



## Discription

The HESD5581N2T5G 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  
(SOD-882)

## Features

- ★ Low Leakage
- ★ Response Time is Typically < 1 ns
- ★ ESD Rating of Class 3 per Human Body Model
- ★ IEC61000-4-2 Level 4 ESD Protection
- ★ These are Pb-Free Devices
- ★ We declare that the material of product compliance with RoHS requirements and Halogen Free.



Circuit Diagram

## Ordering Information

| Product ID    | Pack                | Qty(PCS) |
|---------------|---------------------|----------|
| HESD5581N2T5G | DFN1006-2L(SOD-882) | 10000    |

## Absolute Ratings(Tamb = 25°C)

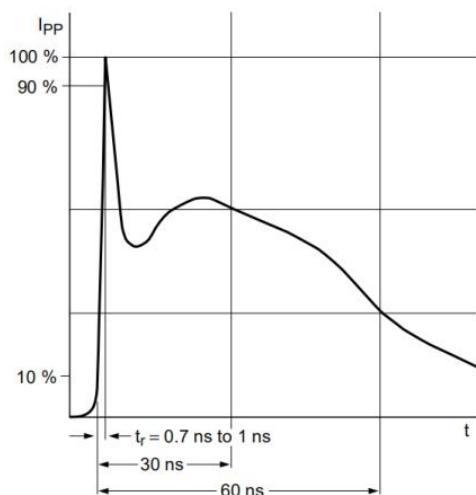
| Symbol           | Parameter                                         | Value                              | Units            |
|------------------|---------------------------------------------------|------------------------------------|------------------|
| P <sub>PP</sub>  | Peak Pulse Power (t <sub>p</sub> = 8/20μs)        | 90                                 | W                |
| T <sub>L</sub>   | Maximum lead temperature for soldering during 10s | 260                                | °C               |
| T <sub>stg</sub> | Storage Temperature Range                         | -55 to +150                        | °C               |
| T <sub>op</sub>  | Operating Temperature Range                       | -40 to +125                        | °C               |
| T <sub>j</sub>   | Maximum junction temperature                      | 150                                | °C               |
|                  | IEC61000-4-2 (ESD)                                | air discharge<br>contact discharge | ±30<br>±30<br>KV |



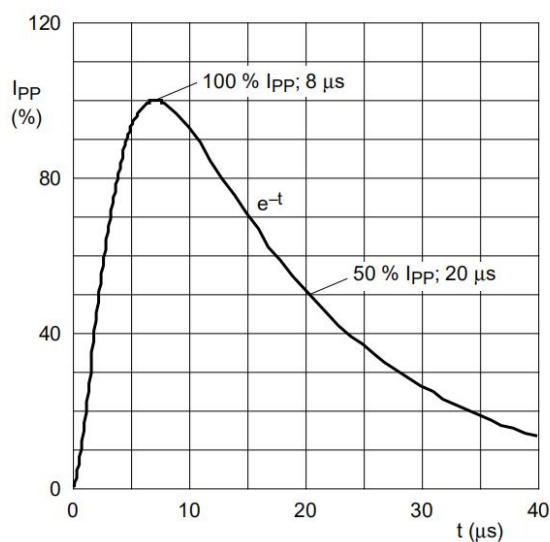
## Electrical Characteristics

| Symbol    | Parameter                 | Test Condition                    | Min | Typ | Max | Units |
|-----------|---------------------------|-----------------------------------|-----|-----|-----|-------|
| $V_{RWM}$ | Reverse Working Voltage   |                                   |     |     | 5.0 | V     |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1mA$                       | 5.8 |     | 8.2 | V     |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 5.0V$                  |     |     | 100 | nA    |
| $V_C$     | Clamping Voltage          | $I_{PP} = 9A$ , $t_p = 8/20\mu s$ |     |     | 10  | V     |
| $C_J$     | Junction Capacitance      | $V_R = 0V$ , $f = 1MHz$           |     | 15  | 20  | pF    |

## Typical Characteristics



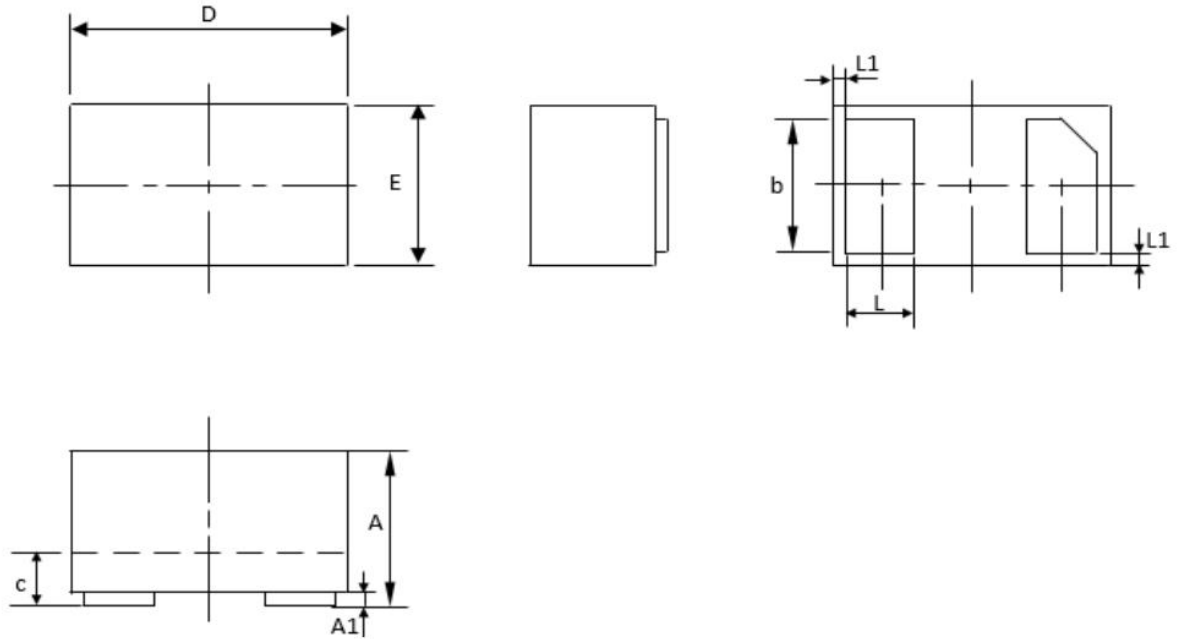
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20 $\mu s$  pulse)



## Outline And Dimensions



| DFN1006-2L(SOD-882)  |       |      |       |
|----------------------|-------|------|-------|
| 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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