

## FEATURES

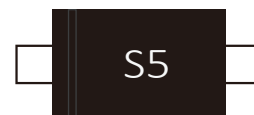
- | 325W Peak Pulse Power per Line (tp=8/20μs)
- | Protects one I/O or power Line
- | Low Clamping Voltage
- | Working Voltages : 5.0V
- | Low leakage current
- | Meet AEC-Q101 Requirements

## APPLICATIONS

- | Ethernet - 10/100/1000 Base T
- | Cellular Phones
- | I<sup>2</sup>C Bus Protection
- | Parallel & Serial Port Protection
- | Personal Digital Assistant (PDA)
- | Microcontroller Input Protection
- | WAN/LAN Equipment



SOD-323



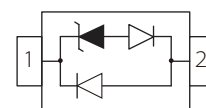
Marking

## 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

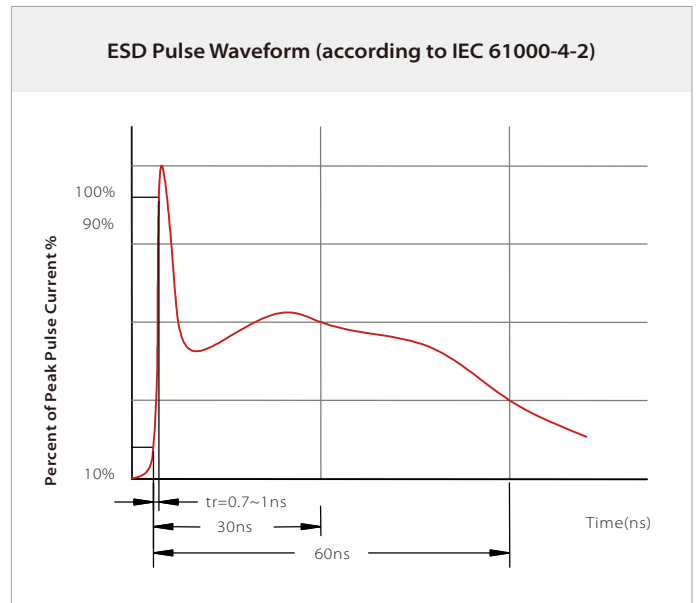
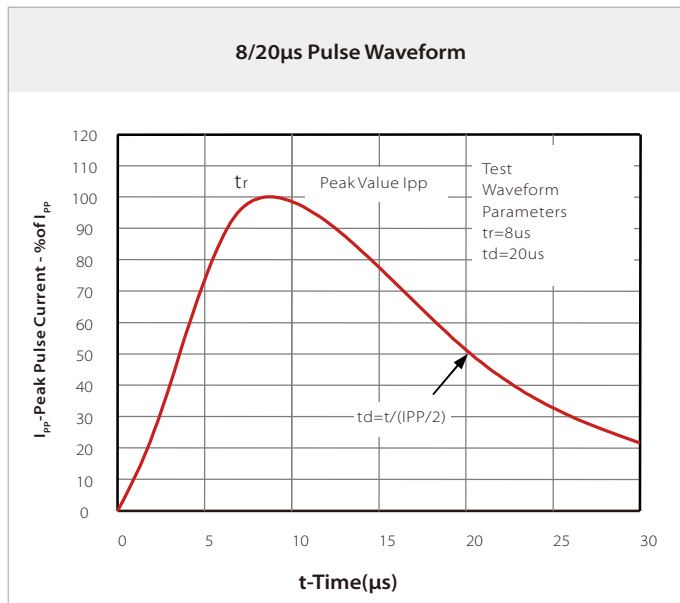
## THERMAL CONSIDERATIONS

| Symbol    | Parameter                             | Value       | Unit  |
|-----------|---------------------------------------|-------------|-------|
| $P_{PP}$  | Peak Pulse Power (tp=8/20μs waveform) | 325         | Watts |
| $T_J$     | Operating Temperature Range           | -55 to +125 | °C    |
| $T_{STG}$ | Storage Temperature Range             | -55 to +150 | °C    |

## ELECTRICAL CHARACTERISTICS

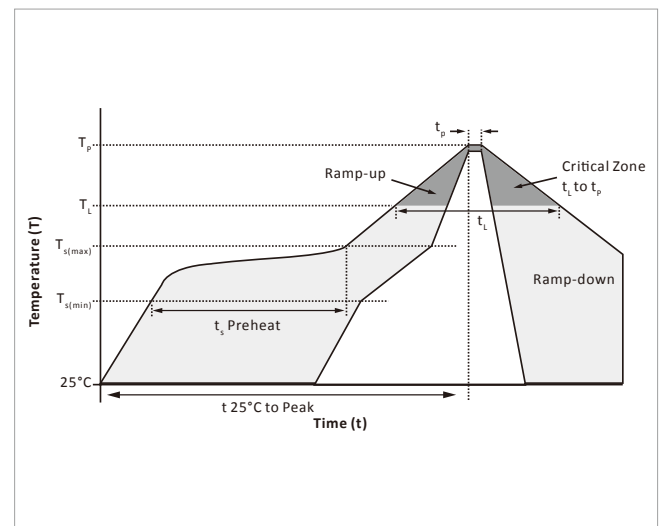
| Symbol    | Parameter                      | Condition                             | Min. | Typ. | Max. | Unit |
|-----------|--------------------------------|---------------------------------------|------|------|------|------|
| $V_{RWM}$ | Reverse Stand-off Voltage      |                                       |      |      | 5    | V    |
| $V_{BR}$  | Reverse Breakdown Voltage      | $I_T=1\text{mA}$                      | 6    |      |      | V    |
| $I_R$     | Reverse Leakage Current        | $V_{RWM}=5\text{V}$                   |      |      | 0.1  | μA   |
| $V_C$     | Clamping Voltage (Tp=8/20us)   | $I_{pp}=1\text{A}, tp=8/20\text{us}$  |      |      | 9.8  | V    |
| $V_C$     | Clamping Voltage (Tp=8/20us)   | $I_{pp}=10\text{A}, tp=8/20\text{us}$ |      |      | 18   | V    |
| $V_C$     | Clamping Voltage (Tp=8/20us)   | $I_{pp}=13\text{A}, tp=8/20\text{us}$ |      |      | 25   | V    |
| $I_{pp}$  | Peak Pulse Current (Tp=8/20us) | tp=8/20us                             |      |      | 13   | A    |
| $C_J$     | Off State Junction Capacitance | $V_R=0\text{V}, f=1\text{MHz}$        |      | 1    |      | pF   |

## CHARACTERISTIC CURVES

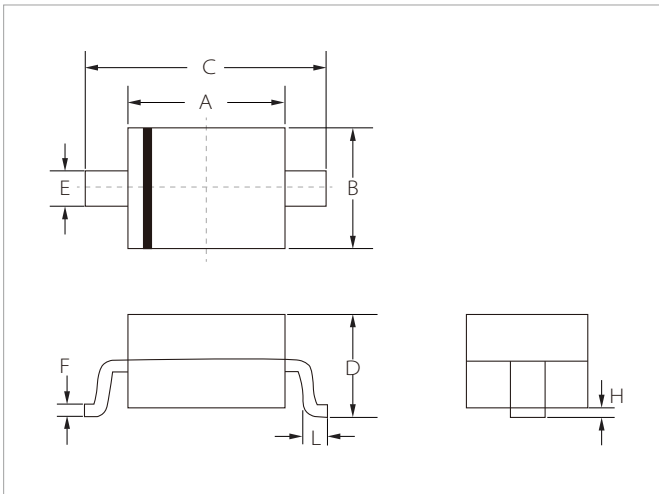


## SOLDERING PARAMETERS

| 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              |

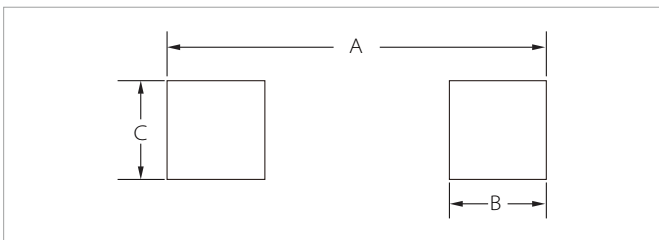


## SOD-323 PACKAGE INFORMATION



| Ref. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | Min.        | Max. | Min.   | Max.  |
| A    | 1.60        | 1.90 | 0.063  | 0.075 |
| B    | 1.15        | 1.45 | 0.045  | 0.057 |
| C    | 2.39        | 2.75 | 0.094  | 0.108 |
| D    | 0.80        | 1.10 | 0.031  | 0.043 |
| E    | 0.25        | 0.40 | 0.010  | 0.016 |
| F    | 0.10        | 0.20 | 0.004  | 0.008 |
| H    | -           | 0.10 | -      | 0.004 |
| L    | 0.20        | 0.40 | 0.008  | 0.016 |

## RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | Min.        | Max. | Min.   | Max.  |
| A    | 2.87        | 3.12 | 0.113  | 0.123 |
| B    | 0.66        | 0.91 | 0.026  | 0.036 |
| C    | 0.66        | 0.91 | 0.026  | 0.036 |

## ORDERING INFORMATION

| Part Number    | Component Package | QTY/Reel | Reel Size |
|----------------|-------------------|----------|-----------|
| TPSE3D35U5.0MA | SOD-323           | 3000PCS  | 7"        |

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