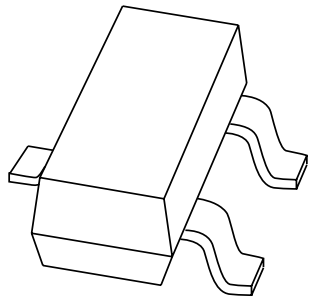


# DATA SHEET



## **BAT18** Band-switching diode

Product specification  
Supersedes data of April 1991

1996 Mar 13

## Band-switching diode

BAT18

## FEATURES

- Continuous reverse voltage:  
max. 35 V
- Continuous forward current:  
max. 100 mA
- Low diode capacitance:  
max. 1.0 pF
- Low diode forward resistance:  
max. 0.7  $\Omega$ .

## APPLICATION

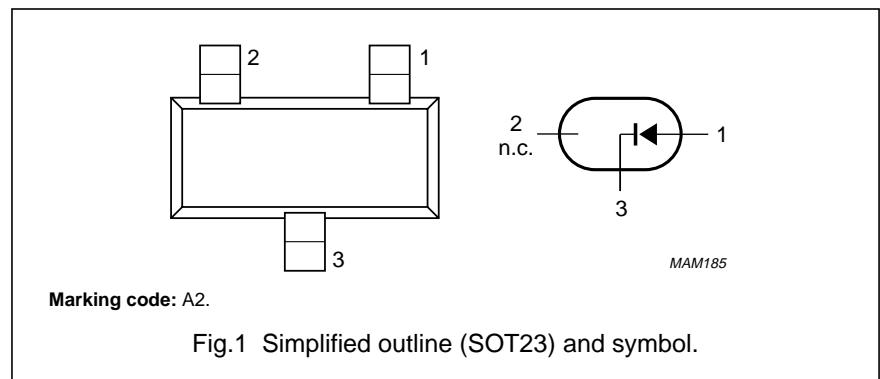
- Band switching.

## DESCRIPTION

Planar high performance band-switching diode in a small rectangular plastic SOT23 SMD package.

## PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode



## LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage	–	35	V
$I_F$	continuous forward current	–	100	mA
$T_{stg}$	storage temperature	–55	+125	$^{\circ}\text{C}$
$T_j$	junction temperature	–	125	$^{\circ}\text{C}$

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 100\text{ mA}$ ; see Fig.2	–	1.2	V
$I_R$	reverse current	see Fig.3 $V_R = 20\text{ V}$ $V_R = 20\text{ V}$ ; $T_j = 60\text{ }^{\circ}\text{C}$	–	100	nA $\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; $V_R = 20\text{ V}$ ; see Fig.4	0.8	1.0	pF
$r_D$	diode forward resistance	$I_F = 5\text{ mA}$ ; $f = 200\text{ MHz}$ ; see Fig.5	0.5	0.7	$\Omega$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		330	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

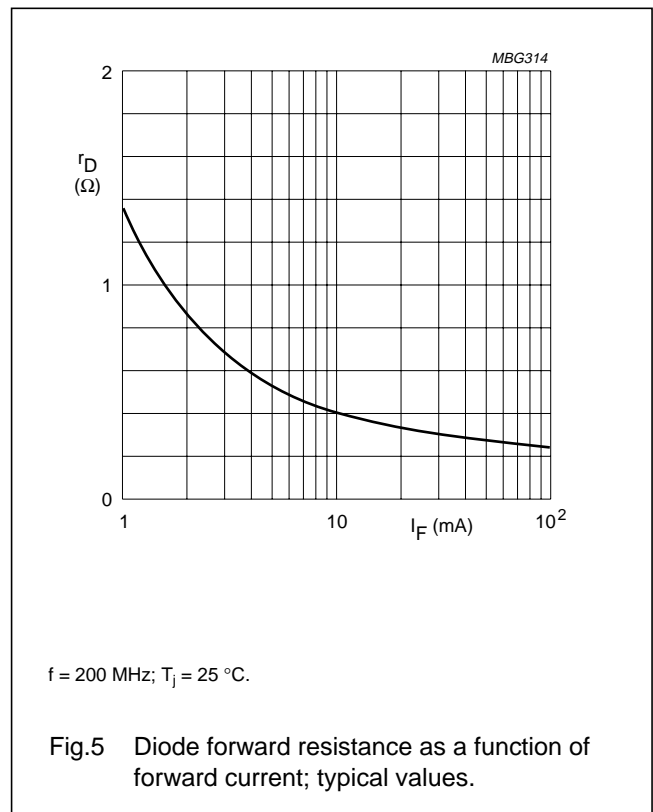
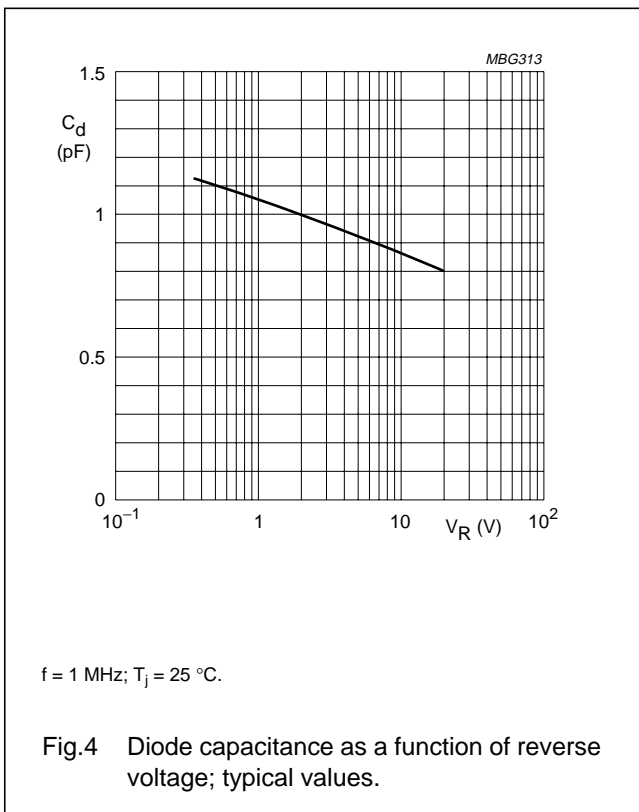
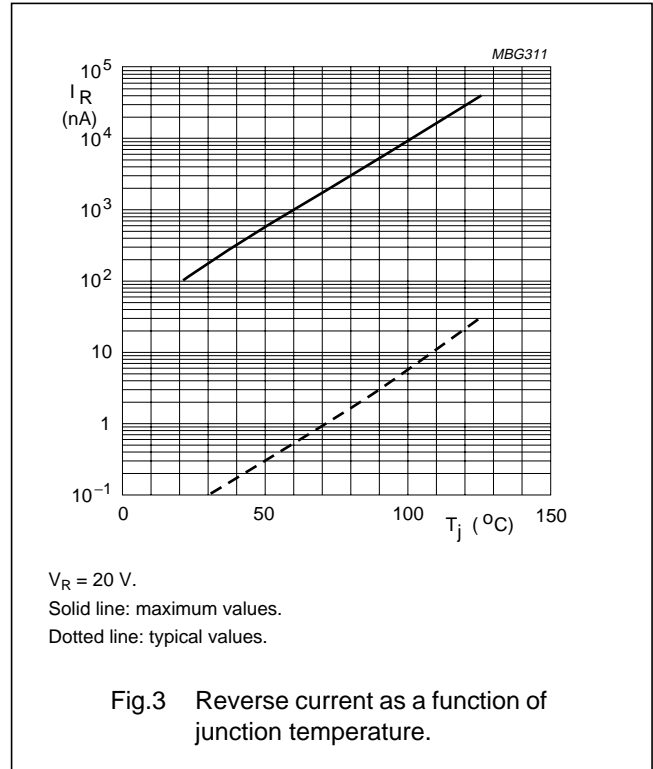
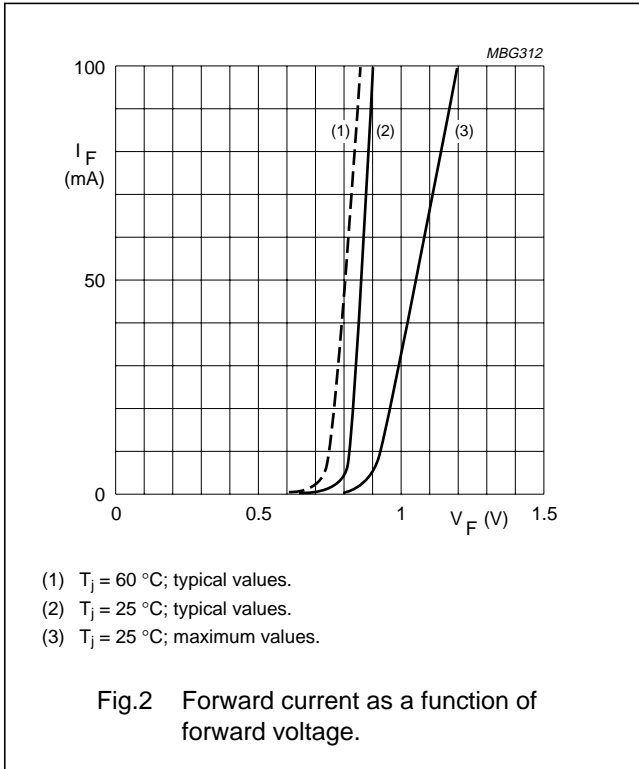
## Note

1. Device mounted on a FR4 printed-circuit board.

Band-switching diode

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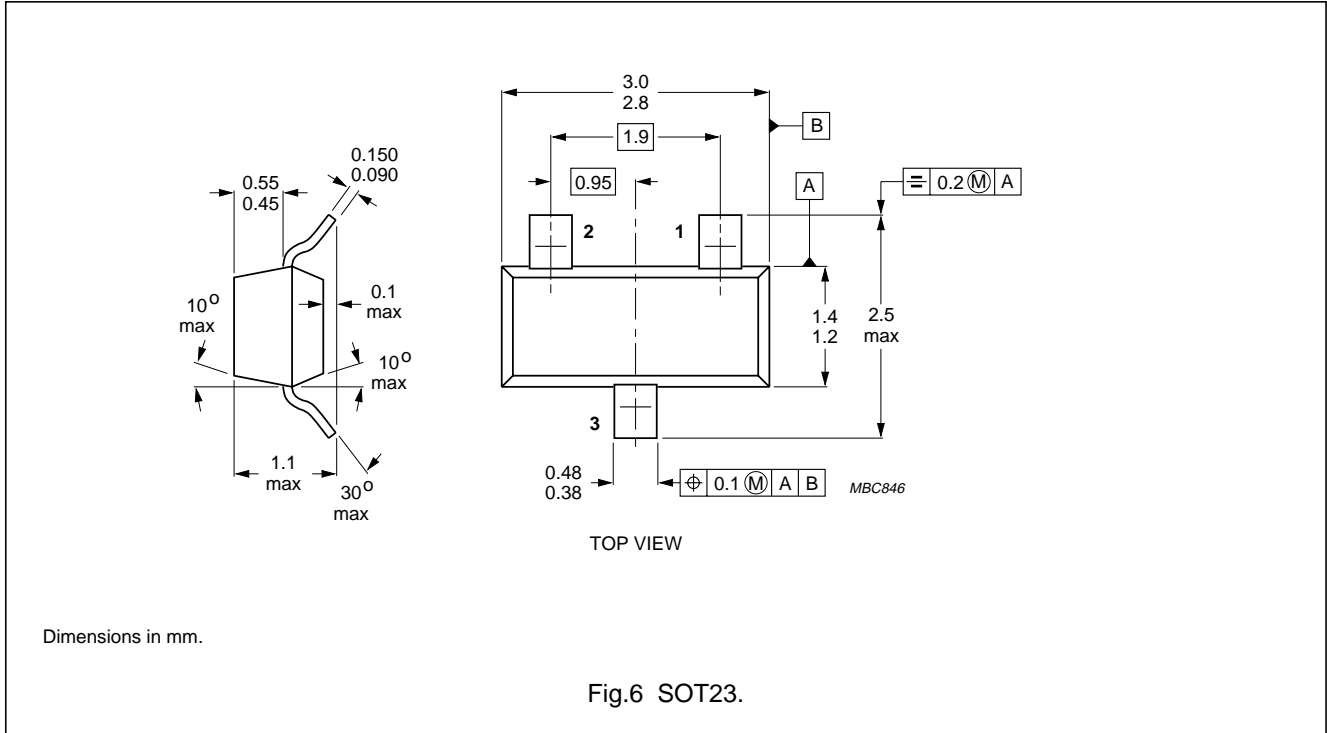
GRAPHICAL DATA



Band-switching diode

BAT18

PACKAGE OUTLINE



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.	

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.