## Features

- Ultra Low Operating Voltage
- Ultra Low Clamping Voltage
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)


## Maximum Ratings

- Operating Junction Temperature Range: $-55^{\circ} \mathrm{C}$ to $+125^{\circ} \mathrm{C}$
- Storage Temperature Range: $-55^{\circ} \mathrm{C}$ to $+150^{\circ} \mathrm{C}$

| IEC61000-4-2(ESD) | Air <br> Contact | $\pm 30 \mathrm{KV}$ <br> $\pm 30 \mathrm{KV}$ |
| :--- | :---: | :---: |
| IEC61000-4-4 (EFT) @5/50ns |  | 40 A |
| IEC61000-4-5(Surge) @8/20us | $\mathrm{I}_{\mathrm{PP}}$ | 8 A |
| Peak pulse power(tp=8/20us) | $\mathrm{P}_{\mathrm{PP}}$ | 80 W |

## Internal Structure



## ESD Protection Device

## DFN1006-2



| DIMENSIONS |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| DIM | INCHES |  | MM |  | NOTE |
|  | MIN | MAX | MIN | MAX |  |
| A | 0.018 | 0.022 | 0.45 | 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 |  |

SUGGESTED SOLDER PAD LAYOUT


Electrical Characteristics per line @ $\mathbf{2 5}^{\circ} \mathrm{C}$ (Unless Otherwise Specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Reverse Stand-Off Voltage | $\mathrm{V}_{\mathrm{RWM}}$ |  |  |  | 3.3 | V |
| Punch-Through Voltage | $\mathrm{V}_{\mathrm{PT}}$ | $\mathrm{I}_{\mathrm{T}}=2 \mu \mathrm{~A}$ | 3.8 |  |  | V |
| Snap-Back Voltage | $\mathrm{V}_{\mathrm{SB}}$ | $\mathrm{I}_{\mathrm{T}}=50 \mathrm{~mA}$ | 3.5 |  |  | V |
| Reverse Leakage Current | $\mathrm{I}_{\mathrm{R}}$ | $\mathrm{V}_{\mathrm{RWM}}=3.3 \mathrm{~V}$ |  | 0.005 | 0.05 | $\mu \mathrm{~A}$ |
| Clamping Voltage | $\mathrm{V}_{\mathrm{C}}$ | $\mathrm{I}_{\mathrm{PP}}=1 \mathrm{~A}, \mathrm{t}_{\mathrm{P}}=8 / 20 \mu \mathrm{~s}$ |  |  | 6 | V |
| Clamping Voltage | $\mathrm{V}_{\mathrm{C}}$ | $\mathrm{I}_{\mathrm{PP}}=5 \mathrm{~A}, \mathrm{t}_{\mathrm{P}}=8 / 20 \mu \mathrm{~s}$ |  |  | 8 | V |
| Junction Capacitance | $\mathrm{C}_{\mathrm{J}}$ | $\mathrm{V}_{\mathrm{R}}=0 \mathrm{~V}, \mathrm{f}=1 \mathrm{MHz}$ |  | 12.5 | 25 | pF |

## Curve Characteristics

Fig. 1-8 X $20 \mu \mathrm{~s}$ Pulse Waveform


Fig. 3 - Capacitance Characteristics


Fig. 2 - Pulse Derating Curve


Fig. 4 - Clamping Voltage Characteristics


## Ordering Information

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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