

## Features

- 1600Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Protection one data/power line to:
- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning)70A (8/20 $\mu s$ )



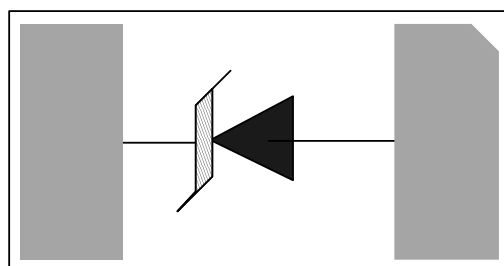
## Applications

- Power supply protection
- Power management servers

## Mechanical Data

- DFN1006 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## Schematic & PIN Configuration



**DFN1006**



### Absolute Maximum Rating

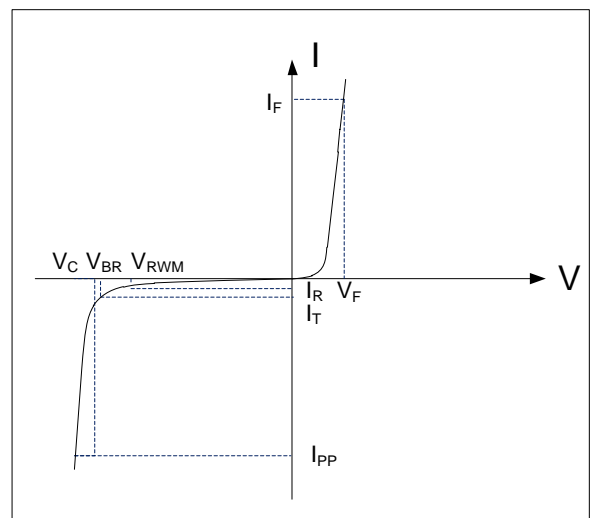
| Rating   | Symbol    | Value          | Units |
|--|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 1600           | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)               | $I_{PP}$  | 70             | A     |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 30<br>30       | kV    |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds) | °C    |
| Junction Temperature   | $T_J$     | -55 to + 125   | °C    |
| Storage Temperature  | $T_{stg}$ | -55 to + 125   | °C    |

### Electrical Characteristics

| Parameter                 | Symbol    | Conditions                      | Min  | Typical | Max | Units   |
|---------------------------|-----------|---------------------------------|------|---------|-----|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                 |      |         | 12  | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                     | 13.3 |         |     | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 12V, T = 25^\circ C$ |      |         | 1   | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$               |      | 70      |     | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 70A, t_p = 8/20\mu s$ |      | 24      |     | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$            |      | 110     |     | pF      |

### Electrical Parameters (TA = 25°C unless otherwise noted)

| Symbol    | Parameter                                   |
|-----------|---|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                   |
| $I_T$     | Test Current                                |
|           |   |
|           |   |



Note: 8/20 $\mu s$  pulse waveform.



## Typical Characteristic

Fig.1 Peak Pulse Power Rating Curve

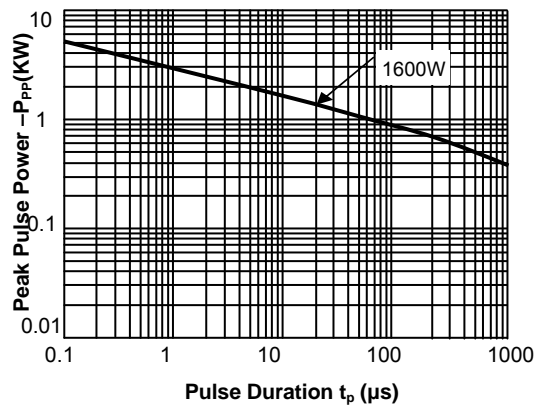


Fig.2 Pulse Derating Curve

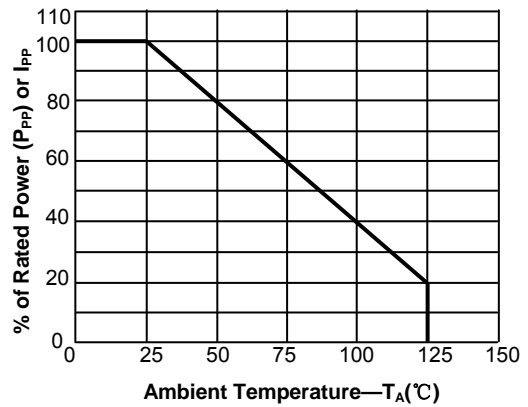


Fig.3 Pulse Waveform-8/20 $\mu s$

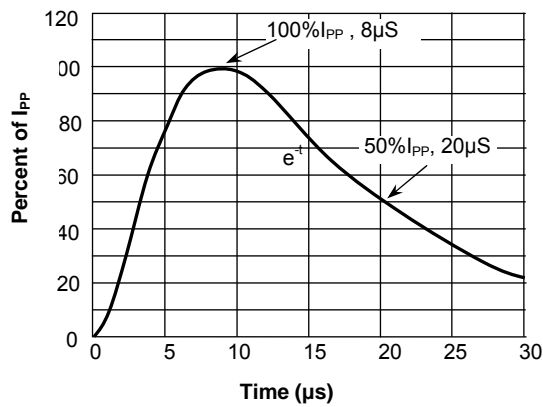


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

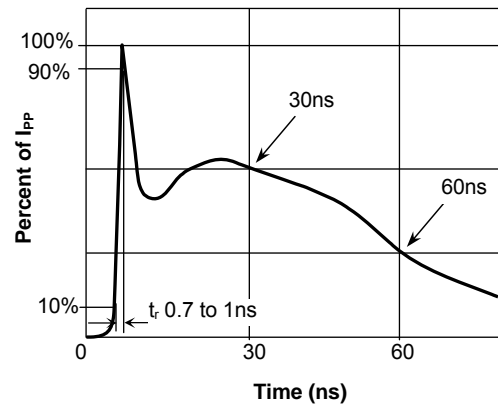


Fig.5 IEC61000-4-2 +8kV Contact Discharge

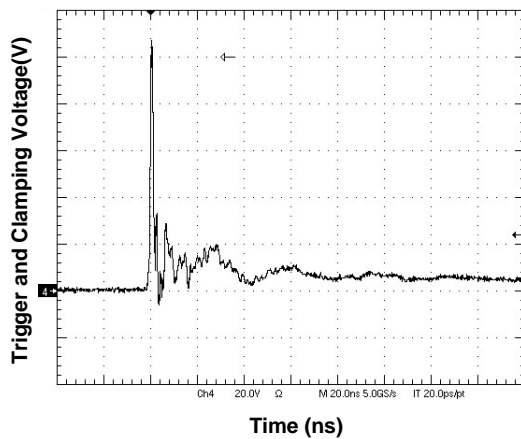
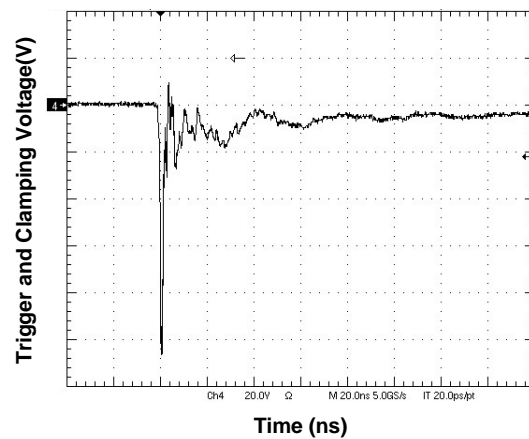
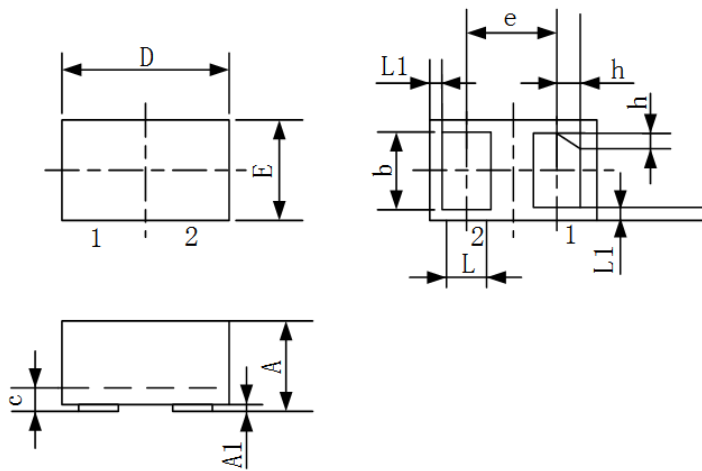
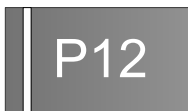


Fig.6 IEC61000-4-2 -8kV Contact Discharge



**Outline Drawing – DFN1006**


| SYMBOL     | MILLIMETER |      |      |
|------------|------------|------|------|
|            | MIN        | NOM  | MAX  |
| A          | 0.40       | 0.50 | 0.55 |
| A1         | 0          | 0.02 | 0.05 |
| b          | 0.45       | 0.50 | 0.55 |
| c          | 0.12       | 0.15 | 0.18 |
| D          | 0.95       | 1.00 | 1.05 |
| e          | 0.65BSC    |      |      |
| E          | 0.55       | 0.60 | 0.65 |
| L          | 0.20       | 0.25 | 0.30 |
| L1         | 0.05REF    |      |      |
| h          | 0.07       | 0.12 | 0.17 |
| 载体尺寸 (MIL) | 20*20      |      |      |

**Marking**

**Ordering information**

| Order code   | Package | Base qty | Delivery mode |
|--------------|---------|----------|---------------|
| RLSD92Q121VH | DFN1006 | 10k      | Tape and reel |

