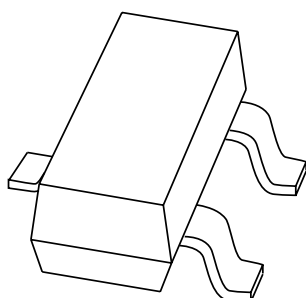


DATA SHEET



BAT17 Schottky barrier diode

Product specification
Supersedes data of 1996 Mar 20

1999 May 26

Schottky barrier diode

BAT17

FEATURES

- Low forward voltage
- Small SMD package
- Low capacitance.

APPLICATIONS

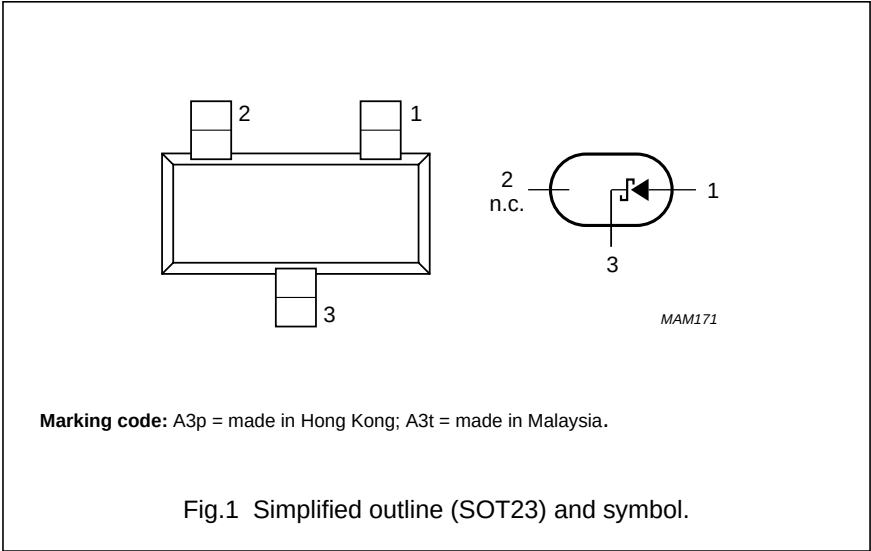
- UHF mixer
- Sampling circuits
- Modulators
- Phase detection.

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode

DESCRIPTION

Planar Schottky barrier diode in a small SOT23 plastic SMD package.



LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_R	continuous reverse voltage	–	4	V
I_F	continuous forward current	–	30	mA
T_{stg}	storage temperature	–65	+150	°C
T_j	junction temperature	–	100	°C

Schottky barrier diode

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ELECTRICAL CHARACTERISTICS $T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.2		
		$I_F = 0.1\text{ mA}$	350	mV
		$I_F = 1\text{ mA}$	450	mV
		$I_F = 10\text{ mA}$	600	mV
I_R	reverse current	$V_R = 3\text{ V}$; see Fig.3	0.25	μA
		$V_R = 3\text{ V}$; $T_{amb} = 60\text{ }^{\circ}\text{C}$; see Fig.3	1.25	μA
r_D	diode forward resistance	$f = 1\text{ kHz}$; $I_F = 5\text{ mA}$	15	Ω
C_d	diode capacitance	$f = 1\text{ MHz}$; $V_R = 0$; see Fig.4	1	pF
F	noise figure	$f = 900\text{ MHz}$; note 1	8	dB

Note

1. The local oscillator is adjusted for a diode current of 2 mA. IF amplifier noise $F_{if} = 1.5\text{ dB}$; $f = 35\text{ MHz}$.

THERMAL CHARACTERISTICS

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

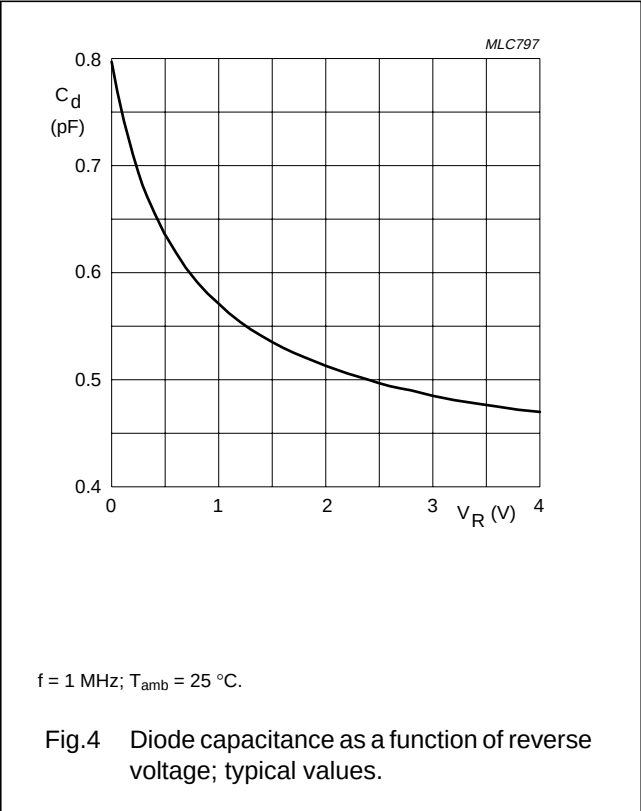
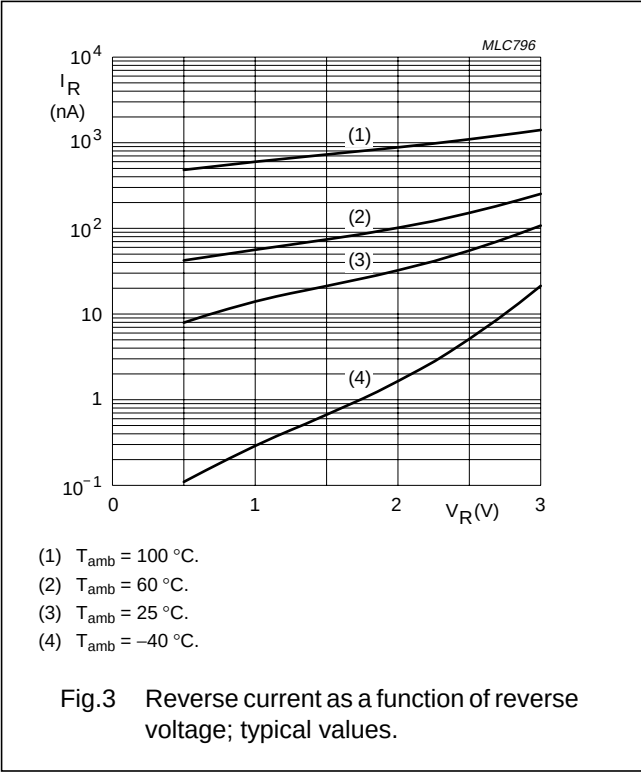
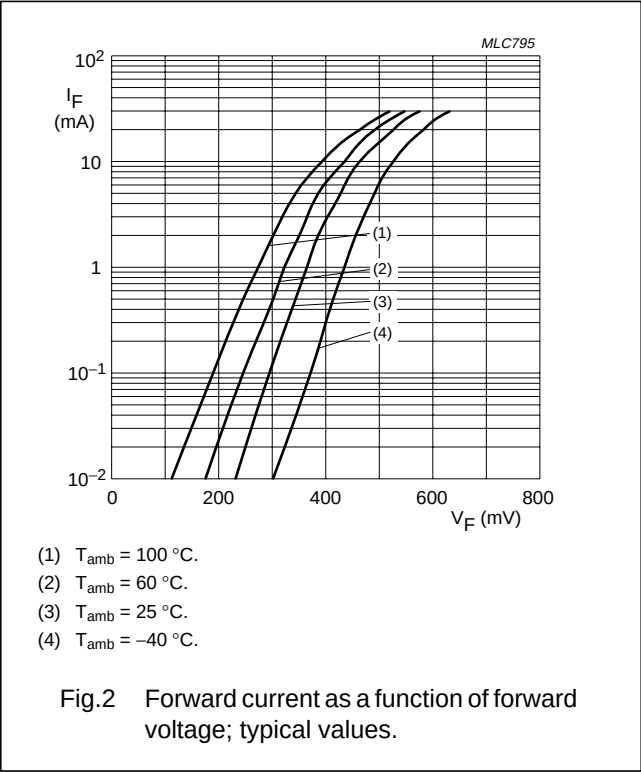
Note

1. Refer to SOT23 standard mounting conditions.

Schottky barrier diode

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GRAPHICAL DATA



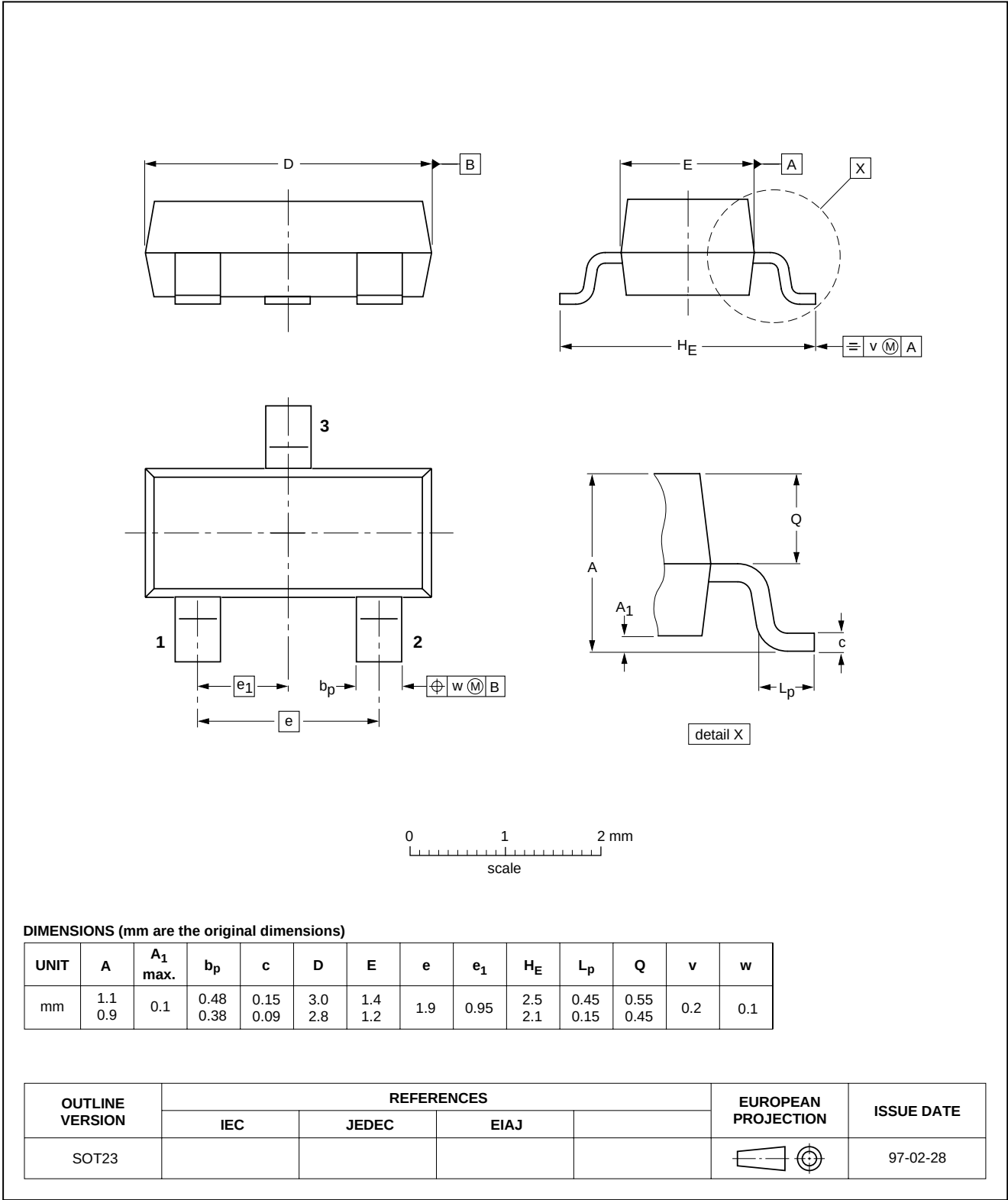
Schottky barrier diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



Schottky barrier diode

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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.

Schottky barrier diode

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