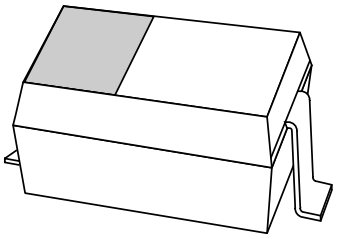
DATA SHEET



BA592
Band-switching diode

Preliminary specification
File under Discrete Semiconductors, SC01

1998 May 07

Philips
Semiconductors

PHILIPS

Band-switching diode BA592

FEATURES

- Small plastic SMD package
- Low diode capacitance
- Low diode forward resistance
- Small inductance.

APPLICATIONS

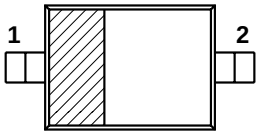
- Low loss band-switching in VHF television tuners
- Surface mount band-switching circuits.

DESCRIPTION

Planar, high performance band-switch diode in a small SMD plastic package (SOD323).

PINNING SOD323

PIN	DESCRIPTION
1	cathode
2	anode



Top view

Marking code: A2.

Fig.1 Simplified outline.

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 °C	–	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

ELECTRICAL CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	forward voltage	I_F = 10 mA	–	–	1	V
I_R	reverse current	V_R = 20 V	–	–	20	nA
C_d	diode capacitance	V_R = 1 V; f = 1 MHz; note 1	–	0.92	1.4	pF
		V_R = 3 V; f = 1 MHz; note 1	0.6	0.85	1.1	pF
r_D	diode forward resistance	I_F = 3 mA; f = 100 MHz; note 1	–	0.45	0.7	Ω
		I_F = 10 mA; f = 100 MHz; note 1	–	0.36	0.5	Ω
$1/g_p$	reverse resistance	V_R = 1 V; f = 100 MHz; note 1	–	100	–	kΩ
L_S	series inductance		–	2	–	nH

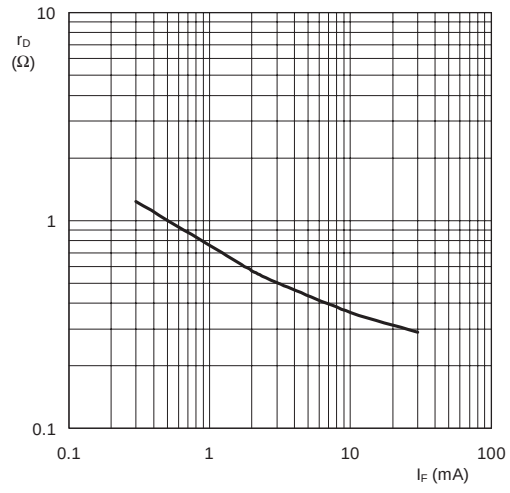
Note

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

THERMAL CHARACTERISTICS

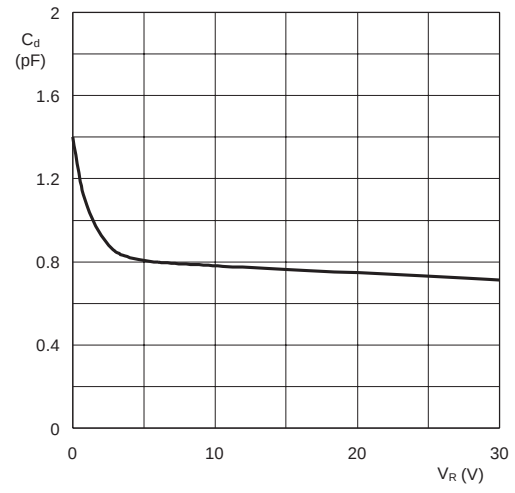
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}s}$	thermal resistance from junction to soldering point		120	K/W

GRAPHICAL DATA



f = 100 MHz; T_j = 25 °C.

Fig.2 Forward resistance as a function of forward current; typical values.

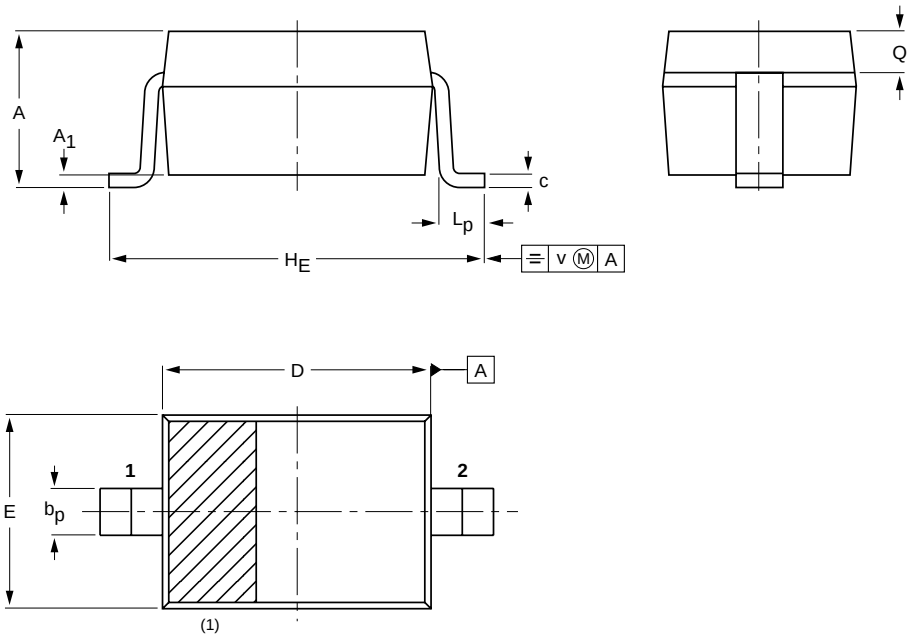


f = 1 MHz; T_j = 25 °C.

Fig.3 Diode capacitance as a function of reverse voltage; typical values.

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 band indicate the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD323						97-12-10

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.

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