

GSE050L1B1N1F

ESD Protection Diodes


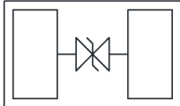
Product Description

The device is designed to protect one power/control line or one signal line from over voltage hazard of Electrostatic Discharge (ESD).

Features

- DFN1006-2L Package
- Bi-directional ESD Protection
- Working Voltage: 5V
- Low Capacitance 18pF
- Low Leakage Current
- 100W Peak Pulse Power (8/20 μ s)
- IEC61000-4-2 (ESD) \pm 30kV (Air), \pm 30kV (Contact)
- IEC61000-4-5 (Lightning) 8A (8/20 μ s)

Package & Symbol

| GSE050L1B1N1F (DFN1006-2L) | Equivalent Circuit |
|--|---|
|  |  |

Marking & Ordering Information

| Ordering Information | | | |
|---|------------|--------------|-----------------|
| Part Number | Package | Part Marking | Quantity / Reel |
| GSE050L1B1N1F | DFN1006-2L | B2 | 10,000 PCS |
| <div>- Product Code: GSE050L1B1</div> <div>- Package Code: N1 for DFN1006-2L</div> <div>- Green Level: F for RoHS Compliant and Halogen Free</div> | | | |
| Marking Information | | | |
| <div><div><div>Marking</div></div></div> <div>- Product Code: B2</div> | | | |

Absolute Maximum Ratings (T_A=25°C Unless otherwise noted)

| Symbol | Parameter | Typical | Unit |
|------------------|--|-------------|------|
| P _{PP} | Peak Pulse Power (tp=8/20μs waveform) | 100 | W |
| I _{PP} | Peak Pulse Current (tp=8/20μs waveform) | 8 | A |
| V _{ESD} | Maximum Air discharge voltage Per IEC61000-4-2 | ±30 | KV |
| | Maximum Contact discharge voltage Per IEC61000-4-2 | ±30 | KV |
| T _{OP} | Operating Junction Temperature Range | -55 to +125 | °C |
| T _{STG} | Storage Temperature Range | -55 to +150 | °C |

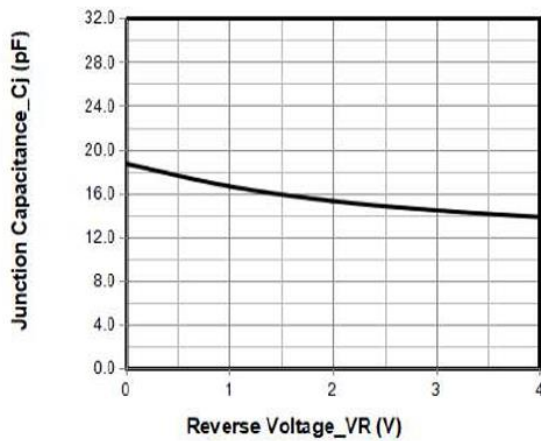
Note :

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

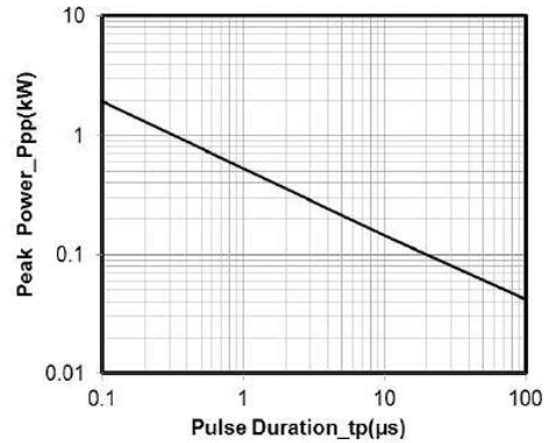
Electrical Characteristics (T_A=25°C unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|------------------|---------------------------|---------------------------------|-----|-----|-----|------|
| V _{RWM} | Reverse Stand-Off Voltage | | | | 5.0 | V |
| V _{BR} | Reverse Breakdown Voltage | I _T = 1mA | 6.0 | | | V |
| I _R | Reverse Leakage Current | V _{RWM} = 5V | | | 0.2 | uA |
| V _C | Clamping Voltage | I _{PP} = 1A, tp=8/20us | | | 8 | V |
| V _C | Clamping Voltage | I _{PP} = 8A, tp=8/20us | | | 13 | V |
| C _J | Junction Capacitance | V _R =0V, f=1MHz | | 18 | | pF |

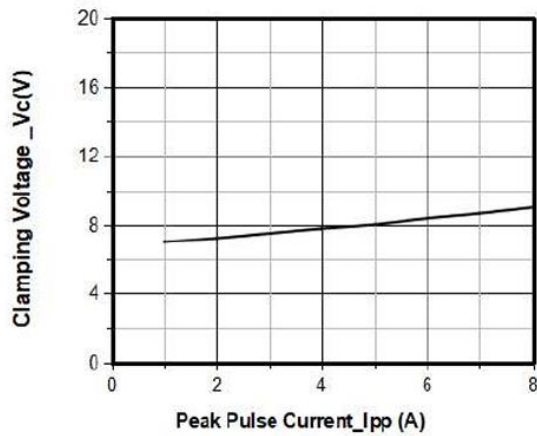
Typical Characteristics



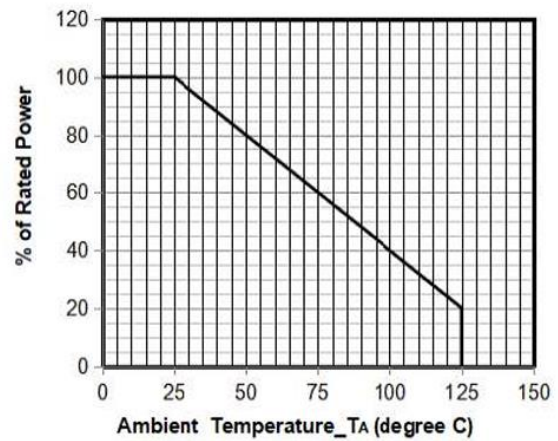
Junction Capacitance vs. Reverse Voltage



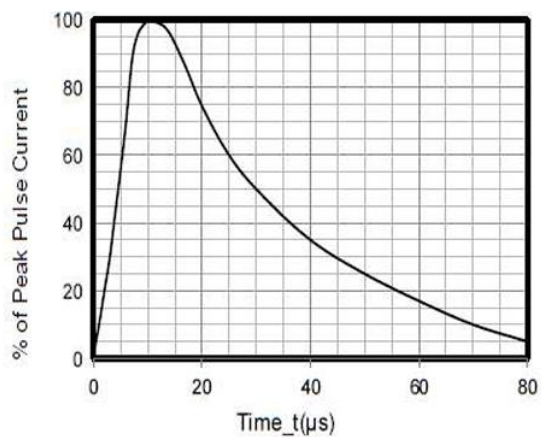
Peak Pulse Power vs. Pulse Time



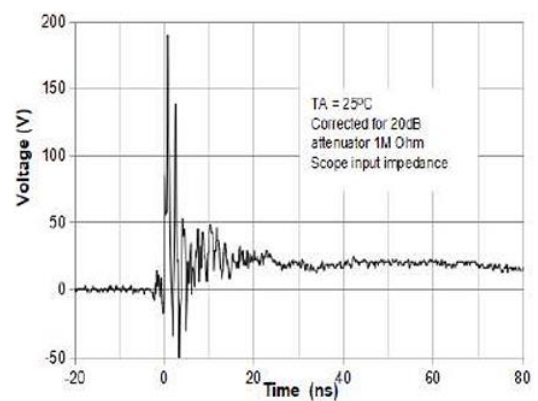
Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu s$)



Power Derating Curve



8 X 20μs Pulse Waveform

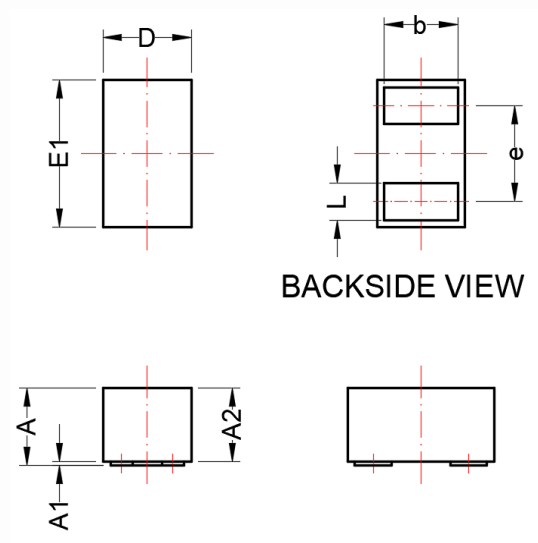


ESD Clamping Voltage

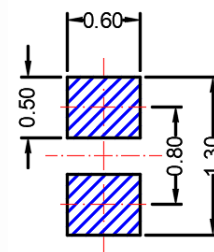
8 kV Contact per IEC61000-4-2

DFN1006-2L

Package Dimension



Recommended Land Pattern



| Dimensions | | | | |
|------------|-------------|------|-----------|-------|
| Symbol | Millimeters | | Inches | |
| | Min | Max | Min | Max |
| A | 0.34 | 0.55 | 0.013 | 0.022 |
| A1 | 0.00 | 0.05 | 0.000 | 0.002 |
| A2 | 0.34 | --- | 0.013 | --- |
| b | 0.45 | 0.55 | 0.018 | 0.022 |
| D | 0.55 | 0.68 | 0.022 | 0.027 |
| E1 | 0.95 | 1.08 | 0.037 | 0.043 |
| e | 0.65 BSC | | 0.026 BSC | |
| L | 0.2 | 0.3 | 0.008 | 0.012 |





NOTE:



Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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