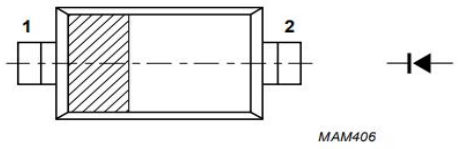
- Small plastic SMD package • Switching speed: max. 50 ns • General application
- Continuous reverse voltage: max. 200 V
- Repetitive peak reverse voltage: max. 250 V
- Repetitive peak forward current: max. 625 mA.

| PIN | DESCRIPTION |
|---|---|
| 1 | cathode |
| 2 | anode |




**Marking code:** A7
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD323) and symbol.

## APPLICATIONS

- General purpose switching in e.g. surface mounted circuits.

## DESCRIPTION

The BAS321 is a general purpose diode fabricated in planar technology and encapsulated in a plastic SOD323 package.

## ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|---|---|---|---|
| | NAME | DESCRIPTION | VERSION |
| BAS321 | − | plastic surface mounted package; 2 leads | SOD323 |

## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|---|---|---|---|---|
| $V_{RRM}$ | repetitive peak reverse voltage | | − | 250 | V |
| $V_R$ | continuous reverse voltage | | − | 200 | V |
| $I_F$ | continuous forward current | see Fig.2; note 1 | − | 250 | mA |
| $I_{FRM}$ | repetitive peak forward current | $t_p$ < 0.5 ms; $\delta \leqslant 0.25$ | − | 625 | mA |
| $I_{FSM}$ | non-repetitive peak forward current | square wave; $T_j$ = 25 °C prior to surge; see Fig.4 | | | |
| | | t = 1 ∝s | − | 9 | A |
| | | t = 100 ∝s | − | 3 | A |
| | | t = 10 ms | − | 1.7 | A |
| $P_{tot}$ | total power dissipation | $T_{amb}$ = 25 °C; note 1 | − | 300 | mW |
| $T_{stg}$ | storage temperature | | −65 | +150 | °C |
| $T_j$ | junction temperature | | − | 150 | °C |

**Note**

1. Device mounted on an FR4 printed circuit-board.

## CHARACTERISTICS

$T_j$ = 25 °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MAX. | UNIT |
|---|---|---|---|---|
| $V_F$ | forward voltage | see Fig.3 | | |
| | | $I_F$ = 100 mA | 1 | V |
| | | $I_F$ = 200 mA | 1.25 | V |
| $I_R$ | reverse current | see Fig.5 | | |
| | | $V_R$ = 200 V | 100 | nA |
| | | $V_R$ = 200 V; $T_j$ = 150 °C | 100 | ∝A |
| $C_d$ | diode capacitance | f = 1 MHz; $V_R$ = 0; see Fig.6 | 2 | pF |
| $t_{rr}$ | reverse recovery time | when switched from $I_F$ = 30 mA to $I_R$ = 30 mA; $R_L$ = 100 Ω; measured at $I_R$ = 3 mA; see Fig.8 | 50 | ns |

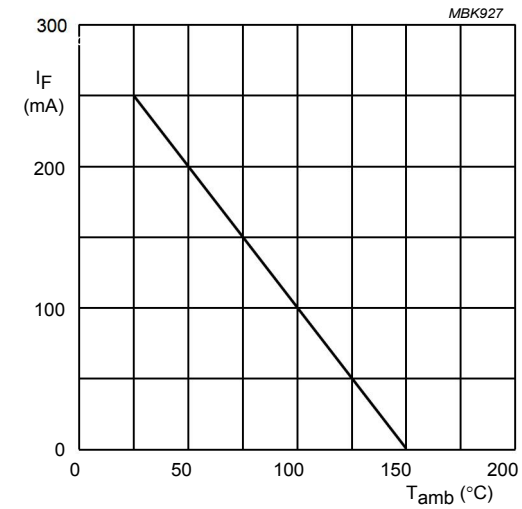
## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $R_{th(j-s)}$ | thermal resistance from junction to soldering point | $T_s$ = 90°C; note 1 | 130 | K/W |
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | note 2 | 366 | K/W |

**Notes**

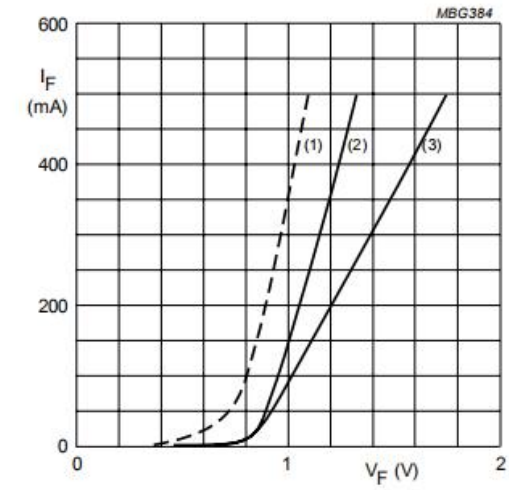
1. Soldering point of cathode tab.
2. Device mounted on an FR4 printed circuit board.

## GRAPHICAL DATA



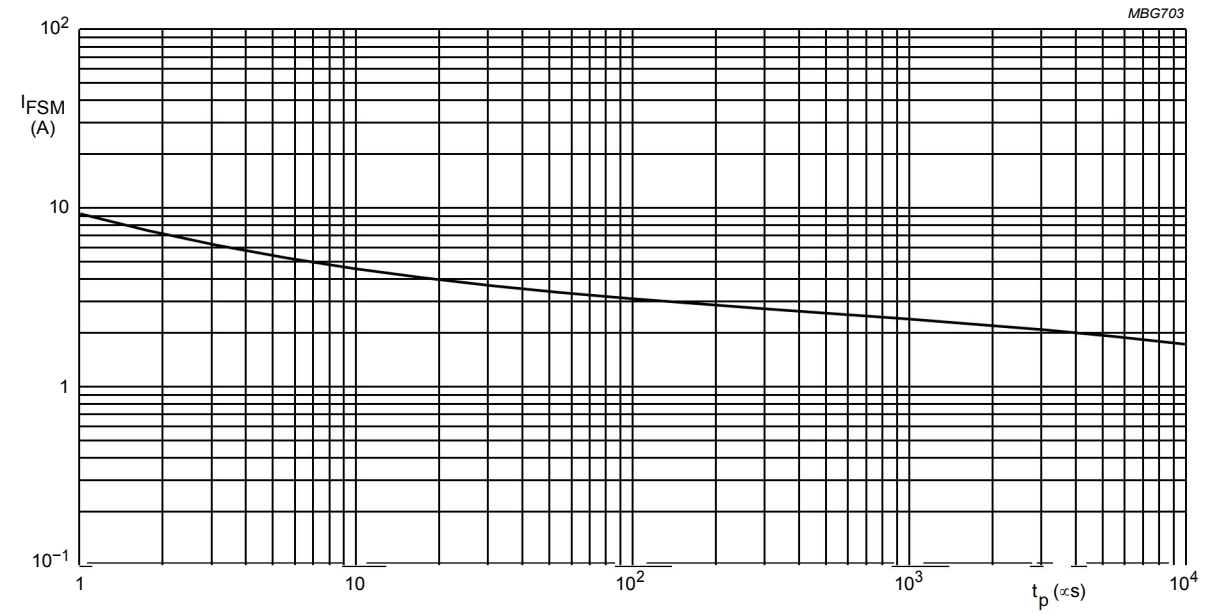

Device mounted on an FR4 printed-circuit board.

Fig.2 Maximum permissible continuous forward current as a function of ambient temperature.



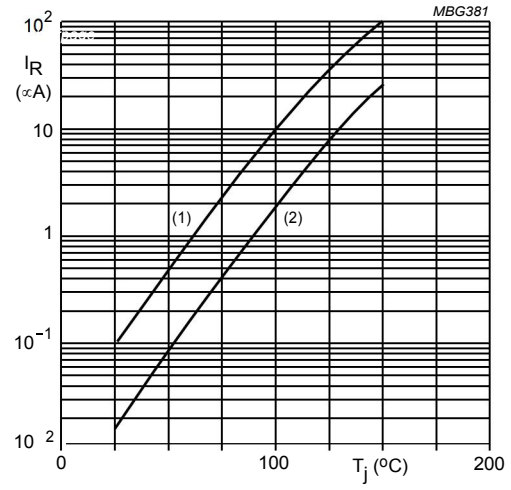

(1) $T_j$ = 150 °C; typical values.
(2) $T_j$ = 25 °C; typical values.
(3) $T_j$ = 25 °C; maximum values.

Fig.3 Forward current as a function of forward voltage.



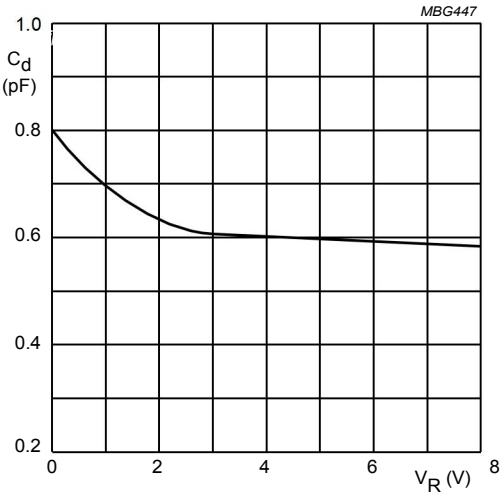

Based on square wave currents.
$T_j$ = 25 °C prior to surge.

Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.




(1) $V_R = V_{Rmax}$; maximum values.
(2) $V_R = V_{Rmax}$; typical values.

Fig.5 Reverse current as a function of junction temperature.




f = 1 MHz; $T_j$ = 25 °C.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

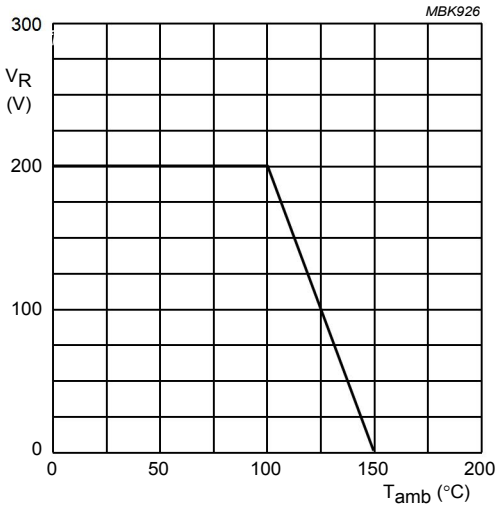
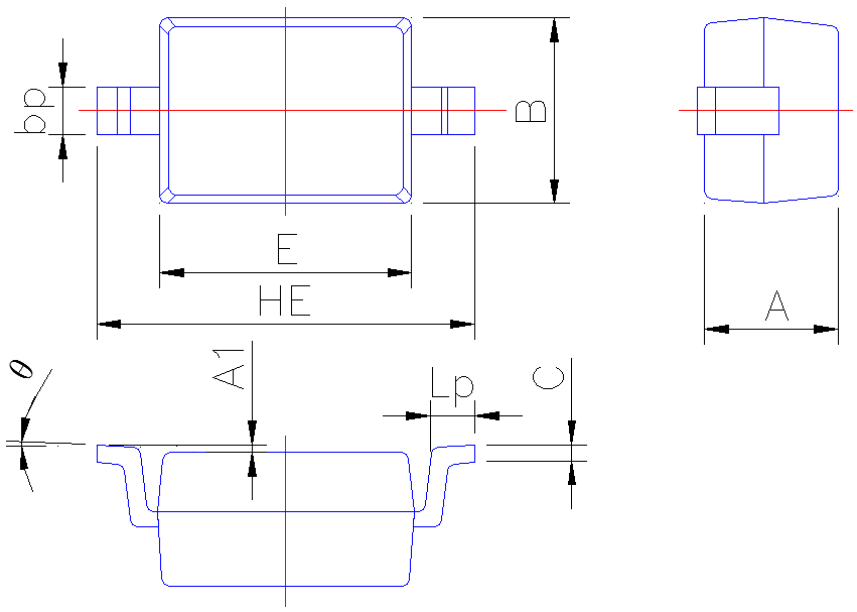



Fig.7 Maximum permissible continuous reverse voltage as a function of the ambient temperature.

## PACKAGE OUTLINE

**Plastic surface mounted package; 2 leads** **SOD-323**




| Symbol | Dimension in Millimeters | |
|---|---|---|
| | Min | Max |
| A | 0.95 | 1.15 |
| A1 | 0.010 | 0.100 |
| B | 1.20 | 1.40 |
| bp | 0.25 | 0.40 |
| C | 0.09 | 0.150 |
| E | 1.60 | 1.80 |
| HE | 2.30 | 2.70 |
| Lp | 0.20 | 0.40 |
| θ | 0° | 5° |