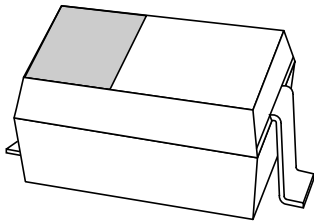


# DATA SHEET



## **BA591** Band-switching diode

Product specification  
Supersedes data of 1998 Aug 18

1998 Aug 31

## Band-switching diode

BA591

## FEATURES

- Very small plastic SMD package
- Low diode capacitance:  
max. 1.05 pF
- Low diode forward resistance:  
max. 0.7  $\Omega$
- Small inductance.

## APPLICATIONS

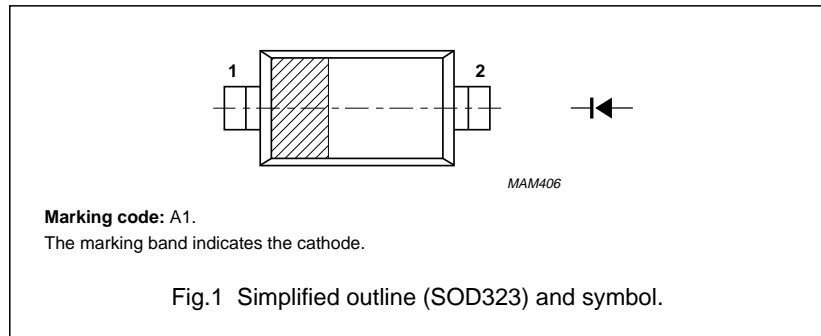
- Low loss band-switching in VHF television tuners
- Surface mount band-switching circuits.

## DESCRIPTION

The BA591 is a planar, high performance band-switching diode in the very small SOD323 SMD plastic 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	$T_s = 90\text{ }^\circ\text{C}$	–	500	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	TYP.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 10\text{ mA}$	–	1	V
$I_R$	reverse current	$V_R = 20\text{ V}$	–	20	nA
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; note 1; see Fig.2 $V_R = 1\text{ V}$ $V_R = 3\text{ V}$	0.8 0.65	1.05 0.9	pF pF
$r_D$	diode forward resistance	$f = 100\text{ MHz}$ ; note 1; see Fig.3 $I_F = 3\text{ mA}$ $I_F = 10\text{ mA}$	0.45 0.36	0.7 0.5	$\Omega$ $\Omega$
$1/g_p$	reverse resistance	$V_R = 1\text{ V}$ ; $f = 100\text{ MHz}$ ; note 1	100	–	k $\Omega$
$L_S$	series inductance		2	–	nH

## Note

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

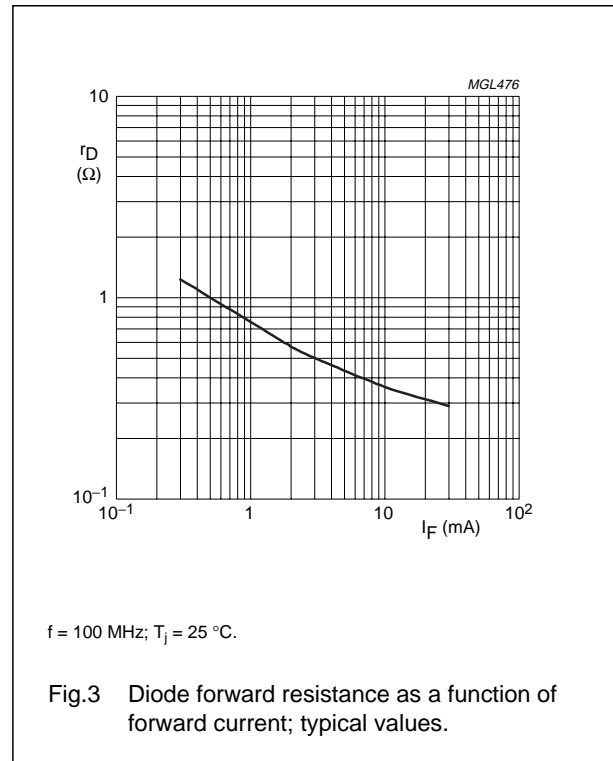
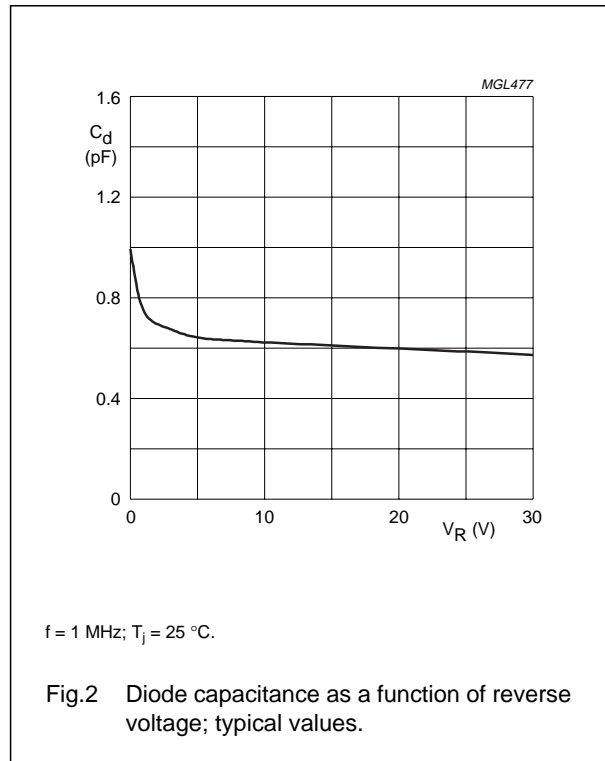
## Band-switching diode

BA591

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	120	K/W

## GRAPHICAL DATA



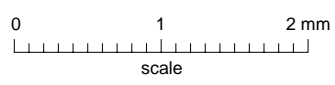
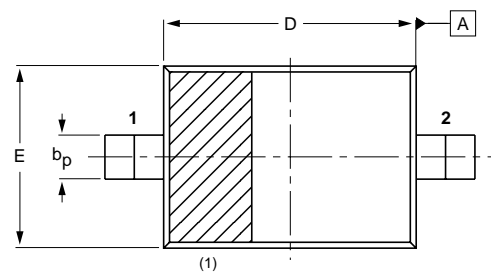
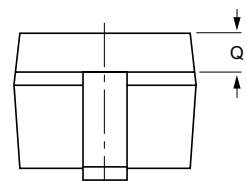
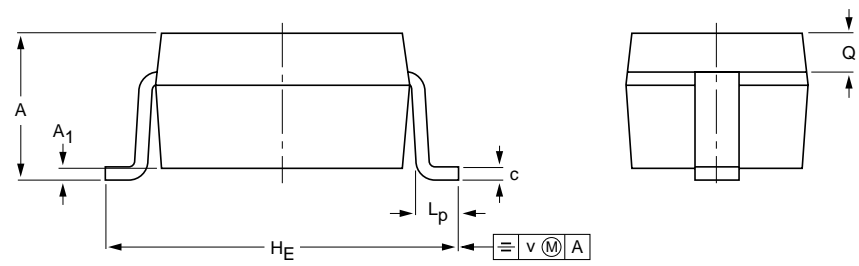
Band-switching diode

BA591

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	H <sub>E</sub>	L <sub>p</sub>	Q	v
mm	1.1 0.8	+0.05 -0.05	0.40 0.25	0.25 0.10	1.8 1.6	1.35 1.15	2.7 2.3	0.45 0.15	0.25 0.15	0.2

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD323						98-09-14

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**Band-switching diode**
**BA591**


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**DEFINITIONS**

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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Band-switching diode

BA591

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**NOTES**

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Band-switching diode

BA591

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**NOTES**

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