

## FEATURES

- | 66 Watts Peak Pulse Power per Line (tp=8/20μs)
- | Package optimized for high-speed line
- | Snap back featured
- | Working voltage: 3.3V
- | Low Leakage Current
- | Low Clamping Voltage

## APPLICATIONS

- | USB 3.x
- | MHL 2.0
- | SATA/SAS
- | PCI Express
- | RF Antenna



DFN1006



Marking

## 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 |



Schematic Symbol

## THERMAL CONSIDERATIONS

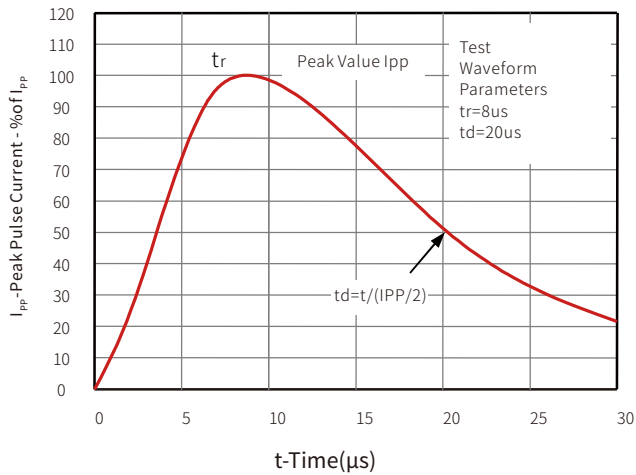
| Symbol           | Parameter                             | Value       | Unit  |
|------------------|---------------------------------------|-------------|-------|
| P <sub>pp</sub>  | Peak Pulse Power (tp=8/20μs waveform) | 66          | Watts |
| T <sub>J</sub>   | Operating Temperature Range           | -55 to +125 | °C    |
| T <sub>STG</sub> | Storage Temperature Range             | -55 to +150 | °C    |

## ELECTRICAL CHARACTERISTICS

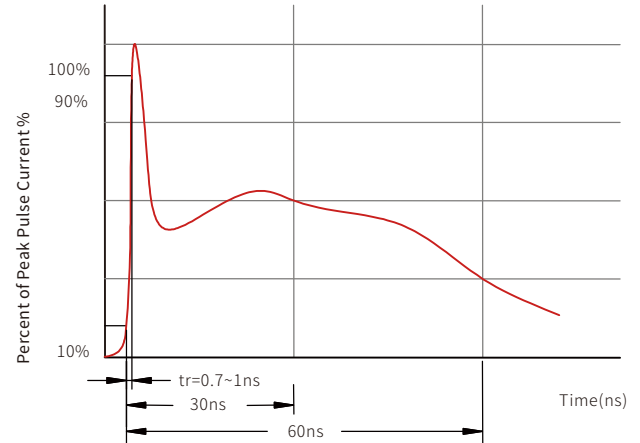
| Symbol             | Parameter                 | Condition                                       | Min. | Typ. | Max. | Unit |
|--------------------|---------------------------|-------------------------------------------------|------|------|------|------|
| V <sub>RWM</sub>   | Reverse Working Voltage   | Pin to Pin                                      |      |      | 3.3  | V    |
| V <sub>BR</sub>    | Reverse Breakdown Voltage | I <sub>T</sub> =1mA                             | 4.0  |      |      | V    |
| V <sub>H</sub>     | Holding Reverse Voltage   | I <sub>H</sub> =50mA                            | 4.0  |      |      | V    |
| I <sub>R</sub>     | Reverse Leakage Current   | V <sub>RWM</sub> =3.3V                          |      |      | 200  | nA   |
| V <sub>C</sub>     | Clamping Voltage          | I <sub>pp</sub> =1A, tp=8/20μs                  |      | 5.5  | 7.0  | V    |
| V <sub>C</sub>     | Clamping Voltage          | I <sub>pp</sub> =8A, tp=8/20μs                  |      | 7.5  | 9.0  | V    |
| V <sub>CTLTP</sub> | TLP Clamping Voltage      | I <sub>TLP</sub> =16A, tp=100ns                 |      | 7.5  |      | V    |
| R <sub>DYN</sub>   | Dynamic Resistance        | I <sub>TLP</sub> = 4A to I <sub>TLP</sub> = 16A |      | 0.16 |      | Ω    |
| I <sub>PP</sub>    | Peak Pulse Current        | tp=8/20μs                                       |      |      | 8    | A    |
| C <sub>J</sub>     | Junction Capacitance      | V <sub>R</sub> =0V, f=1MHz                      |      | 0.4  | 0.6  | pF   |

# CHARACTERISTIC CURVES

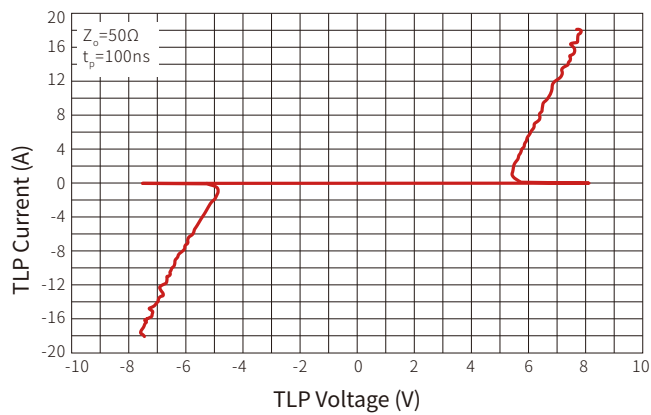
8/20 $\mu$ s Pulse Waveform



ESD Pulse Waveform (according to IEC 61000-4-2)

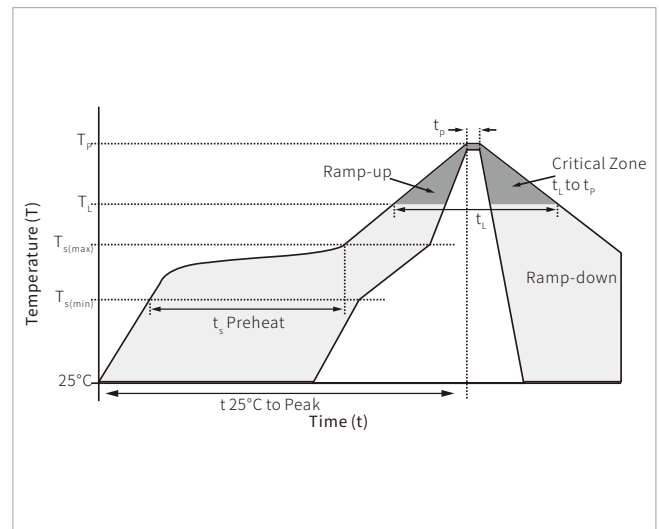


Transmission Line Pulsing (TLP) Measurement

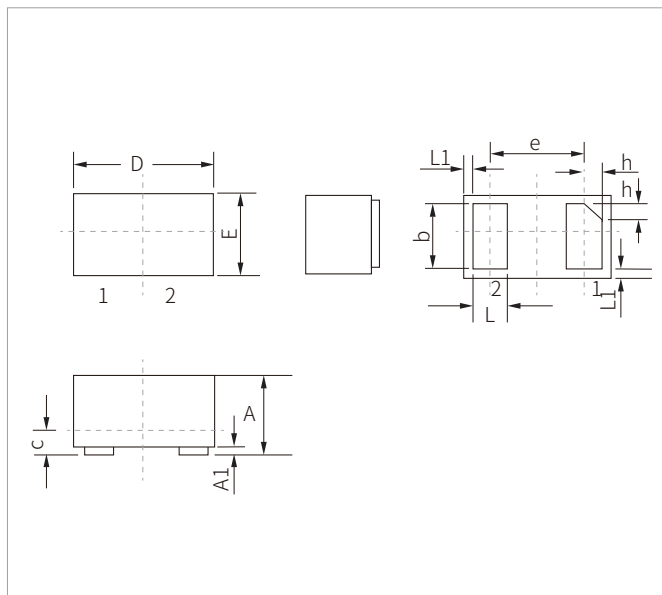


## SOLDERING PARAMETERS

| 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              |

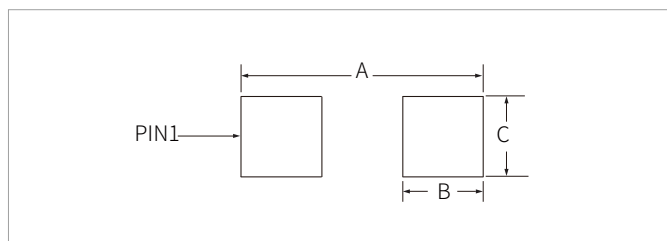


## DFN1006 PACKAGE INFORMATION



| 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 |
|------------------|-------------------|----------|-----------|
| SE10F07B3.3MA-SP | 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.