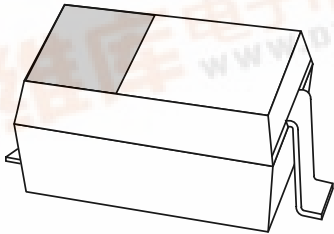


DISCRETE SEMICONDUCTORS

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 Ω
- Small inductance.

APPLICATIONS

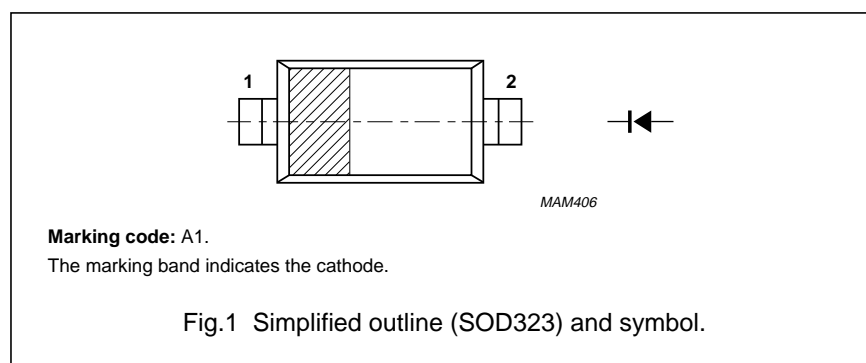
- Low loss band-switching in VHF television tuners
- Surface mount band-switching circuits.

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	Ω Ω
$1/g_p$	reverse resistance	$V_R = 1\text{ V}$; $f = 100\text{ MHz}$; note 1	100	–	k Ω
L_S	series inductance		2	–	nH

Note

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

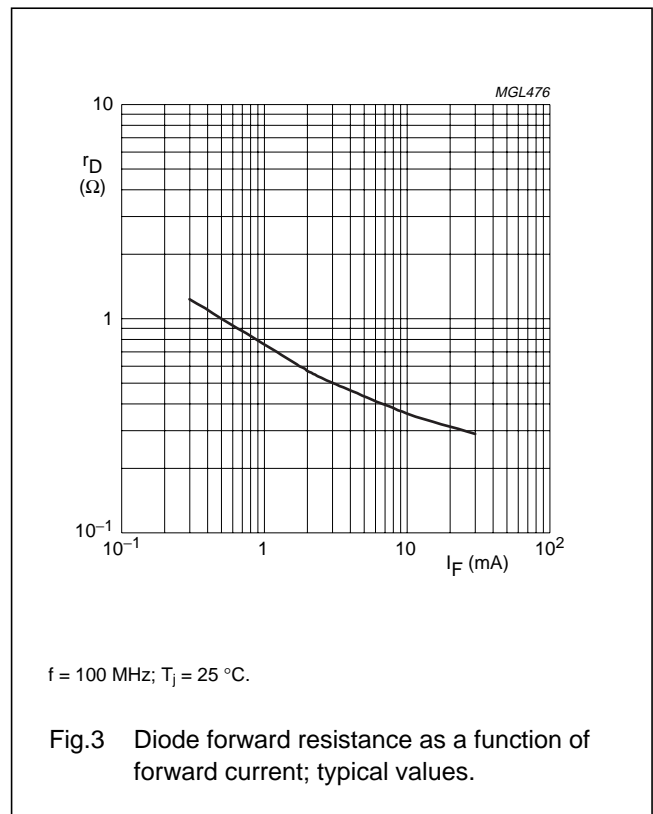
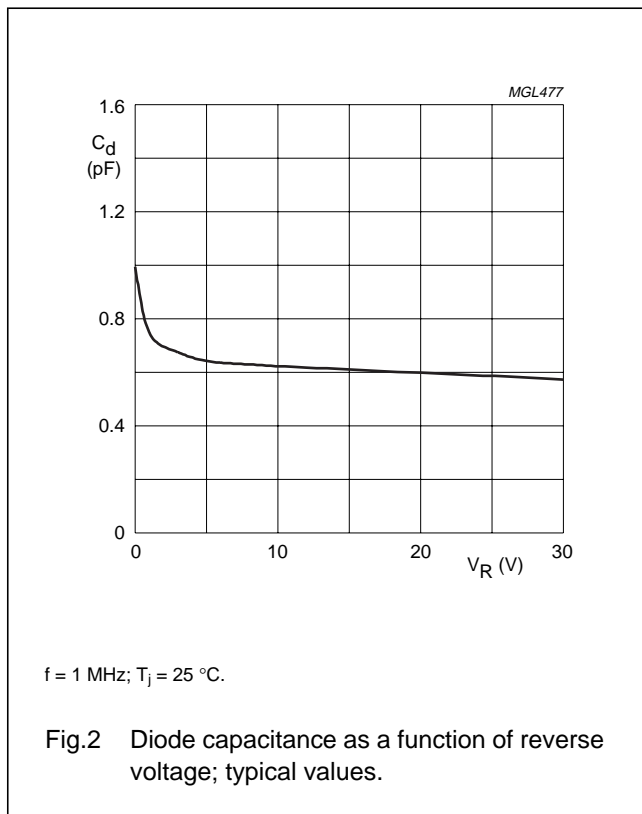
Band-switching diode

BA591

THERMAL CHARACTERISTICS

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

GRAPHICAL DATA



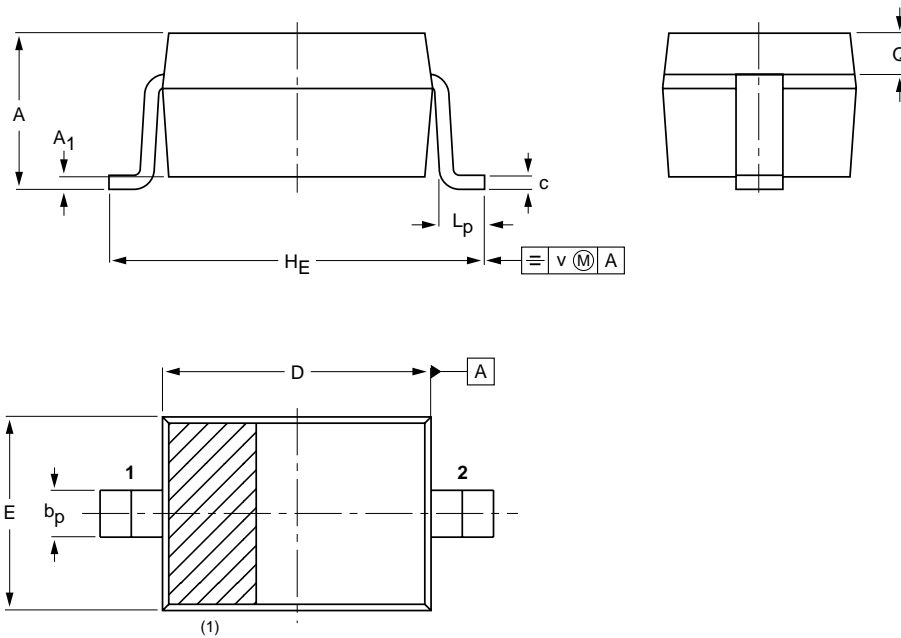
Band-switching diode

BA591

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	H _E	L _p	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

Band-switching diode

BA591

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 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.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

Band-switching diode

BA591

NOTES

Band-switching diode

BA591

NOTES

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