

## Features

- Extremely Fast Switching Speed
- Low Forward Voltage



## Marking: JV



Marking and pin assignment

SOD-523 top view

Schematic diagram



Halogen-Free

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

| Symbol          | Parameter                                                    | Value           | Unit                 |
|-----------------|--------------------------------------------------------------|-----------------|----------------------|
| $V_{RM}$        | Non-Repetitive Peak Reverse Voltage                          | 30              | V                    |
| $V_R$           | Peak Repetitive Peak Reverse Voltage                         | 21              | V                    |
| $I_F$           | Forward Continuous Current                                   | 200             | mA                   |
| $I_o$           | Average Rectified Output Current                             | 100             | mA                   |
| $I_{FRM}$       | Repetitive peak forward current                              | 300             | mA                   |
| $I_{FSM}$       | Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$ | 600             | mA                   |
| $P_D$           | Power Dissipation                                            | 150             | mW                   |
| $R_{\theta JA}$ | Thermal Resistance Junction to Ambient                       | 667             | $^{\circ}\text{C/W}$ |
| $T_J$           | Operating Junction Temperature Range                         | $-40 \sim +125$ | $^{\circ}\text{C}$   |
| $T_{STG}$       | Storage Temperature Range                                    | $-55 \sim +150$ | $^{\circ}\text{C}$   |

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

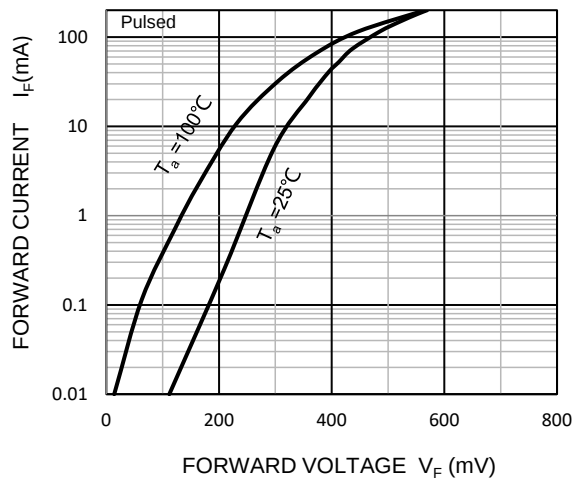
| Symbol     | Parameter                     | Condition                                                       | Min | Typ | Max  | Unit          |
|------------|-------------------------------|-----------------------------------------------------------------|-----|-----|------|---------------|
| $V_{(BR)}$ | Reverse breakdown voltage     | $I_R=100\mu\text{A}$                                            | 30  | --  | --   | V             |
| $I_R$      | Reverse current               | $V_R=25\text{V}$                                                | --  | --  | 2    | $\mu\text{A}$ |
| $V_{F1}$   | Forward voltage               | $I_F=0.1\text{mA}$                                              | --  | --  | 240  | mV            |
| $V_{F2}$   |                               | $I_F=1\text{mA}$                                                | --  | --  | 320  | mV            |
| $V_{F3}$   |                               | $I_F=10\text{mA}$                                               | --  | --  | 400  | mV            |
| $V_{F4}$   |                               | $I_F=30\text{mA}$                                               | --  | --  | 500  | mV            |
| $V_{F5}$   |                               | $I_F=100\text{mA}$                                              | --  | --  | 1000 | mV            |
| $C_T$      | Capacitance between terminals | $V_R=1\text{V}, f=1\text{MHz}$                                  | --  | --  | 10   | pF            |
| $t_{rr}$   | Reverse recovery time         | $I_F=10\text{mA}, I_R=10\text{mA to }1\text{mA}, R_L=100\Omega$ | --  | --  | 5    | ns            |

## Ordering Information (Example)

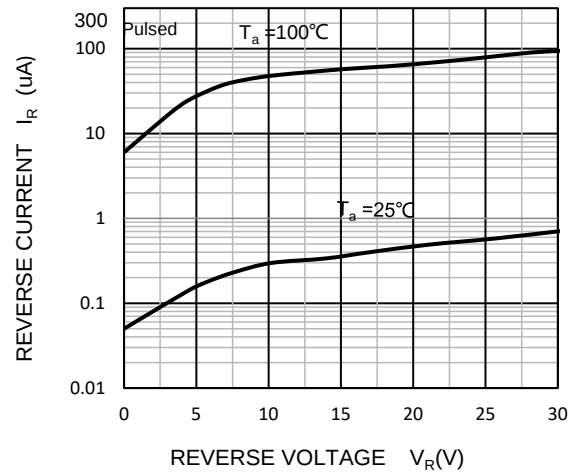
| Type   | Package | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|--------|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| BAT54X | SOD-523 | JV      | 3,000                | 45,000                  | 180,000                    | 7"reel        |

## Typical Operating Characteristics

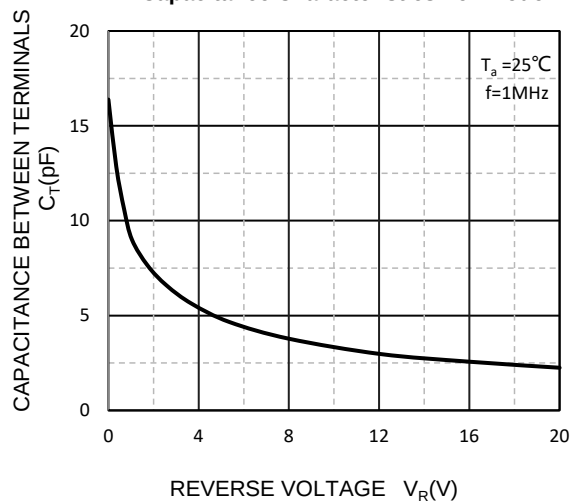
Forward Characteristics



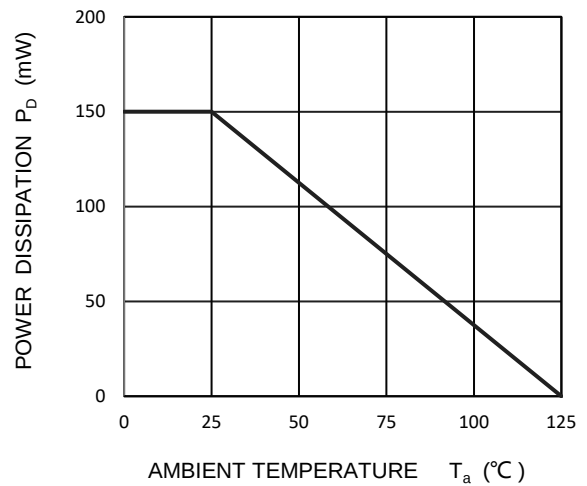
Reverse Characteristics



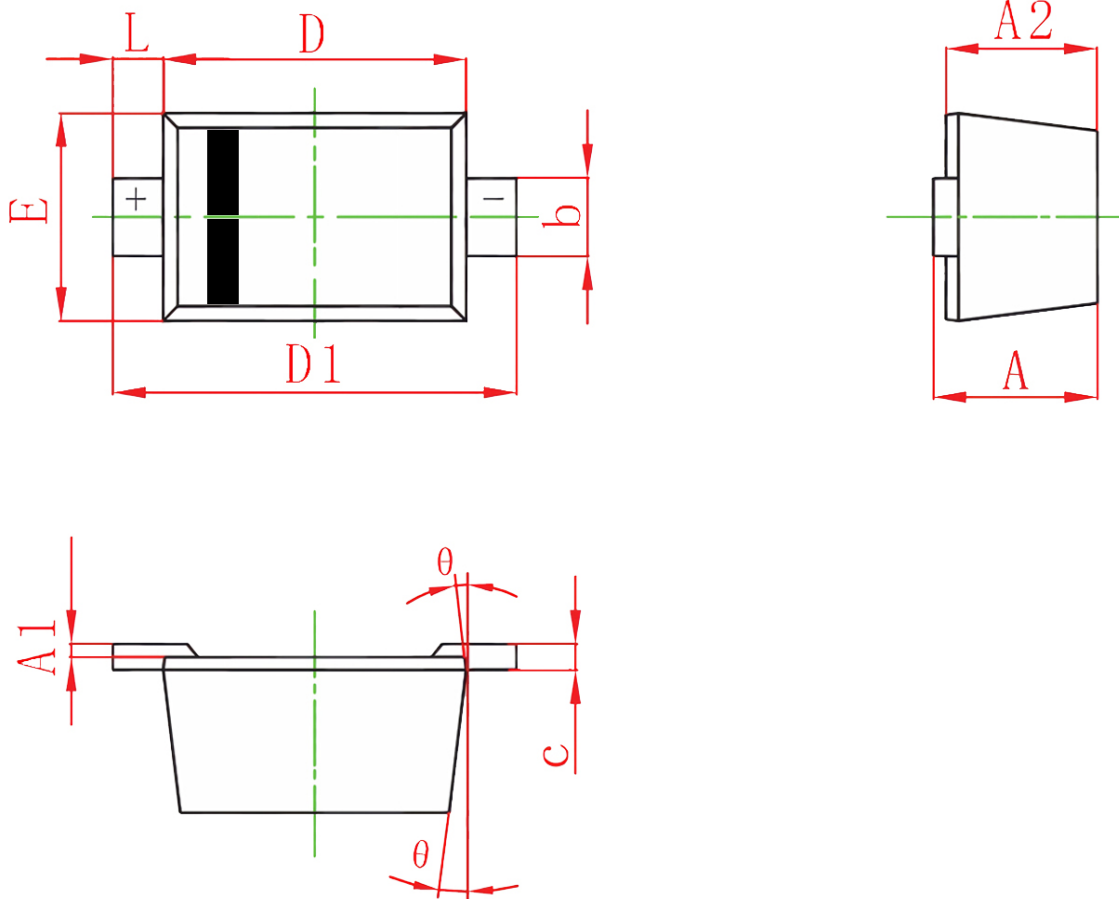
Capacitance Characteristics Per Diode



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                |       |