

### Features

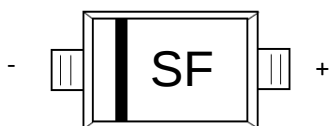
- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Also Available in Lead Free Version



SOD-323 top view



Schematic diagram



Marking and pin assignment



Halogen-Free

### Maximum Ratings( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                          | Value    | Unit                 |
|-----------------|----------------------------------------------------|----------|----------------------|
| $V_R$           | Reverse Voltage                                    | 40       | V                    |
| $V_{RRM}$       | Maximum recurrent peak reverse voltage             |          |                      |
| $V_{RWM}$       | Working Peak Reverse Voltage                       |          |                      |
| $V_{R(RMS)}$    | RMS Reverse Voltage                                | 28       |                      |
| $I_O$           | Average Rectified Output Current                   | 0.5      | A                    |
| $I_{FSM}$       | Non-repetitive Peak Forward Surge Current@t= 8.3ms | 5.5      |                      |
| $P_D$           | Power Dissipation                                  | 200      | mW                   |
| $R_{\theta JA}$ | Thermal resistance junction to ambient air         | 500      | $^{\circ}\text{C/W}$ |
| $T_J$           | Operating Junction Temperature Range               | -40~+125 | $^{\circ}\text{C}$   |
| $T_{stg}$       | Operation Junction and Storage Temperature Range   | -55~+150 | $^{\circ}\text{C}$   |
| dv/dt           | Voltage rate of change                             | 1000     | V/ $\mu\text{s}$     |

### ELECTRICAL CHARACTERISTICS( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

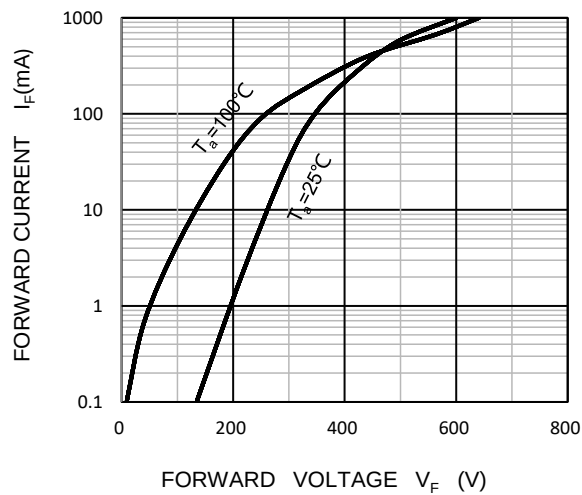
| Symbol     | Parameter                       | Condition                      | Min | Typ | Max  | Unit          |
|------------|---------------------------------|--------------------------------|-----|-----|------|---------------|
| $V_{(BR)}$ | Reverse voltage                 | $I_R=20\mu\text{A}$            | 40  | --  | --   | V             |
| $I_R$      | Reverse voltage leakage current | $V_R=20\text{V}$               | --  | --  | 10   | $\mu\text{A}$ |
|            |                                 | $V_R=40\text{V}$               | --  | --  | 20   |               |
| $V_F$      | Forward voltage                 | $I_F=0.5\text{A}$              | --  | --  | 0.51 | V             |
|            |                                 | $I_F=1.0\text{A}$              | --  | --  | 0.62 |               |
| $C_{tot}$  | Total capacitance               | $V_R=0\text{V}, f=1\text{MHz}$ | --  | --  | 170  | pF            |

### Ordering Information (Example)

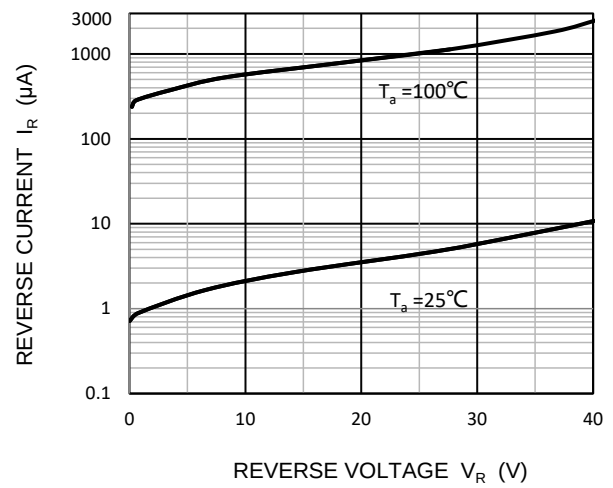
| Type    | Package | Marking | Minimum | Inner Box | Outer   | Delivery |
|---------|---------|---------|---------|-----------|---------|----------|
| B0540WS | SOD-323 | SF      | 3,000   | 45,000    | 180,000 | 7"reel   |

## Typical Operating Characteristics

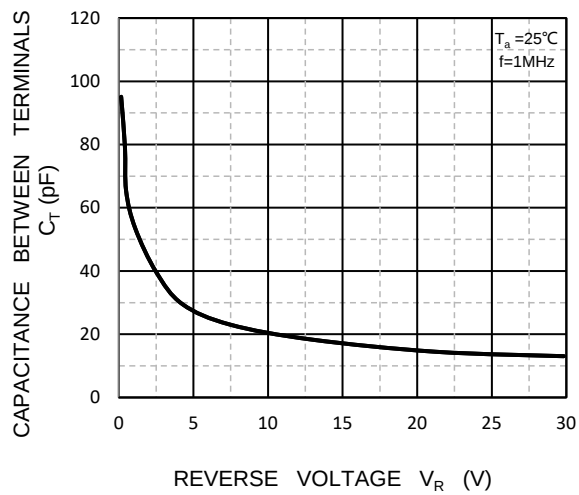
Forward Characteristics



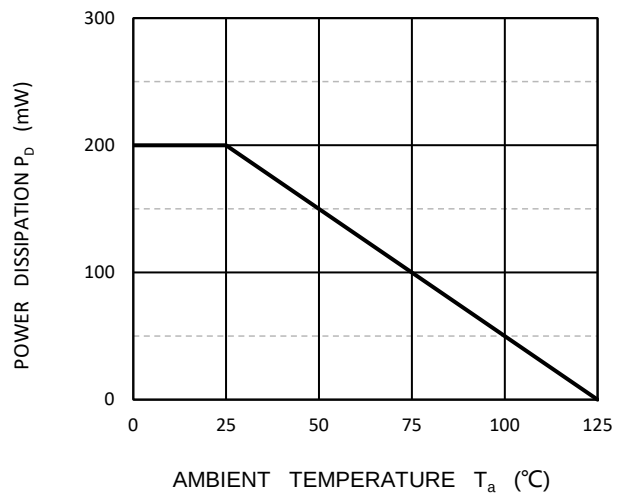
Reverse Characteristics



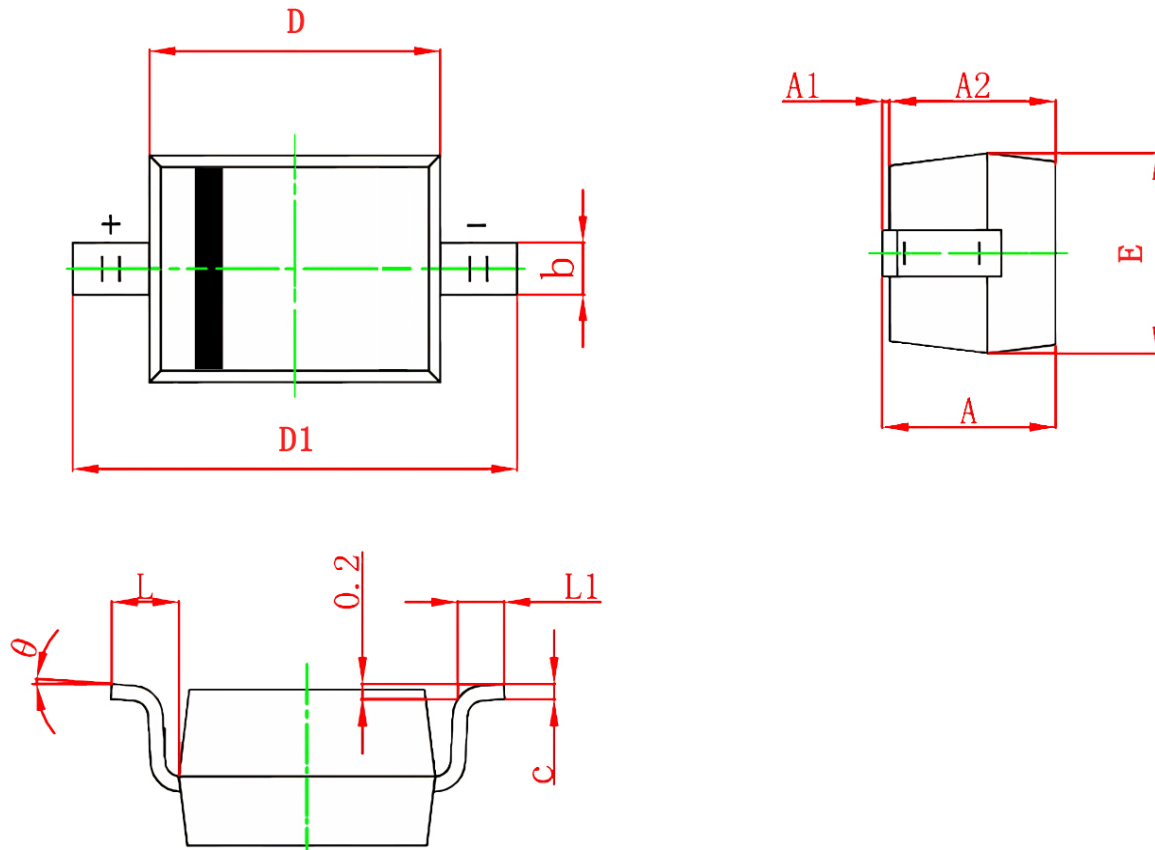
Capacitance Characteristics



Power Derating Curve



SOD-323 Package information



| Symbol   | Dimensions in Millimeters(mm) |       | Dimensions In Inches |       |
|----------|-------------------------------|-------|----------------------|-------|
|          | Min                           | Max   | Min                  | Max   |
| A        | -                             | 1.100 | -                    | 0.043 |
| A1       | 0.000                         | 0.100 | 0.000                | 0.004 |
| A2       | 0.800                         | 1.000 | 0.031                | 0.039 |
| b        | 0.250                         | 0.350 | 0.010                | 0.014 |
| c        | 0.080                         | 0.150 | 0.003                | 0.006 |
| D        | 1.600                         | 1.800 | 0.063                | 0.071 |
| D1       | 2.500                         | 2.750 | 0.098                | 0.108 |
| E        | 1.200                         | 1.400 | 0.047                | 0.055 |
| L        | 0.475 REF                     |       | 0.019 REF            |       |
| L1       | 0.250                         | 0.400 | 0.010                | 0.016 |
| $\theta$ | 0°                            | 8°    | 0°                   | 8°    |





