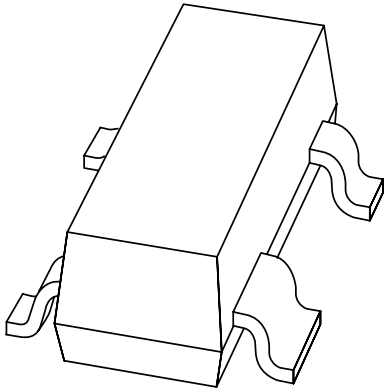


DATA SHEET



BAT74

Schottky barrier double diode

Product specification
Supersedes data of 1996 Mar 19

2001 Sep 05

Schottky barrier double diode

BAT74

FEATURES

- Low forward voltage
- Guard ring protected
- Small plastic SMD package.

APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

DESCRIPTION

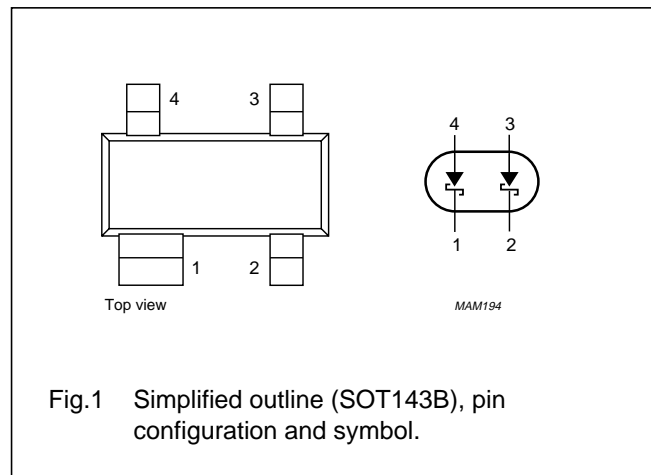
Planar Schottky barrier double diode. Two separate dies encapsulated in a SOT143B small plastic SMD package.

MARKING

TYPE NUMBER	MARKING CODE
BAT74	L41

PINNING

PIN	DESCRIPTION
1	cathode (k ₁)
2	cathode (k ₂)
3	anode (a ₂)
4	anode (a ₁)



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V _R	continuous reverse voltage		–	30	V
I _F	continuous forward current		–	200	mA
I _{FRM}	repetitive peak forward current	t _p ≤ 1 s; δ ≤ 0.5	–	300	mA
I _{FSM}	non-repetitive peak forward current	t _p < 10 ms		600	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; see Fig.2	–	230	mW
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	125	°C
T _{amb}	operating ambient temperature		–65	+125	°C
Double diode operation					
V _R	continuous reverse voltage		–	30	V
		series connection	–	60	V
I _F	continuous forward current		–	110 ⁽¹⁾	mA
I _{FRM}	repetitive peak forward current	t _p ≤ 1 s; δ ≤ 0.5	–	200	mA

Note

1. If both diodes are in forward operation at the same moment, total device current is max. 110 mA. If one diode is in reverse operation and the other is in forward operation at the same moment, total device current is max. 200 mA.

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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 SOT143B standard mounting conditions.

ELECTRICAL CHARACTERISTICS

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

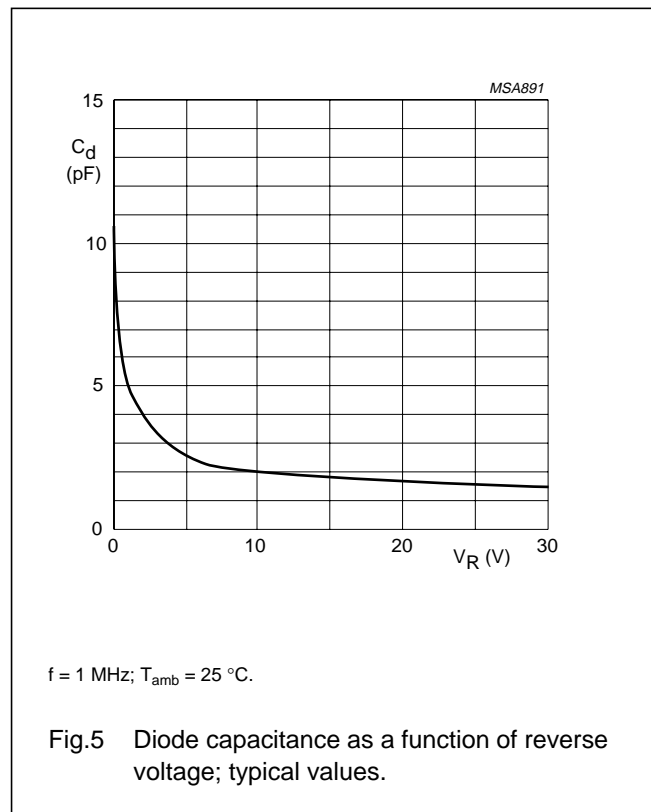
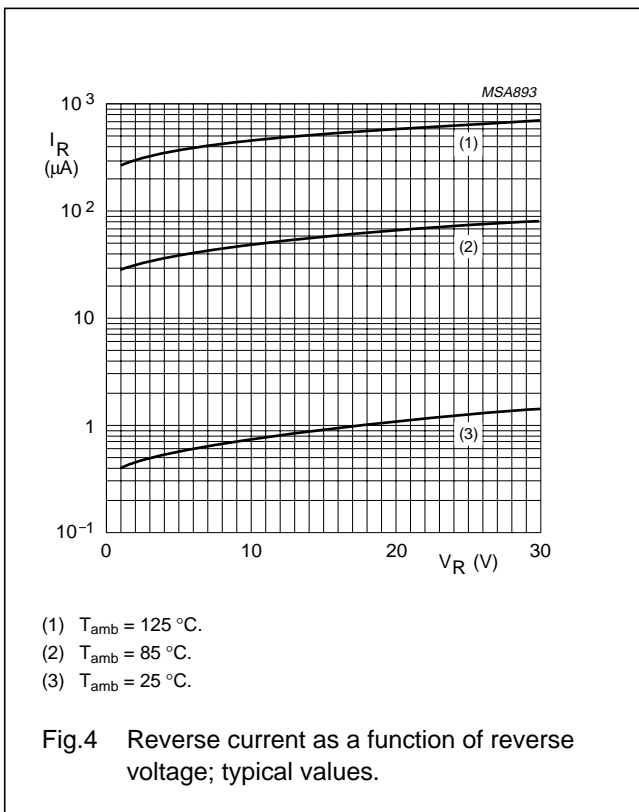
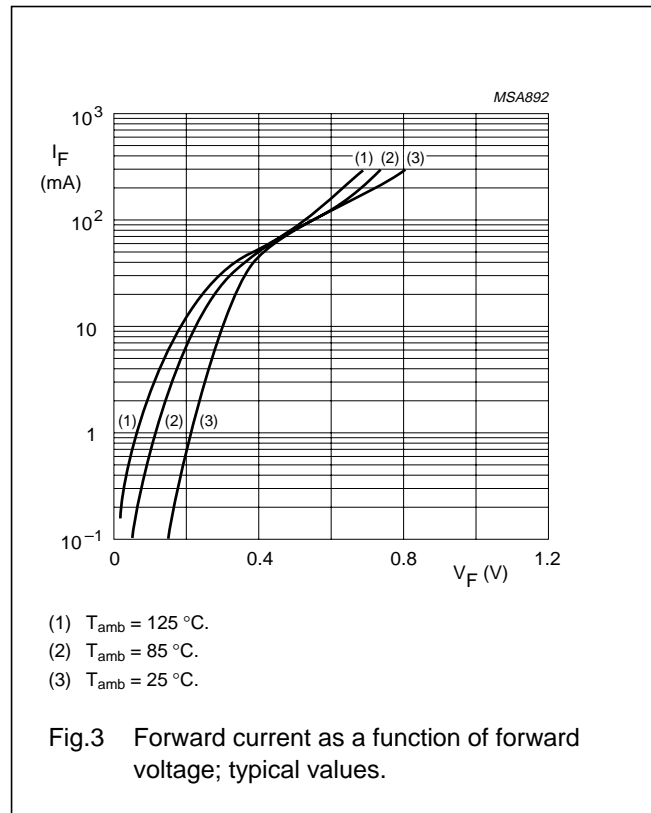
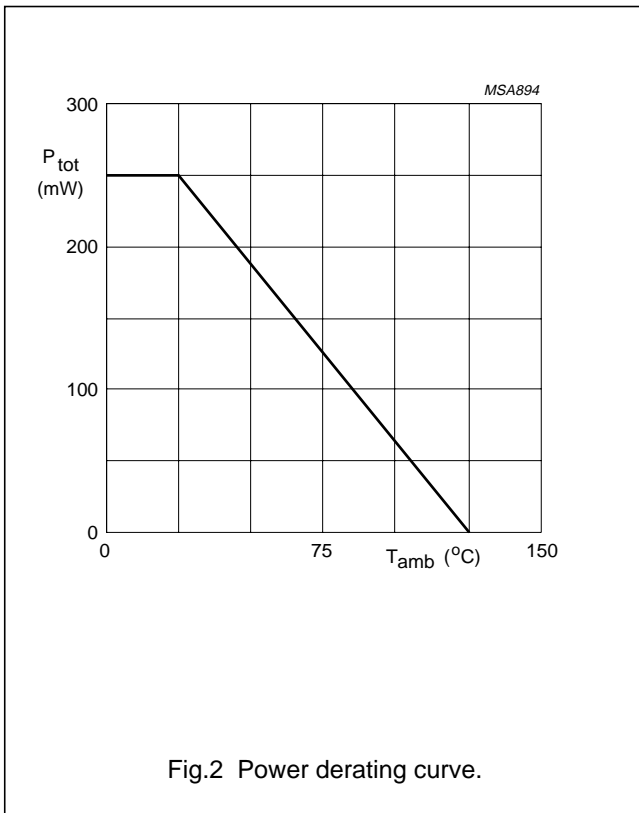
SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V_F	forward voltage	see Fig.3 $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$; note 1 $I_F = 10\text{ mA}$ $I_F = 30\text{ mA}$ $I_F = 100\text{ mA}$	240 320 400 500 800	mV mV mV mV mV
I_R	reverse current	$V_R = 25\text{ V}$; note 2; see Fig.4	2	μA
t_{rr}	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$; $R_L = 100\ \Omega$; measured at $I_R = 1\text{ mA}$; see Fig.6	5	ns
C_d	diode capacitance	$f = 1\text{ MHz}$; $V_R = 1\text{ V}$; see Fig.5	10	pF

Notes

1. Temperature coefficient of forward voltage $-0.6\%/K$.
2. Pulsed test: $t_p = 300\ \mu\text{s}$; $\delta = 0.02$.

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Schottky barrier double diode

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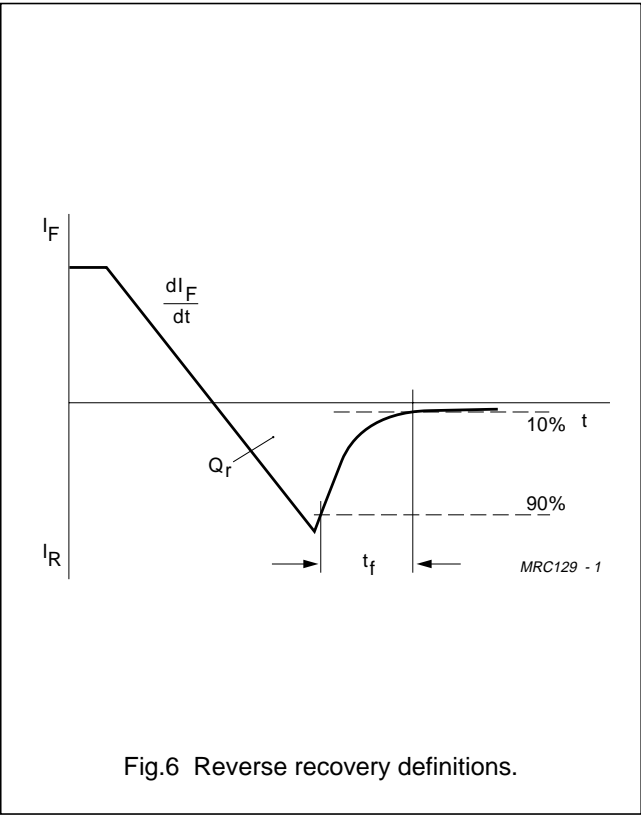


Fig.6 Reverse recovery definitions.

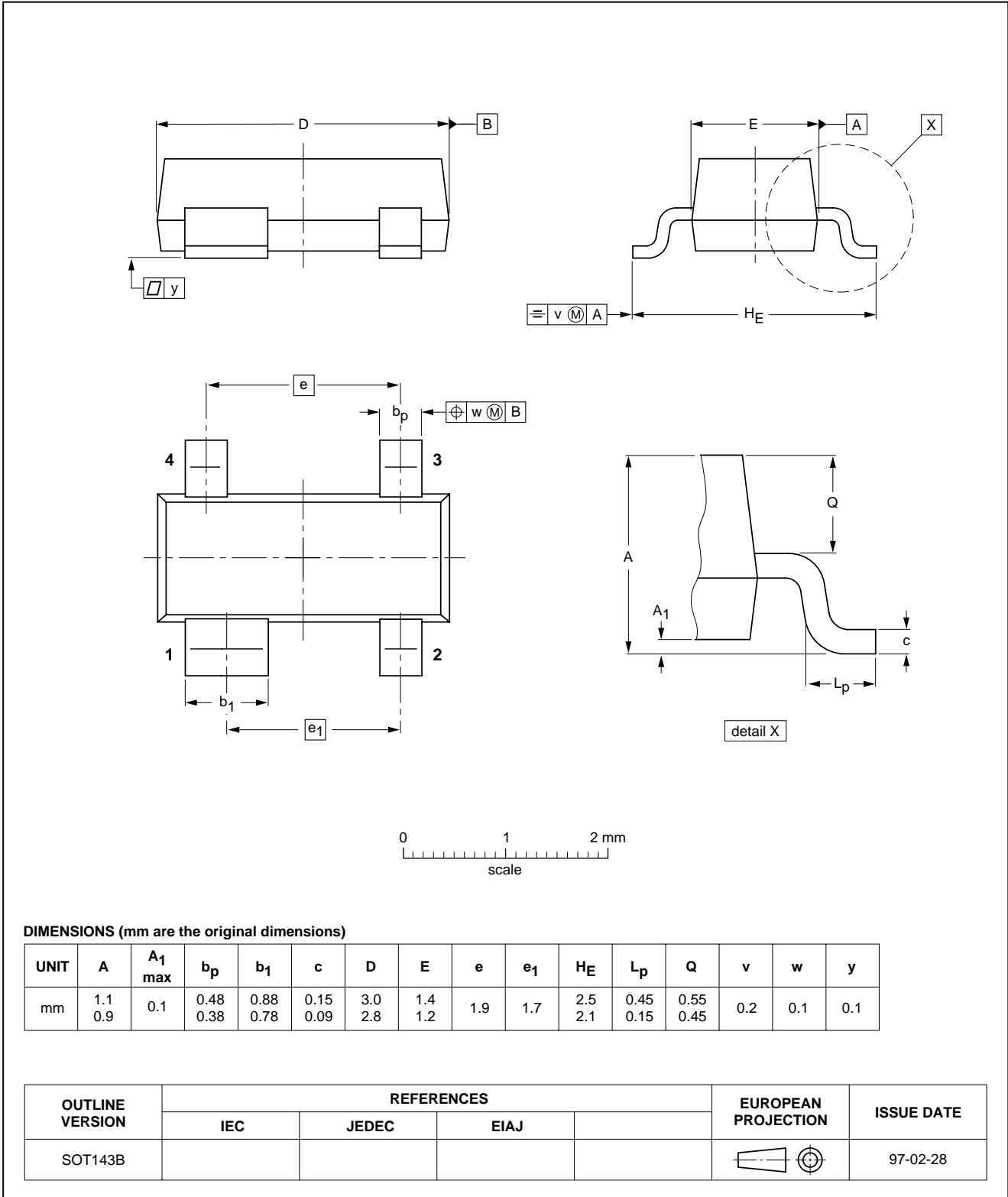
Schottky barrier double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 4 leads

SOT143B



Schottky barrier double diode

BAT74

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Changes will be communicated according to the Customer Product/Process Change Notification (CPCN) procedure SNW-SQ-650A.

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