

## FEATURES

- | 400 Watts Peak Pulse Power per Line (tp=8/20μs)
- | Protects one Vcc or data line
- | Working voltages : 5 V
- | Low leakage current
- | Low clamping voltage
- | Meet AEC-Q101 Requirements

## APPLICATIONS

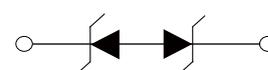
- | Cell Phone Handsets and Accessories
- | Microprocessor based equipment
- | Personal Digital Assistants (PDA' s)
- | Notebooks, Desktops, and Servers
- | Portable Instrumentation
- | Networking and Telecom
- | Serial and Parallel Ports
- | Peripherals



DFN1006



Marking



Schematic Symbol

## IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- | IEC61000-4-4 (EFT) 40A (5/50ns)

## APPROVALS

- |             |                                    |
|-------------|------------------------------------|
| <b>RoHS</b> | Compliance with 2011/65/EU         |
| <b>HF</b>   | Compliance with IEC61249-2-21:2003 |

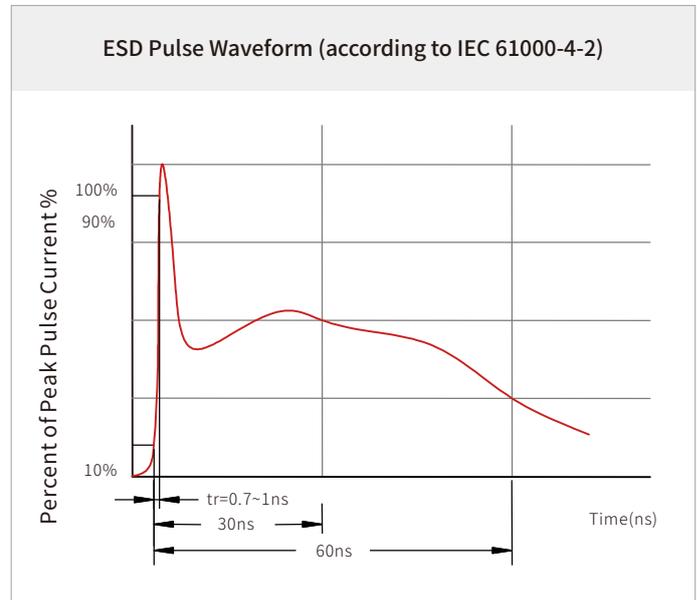
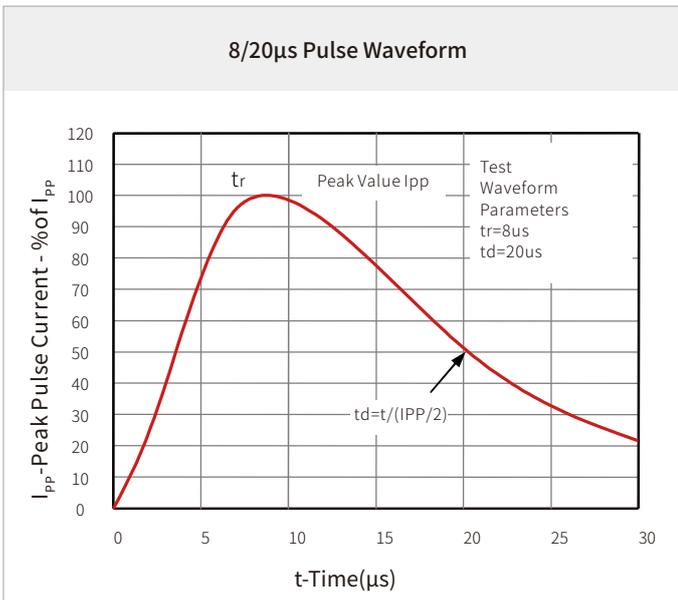
## THERMAL CONSIDERATIONS

| Symbol           | Parameter                             | Value       | Unit  |
|------------------|---------------------------------------|-------------|-------|
| P <sub>PP</sub>  | Peak Pulse Power (tp=8/20μs waveform) | 400         | Watts |
| T <sub>J</sub>   | Operating Temperature Range           | -55 to +150 | °C    |
| T <sub>STG</sub> | Storage Temperature Range             | -55 to +150 | °C    |

## ELECTRICAL CHARACTERISTICS

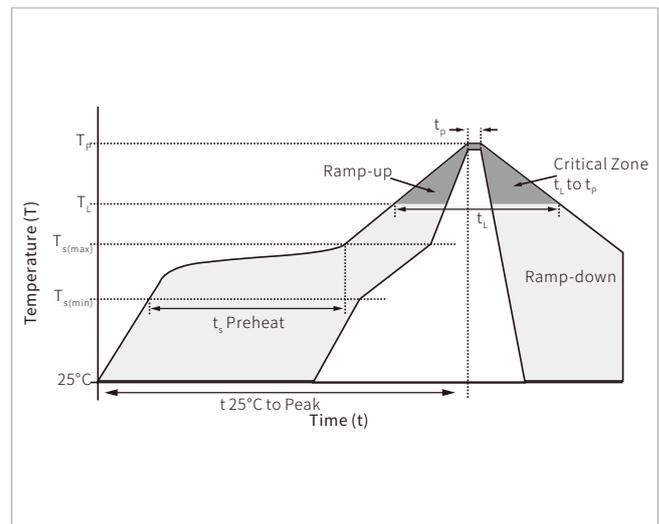
| Symbol           | Parameter                      | Condition                       | Min. | Typ. | Max. | Unit |
|------------------|--------------------------------|---------------------------------|------|------|------|------|
| V <sub>RWM</sub> | Reverse Stand-off Voltage      |                                 |      |      | 5    | V    |
| V <sub>BR</sub>  | Reverse Breakdown Voltage      | I <sub>T</sub> =1mA             | 5.8  |      | 9    | V    |
| I <sub>R</sub>   | Reverse Leakage Current        | V <sub>RWM</sub> =5V            |      |      | 1    | μA   |
| V <sub>C</sub>   | Clamping Voltage               | I <sub>PP</sub> =1A, tp=8/20μs  |      |      | 9.8  | V    |
| V <sub>C</sub>   | Clamping Voltage               | I <sub>PP</sub> =20A, tp=8/20μs |      | 15   | 20   | V    |
| I <sub>PP</sub>  | Peak Pulse Current             | tp=8/20μs                       |      |      | 20   | A    |
| C <sub>J</sub>   | Off State Junction Capacitance | V <sub>R</sub> =0V, f=1MHz      |      | 33   | 40   | pF   |

## CHARACTERISTIC CURVES

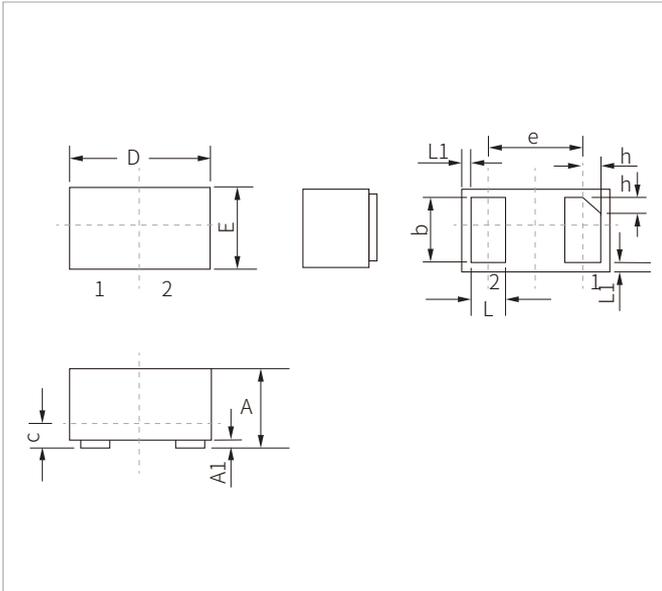


## SOLDERING PARAMETERS

| Reflow Condition                                       |                                   | Lead-free assembly |
|--|-----------------------------------|--------------------|
| Pre Heat   | Temperature Max ( $T_{s(\min)}$ ) | 150°C              |
|  | Temperature Max ( $T_{s(\max)}$ ) | 200°C              |
|  | Time (min to max) ( $t_s$ )       | 60 – 180 secs      |
| Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak) |                                   | 3°C/second max     |
| $T_{s(\max)}$ to $T_L$ - Ramp-up Rate                  |                                   | 3°C/second max     |
| Reflow   | Temperature ( $T_L$ ) (Liquidus)  | 217°C              |
|  | Time (min to max) ( $t_L$ )       | 60 – 150 seconds   |
| Peak Temperature ( $T_p$ )                             |                                   | 260°C              |
| Time within 5°C of actual peak Temperature ( $t_p$ )   |                                   | 20 – 40 seconds    |
| Ramp-down Rate   |                                   | 6°C/second max     |
| Time 25°C to peak Temperature ( $T_p$ )                |                                   | 8 minutes max.     |
| Do not exceed  |                                   | 260°C              |

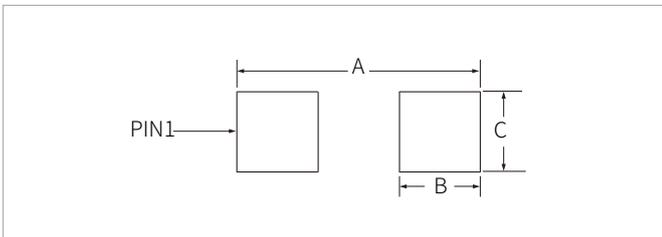


## DFN1006 PACKAGE INFORMATION



| Ref. | Millimeters |      | Inches   |       |
|------|-------------|------|----------|-------|
|      | Min.        | Max. | Min.     | Max.  |
| A    | 0.40        | 0.60 | 0.016    | 0.024 |
| A1   | 0           | 0.05 | 0        | 0.002 |
| b    | 0.40        | 0.55 | 0.016    | 0.022 |
| c    | 0.12        | 0.18 | 0.005    | 0.007 |
| D    | 0.90        | 1.10 | 0.035    | 0.043 |
| e    | 0.65BSC     |      | 0.026BSC |       |
| E    | 0.55        | 0.75 | 0.022    | 0.030 |
| L    | 0.20        | 0.35 | 0.008    | 0.014 |
| L1   | 0.05REF     |      | 0.002REF |       |
| h    | 0.07        | 0.17 | 0.003    | 0.007 |

## RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | Inches |
|------|-------------|--------|
| A    | 1.20        | 0.047  |
| B    | 0.47        | 0.019  |
| C    | 0.60        | 0.024  |

## ORDERING INFORMATION

| Part Number    | Component Package | QTY/Reel | Reel Size |
|----------------|-------------------|----------|-----------|
| TPSE10F30B5.0A | DFN1006           | 10000PCS | 7"        |

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

**By QR Code**

Website



Wechat

To find your local partner within Semiware' s global website: [www.semiware.com](http://www.semiware.com)

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.