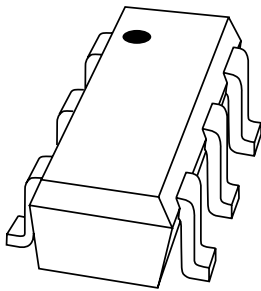


# DATA SHEET



## **BAT74S** Schottky barrier double diode

Product specification  
Supersedes data of 1998 Feb 06

1998 Jul 10

# 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.

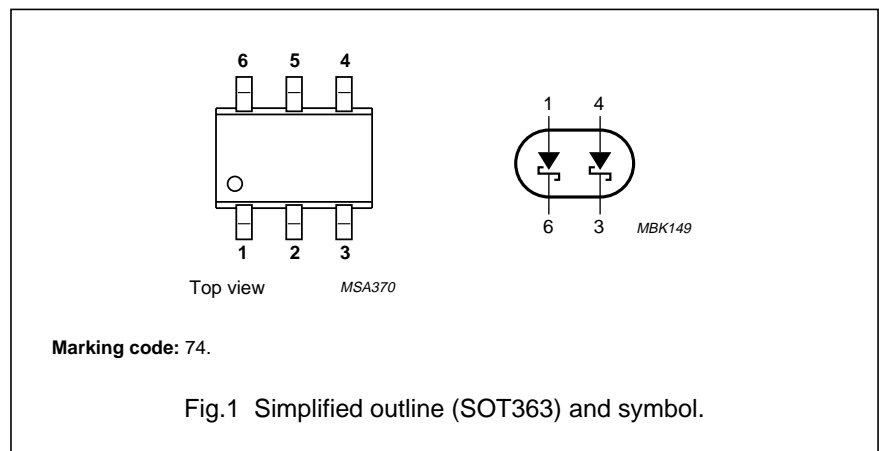
### DESCRIPTION

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

Two separate dies are encapsulated in a SOT363 small SMD plastic package.

### PINNING

PIN	DESCRIPTION
1	anode (a <sub>1</sub> )
2,5	not connected
3	cathode (k <sub>2</sub> )
4	anode (a <sub>2</sub> )
6	cathode (k <sub>1</sub> )



## Schottky barrier double diode

BAT74S

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	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	$T_{amb} \leq 25 \text{ °C}; \text{ see Fig.2}$	–	230	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C
<b>Double diode operation</b>					
$V_R$	continuous reverse voltage		–	30	V
$V_R$	continuous reverse voltage	series connection	–	60	V
$I_F$	continuous forward current		–	110 <sup>(1)</sup>	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

## BAT74S

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	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	$\mu\text{A}$
$t_{rr}$	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

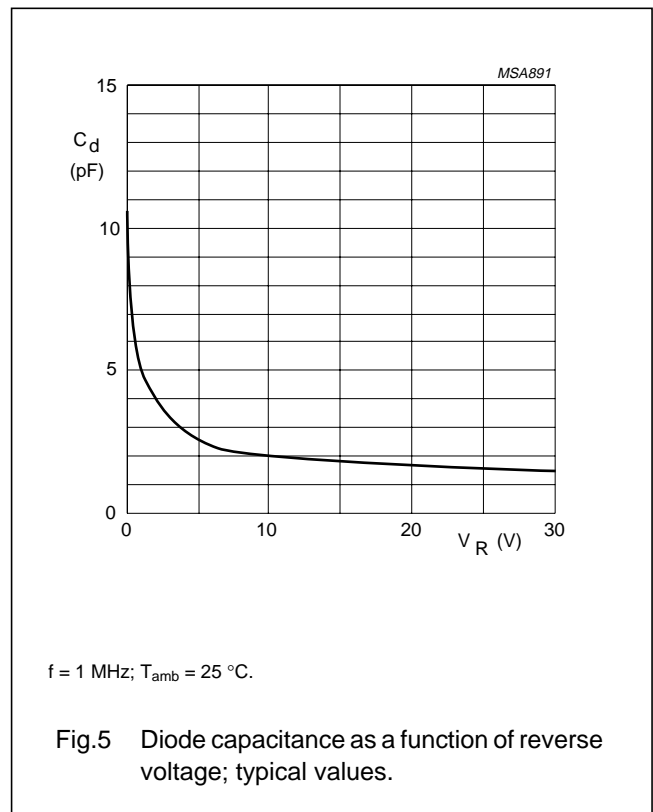
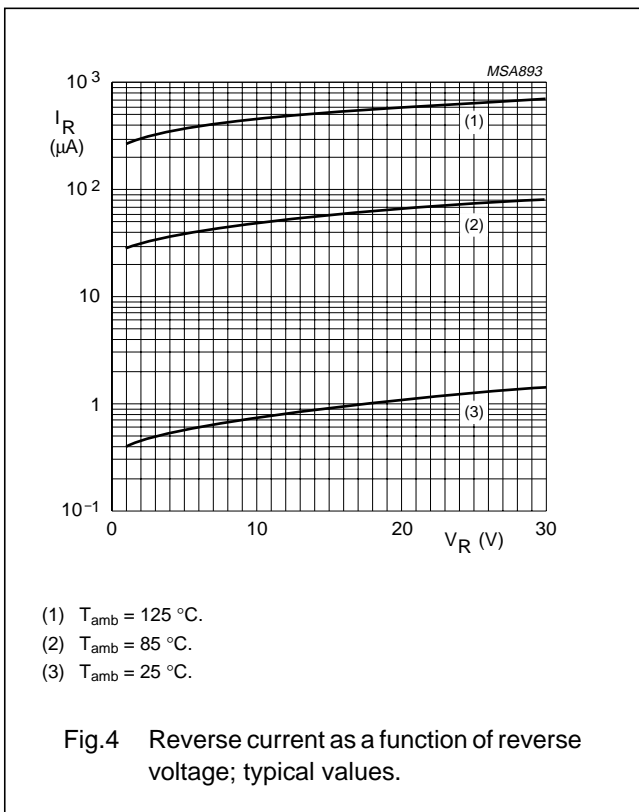
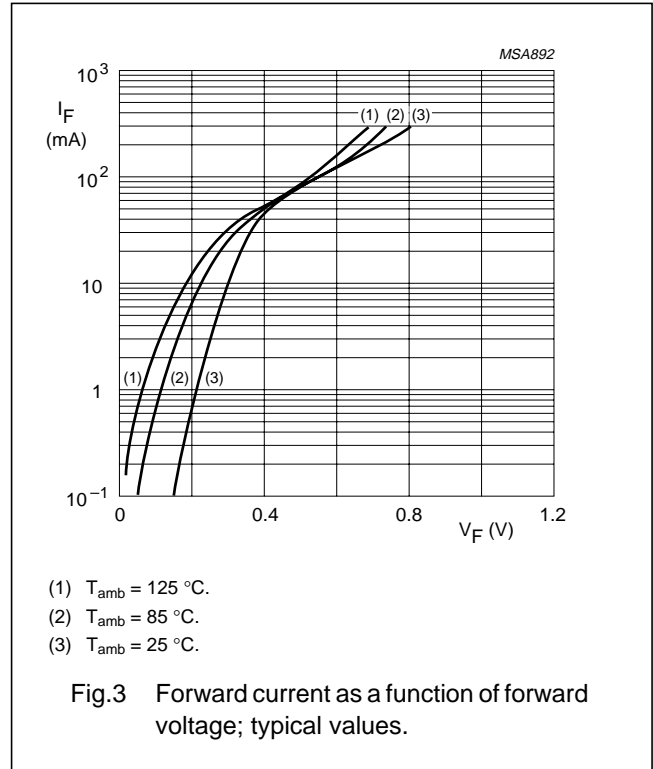
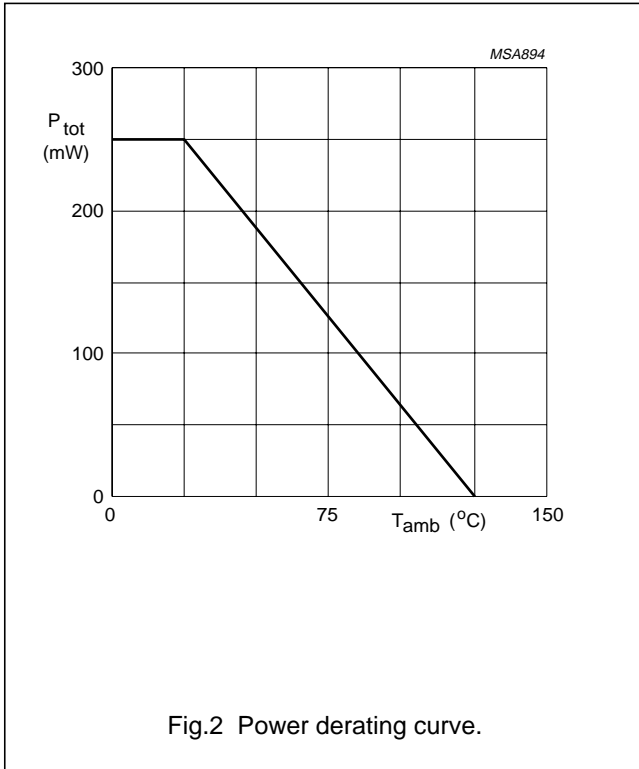
**Note**

1. Refer to SOT363 standard mounting conditions.

Schottky barrier double diode

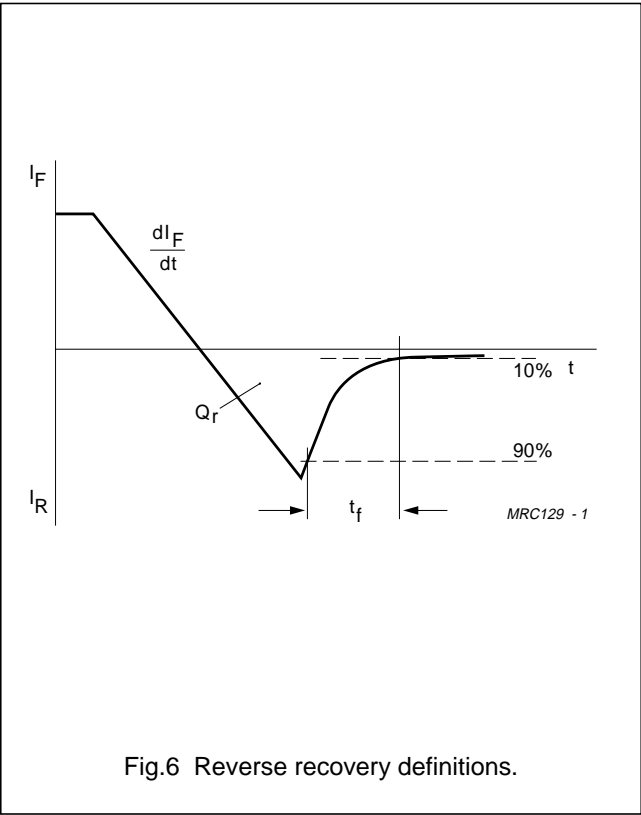
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GRAPHICAL DATA



Schottky barrier double diode

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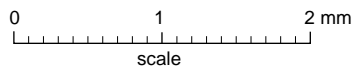
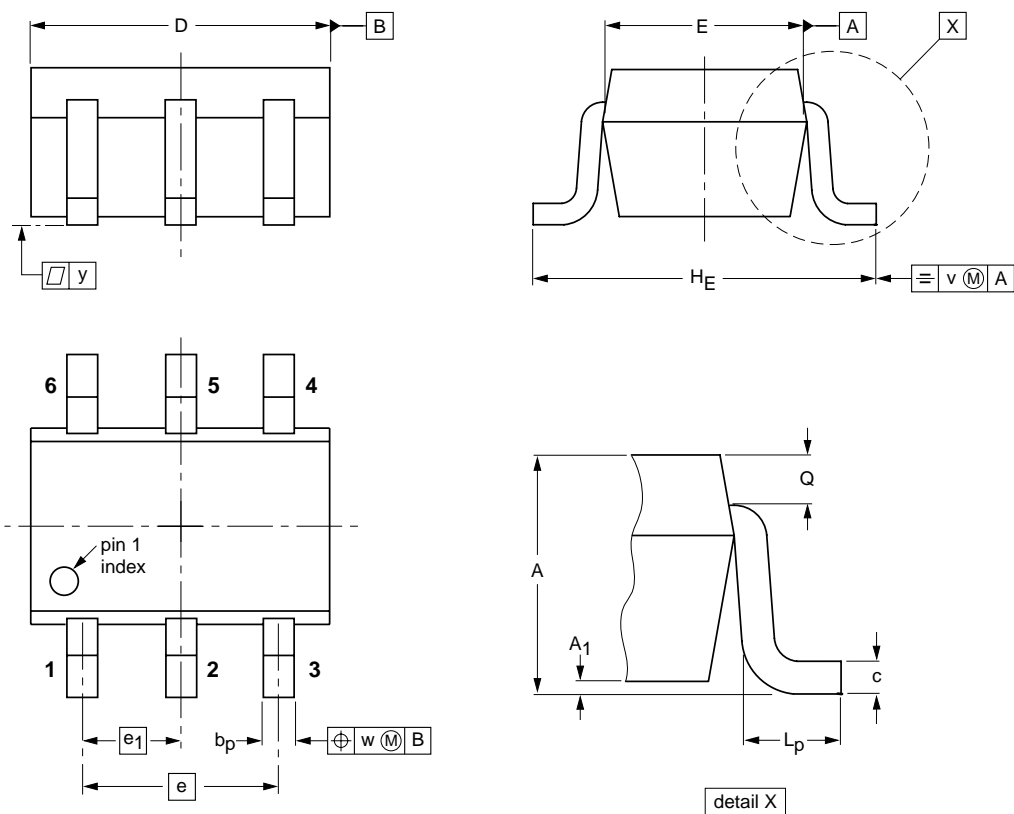
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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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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**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**

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**NOTES**

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**NOTES**

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**NOTES**

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