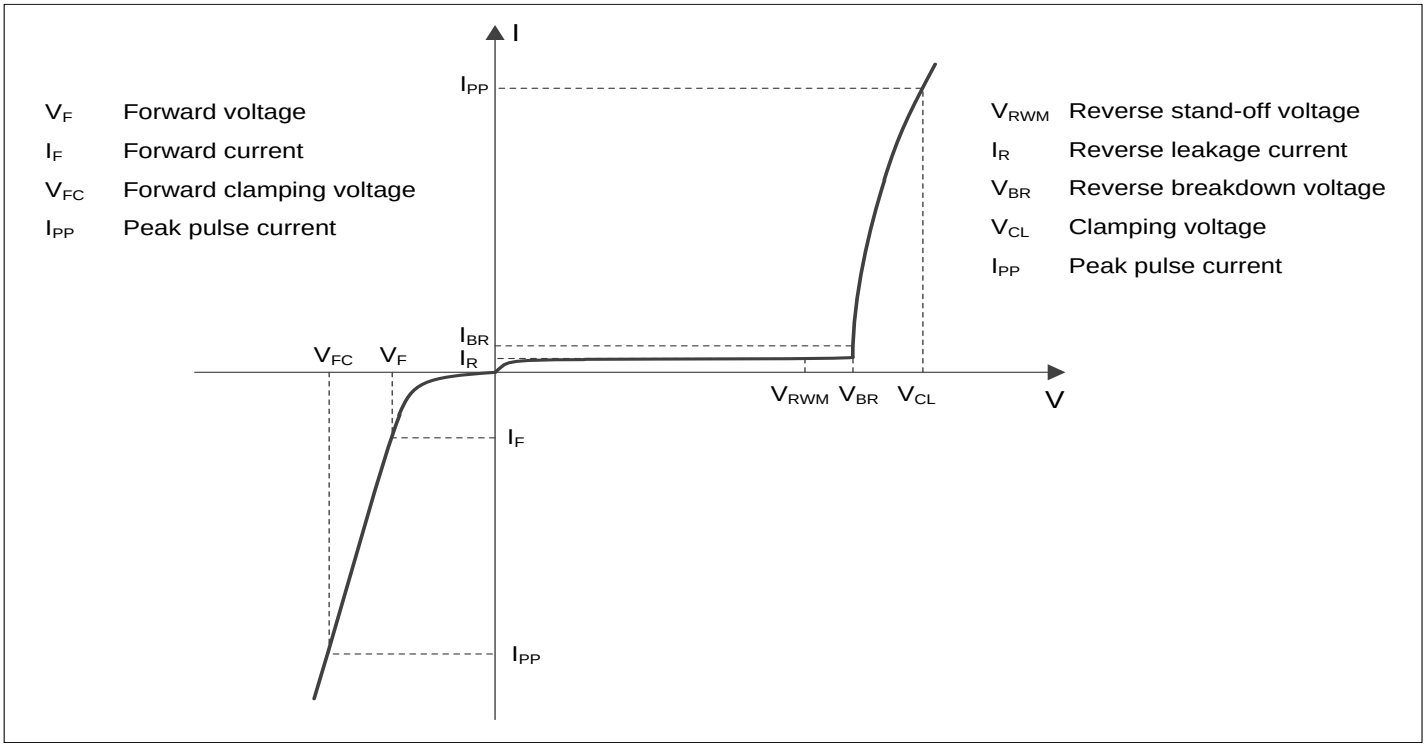
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players

## 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) | $P_{pk}$ | 304 | W |
| Peak pulse current ($t_p$ = 8/20μs) | $I_{PP}$ | 9 | A |
| ESD according to IEC61000-4-2 air discharge | $V_{ESD}$ | ±30 | KV |
| ESD according to IEC61000-4-2 contact discharge | | ±30 | 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 | | | | 18 |
| Reverse breakdown voltage | $V_{BR}$ | V | $I_{BR}$ = 1mA | 18.5 | | |
| Forward voltage | $V_F$ | V | $I_F$ = 10mA | | | 1.2 |
| Reverse leakage current | $I_R$ | μ A | $V_{RWM}$ =18V | | | 0.5 |
| Clamping voltage 3) | $V_{CL}$ | V | $I_{PP}$ = 8A, $t_p$ = 8/20μs | | 32 | 38 |
| Junction capacitance | $C_J$ | pF | $V_R$ = 0V, f = 1MHz | | 31 | |

(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 |
|---|---|---|---|---|---|
| ESD18VL | Approximate 0.9 | 10000 | 40000 | 400000 | Tae& reel |

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

**Fig1. 8/20μs waveform per IEC61000-4-5**

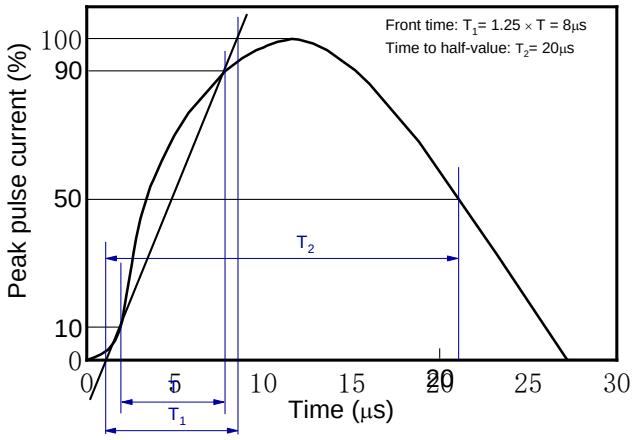



**Fig2. Contact discharge current waveform per IEC61000-4-2**

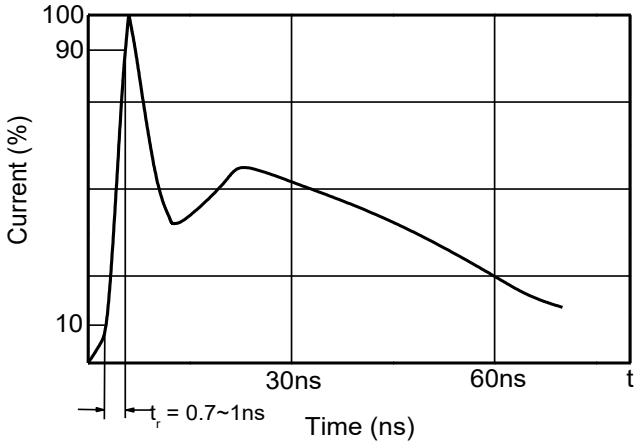



**Fig3. Clamping voltage vs. Peak pulse current**

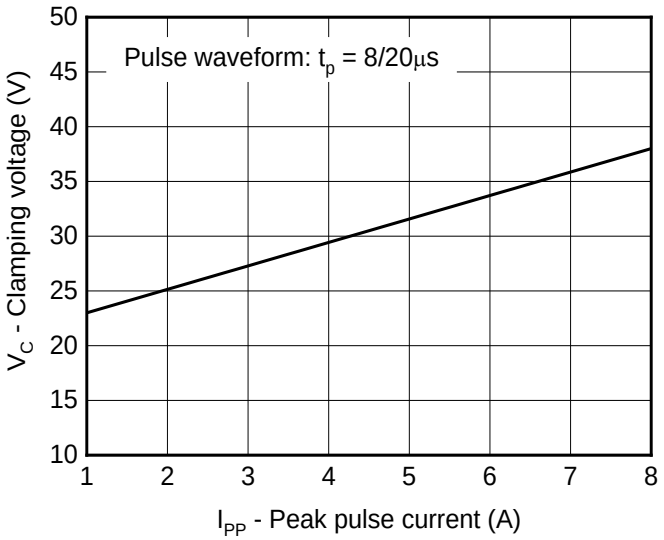



**Fig4. Capacitance vs. Reverse voltage**

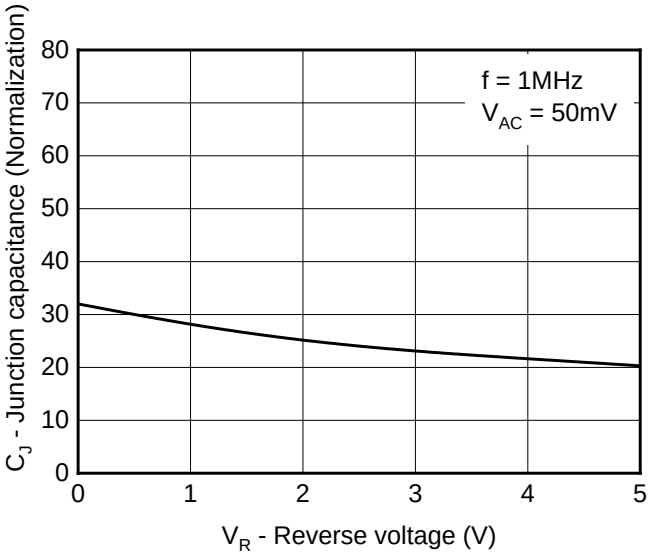



**Fig5. Non-repetitive peak pulse power vs. Pulse time**

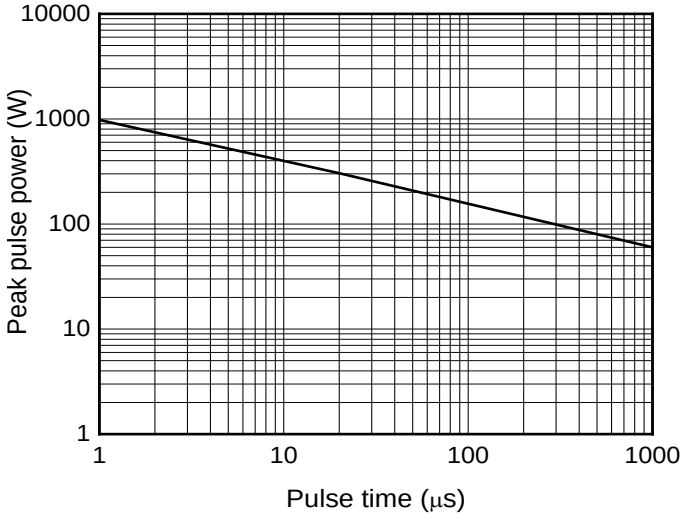



**Fig6. Power derating vs. Ambient temperature**

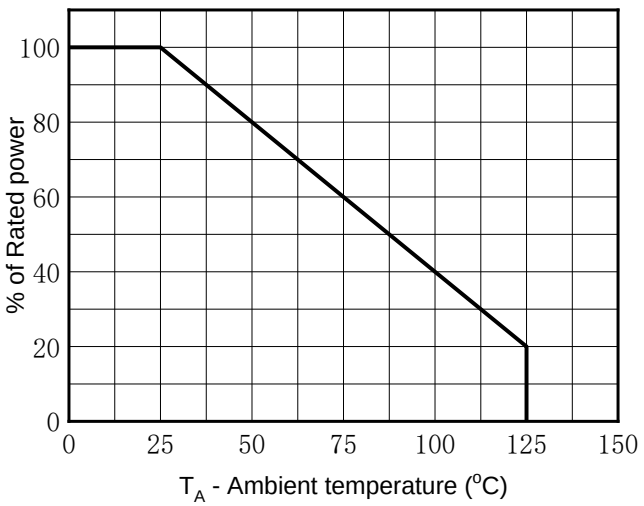
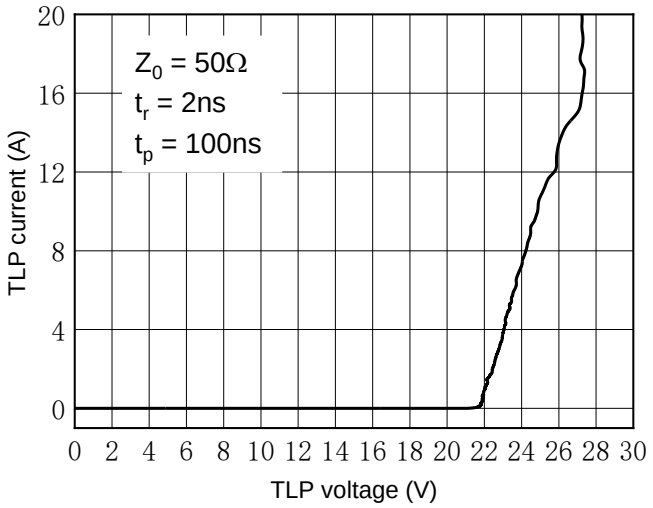
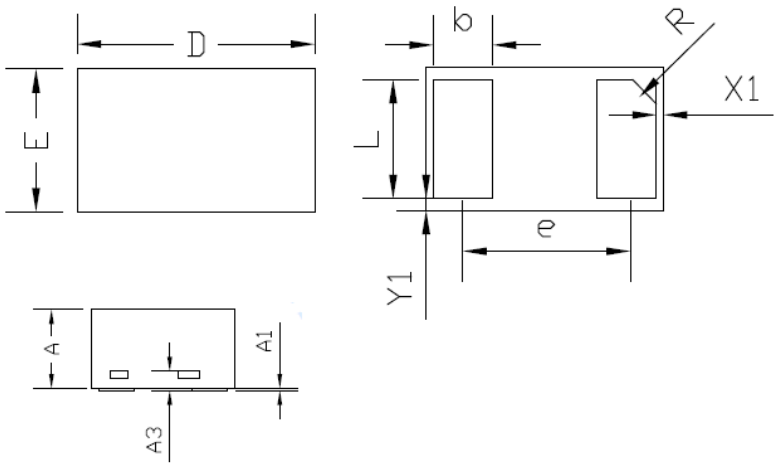


**Fig7.TLP Measurement**

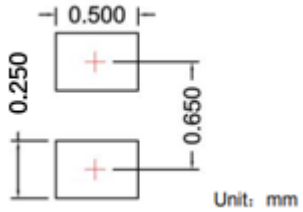


## ■ Outline Dimensions




| COMMON DIMENSION (MM) | | | |
|---|---|---|---|
| PKG | DFN1006-2L | | |
| REF. | MIN. | NOM. | MAX |
| A | 0.45 | 0.50 | 0.55 |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| b | 0.20 | 0.25 | 0.30 |
| L | 0.45 | 0.50 | 0.55 |
| e | | 0.650 | |
| R | 0.07 | 0.10 | 0.13 |
| X1 | 0.025 | --- | 0.065 |
| Y1 | 0.025 | --- | 0.065 |
| A1 | 0 | --- | 0.015 |
| A3 | 0.119 | --- | 0.15 |

## ■ Recommend land pattern (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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