



Discription

The HESDNC3V3B1AF-A protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



DFN1006-2L

Features

- ★ Small Body Outline Dimensions
- ★ Low Body Height
- ★ Peak Power up to 105 Watts @ 8 x 20 μ s Pulse
- ★ Low Leakage current
- ★ Response Time is Typically < 1 ns
- ★ ESD Rating of Class 3 per Human Body Model



Circuit Diagram

Ordering Information

| Product ID | Pack | Qty(PCS) |
|-----------------|------------|----------|
| HESDNC3V3B1AF-A | DFN1006-2L | 10000 |

Absolute Ratings (T_{amb}=25°C)

| Symbol | Parameter | Value | Units |
|------------------|--|-------------|-------|
| P _{pp} | Peak Pulse Power (t _p = 8/20 μ s) | 100 | W |
| T _L | Maximum lead temperature for soldering during 10s | 260 | °C |
| T _{stg} | Storage Temperature Range | -55 to +150 | °C |
| T _{op} | Operating Temperature Range | -55 to +150 | °C |
| T _j | Maximum junction temperature | 150 | °C |
| | IEC61000-4-2 (ESD) air discharge contact discharge | ±30 ±30 | KV |
| | IEC61000-4-4 (EFT) | 40 | A |



Electrical Characteristics

| Device | V_{RWM} (V) | I_R (μ A) @ V_{RWM} | V_{BR} (V) @ I_T (Note 1) | | I_T | V_C (V) @ $I_{PP} = 1$ A (Note 2) | V_C (V) @ MAX I_{PP} (Note 2) | I_{PP} (A) (Note 2) | P_{PK} (W) (Note 2) | C (pF) | $R_{DYN}(\Omega)$ @ $t_p=100$ ns(TLP) |
|-----------------|------------------|---------------------------------|----------------------------------|-----|-------|---|---|--------------------------|--------------------------|--------|---|
| | Max | Max | Min | Max | mA | Max | Max | Max | Max | Typ. | Typ. |
| HESDNC3V3B1AF-A | 3.3 | 0.05 | 5 | 6.5 | 1.0 | 7 | 11 | 99 | 100 | 15 | 0.2 |

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.
- Surge current waveform per Figure 1.

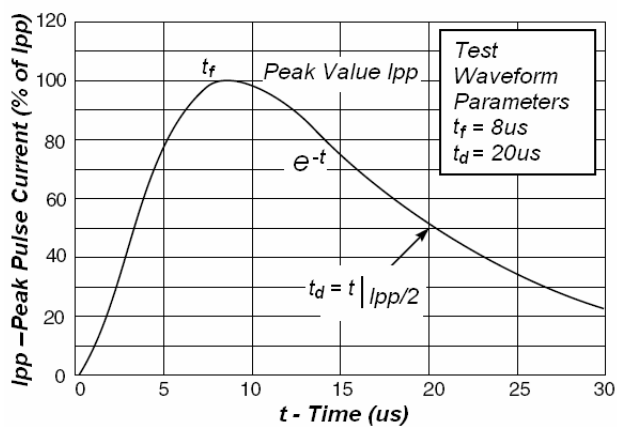


Fig1. Pulse Waveform

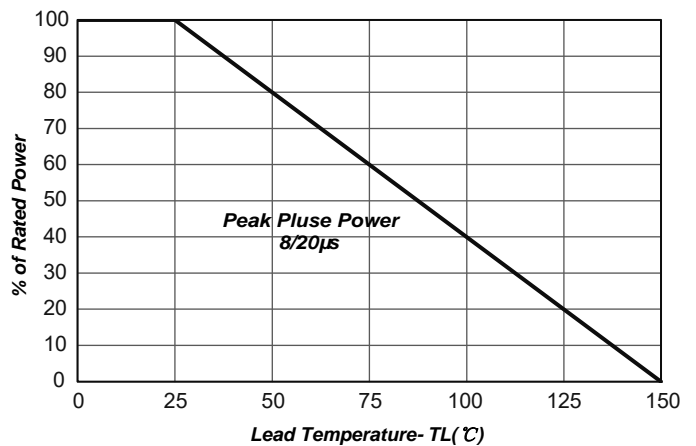


Fig2. Power Derating Curve

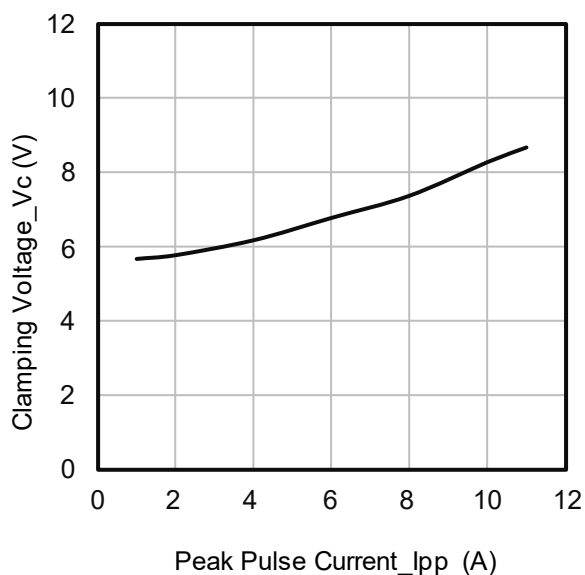


Fig3. Clamping Voltage vs. Peak Pulse Current

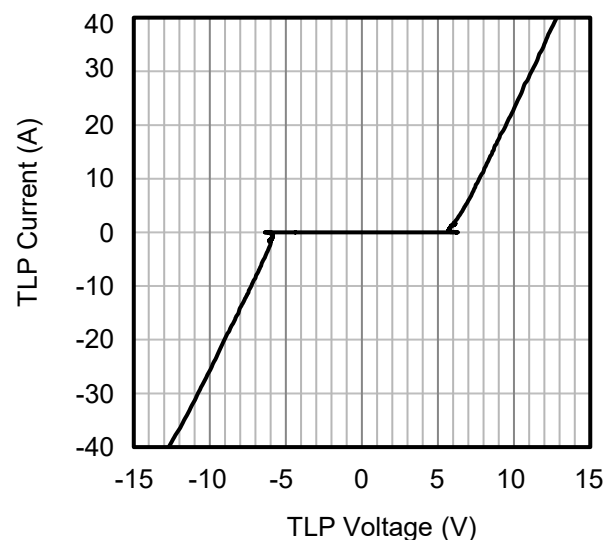
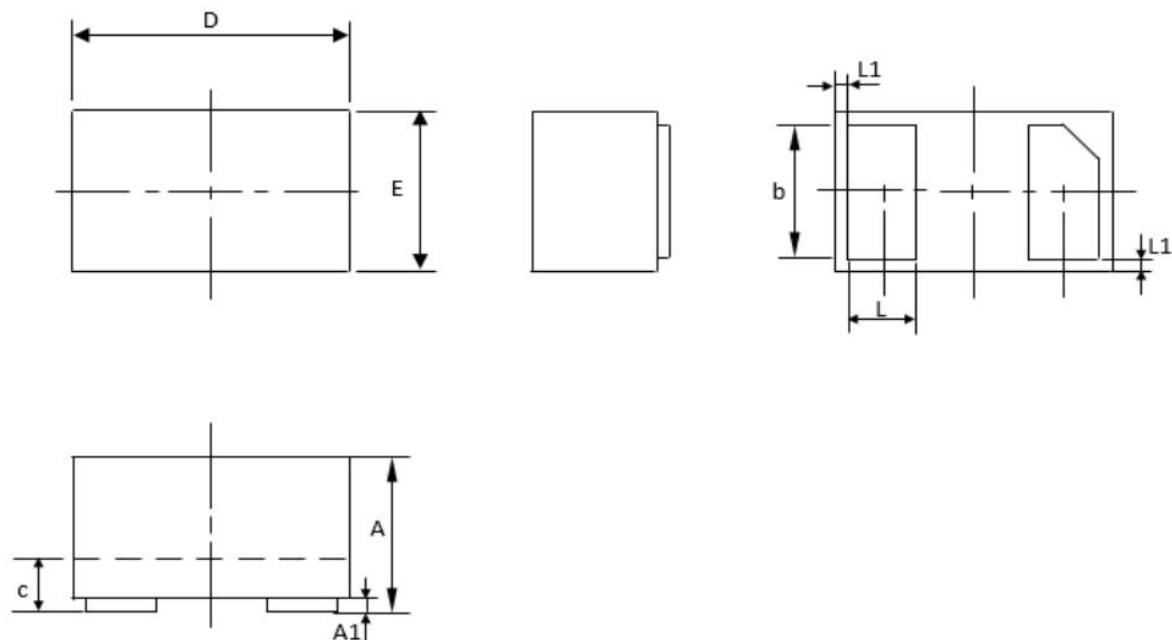


Fig4. TLP Measurement



Outline And Dimensions



| DFN1006-2L | | | |
|----------------------|-------|------|-------|
| Dim | Min | Typ. | Max |
| A | 0.46 | 0.48 | 0.50 |
| A1 | 0 | 0.02 | 0.05 |
| b | 0.45 | 0.5 | 0.55 |
| c | 0.1 | 0.12 | 0.14 |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| L | 0.20 | 0.25 | 0.30 |
| L1 | 0.035 | 0.05 | 0.065 |
| h | 0.07 | 0.12 | 0.17 |
| All Dimensions in mm | | | |



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