## DATA SHEET



## BA423A

AM band-switching diode

## FEATURES

- Continuous reverse voltage: max. 20 V
- Continuous forward current: max. 50 mA
- Low diode capacitance: max. 2.5 pF
- Low diode forward resistance: max. $1.2 \Omega$.


## APPLICATION

- Band switching in AM radio receivers.


## DESCRIPTION

Planar band-switching diode in a hermetically sealed glass SOD68 (DO-34) package.


## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | MIN. | MAX. | UNIT |
| :--- | :--- | :---: | :---: | :---: |
| $\mathrm{V}_{\mathrm{R}}$ | continuous reverse voltage | - | 20 | V |
| $\mathrm{I}_{\mathrm{F}}$ | continuous forward current | - | 50 | mA |
| $\mathrm{~T}_{\text {stg }}$ | storage temperature | -65 | +150 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{T}_{\mathrm{j}}$ | junction temperature | - | 150 | ${ }^{\circ} \mathrm{C}$ |

## ELECTRICAL CHARACTERISTICS

$\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MAX. | UNIT |
| :--- | :--- | :--- | :---: | :--- |
| $\mathrm{V}_{\mathrm{F}}$ | forward voltage | $\mathrm{I}_{\mathrm{F}}=50 \mathrm{~mA} ;$ see Fig.2 | 0.9 | V |
| $\mathrm{I}_{\mathrm{R}}$ | reverse current | see Fig.3 |  |  |
|  |  | $\mathrm{V}_{\mathrm{R}}=20 \mathrm{~V}$ |  |  |
|  |  | $\mathrm{~V}_{\mathrm{R}}=20 \mathrm{~V} ; \mathrm{T}_{\mathrm{j}}=125^{\circ} \mathrm{C}$ | 100 | nA |
| $\mathrm{C}_{\mathrm{d}}$ | diode capacitance | $\mathrm{f}=1 \mathrm{MHz} ; \mathrm{V}_{\mathrm{R}}=3 \mathrm{~V} ;$ see Fig.4 | 5 | $\mu \mathrm{~A}$ |
| $\mathrm{r}_{\mathrm{D}}$ | diode forward resistance | $\mathrm{I}_{\mathrm{F}}=10 \mathrm{~mA} ; \mathrm{f}=1 \mathrm{MHz}$; see Fig.5 | 2.5 | pF |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
| :--- | :--- | :--- | :---: | :---: |
| $R_{\text {th } j \text {-tp }}$ | thermal resistance from junction to tie-point | lead length 10 mm | 240 | K/W |
| $R_{\text {th } j-a}$ | thermal resistance from junction to ambient | lead length 10 mm ; note 1 | 500 | K/W |

## Note

1. Device mounted on a FR4 printed-circuit board without metallization pad.

## GRAPHICAL DATA


(1) $\mathrm{T}_{\mathrm{j}}=125^{\circ} \mathrm{C}$; typical values.
(2) $\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$; typical values.
(3) $\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$; maximum values.

Fig. 2 Forward current as a function of forward voltage.

$\mathrm{f}=1 \mathrm{MHz} ; \mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$.
Fig. 4 Diode capacitance as a function of reverse voltage; typical values.

$\mathrm{V}_{\mathrm{R}}=20 \mathrm{~V}$.
Solid line: maximum values.
Dotted line: typical values.
Fig. 3 Reverse current as a function of junction temperature.

$\mathrm{f}=1 \mathrm{MHz} ; \mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$.
Fig. 5 Diode forward resistance as a function of forward current; typical values.

## AM band-switching diode

## PACKAGE OUTLINE



Dimensions in mm.
The marking band indicates the cathode.

Fig. 6 SOD68; DO-34.

## DEFINITIONS

| Data Sheet Status |  |
| :--- | :--- |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or <br> more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation <br> of the device at these or at any other conditions above those given in the Characteristics sections of the specification <br> is not implied. Exposure to limiting values for extended periods may affect device reliability. |
| Application information | Where application information is given, it is advisory and does not form part of the specification. |

## LIFE SUPPORT APPLICATIONS

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