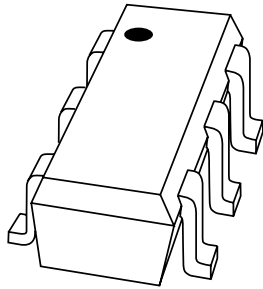


DATA SHEET



BAT74S

Schottky barrier double diode

Product specification
Supersedes data of 1998 Jul 10

2003 Apr 11

Schottky barrier double diode

BAT74S

FEATURES

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

APPLICATIONS

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

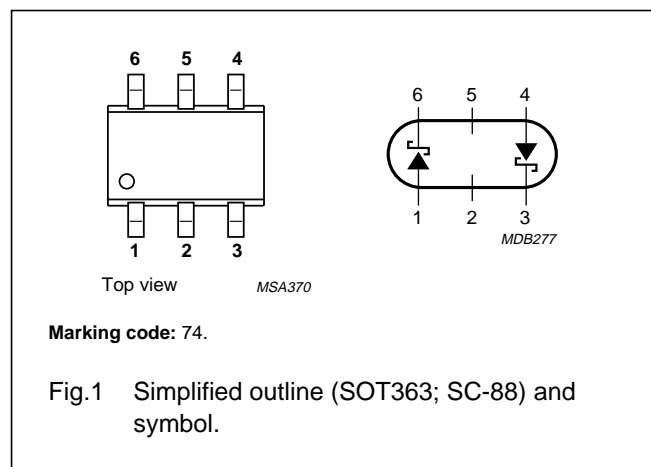
DESCRIPTION

Planar Schottky barrier double diode with an integrated guard ring for stress protection.

Two separate dies are encapsulated in a SOT363 (SC-88) small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	anode 1
2	not connected
3	cathode 2
4	anode 2
5	not connected
6	cathode 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	$t_p \leq 1 \text{ s}; \delta \leq 0.5$	–	300	mA
I_{FSM}	non-repetitive peak forward current	$t_p < 10 \text{ ms}$		600	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25 \text{ }^\circ\text{C}; \text{ see Fig.2}$	–	240	mW
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	125	$^\circ\text{C}$
T_{amb}	operating ambient temperature		–65	+125	$^\circ\text{C}$
Double diode operation					
V_R	continuous reverse voltage		–	30	V
V_R	continuous reverse voltage	series connection	–	60	V
I_F	continuous forward current		–	110 ⁽¹⁾	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1 \text{ s}; \delta \leq 0.5$	–	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 and the other in forward operation at the same moment, total device current is max. 200 mA.

Schottky barrier double diode

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V_F	forward voltage	see Fig.3 $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 30\text{ mA}$ $I_F = 100\text{ mA}$	240 320 400 500 800	mV mV mV mV mV
I_R	reverse current	$V_R = 25\text{ V}$; note 1; 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 $I_R = 1\text{ mA}$	5	ns
C_d	diode capacitance	$f = 1\text{ MHz}$; $V_R = 1\text{ V}$; see Fig.5	10	pF

Note

1. Pulsed test: $t_p = 300\ \mu\text{s}$; $\delta = 0.02$.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	416	K/W

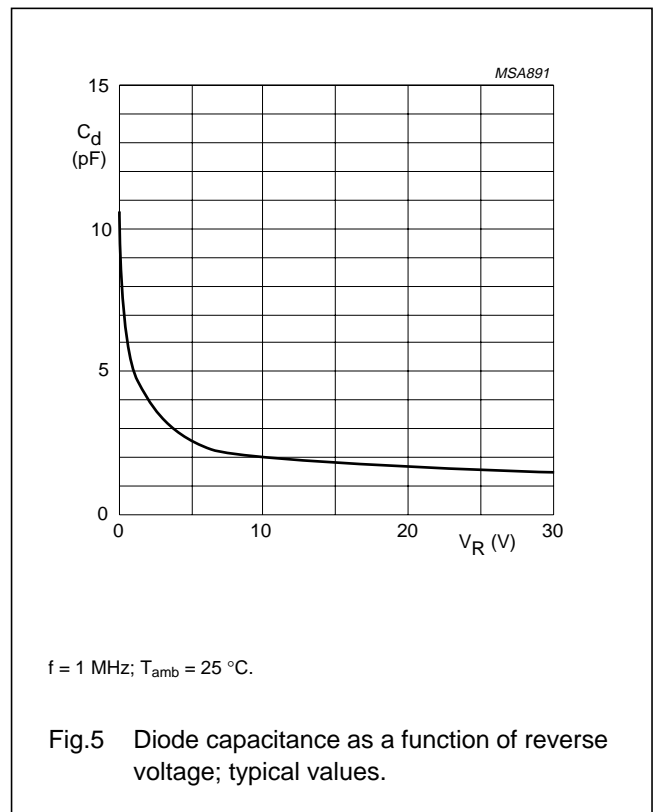
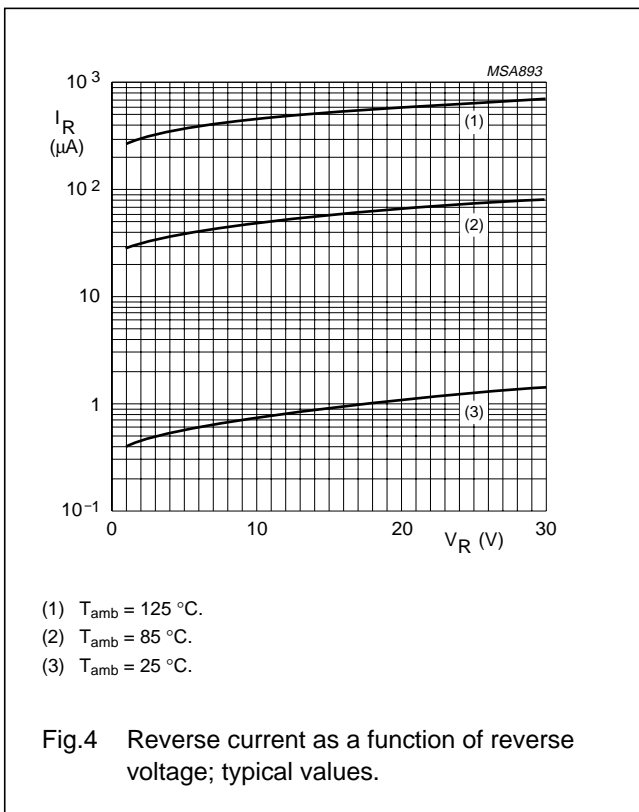
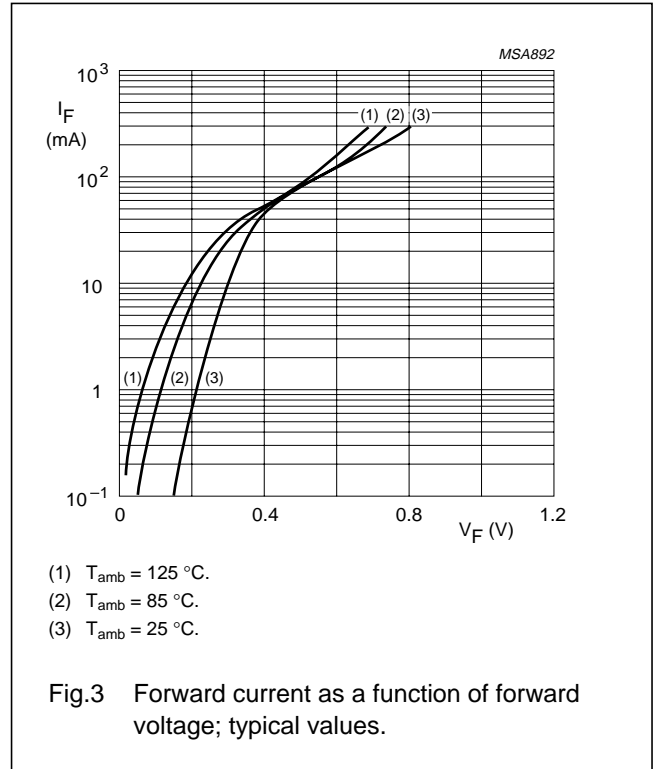
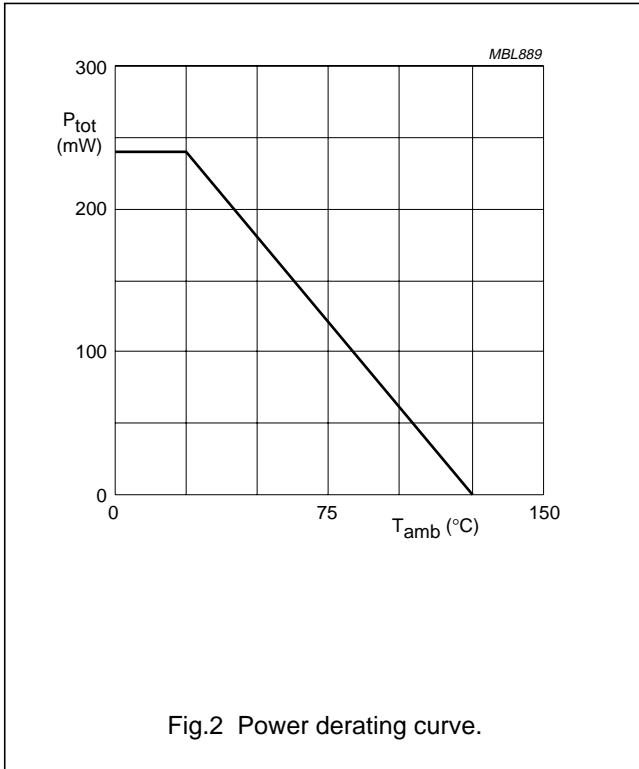
Note

1. Refer to SOT363 standard mounting conditions.

Schottky barrier double diode

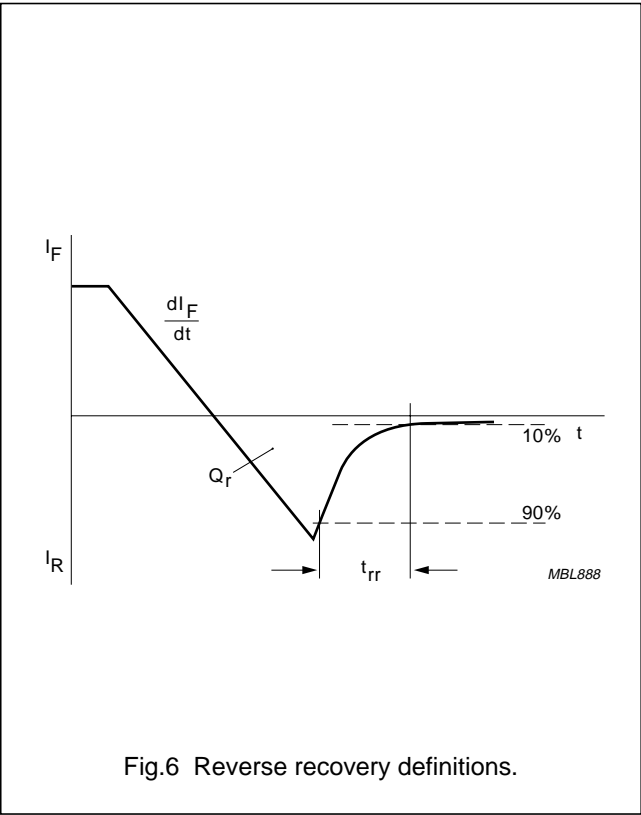
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GRAPHICAL DATA



Schottky barrier double diode

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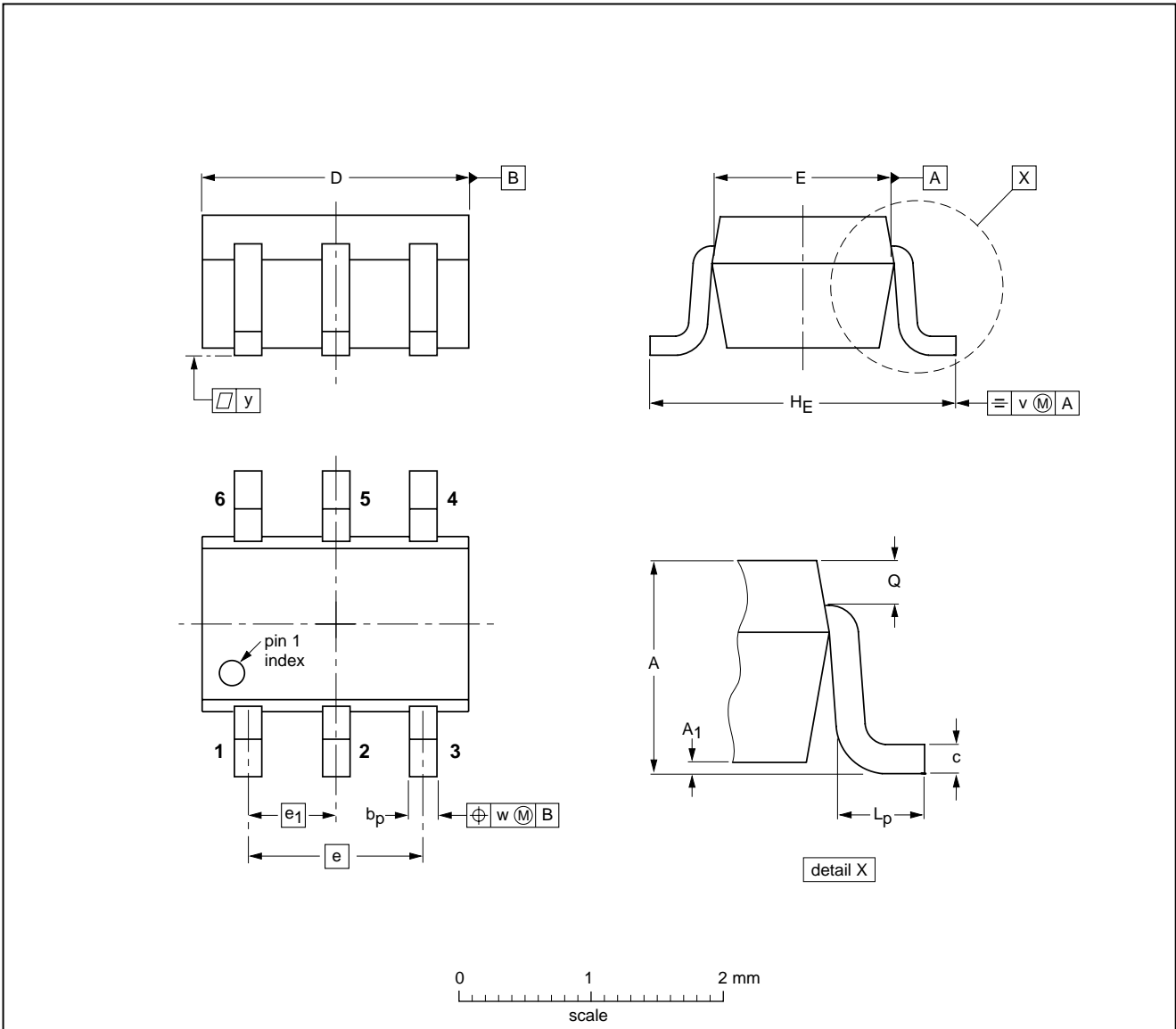
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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A1 max	bp	c	D	E	e	e1	HE	Lp	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT363			SC-88			97-02-28

Schottky barrier double diode

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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	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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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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