

## FEATURES

- | 50W Peak Pulse Power per Line (tp=8/20μs)
- | Protects one unidirectional I/O line
- | Low clamping voltage
- | Working voltages : 5 V
- | Low leakage current
- | Ultra Low capacitance

## APPLICATIONS

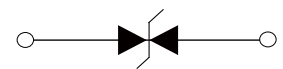
- | Cell Phone Handsets and Accessories
- | Microprocessor based equipment
- | Industrial Controls
- | Notebooks, Desktops, and Servers
- | Instrumentation
- | USB ports
- | Display Ports



SOD-523



Marking



Schematic Symbol

## IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) ±15kV (air), ±8kV (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 |

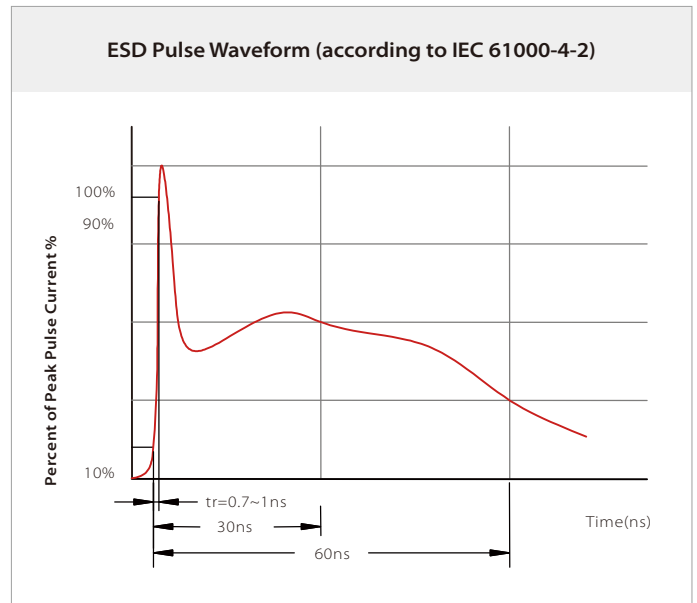
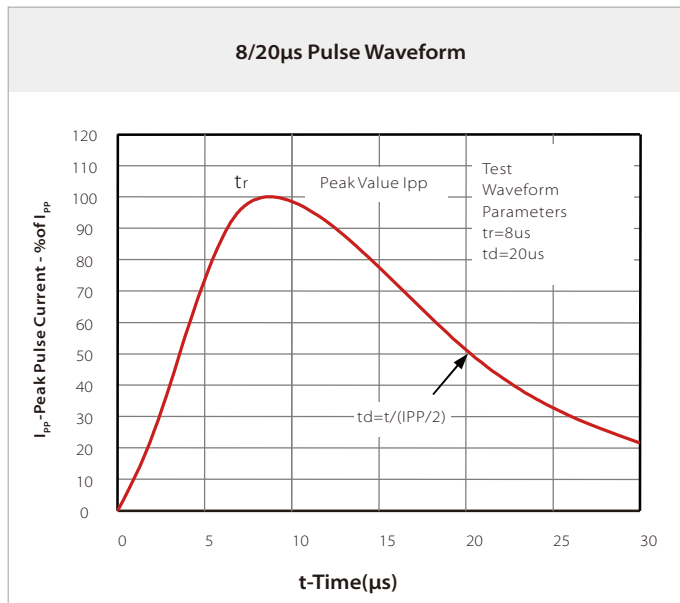
## THERMAL CONSIDERATIONS

| Symbol    | Parameter                             | Value       | Unit  |
|-----------|---------------------------------------|-------------|-------|
| $P_{PP}$  | Peak Pulse Power (tp=8/20μs waveform) | 50          | Watts |
| $T_J$     | Operating Temperature Range           | -55 to +125 | °C    |
| $T_{STG}$ | Storage Temperature Range             | -55 to +150 | °C    |

## ELECTRICAL CHARACTERISTICS

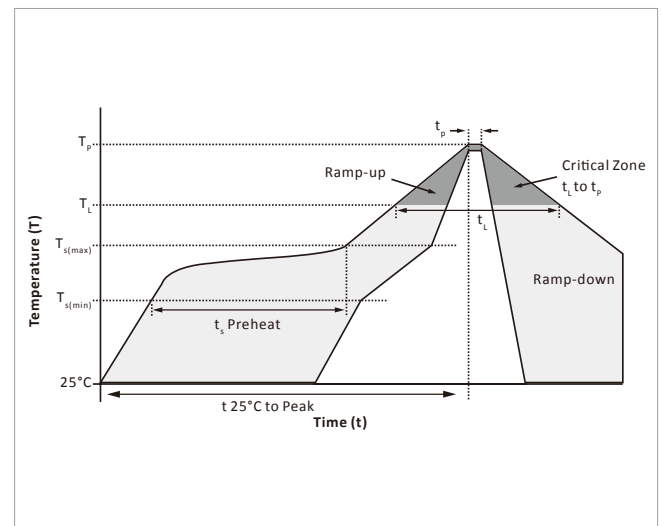
| Symbol    | Parameter                      | Condition                            | Min. | Typ. | Max. | Unit |
|-----------|--------------------------------|--------------------------------------|------|------|------|------|
| $V_{RWM}$ | Reverse Stand-off Voltage      |                                      |      |      | 5    | V    |
| $V_{BR}$  | Reverse Breakdown Voltage      | $I_T=1\text{mA}$                     | 6    | 7.5  | 9    | V    |
| $I_R$     | Reverse Leakage Current        | $V_{RWM}=5\text{V}$                  |      |      | 0.5  | μA   |
| $V_C$     | Clamping Voltage (Tp=8/20us)   | $I_{pp}=1\text{A}, tp=8/20\text{us}$ |      |      | 12   | V    |
| $V_C$     | Clamping Voltage (Tp=8/20us)   | $I_{pp}=2\text{A}, tp=8/20\text{us}$ |      |      | 20   | V    |
| $I_{PP}$  | Peak Pulse Current (Tp=8/20us) | tp=8/20us                            |      |      | 2    | A    |
| $C_J$     | Off State Junction Capacitance | $V_R=0\text{V}, f=1\text{MHz}$       |      | 0.8  | 1.1  | pF   |

## CHARACTERISTIC CURVES

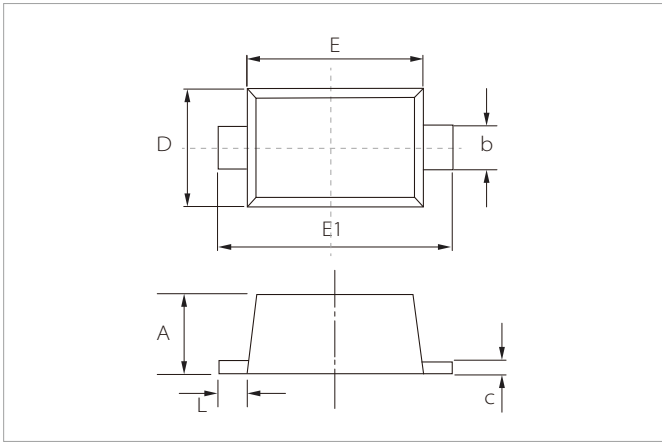


## SOLDERING PARAMETERS

| 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              |

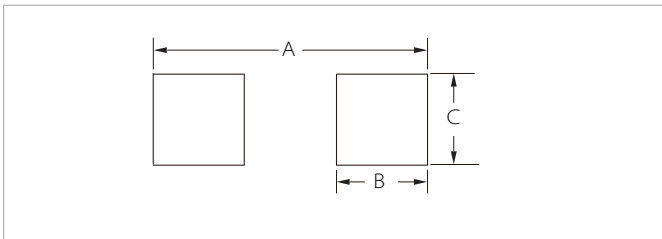


## SOD-523 PACKAGE INFORMATION



| Ref. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | Min.        | Max. | Min.   | Max.  |
| A    | 0.50        | 0.80 | 0.020  | 0.031 |
| b    | 0.25        | 0.35 | 0.010  | 0.014 |
| c    | 0.07        | 0.20 | 0.003  | 0.008 |
| D    | 0.70        | 0.90 | 0.028  | 0.035 |
| E    | 1.10        | 1.30 | 0.043  | 0.051 |
| E1   | 1.50        | 1.70 | 0.059  | 0.067 |
| L    | 0.15        | 0.25 | 0.006  | 0.010 |

## RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | Inches |
|------|-------------|--------|
|      | Min.        | Min.   |
| A    | 2.00        | 0.0787 |
| B    | 0.60        | 0.0236 |
| C    | 0.70        | 0.0276 |

## ORDERING INFORMATION

| Part Number  | Component Package | QTY/Reel | Reel Size |
|--------------|-------------------|----------|-----------|
| SE5D10B5.0MA | SOD-523           | 3000PCS  | 7"        |

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