

## Product Summary

The GESDB5V0Y1S is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer.

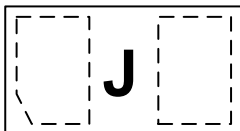
## Feature

- Low reverse stand-off voltage: 5V Max.
- Low capacitance: 3pF(Typ.)
- Low leakage current
- Fast response time
- ESD Rating of Class 3(>16kV) Per Human Body Model
- IEC 61000-4-2 Level 4 ESD protection

## Application

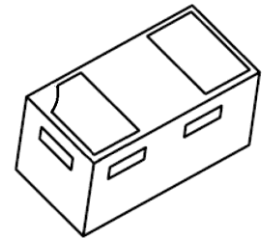
- Computers and peripherals
- Portable electronics
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Other electronic equipment communication systems

## Marking:

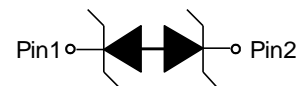


Front Side  
J=Device Code

DFN1006-2L



Schematic diagram



## Absolute Maximum Ratings ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter  | Symbol               | Value     | Unit               |
|--|----------------------|-----------|--------------------|
| IEC 61000-4-2 ESD Voltage                              | Air Model            | $\pm 15$  | kV                 |
| IEC 61000-4-2 ESD Voltage                              | Contact Model        | $\pm 8$   |                    |
| ESD Voltage  | Per Human Body Model | $\pm 16$  |                    |
| ESD Voltage  | Machine Model        | $\pm 0.4$ |                    |
| Peak Pulse Power                                       | $P_{PP}^{2)}$        | 45        | W                  |
| Peak Pulse Current                                     | $I_{PP}^{2)}$        | 3         | A                  |
| Lead Solder Temperature – Maximum (10 Second Duration) | $T_L$                | 260       | $^{\circ}\text{C}$ |
| Junction Temperature                                   | $T_j$                | 150       | $^{\circ}\text{C}$ |
| Storage Temperature                                    | $T_{stg}$            | -55~ +150 | $^{\circ}\text{C}$ |

- 1) Device stressed with ten non-repetitive ESD pulses.
- 2) Non-repetitive current pulse  $8/20\mu\text{s}$  exponential decay waveform according to IEC61000-4-5.

## ESD standards compliance

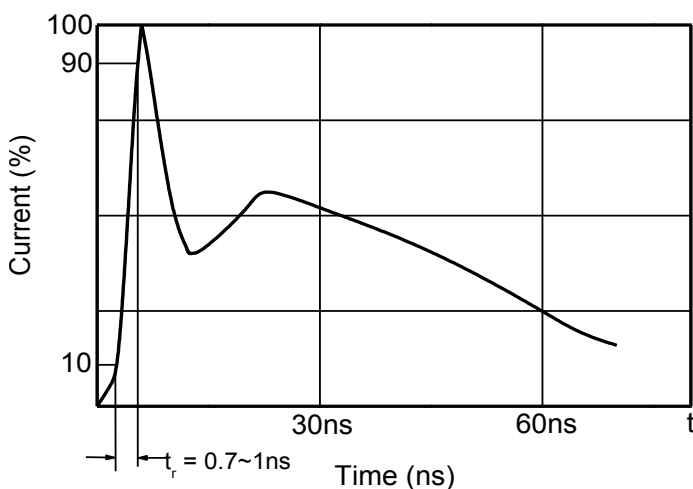
### IEC61000-4-2 Standard

| Contact Discharge |                 | Air Discharge |                 |
|-------------------|-----------------|---------------|-----------------|
| Level             | Test Voltage kV | Level         | Test Voltage kV |
| 1                 | 2               | 1             | 2               |
| 2                 | 4               | 2             | 4               |
| 3                 | 6               | 3             | 8               |
| 4                 | 8               | 4             | 15              |

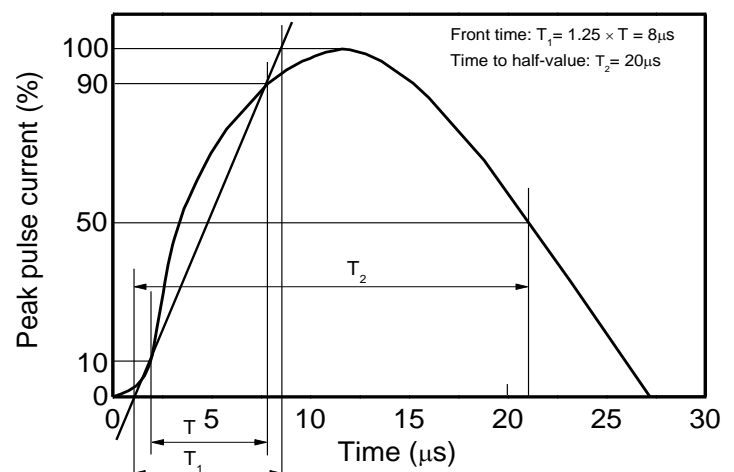
### JESD22-A114-B Standard

| ESD Class | Human Body Discharge V |
|-----------|------------------------|
| 0         | 0~249                  |
| 1A        | 250~499                |
| 1B        | 500~999                |
| 1C        | 1000~1999              |
| 2         | 2000~3999              |
| 3A        | 4000~7999              |
| 3B        | 8000~15999             |

### Contact discharge current waveform per IEC61000-4-2

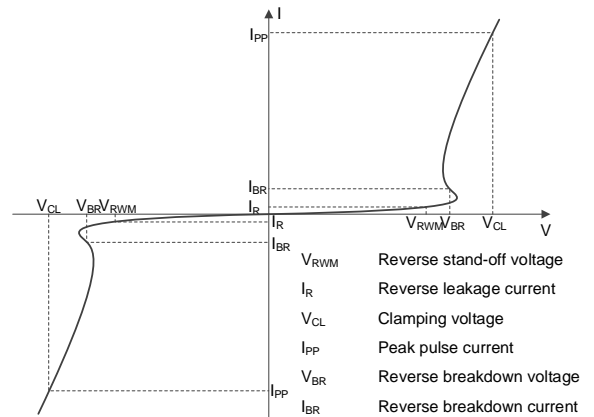


### 8/20μs waveform per IEC61000-4-5



## Electrical Parameter

| Symbol           | Parameter                                  |
|------------------|--|
| V <sub>C</sub>   | Clamping Voltage @ I <sub>PP</sub>         |
| I <sub>PP</sub>  | Peak Pulse Current                         |
| V <sub>BR</sub>  | Breakdown Voltage @ I <sub>BR</sub>        |
| I <sub>BR</sub>  | Test Current                               |
| I <sub>R</sub>   | Reverse Leakage Current @ V <sub>RWM</sub> |
| V <sub>RWM</sub> | Reverse Standoff Voltage                   |



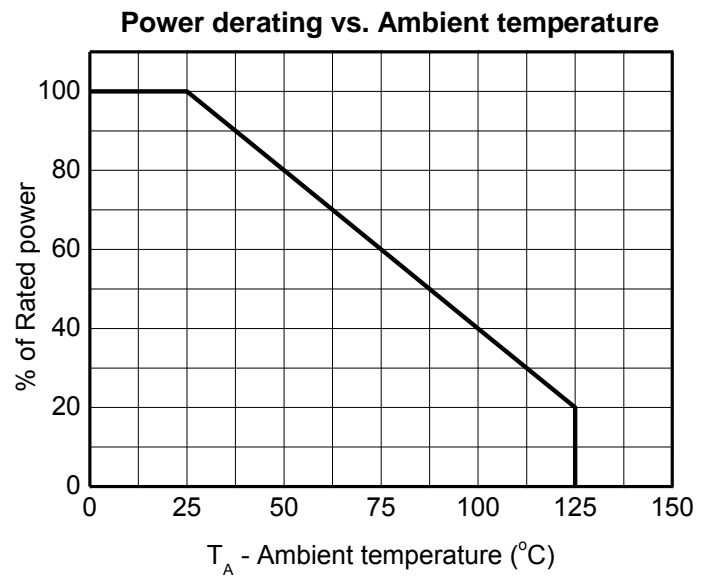
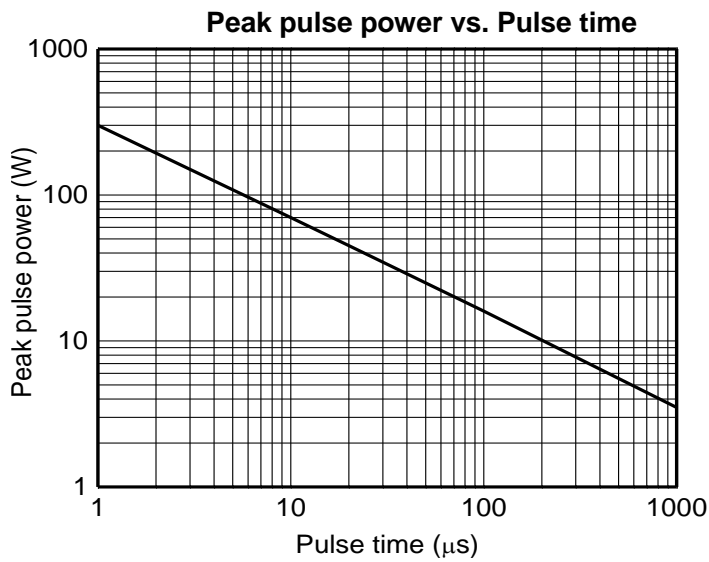
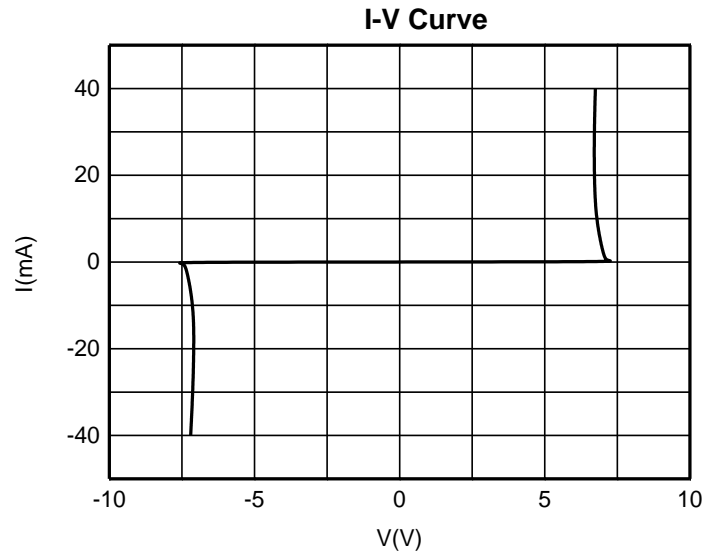
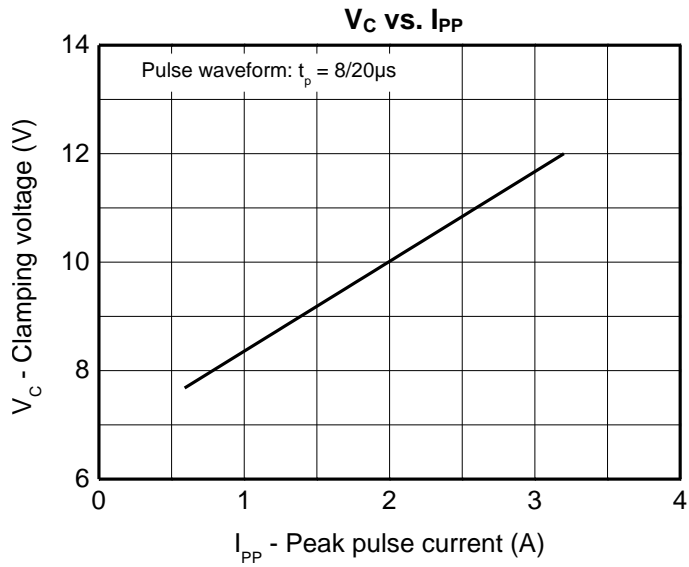
V-I characteristics for a Bi-directional TVS

## Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)

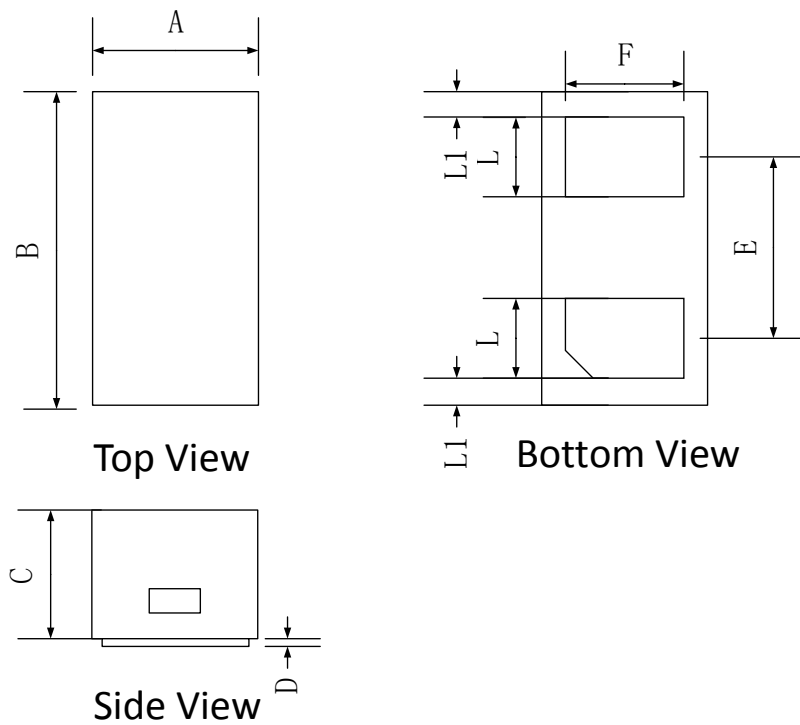
| Parameter                | Symbol                        | Test conditions            | Min | Typ | Max | Unit |
|--------------------------|-------------------------------|----------------------------|-----|-----|-----|------|
| Reverse standoff voltage | V <sub>RWM</sub>              |                            |     |     | 5   | V    |
| Reverse leakage current  | I <sub>R</sub>                | V <sub>RWM</sub> =5V       |     |     | 0.1 | μA   |
|                          |                               | V <sub>RWM</sub> =5.5V     |     |     | 1   | μA   |
| Breakdown voltage        | V <sub>BR</sub> <sup>1)</sup> | I <sub>T</sub> =1mA        | 5.6 |     | 9   | V    |
| Clamping voltage         | V <sub>C1</sub>               | I <sub>PP</sub> =1A        |     | 8   | 10  | V    |
|                          | V <sub>C2</sub>               | I <sub>PP</sub> =3A        |     | 12  | 15  | V    |
| Junction capacitance     | C <sub>J</sub>                | V <sub>R</sub> =0V, f=1MHz |     | 3   |     | pF   |

1) V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C

**Typical Characteristics**

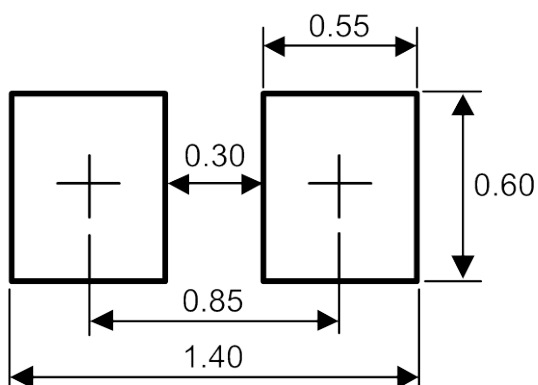


## DFN1006-2L Package Outline Dimensions



|    | Dimensions In Millimeters |      |      |
|----|---------------------------|------|------|
|    | Min.                      | Typ. | Max. |
| A  | 0.55                      | 0.60 | 0.68 |
| B  | 0.95                      | 1.00 | 1.08 |
| C  | 0.44                      | 0.47 | 0.50 |
| D  | 0.00                      | 0.03 | 0.05 |
| E  | -                         | 0.65 | -    |
| F  | 0.40                      | 0.50 | 0.60 |
| L  | 0.20                      | 0.25 | 0.30 |
| L1 | 0.05REF                   |      |      |

## DFN1006-2L Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$ mm.
3. The pad layout is for reference purpose only.

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)