

## Features

- Bi-Directional ESD Protection of One Line
- Low Clamping Voltage
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

|                                              |                  |                 |
|----------------------------------------------|------------------|-----------------|
| IEC61000-4-2 (ESD)                           | Air              | ±30KV           |
|                                              | Contact          | ±30KV           |
| Peak Pulse Current (8/20µs)                  | I <sub>PP</sub>  | 14A             |
| Peak Pulse Power (8/20µs) <sup>(Note2)</sup> | P <sub>PK</sub>  | 140W            |
| Junction Temperature Range                   | T <sub>J</sub>   | -55°C to +150°C |
| Storage Temperature Range                    | T <sub>STG</sub> | -55°C to +150°C |

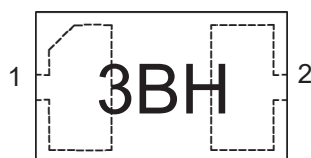
Note :

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Non-repetitive current pulse 8/20 µs exponential decay waveform according to IEC610 00-4-5.

## Internal Structure

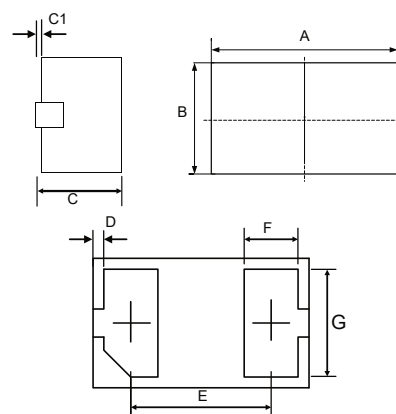


## Marking Code



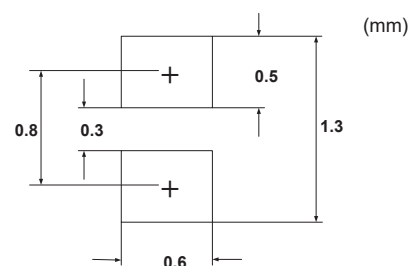
# Snap Back ESD Protection Device

## DFN1006-2L



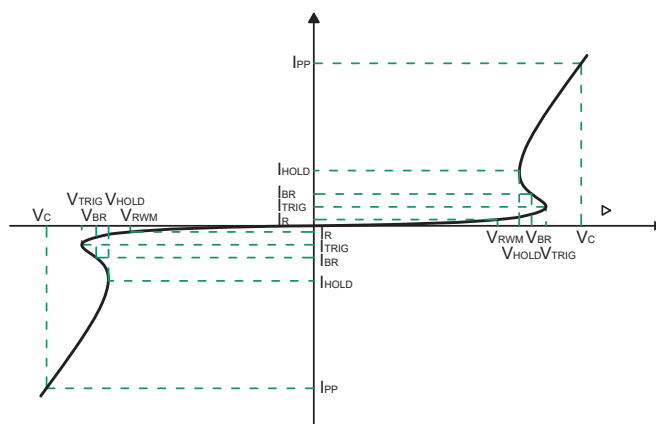
| DIMENSIONS |        |       |      |      |      |
|------------|--------|-------|------|------|------|
| DIM        | INCHES |       | MM   |      | NOTE |
|            | MIN    | MAX   | MIN  | MAX  |      |
| A          | 0.037  | 0.041 | 0.95 | 1.05 |      |
| B          | 0.022  | 0.026 | 0.55 | 0.65 |      |
| C          | 0.016  | 0.022 | 0.40 | 0.50 |      |
| C1         | ----   | 0.004 | ---- | 0.05 |      |
| D          | 0.001  | 0.003 | 0.02 | 0.08 |      |
| E          | 0.026  |       | 0.65 |      | TYP. |
| F          | 0.008  | 0.012 | 0.20 | 0.30 |      |
| G          | 0.018  | 0.022 | 0.45 | 0.55 |      |

## SUGGESTED SOLDER PAD LAYOUT



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Symbol     | Parameter                           |
|------------|-------------------------------------|
| $V_{RWM}$  | Peak Reverse Working Voltage        |
| $I_R$      | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$   | Breakdown Voltage @ $I_T$           |
| $I_{PP}$   | Maximum Reverse Peak Pulse Current  |
| $V_C$      | Clamping Voltage @ $I_{PP}$         |
| $V_{TRIG}$ | Reverse Trigger Voltage             |
| $I_{TRIG}$ | Reverse Trigger Current             |
| $V_{HOLD}$ | Reverse Holding Voltage             |
| $I_{HOLD}$ | Reverse Holding Current             |
| $C_J$      | Junction Capacitance                |



**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

| Parameter                           | Symbol    | Conditions                                  | Min. | Typ. | Max. | Units         |
|-------------------------------------|-----------|---------------------------------------------|------|------|------|---------------|
| Reverse Working Voltage             | $V_{RWM}$ |                                             |      |      | 3.3  | V             |
| Reverse Breakdown Voltage           | $V_{BR}$  | $I_{BR}=1\text{mA}$                         | 3.7  |      | 5    | V             |
| Reverse Leakage Current             | $I_R$     | $V_{RWM}=3.3\text{V}$                       |      |      | 1    | $\mu\text{A}$ |
| Clamping Voltage <sup>Note1</sup>   | $V_C$     | $I_{PP}=14\text{A}$ , $t_p=8/20\mu\text{s}$ |      | 8.8  | 10   | V             |
| Junction Capacitance                | $C_J$     | $V_R=0\text{V}$ , $f=1\text{MHz}$           |      | 29   | 50   | pF            |
| Dynamic Resistance <sup>Note2</sup> | $R_{DYN}$ | TLP, $t_p=100\text{ns}$                     |      | 0.38 |      | $\Omega$      |

Note :

1.Non-repetitive current pulse 8/20 $\mu\text{s}$  exponential decay waveform according to IEC61000-4-5.

2.TLP parameter:  $Z_0=50\Omega$ ,  $t_p=100\text{ns}$ ,  $t_r=2\text{ns}$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

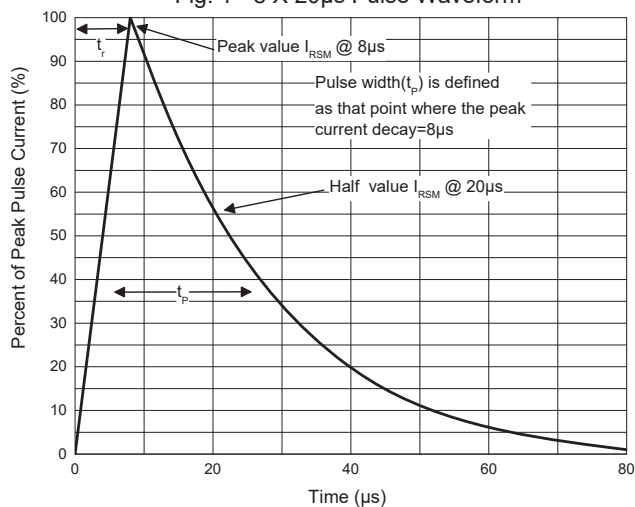


Fig. 2 - Non-Repetitive Peak Pulse Power

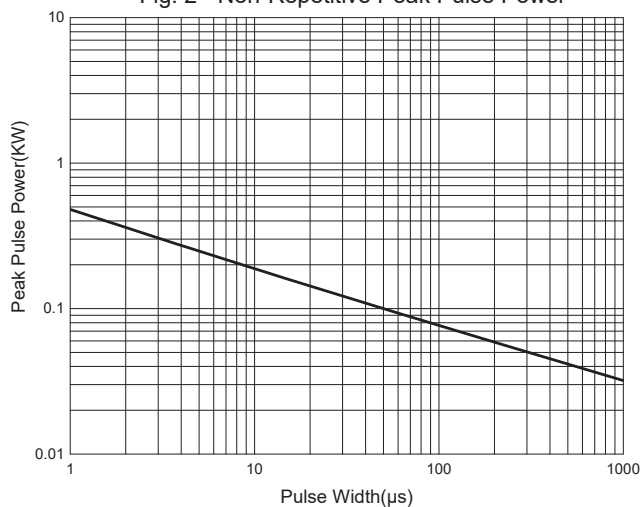


Fig. 3 - Capacitance Characteristics

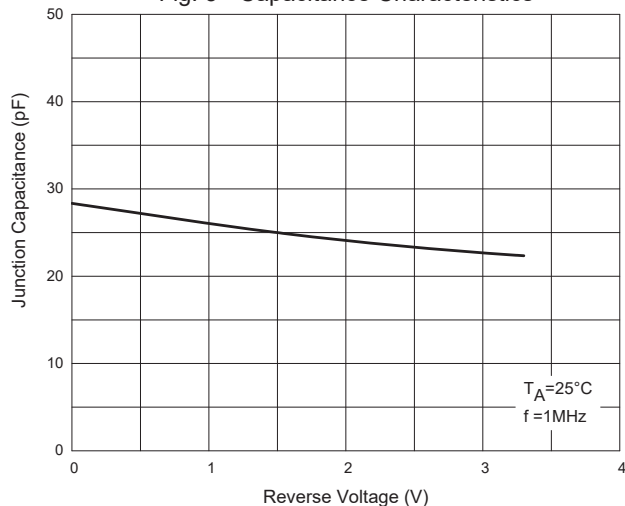


Fig. 4 - Clamping Voltage Characteristics

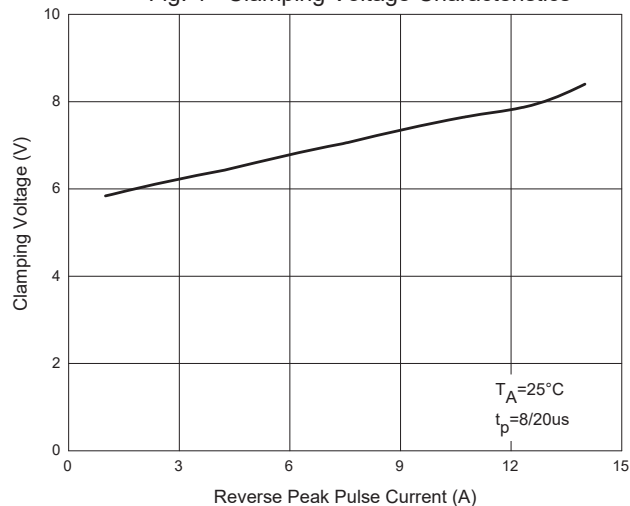


Fig. 5 - TLP Curve

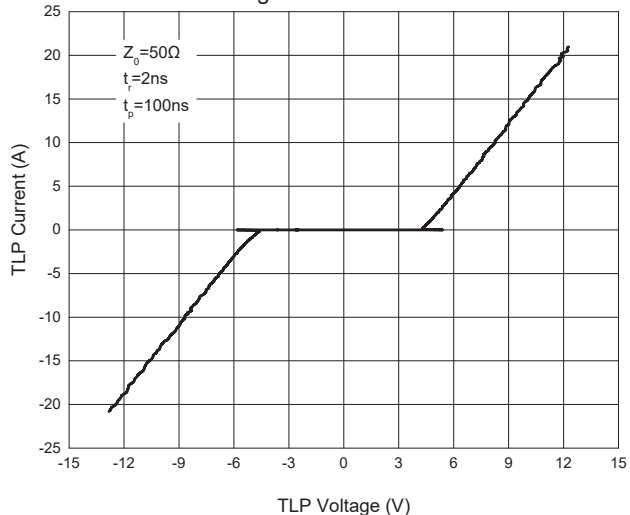
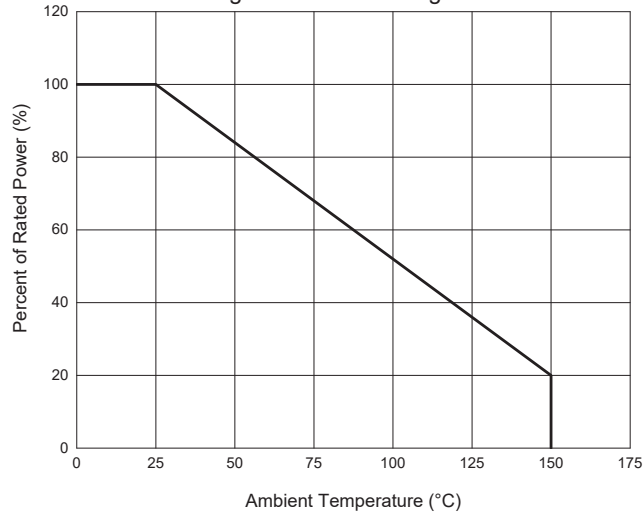


Fig. 6 - Pulse Derating Curve



## Ordering Information

| Device         | Packing                |
|----------------|------------------------|
| Part Number-TP | Tape&Reel: 10Kpcs/Reel |

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