

Product Summary

The GESDS12VFA1 is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in digital cameras, cellular phones, MP3 players and many other portable applications where board space is at a premium.

Feature

- Low reverse stand-off voltage: 12V
- 60A Peak pulse current per line (tp = 8/20μs)
- Low clamping voltage
- Unidirectional configurations
- Response time is typically <1ns
- Protect one power line
- IEC61000-4-2(ESD)±30kV(air), ±30kV(contact)

Applications

- Power supply protection
- Power management

Marking:



Front Side

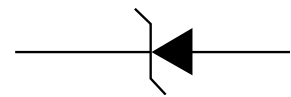
DG =Device Code

* =Month Code

DFN1610-2L



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 | ± 30 | KV |
| IEC 61000-4-2 ESD Voltage | Contact Model | ± 30 | |
| JESD22-A114-B ESD Voltage | Per Human Body Model | ± 16 | |
| ESD Voltage | Machine Model | ± 0.4 | |
| Peak Pulse Power | P_{PP} | 1800 | W |
| Peak Pulse Current | I_{PP} | 60 | A |
| Lead Solder Temperature – Maximum (10 Second Duration) | TL | 260 | $^{\circ}\text{C}$ |
| Junction Temperature | T_J | -45~ +125 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | -45~ +125 | $^{\circ}\text{C}$ |

ESD standards compliance

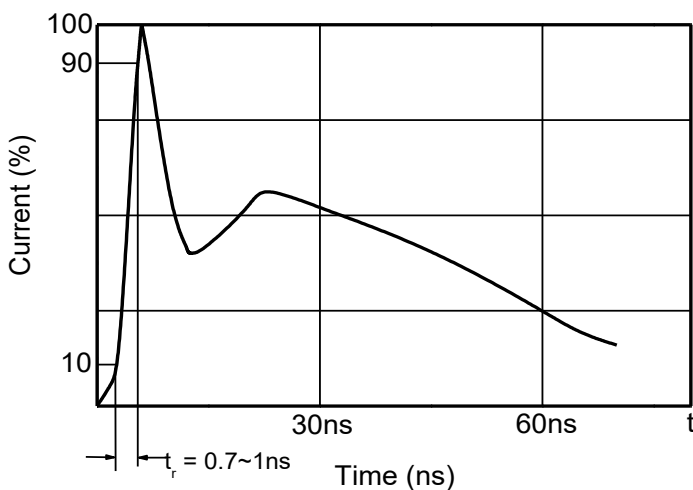
IEC61000-4-2 Standard

| 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 |

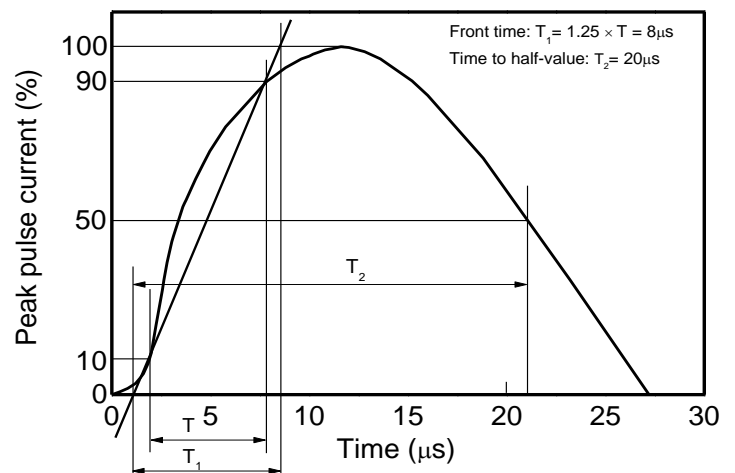
JESD22-A114-B Standard

| 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

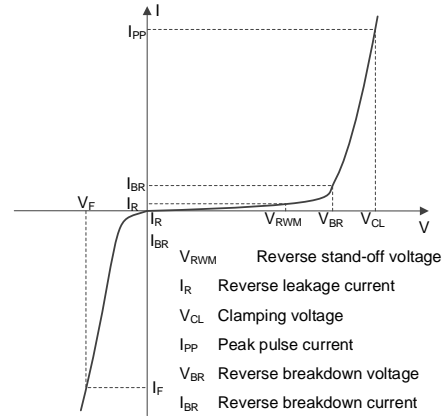


8/20 μs waveform per IEC61000-4-5



Electrical Parameter

| Symbol | Parameter |
|------------------|--|
| V _C | Clamping Voltage @ I _{PP} |
| I _{PP} | Peak Pulse Current |
| V _{BR} | Breakdown Voltage @ I _T |
| I _T | Test Current |
| I _R | Reverse Leakage Current @ V _{RWM} |
| V _{RWM} | Reverse Standoff Voltage |



V-I characteristics for a Uni-directional TVS

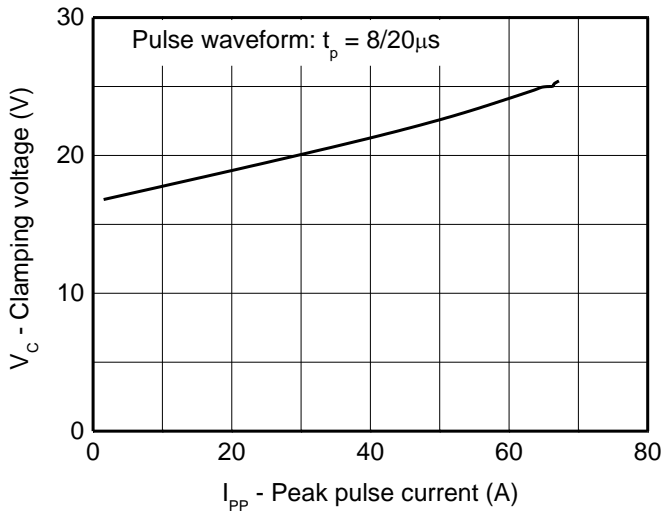
Electrical Characteristics (T_a=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---------------------------|--------------------------------|-----------------------|------|-----|------|------|
| Reverse stand-off voltage | V _{RWM} ¹⁾ | | | | 12 | V |
| Reverse leakage current | I _R | V _{RWM} =12V | | | 0.1 | uA |
| Breakdown voltage | V _{BR} | I _T =1mA | 12.7 | | 14.6 | V |
| Clamping voltage | V _C ²⁾ | I _{PP} =60A | | 25 | 30 | V |

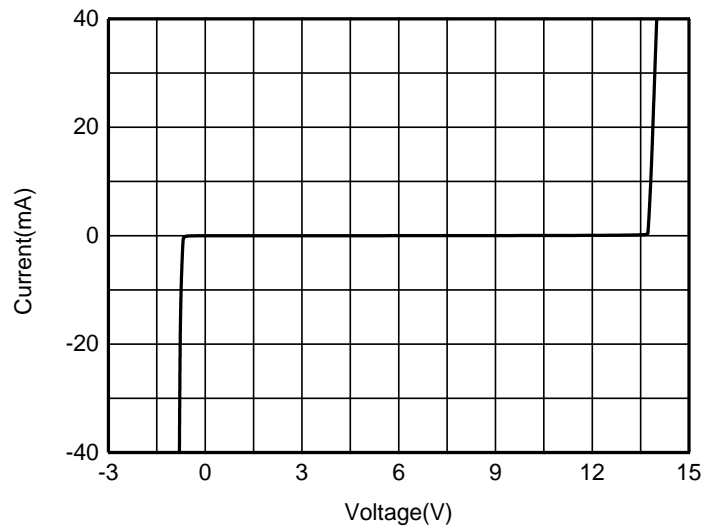
- 1) Other voltages available upon request.
- 2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

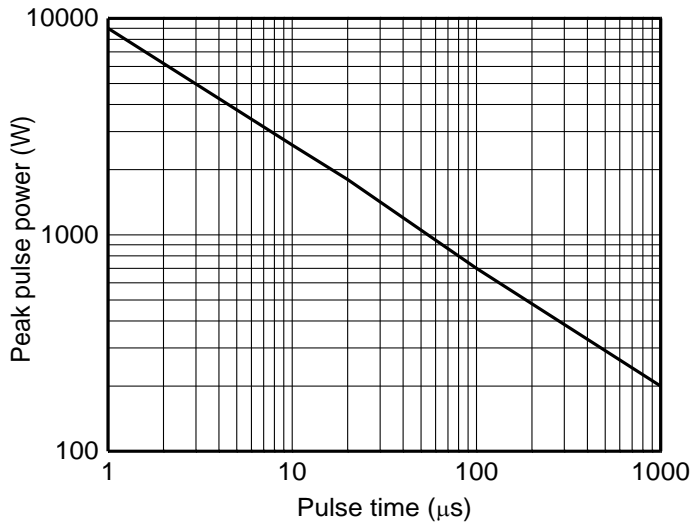
V_C vs. I_{PP}



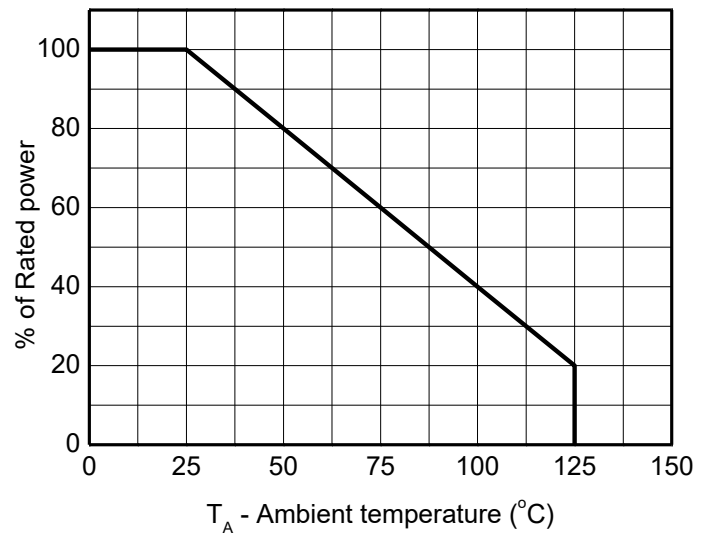
I-V Curve



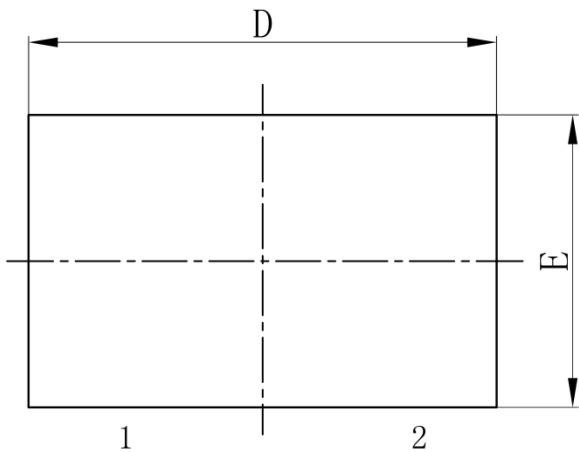
Peak pulse power vs. Pulse time



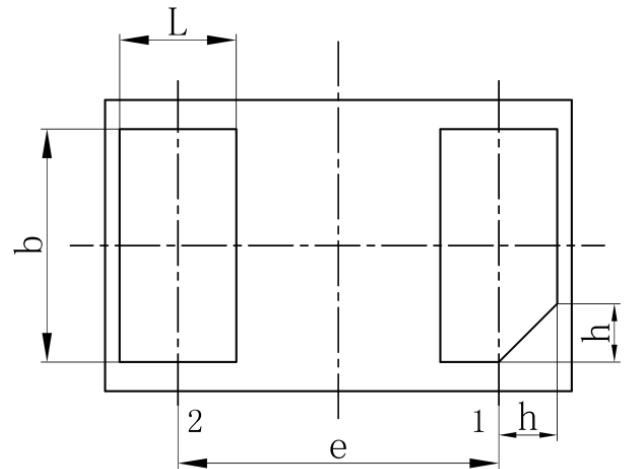
Power derating vs. Ambient temperature



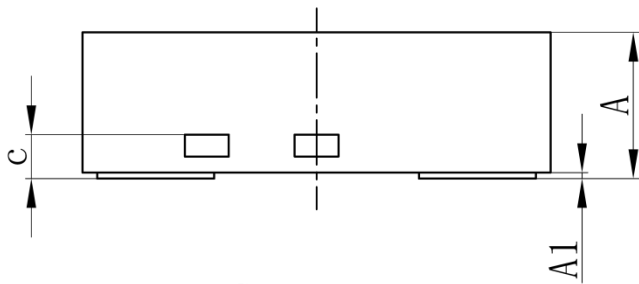
DFN1610-2L Package Outline Dimensions



TOP VIEW



BOTTOM VIEW



SIDE VIEW

| | Dimensions In Millimeters | | |
|-----------|---------------------------|------|------|
| | Min. | Typ. | Max. |
| A | 0.45 | 0.50 | 0.55 |
| A1 | - | 0.02 | 0.05 |
| b | 0.75 | 0.80 | 0.85 |
| c | 0.10 | 0.15 | 0.20 |
| D | 1.55 | 1.60 | 1.65 |
| e | 1.10BSC | | |
| E | 0.95 | 1.00 | 1.05 |
| L | 0.35 | 0.40 | 0.45 |
| h | 0.15 | 0.20 | 0.25 |
| 载体尺寸(Mil) | 34*35 | | |

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)