

FEATURES

- | Low Forward Voltage Drop

- | Fast Switching Time

- | Surface Mount Package Ideally Suited for Automatic Insertion



SOD-323

MECHANICAL DATA

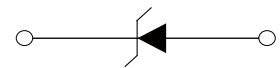
- | SOD-323 Small Outline Plastic Package

- | Polarity: Color band denotes cathode end

- | Mounting Position: Any



Marking



Schematic Symbol

APPROVALS

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

MAXIMUM RATINGS (T_A=25°C)

| Parameter | Symbol | Value | Unit |
|--|---------------------|----------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 30 | V |
| Maximum DC blocking voltage | V _R | 30 | V |
| Maximum RMS reverse voltage | V _{R(RMS)} | 21 | V |
| Forward Continuous Current | I _{FM} | 200 | mA |
| Repetitive Peak Forward Current @t<1.0s | I _{FRM} | 500 | mA |
| Non-repetitive Peak Forward Surge Current @t=8.3ms | I _{FSM} | 4 | A |
| Power Dissipation | P _D | 500 | mW |
| Thermal Resistance Junction to Ambient | R _{θJA} | 200 | °C/W |
| Operating junction temperature | T _J | 125 | °C |
| Storage temperature range | T _{STG} | -55-+150 | °C |

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|-------------------------------|------------|---|------|------|------|---------------|
| Maximum Forward Voltage | V_F | $I_F=200\text{mA}$ | | | 1.0 | V |
| | | $I_F=10\text{mA}$ | | | 0.40 | V |
| | | $I_F=50\text{mA}$ | | | 0.65 | V |
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_R=10\mu\text{A}$ | 30 | | | V |
| Reverse Leakage Current | I_R | $V_R=25\text{V}$ | | | 0.5 | μA |
| Capacitance Between Terminals | C_T | $V_R=1.0\text{V}, f=1.0\text{MHz}$ | | | 10 | pF |
| Reverse Recovery Time | T_{RR} | $I_F=I_R=10\text{mA}, R_L=100\Omega$ $I_{RR}=0.1 \times I_R$ | | | 5 | nS |

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

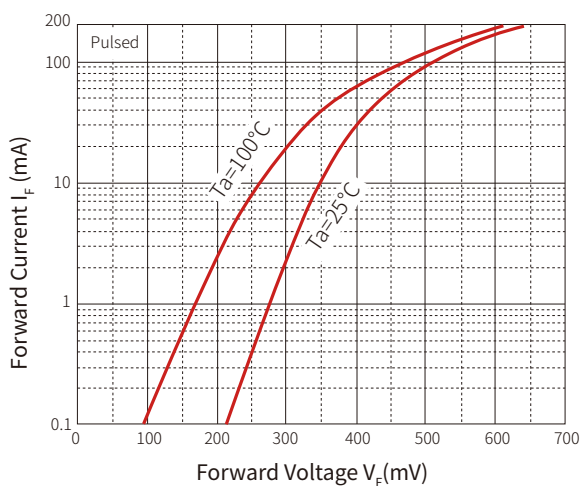


Fig.2 Reverse Characteristics

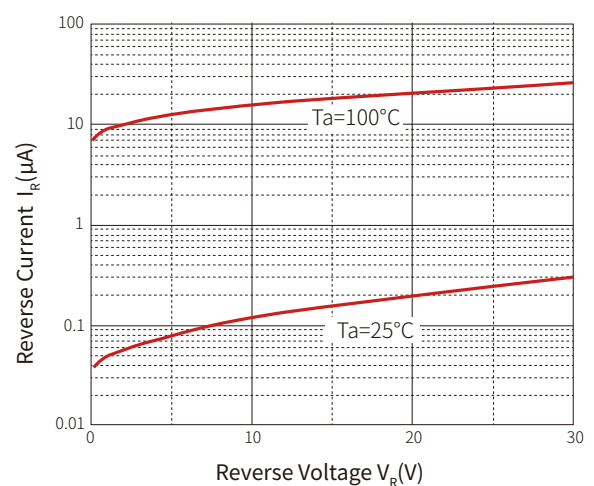
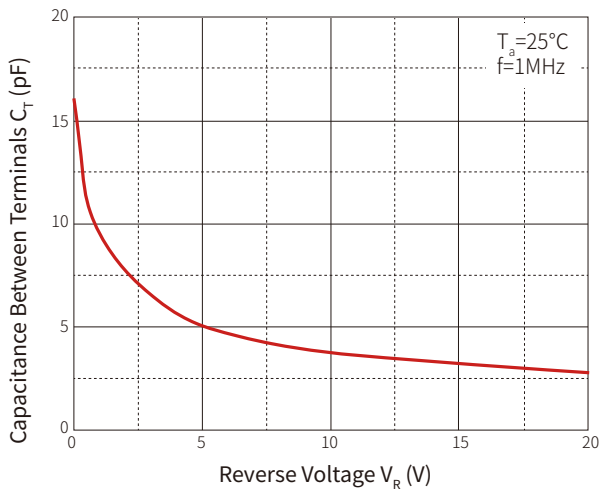
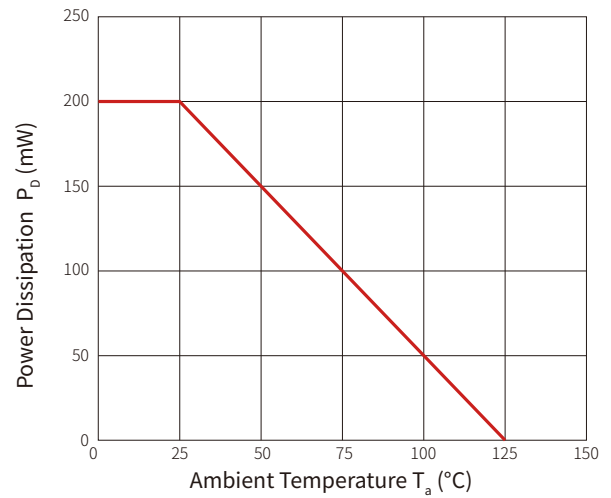
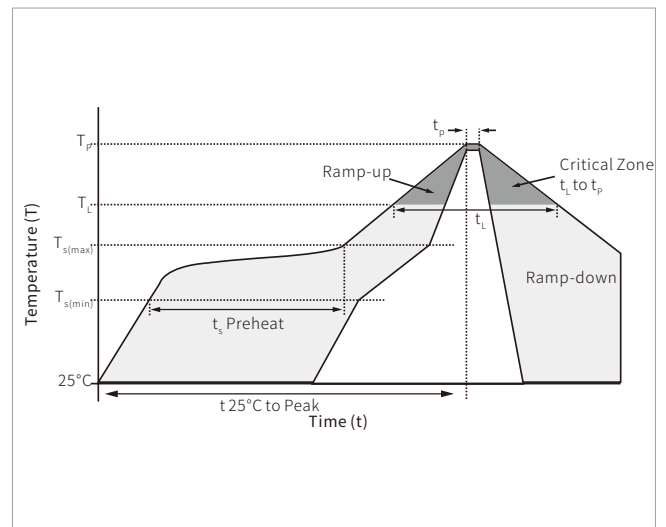


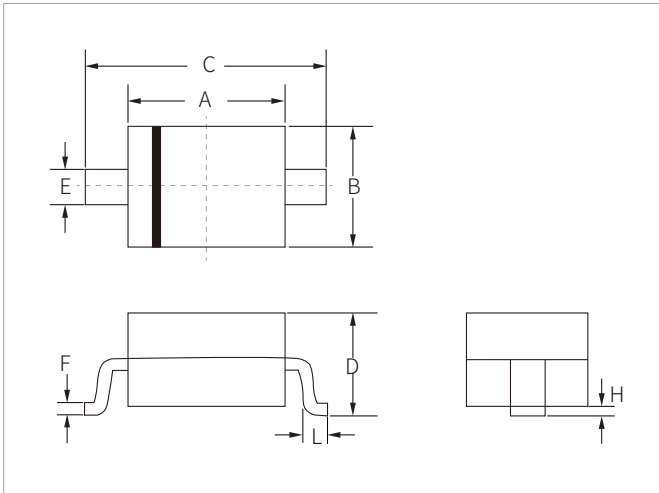
Fig.3 Capacitance Characteristics

Fig.4 Power Derating Curve


SOLDERING PARAMETERS

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

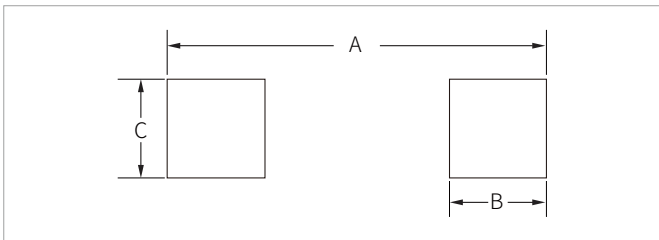


SOD-323 PACKAGE INFORMATION



| 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 | 2.35 | 2.75 | 0.093 | 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 |
|-------------|-------------------|----------|-----------|
| BAT42WS | SOD-323 | 3000PCS | 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

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



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