

## Features

- 60Watts 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
- Low capacitance ( $C_j = 0.4pF$  typ. IO to IO)
- Protection one data/power line to:
- IEC 61000-4-2  $\pm 20kV$  contact  $\pm 20kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3.5A (8/20 $\mu s$ )



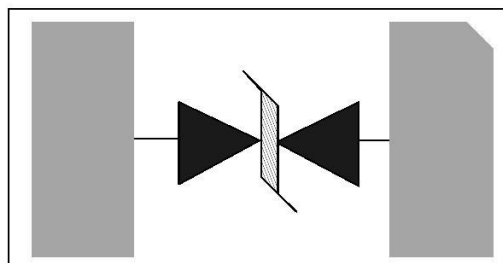
## Applications

- 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

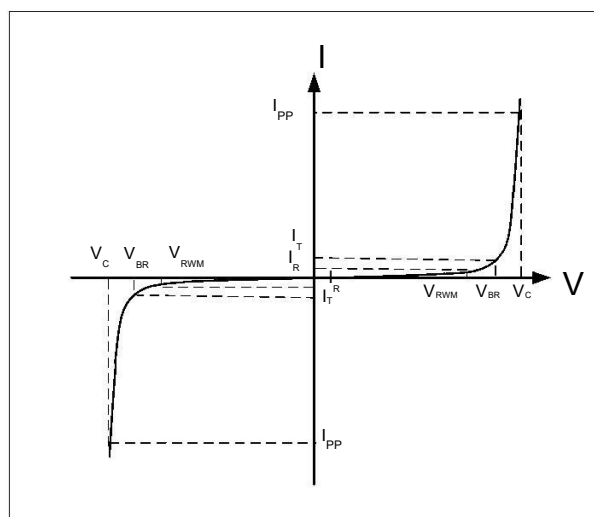
| Rating                                                         | Symbol    | Value          | Units |
|----------------------------------------------------------------|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 60             | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)               | $I_{PP}$  | 3.5            | A     |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 20<br>20       | 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 | $V_{RWM}$ |                                  |     |         | 5.0 | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                      | 6.0 | 8.0     |     | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 5V, T = 25^\circ C$   |     | 0.1     | 0.5 | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$                |     |         | 3.5 | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 3.5A, t_p = 8/20\mu s$ |     |         | 15  | V       |
| Junction Capacitance      | $C_j$     | IO to IO<br>$V_R = 0V, f = 1MHz$ |     | 0.4     | 0.5 | pF      |

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

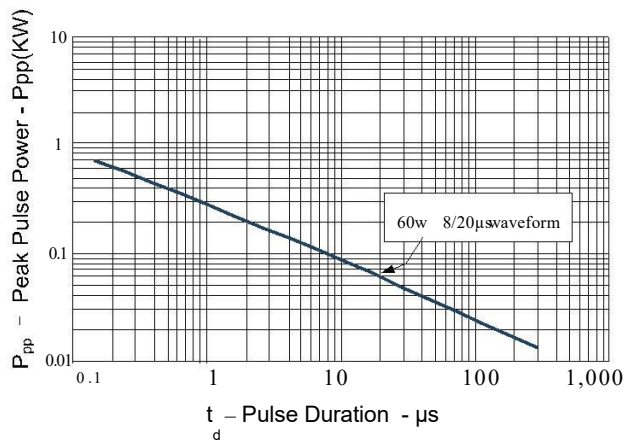
| Symbol    | Parameter                                   |
|-----------|---------------------------------------------|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
|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



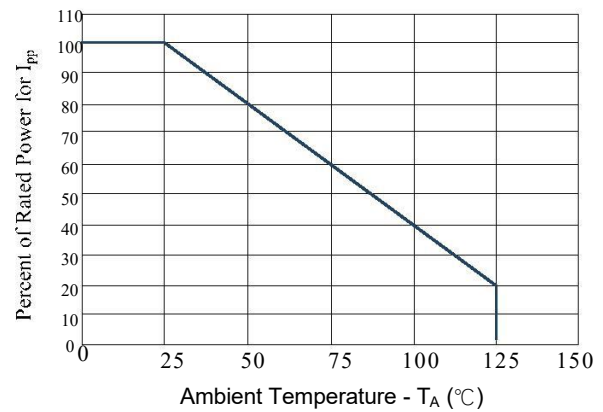
Note: 8/20 $\mu s$  pulse waveform.

## Typical Characteristics

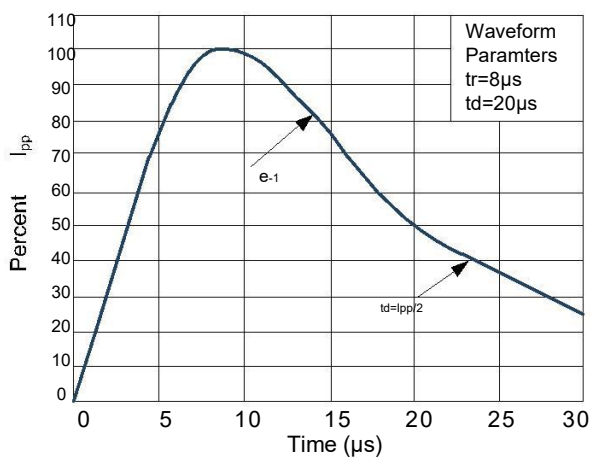
**Figure 1: Peak Pulse Power vs. Pulse Time**



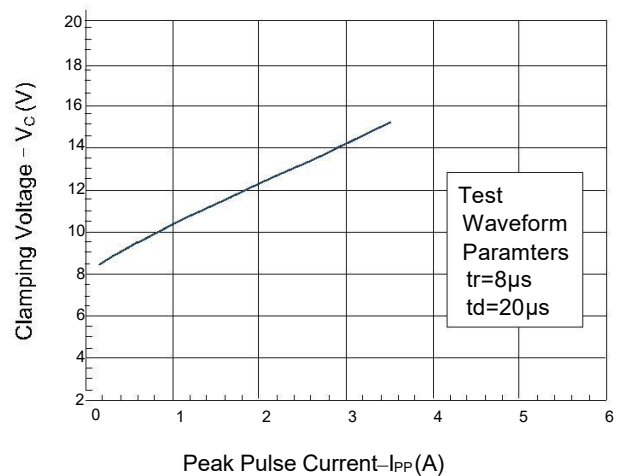
**Figure 2: Power Derating Curve**



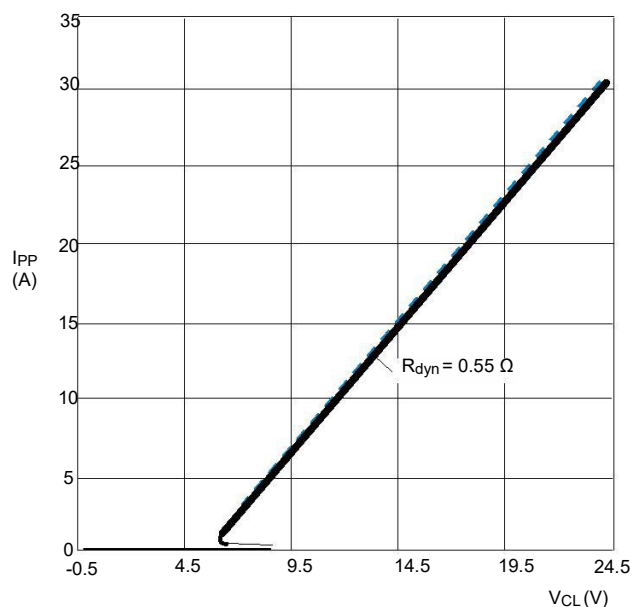
**Figure3: Pulse Waveform**



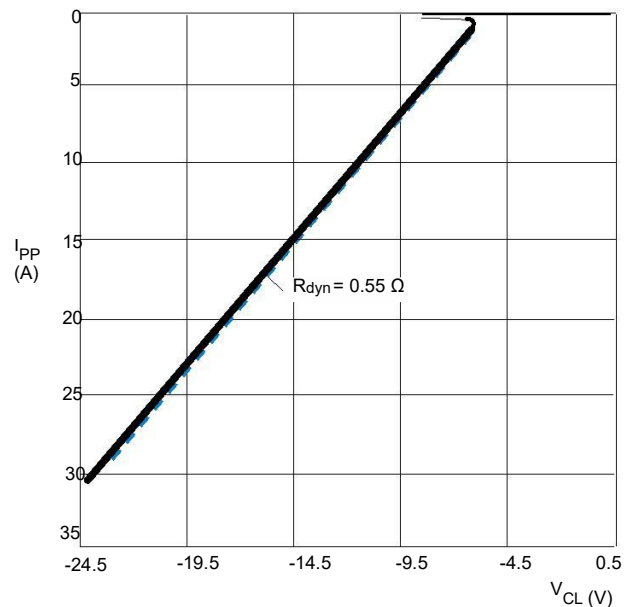
**Figure 4: Clamping Voltage vs. Ipp**



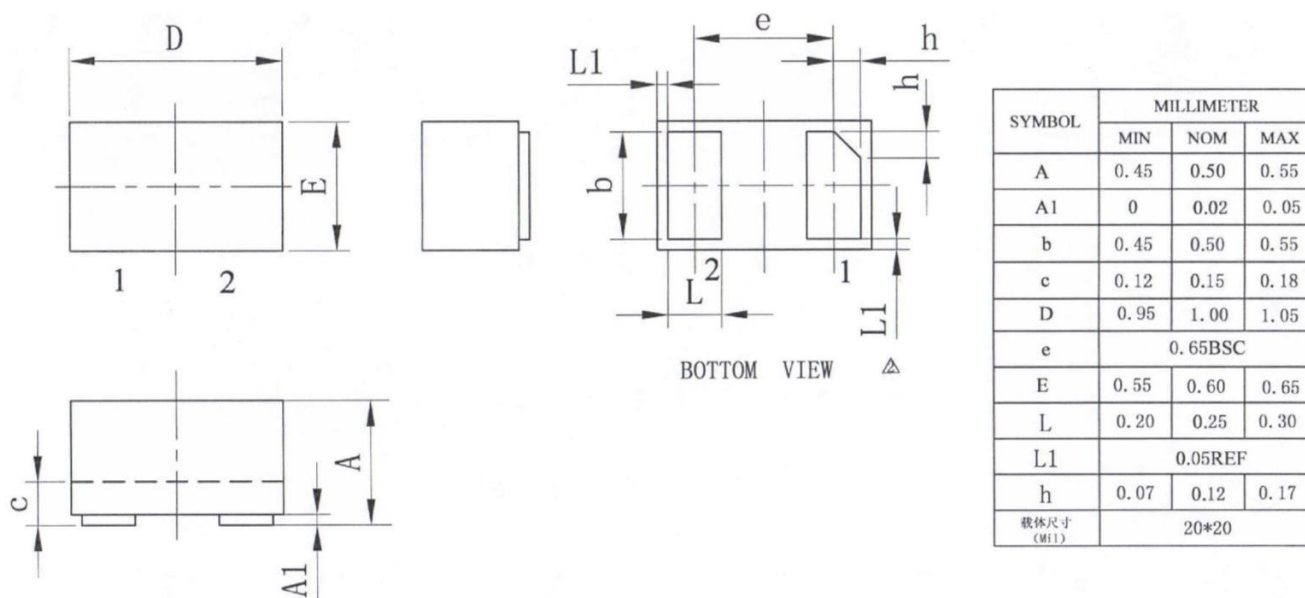
**Figure5: Positive Clamping voltage (TLP)**



**Figure5: Negative Clamping voltage (TLP)**



## Outline Drawing – DFN1006



## Ordering information

| Order code    | Package | Base qty | Delivery mode |
|---------------|---------|----------|---------------|
| CSE5.0BUD1006 | DFN1006 | 10k      | Tape and reel |

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