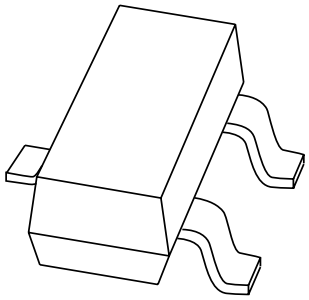
DATA SHEET



BAT17
Schottky barrier diode

Product data sheet
Supersedes data of 1999 May 26

2003 Mar 25

Schottky barrier diode BAT17

FEATURES

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

APPLICATIONS

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

DESCRIPTION

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

MARKING

TYPE NUMBER	MARKING CODE(1)
BAT17	A3*

Note

1. ∗ = p : Made in Hong Kong.
   ∗ = t : Made in Malaysia.
   ∗ = W : Made in China.

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode

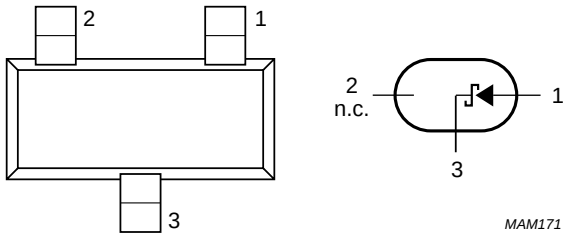


Fig.1 Simplified outline (SOT23) and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

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

ELECTRICAL CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.2		
		I_F = 0.1 mA	350	mV
		I_F = 1 mA	450	mV
		I_F = 10 mA	600	mV
I_R	reverse current	V_R = 3 V; see Fig.3	0.25	μA
		V_R = 3 V; T_{amb} = 60 °C; see Fig.3	1.25	μA
r_D	diode forward resistance	f = 1 kHz; I_F = 5 mA	15	Ω
C_d	diode capacitance	f = 1 MHz; V_R = 0; see Fig.4	1	pF
F	noise figure	f = 900 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 dB; f = 35 MHz.

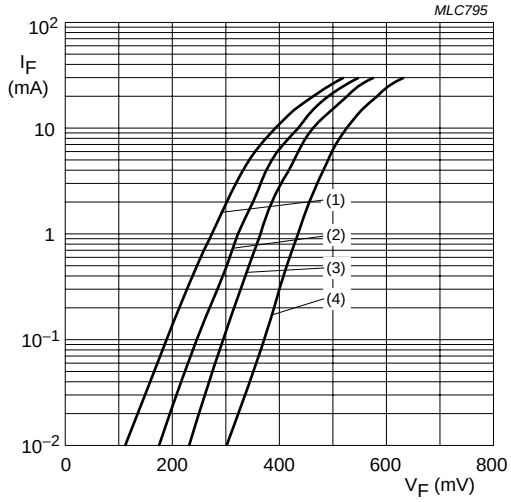
THERMAL CHARACTERISTICS

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

Note

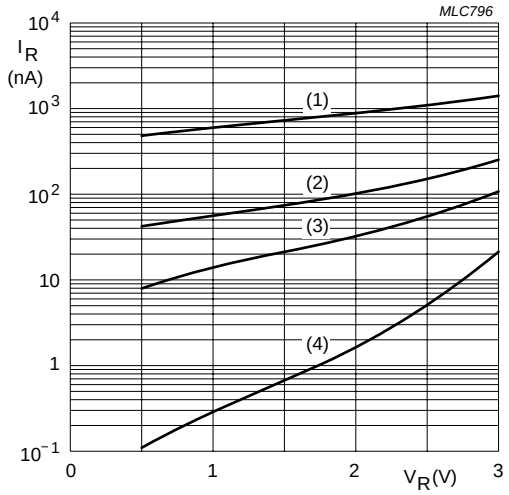
1. Refer to SOT23 standard mounting conditions.

GRAPHICAL DATA



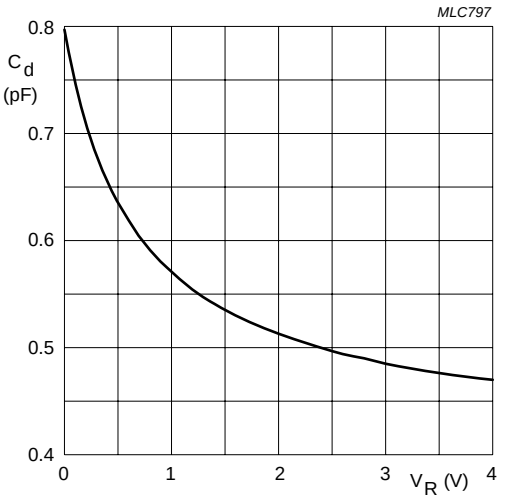
(1) T_{amb} = 100 °C.
(2) T_{amb} = 60 °C.
(3) T_{amb} = 25 °C.
(4) T_{amb} = –40 °C.

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



(1) T_{amb} = 100 °C.
(2) T_{amb} = 60 °C.
(3) T_{amb} = 25 °C.
(4) T_{amb} = –40 °C.

Fig.3 Reverse current as a function of reverse voltage; typical values.

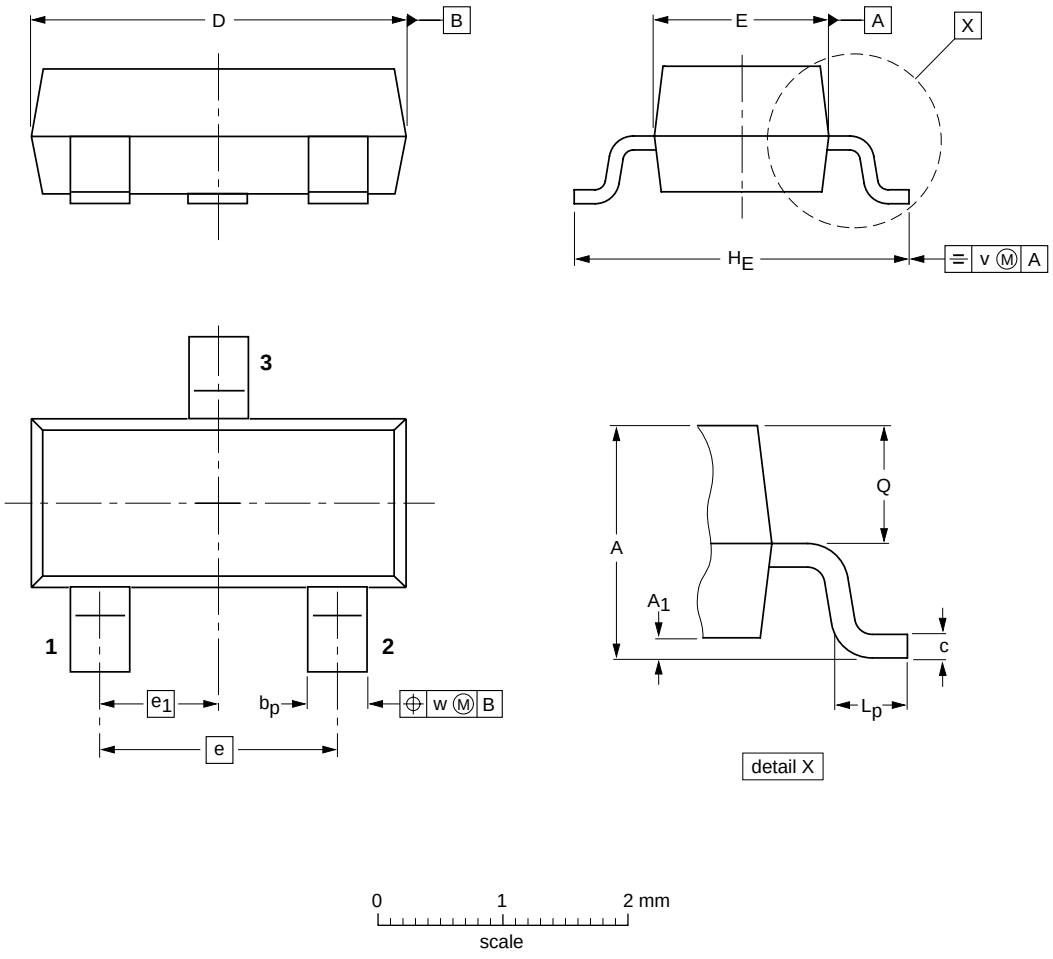


f = 1 MHz; T_{amb} = 25 °C.

Fig.4 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT23**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23		TO-236AB				~~97-02-28~~ 99-09-13

DATA SHEET STATUS

DOCUMENT STATUS[1]	PRODUCT STATUS[2]	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

Notes

1. Please consult the most recently issued document before initiating or completing a design.
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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors. No changes were made to the content, except for the legal definitions and disclaimers.

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Printed in The Netherlands 613514/03/pp7 Date of release: 2003 Mar 25 Document order number: 9397 750 10963