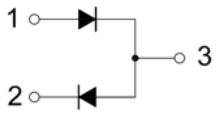
GOOD-ARK
SEMICONDUCTOR

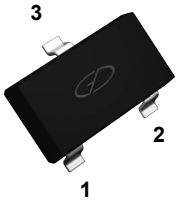
# BAS299
# Switching Diode

## Features

- Fast switching speed
- For general purpose switching applications
- High conductance
- Low reverse leakage




**Schematic Diagram**




**SOT-23**

RoHS COMPLIANT

## Maximum Ratings ($T_A$=25 °C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Repetitive Reverse Voltage | $V_{RRM}$ | 100 | V |
| Reverse Voltage | $V_R$ | 100 | V |
| Forward Current (Single Diode) | $I_F$ | 420 | mA |
| Forward Current (Double Diode) | | 300 | |
| Non-Repetitive Peak Forward Surge Current, @$T_P$=1.0us | $I_{FSM}$ | 9.0 | A |
| Non-Repetitive Peak Forward Surge Current, @$T_P$=1.0ms | | 3.0 | |
| Non-Repetitive Peak Forward Surge Current, @$T_P$=1.0s | | 1.0 | |
| Repetitive Peak Forward Current | $I_{FRM}$ | 900 | mA |
| Power Dissipation | $P_D$ | 300 | mW |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 430 | °C/W |
| Operating Junction Temperature Range | $T_J$ | -55 To +150 | °C |
| Storage Temperature Range | $T_{STG}$ | -55 To +150 | °C |

## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Conditions | Min. | Max. | Unit |
|---|---|---|---|---|---|
| Reverse Breakdown Voltage | $V_R$ | $I_R$=100μA | 100 | - | V |
| Forward Voltage | $V_F$ | $I_F$=1mA | - | 0.72 | V |
| | | $I_F$=10mA | - | 0.86 | |
| | | $I_F$=50mA | - | 1 | |
| | | $I_F$=150mA | - | 1.2 | |
| | | $I_F$=300mA | - | 1.25 | |
| Reverse Current | $I_R$ | $V_R$=25V | - | 30 | nA |
| | | $V_R$=100V | - | 1 | μA |
| | | $V_R$=25V, $T_J$=150°C | - | 30 | |
| | | $V_R$=100V, $T_J$=150°C | - | 60 | |
| Capacitance Between Terminals | $C_T$ | $V_R$=0, f=1MHz | - | 3 | pF |
| Reverse Recovery Time | $t_{rr}$ | $I_F$=$I_R$=10mA, $R_L$=100Ω, $I_{RR}$=0.1×$I_R$ | - | 6 | ns |
| Forward Recovery Voltage | $V_{FR}$ | $I_F$=10mA, $t_r$=20ns | - | 1.75 | V |

## Ratings and Characteristic Curves ($T_A$=25°C unless otherwise specified)

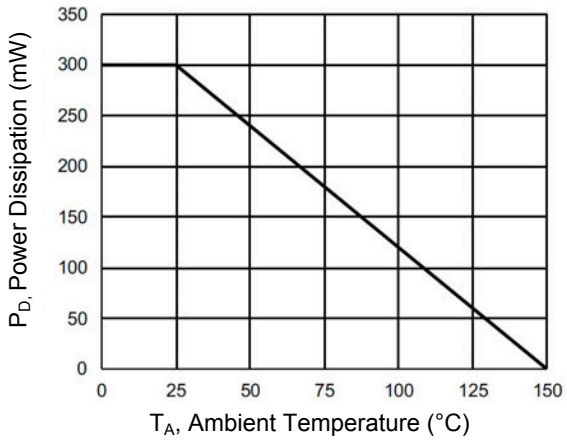



**Figure 1. Power Derating Curve**

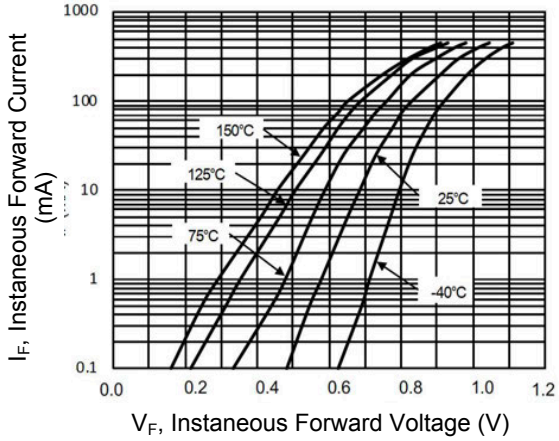



**Figure 2. Forward Characteristics**

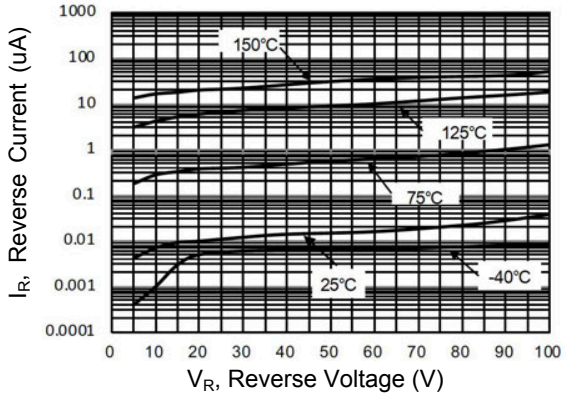



**Figure 3. Reverse Characteristics**

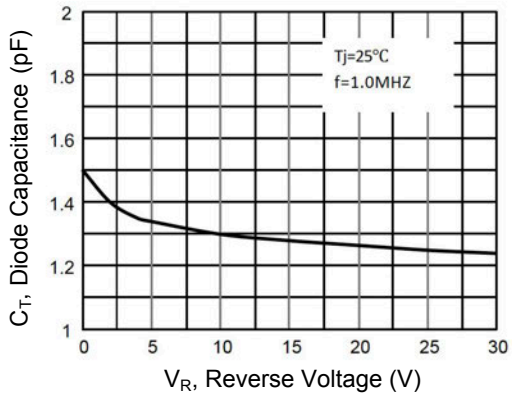
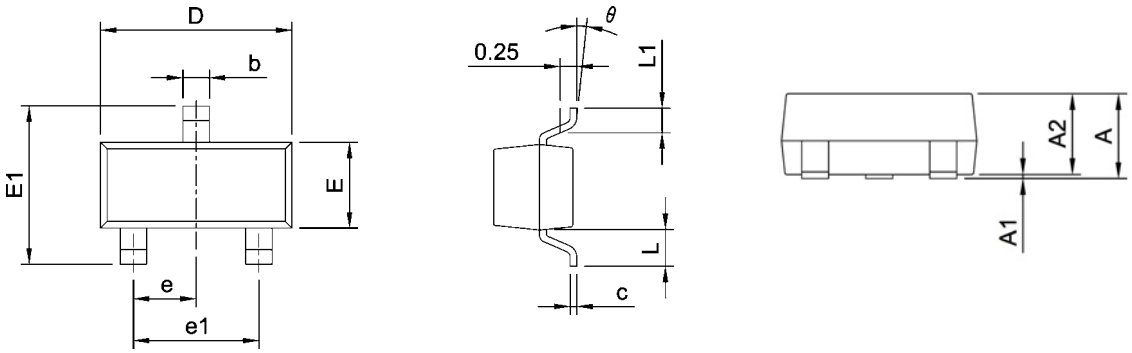


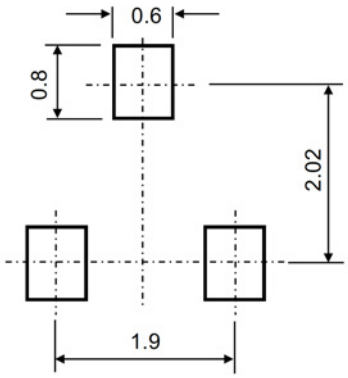

**Figure 4. Capacitance Characteristics**

## Package Outline Dimensions (SOT-23)




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

## Recommended Pad Layout




Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.