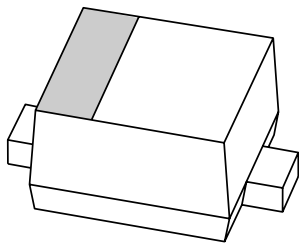


# DATA SHEET



## **BA278** Band-switching diode

Preliminary specification

2001 Jan 15

# Band-switching diode

BA278

## FEATURES

- Small plastic SMD package
- Continuous reverse voltage: max. 35 V
- Continuous forward current: max. 100 mA
- Low diode capacitance: max. 1.2 pF
- Low diode forward resistance: max. 0.7  $\Omega$ .

## APPLICATIONS

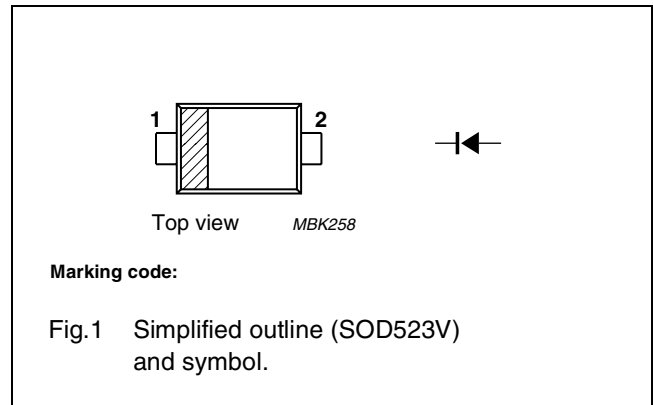
- Low loss band switching in VHF television tuners.
- Surface mount band-switching circuits.

## DESCRIPTION

Planar high performance band-switching diode in a small plastic SOD523V SMD package.

## PINNING

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



## LIMITING VALUES

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

| SYMBOL    | PARAMETER                  | CONDITIONS                       | MIN. | MAX. | UNIT             |
|-----------|----------------------------|----------------------------------|------|------|------------------|
| $V_R$     | continuous reverse voltage |                                  | –    | 35   | V                |
| $I_F$     | continuous forward current |                                  | –    | 100  | mA               |
| $P_{tot}$ | total power dissipation    | $T_s = 90\text{ }^\circ\text{C}$ | –    | 715  | mW               |
| $T_{stg}$ | storage temperature        |                                  | –65  | +150 | $^\circ\text{C}$ |
| $T_j$     | junction temperature       |                                  | –65  | +150 | $^\circ\text{C}$ |

## ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

| SYMBOL | PARAMETER                | CONDITIONS   | MAX. | UNIT          |
|--------|--------------------------|--|------|---------------|
| $V_F$  | forward voltage          | $I_F = 10\text{ mA}$                                       | 1    | V             |
| $I_R$  | reverse current          | $V_R = 25\text{ V}$  | 50   | nA            |
|        |                          | $V_R = 20\text{ V}; T_{amb} = 75\text{ }^\circ\text{C}$    | 1    | $\mu\text{A}$ |
| $C_d$  | diode capacitance        | $f = 1\text{ MHz}; V_R = 6\text{ V};$ note 1; see Fig.2    | 1.2  | pF            |
| $r_D$  | diode forward resistance | $I_F = 2\text{ mA}; f = 100\text{ MHz};$ note 1; see Fig.3 | 0.7  | $\Omega$      |

## Note

1. Guaranteed on AQL basis: inspection level S4, AQL 1.0.

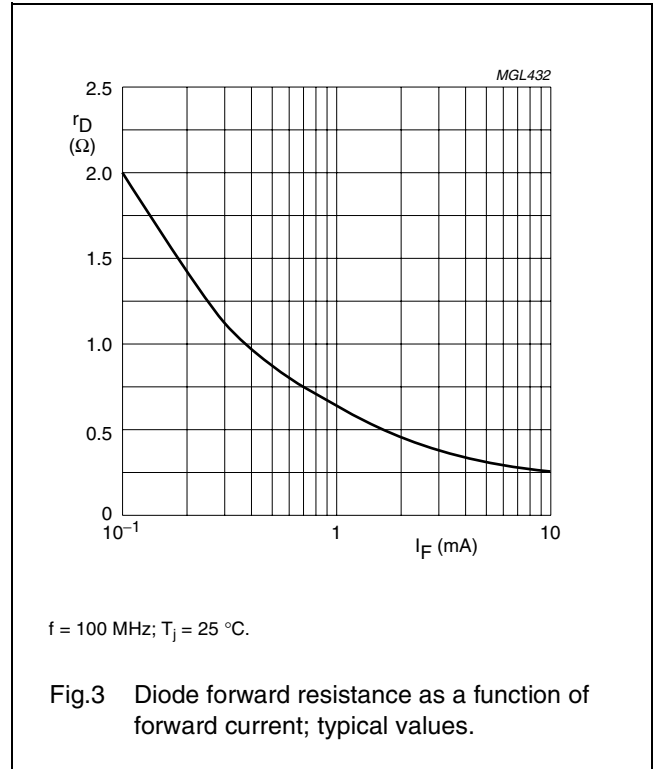
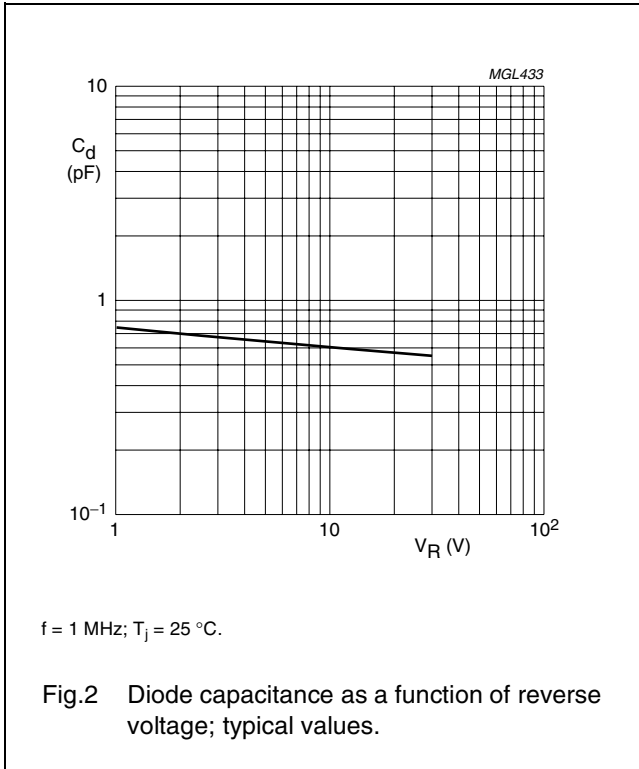
## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER   | VALUE | UNIT |
|---------------|---|-------|------|
| $R_{th\ j-s}$ | thermal resistance from junction to soldering-point | 85    | K/W  |

# Band-switching diode

BA278

## GRAPHICAL DATA



## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523V

**Package under development**

Philips Semiconductors reserves the right to make changes without notice.

0 0.5 1 mm  
scale

| DIMENSIONS (mm are the original dimensions) |              |              |              |              |              |              |     |
|---|--------------|--------------|--------------|--------------|--------------|--------------|-----|
| UNIT  | A            | bp           | c            | D            | E            | HE           | v   |
| mm  | 0.65<br>0.58 | 0.34<br>0.26 | 0.17<br>0.11 | 1.25<br>1.15 | 0.85<br>0.75 | 1.65<br>1.55 | 0.1 |

**Note**  
1. The marking bar indicates the cathode.

| OUTLINE VERSION | REFERENCES |       |       | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|-------|---------------------|------------|
|                 | IEC        | JEDEC | EIAJ  |                     |            |
| SOD523V         |            |       | SC-79 |                     | 00-12-07   |

## Band-switching diode

BA278

## DATA SHEET STATUS

| DATA SHEET STATUS         | PRODUCT STATUS | DEFINITIONS <sup>(1)</sup>   |
|---------------------------|----------------|--|
| Objective specification   | Development    | This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.  |
| Preliminary specification | Qualification  | This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |
| Product specification     | Production     | This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.   |

## Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

## DEFINITIONS

**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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Printed in The Netherlands

budgetnum/ed/pp5

Date of release: 2001 Jan 15

Document order number: 9397 750 07927

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