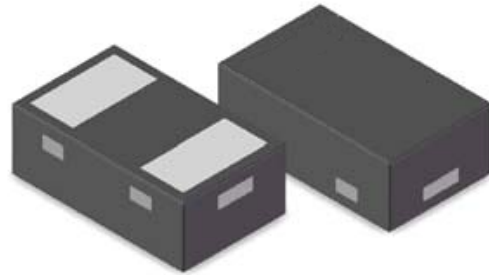




## Features

- 500Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Tiny DFN1006 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 45A (8/20 $\mu s$ )



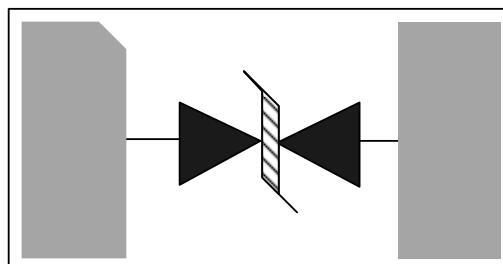
## Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

## 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

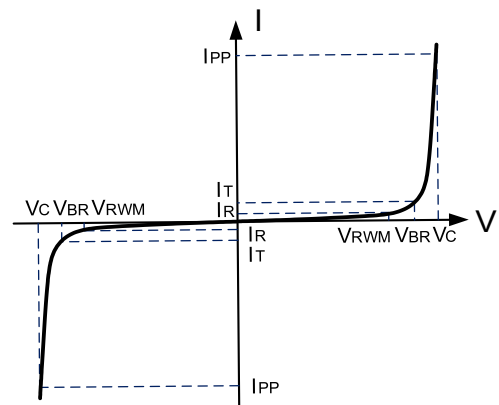
| Rating                                                         | Symbol    | Value          | Units |
|----------------------------------------------------------------|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 500            | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)               | $I_{PP}$  | 45             | 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      | $V_{RWM}$ |                                  |     |         | 4.5 | V       |
| Reverse Breakdown Voltage      | $V_{BR}$  | $I_T = 1mA$                      | 4.7 |         |     | V       |
| Reverse Leakage Current        | $I_R$     | $V_{RWM} = 4.5V, T = 25^\circ C$ |     |         | 0.1 | $\mu A$ |
| Peak Pulse Current             | $I_{PP}$  | $t_p = 8/20\mu s$                |     |         | 45  | A       |
| Clamping Voltage <sup>2)</sup> | $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$   |     |         | 5.5 | V       |
| Clamping Voltage <sup>2)</sup> |           | $I_{PP} = 20A, t_p = 8/20\mu s$  |     |         | 7.5 | V       |
| Clamping Voltage <sup>2)</sup> |           | $I_{PP} = 45A, t_p = 8/20\mu s$  |     |         | 11  | V       |
| Junction Capacitance           | $C_j$     | $V_R = 0V, f = 1MHz$             |     | 70      |     | 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 Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

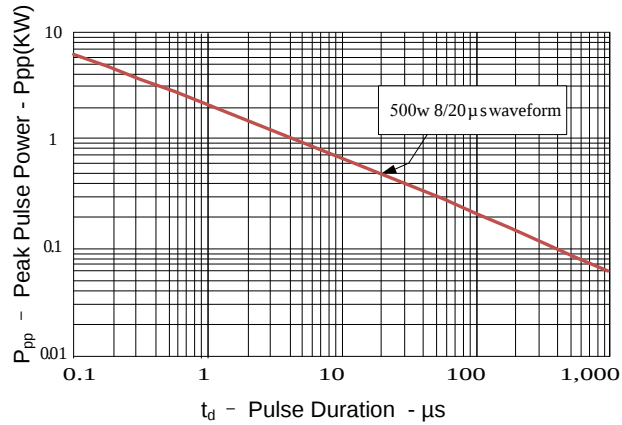


Figure 2: Power Derating Curve

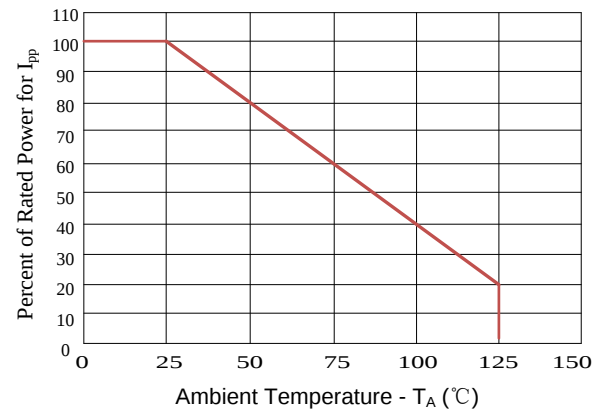


Figure3: Pulse Waveform

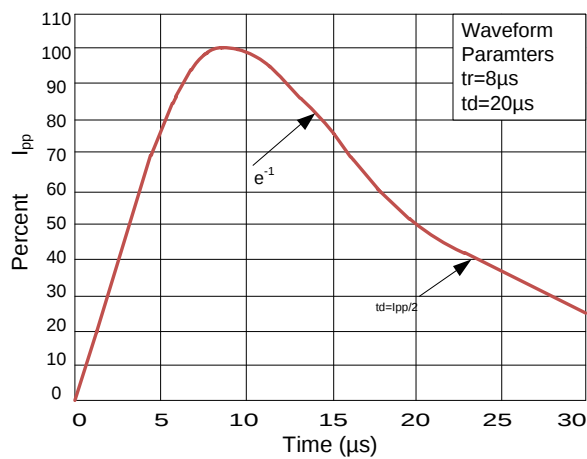
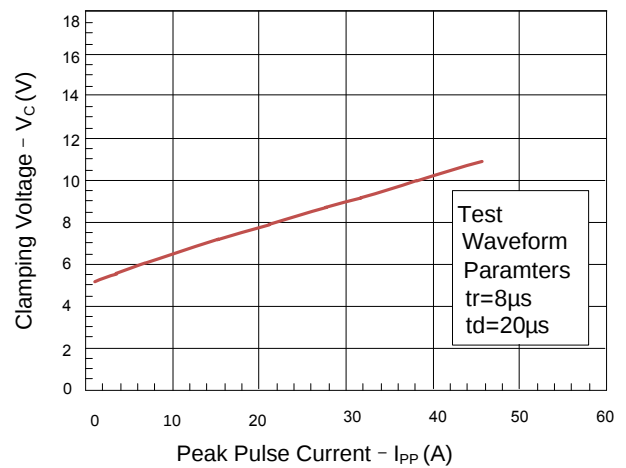
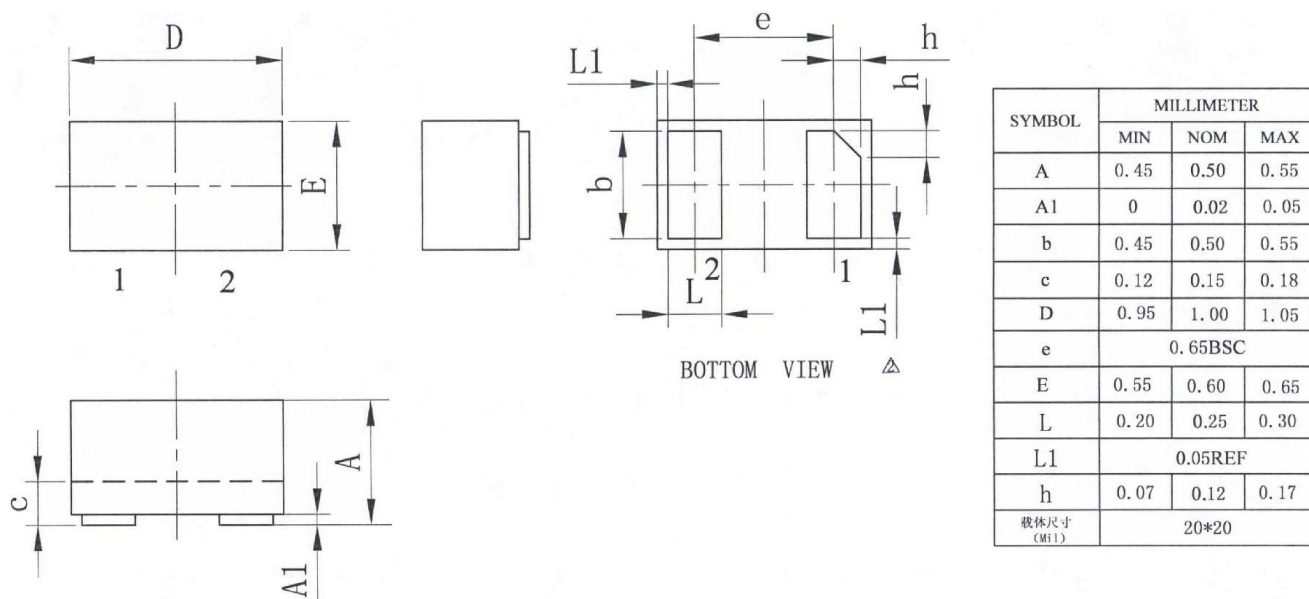


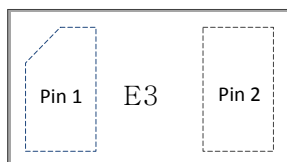
Figure 4: Clamping Voltage vs. I\_pp



# Outline Drawing – DFN1006



## Marking



## Ordering information

| Order code  | Package | Base qty | Delivery mode |
|-------------|---------|----------|---------------|
| SESF4N4522P | DFN1006 | 10k      | Tape and reel |