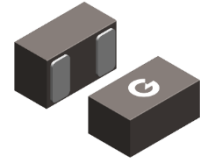


## Features

- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD):  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)
- 500 Watts peak pulse power ( $t_p = 8/20\mu\text{s}$ )
- Low clamping voltage
- Working voltage:  $V_{RWM} = 4.5\text{V}$
- Low reverse clamping voltage
- RoHS compliant with Halogen-free

HF



DFN1006-2

## Mechanical Data

- Case: DFN1006-2
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

## Ordering Information

| Part Number | Package   | Shipping Quantity       | Marking Code |
|-------------|-----------|-------------------------|--------------|
| PSD4V5BL    | DFN1006-2 | 10000 pcs / Tape & Reel | P45          |

## Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                                      | Symbol      | Value    | Unit |
|------------------------------------------------|-------------|----------|------|
| IEC 61000-4-2; ESD (Air)                       | $V_{ESD-A}$ | $\pm 30$ | kV   |
| IEC 61000-4-2; ESD (Contact)                   | $V_{ESD-C}$ | $\pm 30$ | kV   |
| Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )   | $P_{PP}$    | 500      | W    |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ ) | $I_{PP}$    | 40       | A    |

## Thermal Characteristics

| Parameter                  | Symbol    | Value           | Unit             |
|----------------------------|-----------|-----------------|------------------|
| Junction Temperature Range | $T_J$     | $-55 \sim +150$ | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_{STG}$ | $-55 \sim +150$ | $^\circ\text{C}$ |

## Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                 | Symbol     | Test Condition                               | Min. | Typ. | Max. | Unit     |
|---------------------------|------------|----------------------------------------------|------|------|------|----------|
| Reverse Stand-off Voltage | $V_{RWM}$  |                                              | -    | -    | 4.5  | V        |
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_T = 1\text{mA}$                           | 4.7  | -    | -    | V        |
| Reverse Leakage Current   | $I_R$      | $V_{RWM} = 4.5\text{V}$                      | -    | -    | 50   | nA       |
| Clamping Voltage          | $V_C$      | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$  | -    | 5.5  | 8    | V        |
|                           |            | $I_{PP} = 34\text{A}, t_p = 8/20\mu\text{s}$ | -    | 10.2 | 12.5 | V        |
|                           |            | $I_{PP} = 40\text{A}, t_p = 8/20\mu\text{s}$ | -    | 12.5 | 15   | V        |
|                           |            | $I_{PP} = 16\text{A}, t_p = 100\text{ns}$    | -    | 6.0  | -    | V        |
| Dynamic Resistance        | $R_{DYN}$  | $t_p = 100\text{ns}$                         | -    | 0.1  | -    | $\Omega$ |
| Junction Capacitance      | $C_J$      | $V_R = 0\text{V}, f = 1\text{MHz}$           | -    | 66   | 75   | pF       |

Ratings and Characteristic Curves (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

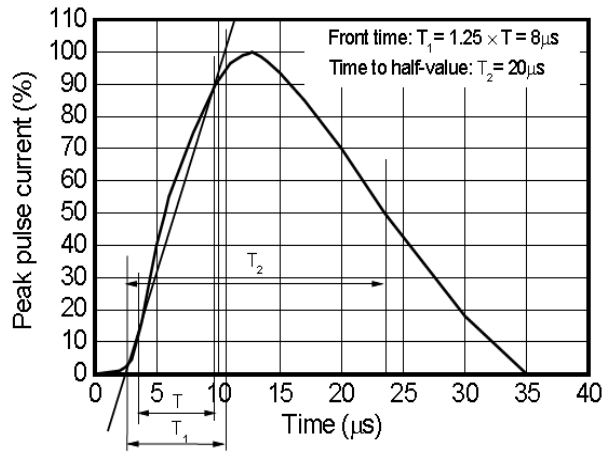


Fig 1 8/20  $\mu\text{s}$  waveform per IEC61000-4-5

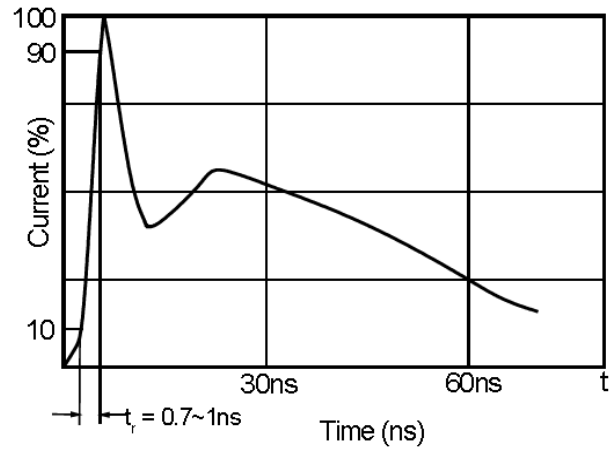


Fig 2 ESD pulse waveform according to IEC61000-4-2

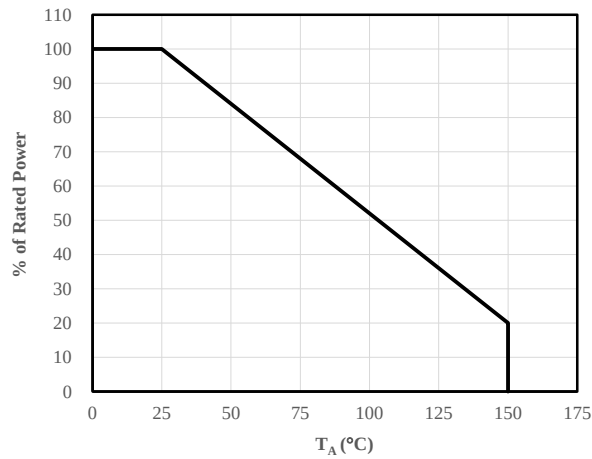


Fig 3 Power Derating Curve

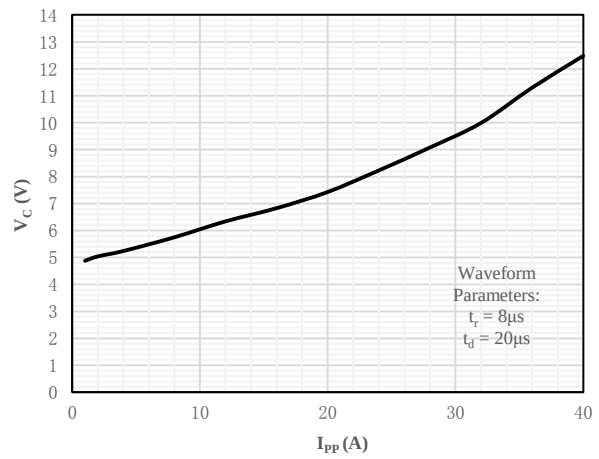


Fig 4 Clamping Voltage vs. Peak Pulse Current

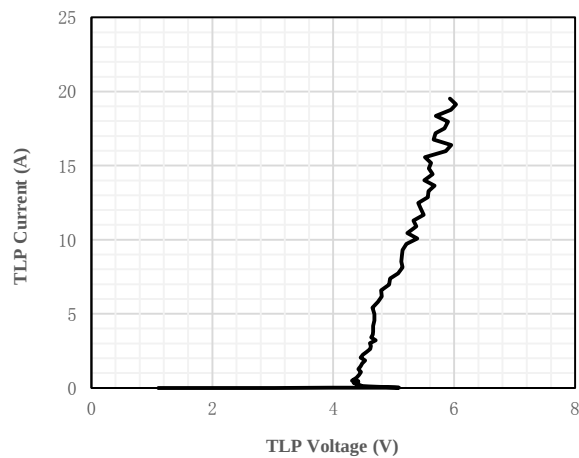
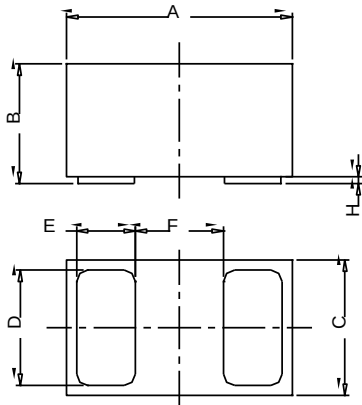


Fig 5 TLP Measurement

Package Outline Dimensions (Unit: mm)



| DFN1006-2 |      |      |       |
|-----------|------|------|-------|
| Dimension | Min. | Typ. | Max.  |
| A         | 0.95 | 1.00 | 1.075 |
| B         | 0.45 | 0.50 | 0.55  |
| C         | 0.55 | 0.60 | 0.675 |
| D         | 0.45 | 0.50 | 0.55  |
| E         | 0.20 | 0.25 | 0.30  |
| F         | -    | 0.40 | -     |
| H         | 0    | 0.03 | 0.05  |

Package Outline Dimensions (Unit: mm)

DFN1006-2

