

## Features

- High-Speed Switching Applications
- Lead Finish: 100% Matte Sn ( Tin )
- Qualified Reflow Temperature: 260 °C
- Extremely Small SOD-523 Package



SOD-523 top view



Schematic diagram



Marking and pin assignment



Pb-Free



Halogen-Free

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

| Symbol          | Parameter                                                    | Value     | Unit                        |
|-----------------|--------------------------------------------------------------|-----------|-----------------------------|
| $V_R$           | Peak Repetitive Peak Reverse Voltage                         | 75        | V                           |
| $I_{FM}$        | Forward Continuous Current                                   | 200       | mA                          |
| $I_{FSM}$       | Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$ | 2         | A                           |
| $P_D$           | Power Dissipation                                            | 150       | mW                          |
| $R_{\theta JA}$ | Thermal Resistance Junction to Ambient                       | 833       | $^{\circ}\text{C}/\text{W}$ |
| $T_J, T_{STG}$  | Operating and Storage Temperature Range                      | -55~ +150 | $^{\circ}\text{C}$          |

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

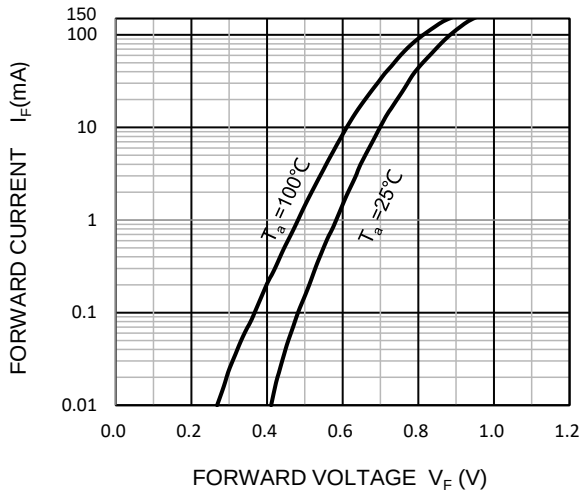
| Symbol     | Parameter                   | Condition                                         | Min | Typ | Max  | Unit          |
|------------|-----------------------------|---------------------------------------------------|-----|-----|------|---------------|
| $V_{(BR)}$ | Reverse voltage             | $I_R=100\mu\text{A}$                              | 75  | --  | --   | V             |
| $I_R$      | Reverse current             | $V_R=75\text{V}$                                  | --  | --  | 1    | $\mu\text{A}$ |
| $V_{F1}$   | Forward voltage             | $I_F=1\text{mA}$                                  | --  | --  | 715  | mV            |
| $V_{F2}$   |                             | $I_F=10\text{mA}$                                 | --  | --  | 855  | mV            |
| $V_{F3}$   |                             | $I_F=50\text{mA}$                                 | --  | --  | 1000 | mV            |
| $V_{F4}$   |                             | $I_F=150\text{mA}$                                | --  | --  | 1250 | mV            |
| $V_{FR}$   | Forward recovery voltage to | $I_F=10\text{mA}, t_r=20\text{ns}$                | --  | --  | 1.75 | V             |
| $C_D$      | Diode capacitance           | $V_R=0\text{V}, f=1\text{MHz}$                    | --  | --  | 2    | pF            |
| $Q_S$      | Stored charge               | $I_F=10\text{mA}, V_R=5.0\text{V}, R_L=500\Omega$ | --  | --  | 45   | pC            |
| $t_{rr}$   | Reverse recovery time       | $I_F=I_R=10\text{mA}, R_L=50\Omega$               | --  | --  | 6    | ns            |
| $V_{fr}$   | Forward Recovery Voltage    | $I_F=10\text{mA}, t_r=20\text{ns}$                | --  | --  | 6    | ns            |

## Ordering Information (Example)

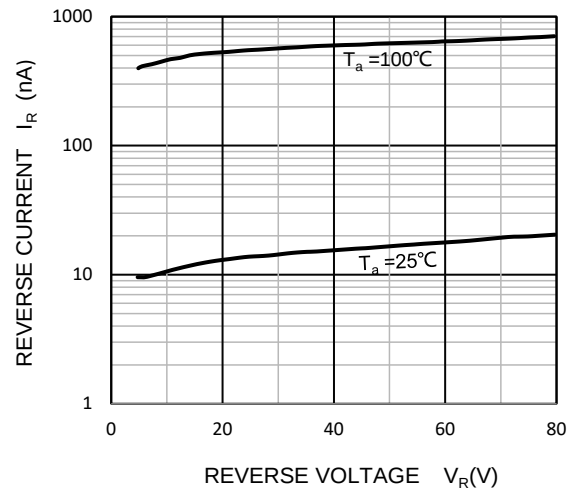
| Type   | Package | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|--------|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| BAS16X | SOD-523 | A6      | 3,000                | 45,000                  | 180,000                    | 7" reel       |

Typical Operating Characteristics

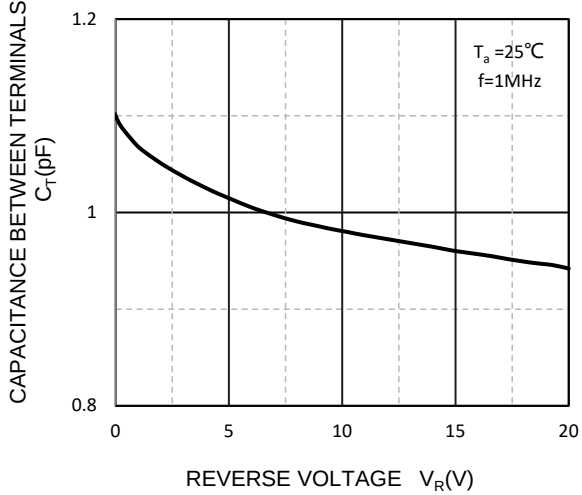
Forward Characteristics



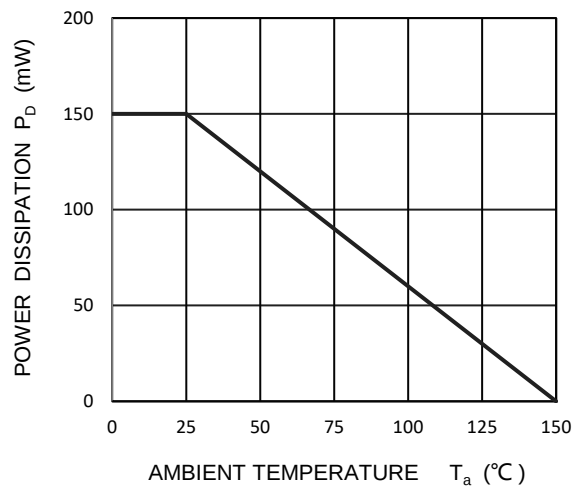
Reverse Characteristics



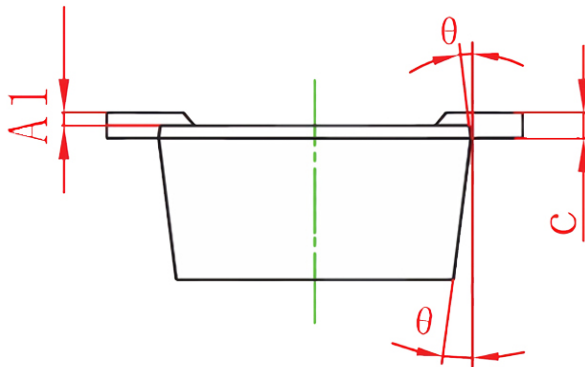
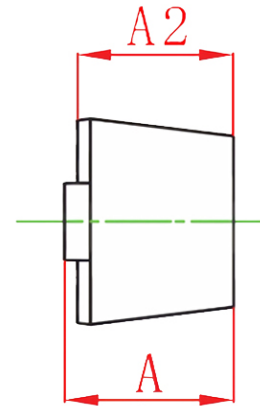
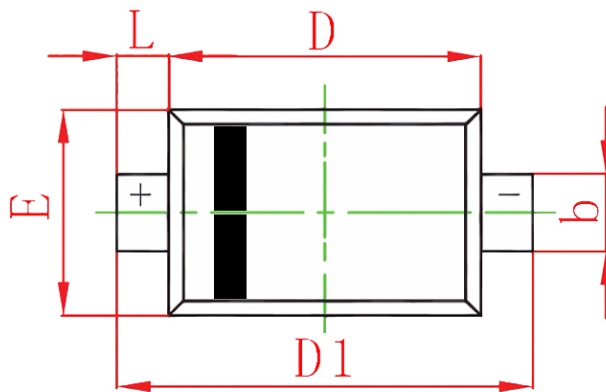
Capacitance Characteristics



Power Derating Curve



SOD-523 Package information



| Symbol   | Dimensions in Millimeters(mm) |       | Dimensions In Inches |       |
|----------|-------------------------------|-------|----------------------|-------|
|          | Min                           | Max   | Min                  | Max   |
| A        | 0.510                         | 0.770 | 0.020                | 0.030 |
| A1       | 0.010                         | 0.070 | 0.000                | 0.003 |
| A2       | 0.500                         | 0.700 | 0.020                | 0.028 |
| b        | 0.250                         | 0.350 | 0.010                | 0.014 |
| c        | 0.080                         | 0.150 | 0.003                | 0.006 |
| D        | 1.100                         | 1.300 | 0.043                | 0.051 |
| D1       | 1.500                         | 1.700 | 0.059                | 0.067 |
| E        | 0.750                         | 0.850 | 0.030                | 0.033 |
| L        | 0.200 REF                     |       | 0.008 REF            |       |
| $\theta$ | 7°REF                         |       | 7°REF                |       |