# GESDBK36VC2

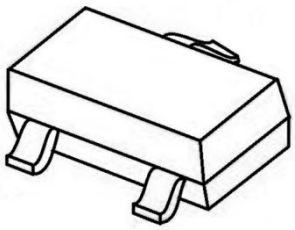
**Bi-direction Transient Voltage Suppressors**

## Product Summary

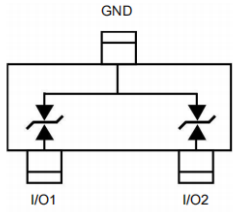
The GESDBK36VC2 is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

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 equipment applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

**SOT-23**



**Schematic Diagram**




## Feature

- Low reverse stand−off voltage: 36V Max
- Line capacitance:12 pF(typical)@1MHz
- Low Reverse Clamping Voltage
- Very low reverse current:IR<1uA(typical)
- IEC61000-4-5(Surge): 4A（8/20us）
- Halogen free ,Lead free and RoHs

## Application

- Industrial Control Networks Smart Distribution Systems Device Net
- Automotive Networks Low and High-Speed Can

**Marking: 36C**

## Absolute Maximum Ratings ($T_A$=25℃ unless otherwise noted)

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| IEC 61000-4-2 ESD Voltage | Air Model | $V_{ESD}$ 1) | ±30 | kV |
| JESD22-A114-B ESD Voltage | Contact Model | | ±30 | |
| Peak Pulse Power | | $P_{PP}$ 2) | 310 | W |
| Peak Pulse Current | | $I_{PP}$ 2) | 4 | A |
| Lead Solder Temperature − Maximum (10 Second Duration) | | $T_L$ | 260 | ℃ |
| Junction Temperature | | $T_j$ | -55~ +150 | ℃ |
| Storage Temperature Range | | $T_{stg}$ | -55~ +150 | ℃ |

1) Device stressed with ten non-repetitive ESD pulses.

2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

## ESD Standards Compliance

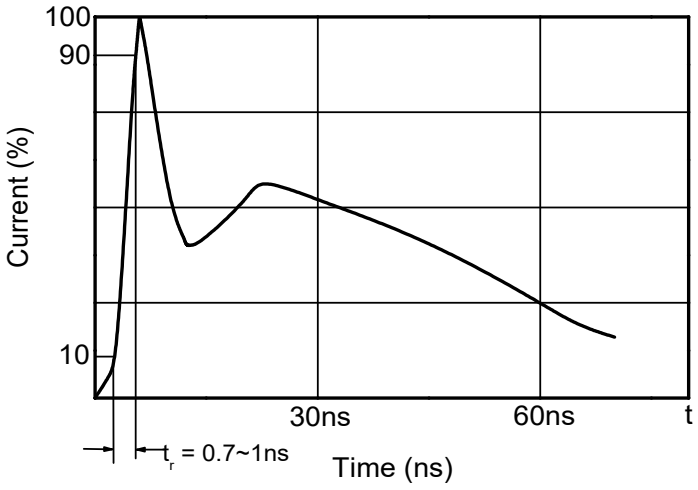
### IEC61000-4-2 Standard

| 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 |

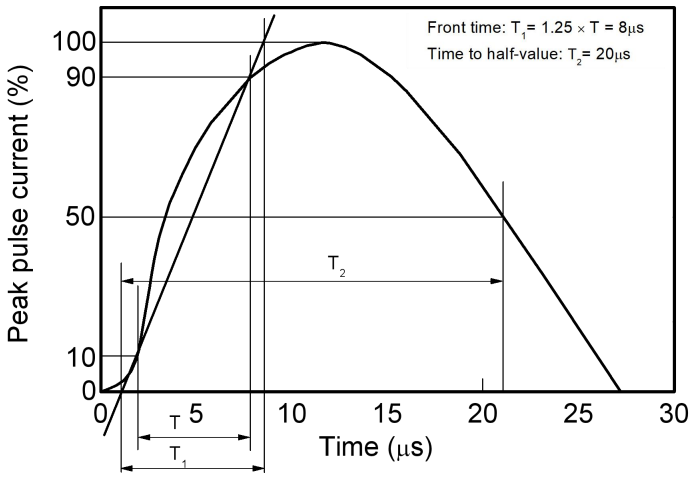
### JESD22-A114-B Standard

| 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

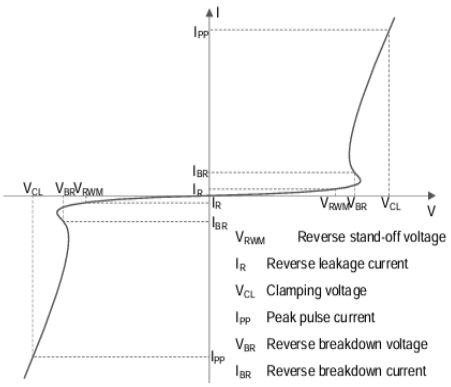



### 8/20μs waveform per IEC61000-4-5



## Electrical Parameter

| Symbol | Parameter |
|---|---|
| $V_C$ | 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 Bi-directional TVS**

## Electrical Characteristics($T_A$=25℃ unless otherwise specified)

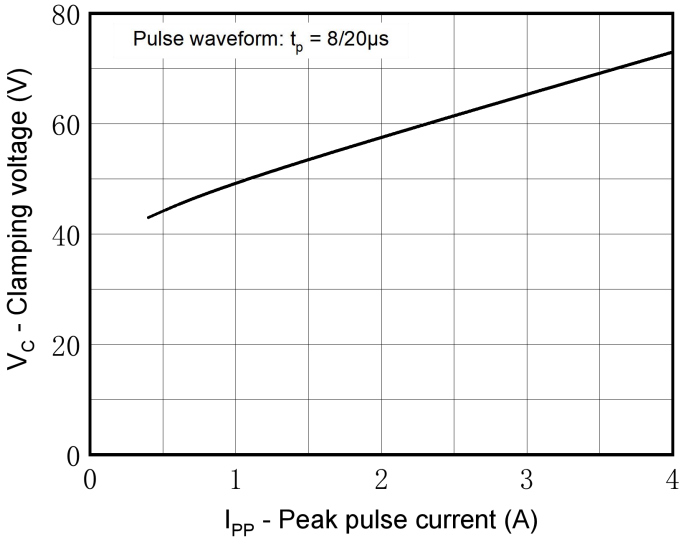
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Stand-Off Voltage | $V_{RWM}$[1)] | | | | 36 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$=36V | | | 1 | μA |
| Breakdown Voltage | $V_{BR}$ | $I_T$=1mA | 37.5 | | 42 | V |
| Clamping Voltage | $V_C$[2)] | IPP=1A | | | 50 | V |
| | | IPP=4A | | | 75 | V |
| Junction Capacitance | $C_J$ | $V_R$=0V,f=1MHz | | 12 | 30 | pF |

1) Other voltages available upon request.

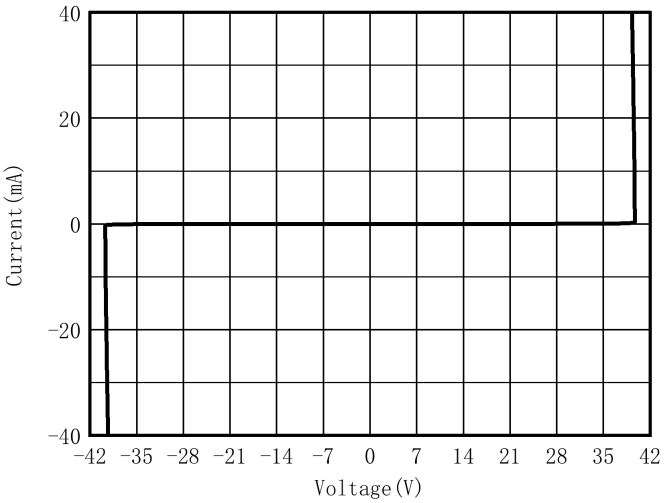
2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

## Typical Characteristics

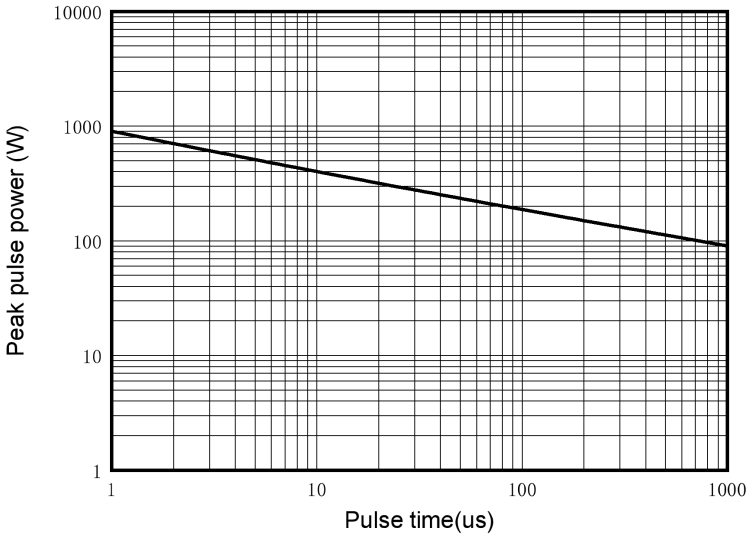
**VC vs. IPP**



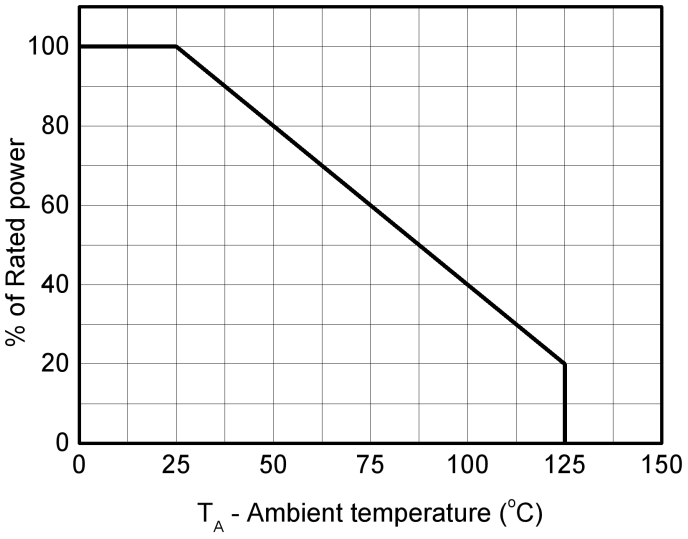

I-V Curve



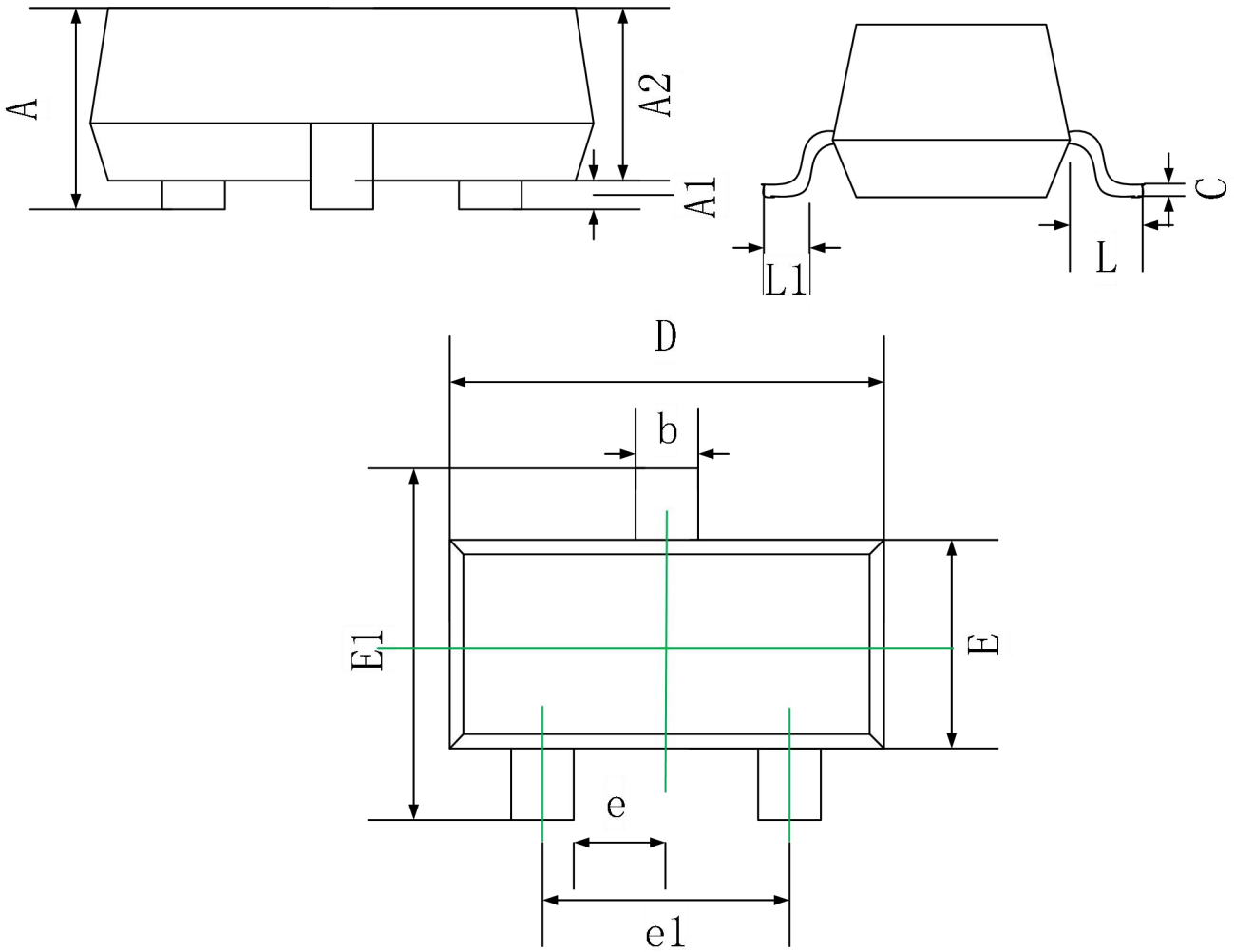

**Peak pulse power vs. Pulse time**




**Power derating vs. Ambient temperature**



## SOT-23 Package Outline Dimensions




| Symbol | Dimensions In Millimeters | |
|---|---|---|
| | Min. | Max. |
| A | 0.90 | 1.15 |
| A1 | 0.00 | 0.10 |
| A2 | 0.90 | 1.05 |
| b | 0.30 | 0.50 |
| c | 0.08 | 0.15 |
| D | 2.80 | 3.00 |
| E | 1.20 | 1.40 |
| E1 | 2.25 | 2.55 |
| e | 0.95 REF. | |
| e1 | 1.80 | 2.00 |
| L | 0.55 REF. | |
| L1 | 0.30 | 0.50 |

**Attention：**

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
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