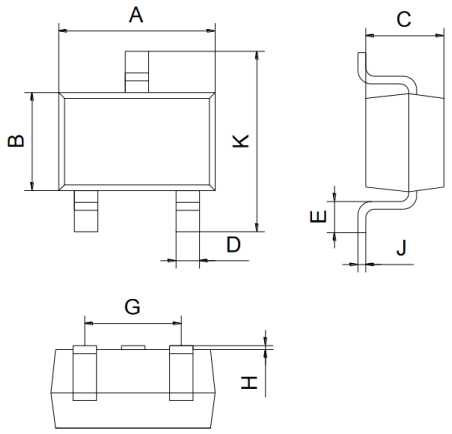
# SMD General Purpose Diode

| Primary characteristics | | |
|---|---|---|
| **Parameter** | **Value** | **Unit** |
| Continuous reverse voltage | 50 | V |
| Forward current | 50 | mA |

## Features

- **SOT-323** case for easy automatic insertion.
- Pb-free and **RoHS** compliant
- General purpose
- Low diode capacitance
- Low diode forward resistance
- Molding compound: UL flammability classification rating 94V-0
- Terminals: matte tin-plated leads; solderability-per MIL-STD-202, method 208

**Case dimensions**



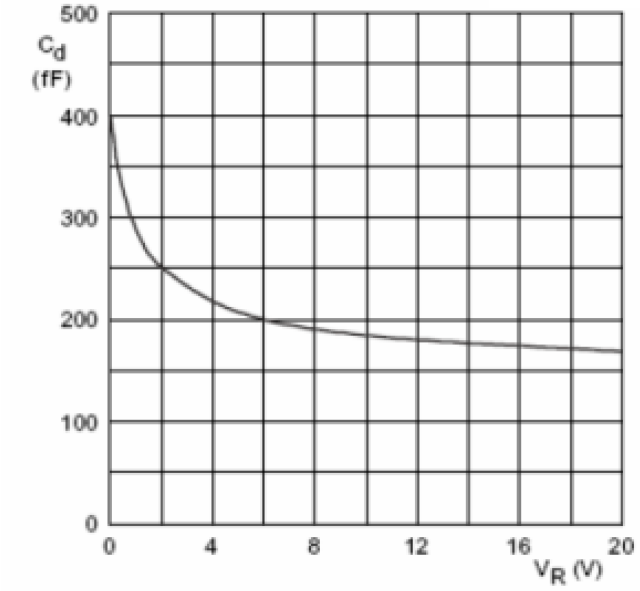

**SOT-323**

| Unit | A | B | C | D | E | G | H | J | K |
|---|---|---|---|---|---|---|---|---|---|
| mm | 2.1 ±0.1 | 1.25 ±0.1 | 1.0 ±0.1 | 0.25 ±0.1 | 0.33 -0.08 +0.07 | 1.3 ±0.1 | 0.06 ±0.04 | 0.1 ±0.05 | 2.3 ±0.1 |

**Absolute maximum ratings and electrical characteristics ($T_a$=25°C)**

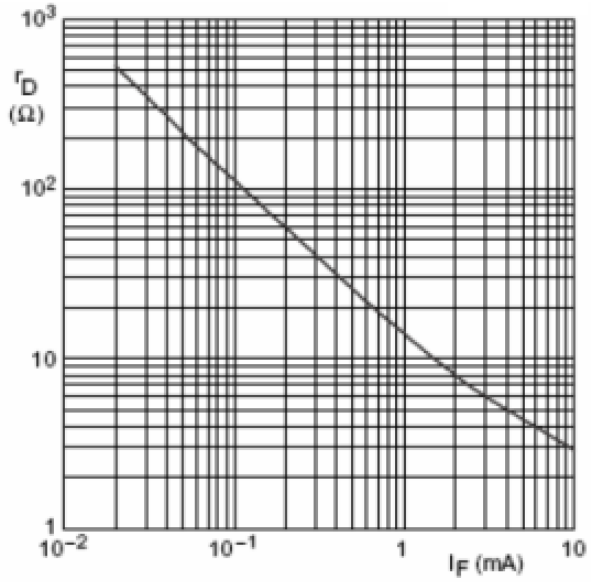
| Parameter | Symbol | Test conditions | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Continuous reverse voltage | $V_R$ | - | - | - | 50 | V |
| Forward current | $I_F$ | - | - | - | 50 | mA |
| Power dissipation ($T_{sp}$=90°C) | $P_D$ | - | - | - | 200 | mW |
| Operating junction and storage temperature range | $T_J$, $T_{stg}$ | - | -65 | - | 150 | °C |
| Continuous reverse voltage | $V_R$ | $I_R$=10µA | 50 | - | - | V |
| Reverse voltage leakage current | $I_R$ | $V_R$=50V | - | - | 100 | nA |
| Forward voltage | $V_F$ | $I_F$=50mA | - | - | 1.1 | V |
| Diode capacitance | $C_{d1}$ | $V_R$=0V, f=1MHz | - | 0.4 | - | pF |
| | $C_{d2}$ | $V_R$=1V, f=1MHz | - | 0.3 | 0.55 | pF |
| | $C_{d3}$ | $V_R$=5V, f=1MHz | - | 0.2 | 0.35 | pF |
| Diode forward resistance | $R_{D1}$ | $I_F$=0.5mA, f=100MHz | - | 25 | 40 | Ω |
| | $R_{D2}$ | $I_F$=1mA, f=100MHz | - | 14 | 25 | Ω |
| | $R_{D3}$ | $I_F$=10mA, f=100MHz | - | 3 | 5 | Ω |

**Diode capacitance as a function of reverse voltage; typical values**



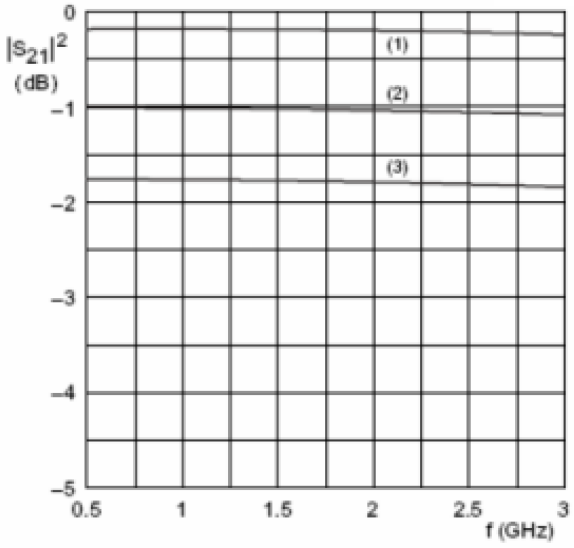

f = 1 MHz; $T_j$ = 25 °C.

**Forward voltage as a function of forward current; typical values**



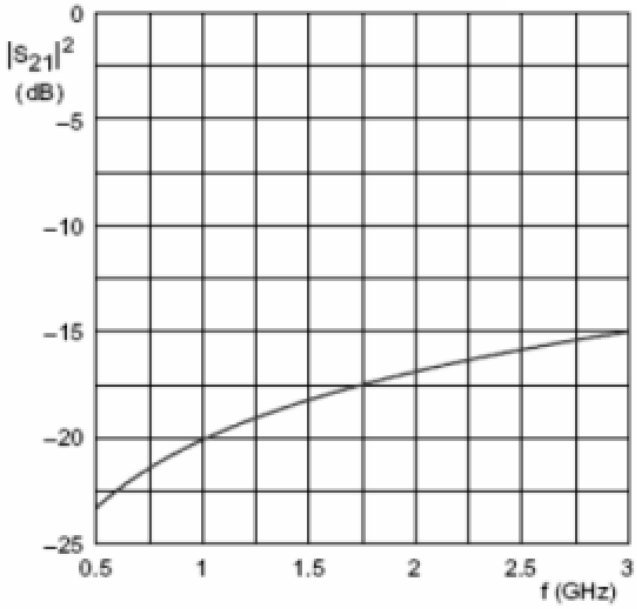

f = 100 MHz; $T_j$ = 25 °C.

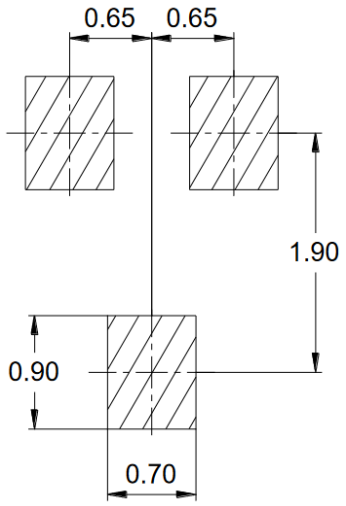
**Insertion loss ($|S_{21}|^2$) of the diode as a function of frequency; typical values**




(1) $I_F$ = 10 mA. (2) $I_F$ = 1 mA. (3) $I_F$ = 0.5 mA.

**Isolation ($|S_{21}|^2$) of the diode as a function of frequency; typical values**



| Suggested soldering pad layout |
|---|
|   |
| **SOT-323** |

| Ordering information | | | |
|---|---|---|---|
| **Part Number** | **Package** | **Shipping Quantity** | **Marking Code** |
| BAP50-04W | SOT-323 | **3000 pcs / reel** | 4LP |

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