

## Features

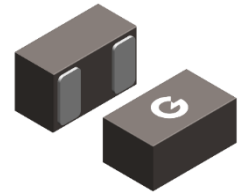
- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD):  $\pm 30$  kV (air),  $\pm 30$  kV (contact)
- Working voltage:  $V_{RWM} = 5V$
- 1-line ESD protection
- Low Leakage current
- Very low load capacitance
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



## Applications

- Cellular Handsets & Accessories
- Hand Held Portable Applications
- Audio Protection
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds



## 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

DFN1006-2

## Ordering Information

| Part Number | Package   | Shipping Quantity       | Marking Code |
|-------------|-----------|-------------------------|--------------|
| TSD05BL     | DFN1006-2 | 10000 pcs / Tape & Reel | 05B          |

## 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 ( $t_p = 8/20\mu\text{s}$ )   | $P_{PP}$    | 300      | W    |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ ) | $I_{PP}$    | 22       | A    |

## Thermal Characteristics

| Parameter                 | Symbol    | Value           | Unit             |
|---------------------------|-----------|-----------------|------------------|
| Junction Temperature      | $T_J$     | $-55 \sim +125$ | $^\circ\text{C}$ |
| 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 | $V_{RWM}$  |                                              | -    | -    | 5    | V        |
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_T = 1\text{mA}$                           | 6    | 7    | 8.5  | V        |
| Reverse Leakage Current   | $I_R$      | $V_{RWM} = 5\text{V}$                        | -    | -    | 200  | nA       |
| Clamping Voltage          | $V_C$      | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$  | -    | 7.5  | 10   | V        |
|                           |            | $I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$  | -    | 8    | 11.5 | V        |
|                           |            | $I_{PP} = 22\text{A}, t_p = 8/20\mu\text{s}$ | -    | 12   | 14   | V        |
|                           |            | $I_{PP} = 4\text{A}, t_p = 100\text{ns}$     | -    | 7.86 | -    | V        |
|                           |            | $I_{PP} = 16\text{A}, t_p = 100\text{ns}$    | -    | 9.01 | -    | V        |
| Dynamic Resistance        | $R_{DYN}$  | TLP= 10/100ns                                | -    | 0.09 | -    | $\Omega$ |
| Junction Capacitance      | $C_J$      | $V_R = 0\text{V}, f = 1\text{MHZ}$           | -    | 40   | 50   | pF       |

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

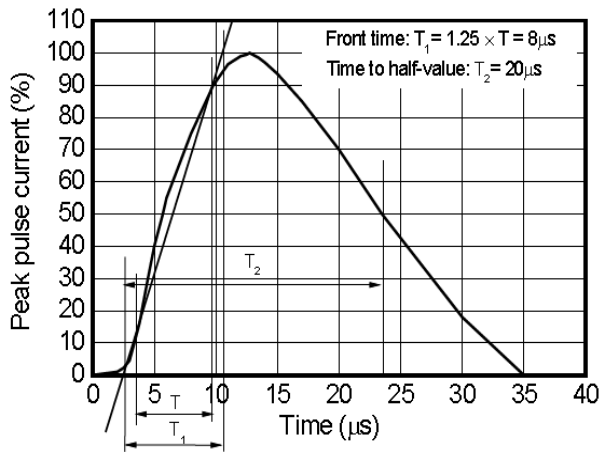


**Fig 1** 8/20  $\mu\text{s}$  waveform per IEC61000-4-5

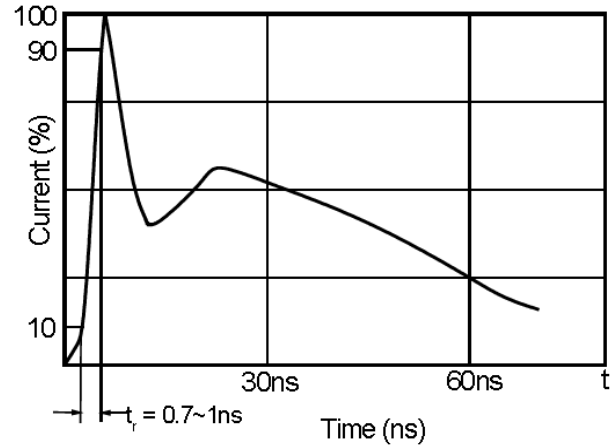


**Fig 2** ESD pulse waveform according to IEC61000-4-2

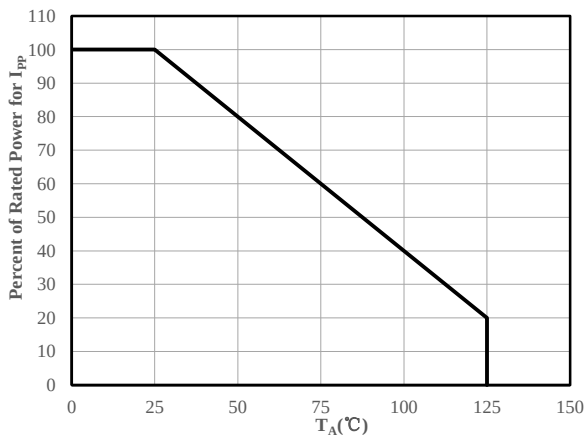


**Fig 3** Power Derating Curve

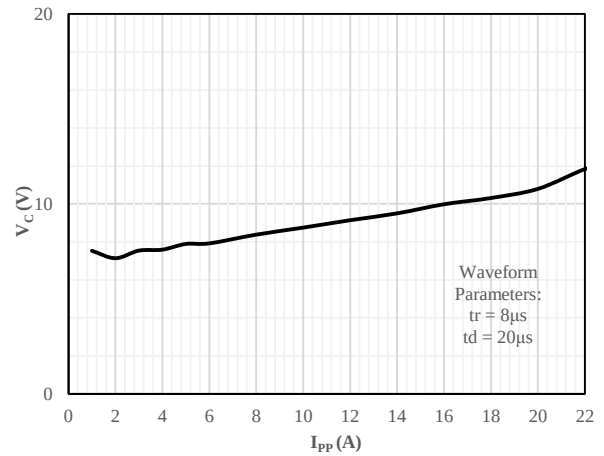


**Fig 4** Clamping Voltage vs. Peak Pulse Current

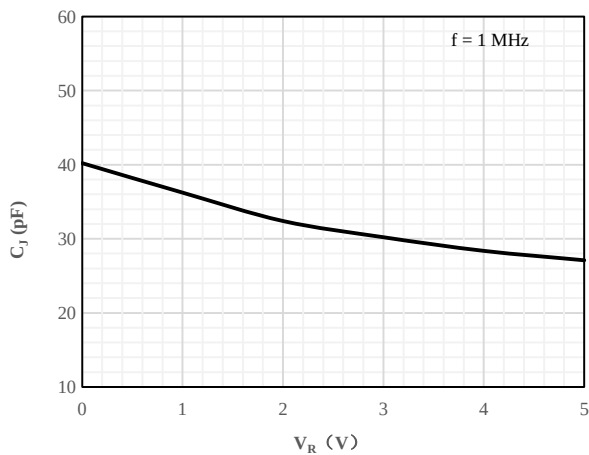


**Fig 5** Junction Capacitance vs. Reverse Voltage

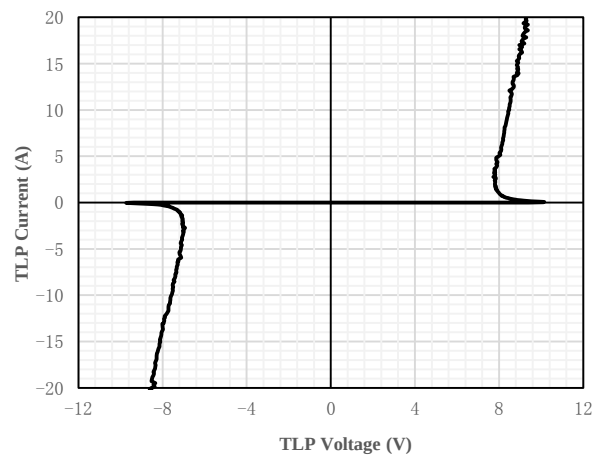
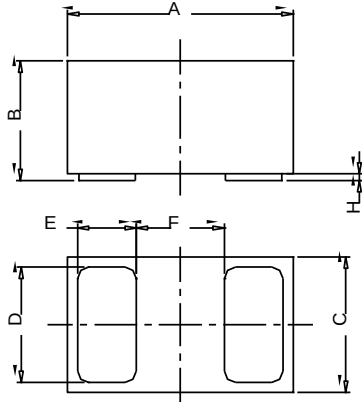


**Fig 6** TLP Measurement

### 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  |

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#### DFN1006-2

