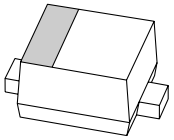

# BA891

## Band-switching diode

**Rev. 04 — 8 January 2008** **Product data sheet**

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# Band-switching diode BA891

## FEATURES

- Ultra small plastic SMD package
- Low diode capacitance: max. 1.05 pF
- Low diode forward resistance: max. 0.7 Ω
- Small inductance.

## APPLICATIONS

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

## DESCRIPTION

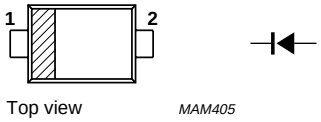
The BA891 is a planar high performance band-switching diode in the ultra small SOD523 SMD plastic package.

## MARKING

| TYPE NUMBER | MARKING CODE |
|---|---|
| BA891 | 7 |

## PINNING

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




The marking band indicates the cathode.

Fig.1 Simplified outline (SOD523) and symbol.

## LIMITING VALUES

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

| 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 °C | – | 715 | mW |
| $T_{stg}$ | storage temperature | | –65 | +150 | °C |
| $T_j$ | junction temperature | | –65 | +150 | °C |

## THERMAL CHARACTERISTICS

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

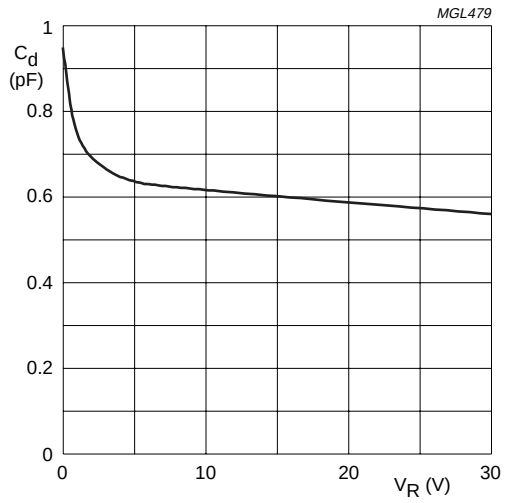
## CHARACTERISTICS

$T_j$ = 25 °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|
| $V_F$ | forward voltage | $I_F$ = 10 mA | – | 1 | V |
| $I_R$ | reverse current | $V_R$ = 30 V | – | 20 | nA |
| $C_d$ | diode capacitance | f = 1 MHz; note 1; see Fig.2 | | | |
| | | $V_R$ = 1 V | 0.8 | 1.05 | pF |
| | | $V_R$ = 3 V | 0.65 | 0.9 | pF |
| $r_D$ | diode forward resistance | f = 100 MHz; note 1; see Fig.3 | | | |
| | | $I_F$ = 3 mA | 0.42 | 0.7 | Ω |
| | | $I_F$ = 10 mA | 0.28 | 0.5 | Ω |
| $L_S$ | series inductance | | 0.6 | – | nH |

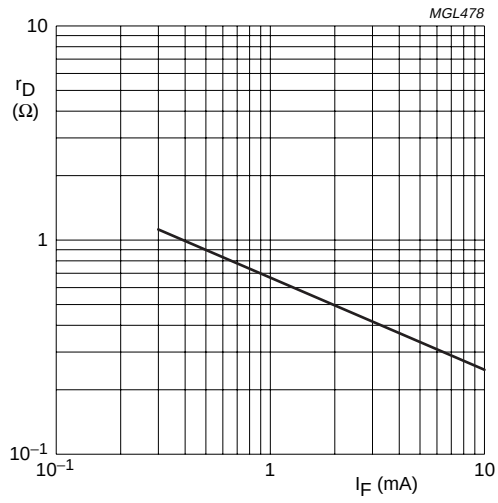
**Note**

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




f = 1 MHz; $T_j$ = 25 °C.

Fig.2 Diode capacitance as a function of reverse voltage; typical values.

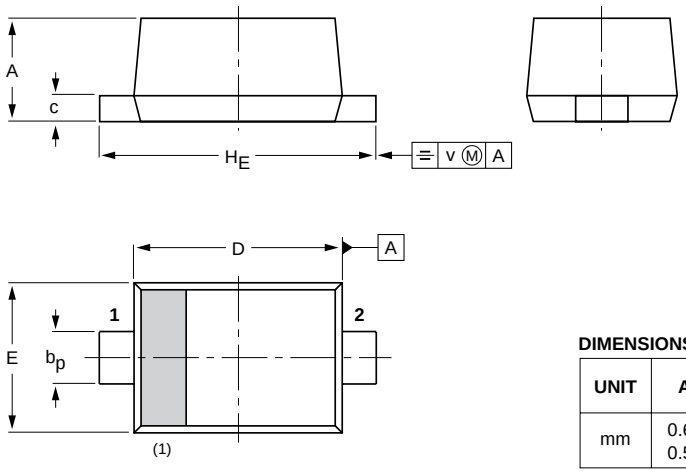


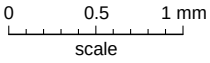

f = 100 MHz; $T_j$ = 25 °C.

Fig.3 Diode forward resistance as a function of forward current; typical values.

## PACKAGE OUTLINE

**Plastic surface-mounted package; 2 leads** **SOD523**




**DIMENSIONS (mm are the original dimensions)**

| UNIT | A | $b_p$ | c | D | E | $H_E$ | 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 | JEITA | | | |
| SOD523 | | | SC-79 | | | ~~02-12-13~~<br>06-03-16 |

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## Data sheet status

| Document status[1][2] | Product status[3] | Definition |
|---|---|---|
| Objective [short] data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet | Qualification | This document contains data from the preliminary specification. |
| Product [short] data sheet | Production | This document contains the product specification. |

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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# Revision history

## Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| BA891_N_4 | 20080108 | Product data sheet | - | BA891_3 |
| Modifications: | • Package outline on page 4 changed | | | |
| BA891_3<br>(9397 750 09281) | 20020125 | Product specification | - | BA891_2 |
| BA891_2<br>(9397 750 04308) | 19980831 | Product specification | - | BA891_1 |
| BA891_1<br>(9397 750 04193) | 19980818 | Product specification | - | - |



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