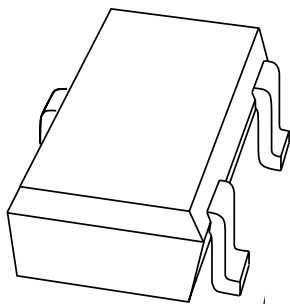


# DATA SHEET



## **BAT854W series** Schottky barrier (double) diodes

Product specification

2001 Feb 27

# Schottky barrier (double) diodes

# BAT854W series

### FEATURES

- Very low forward voltage
- Very low reverse current
- Guard ring protected
- Very small SMD plastic package.

### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes
- Low power consumption applications (e.g. hand-held applications).

### DESCRIPTION

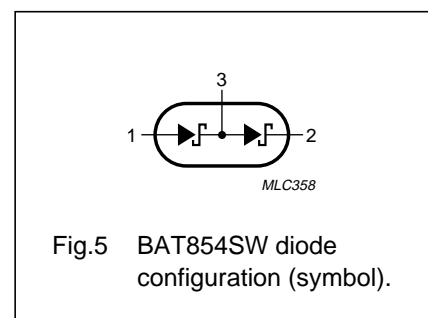
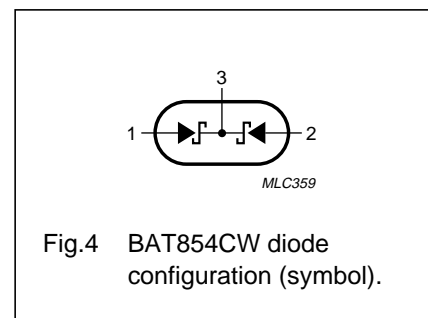
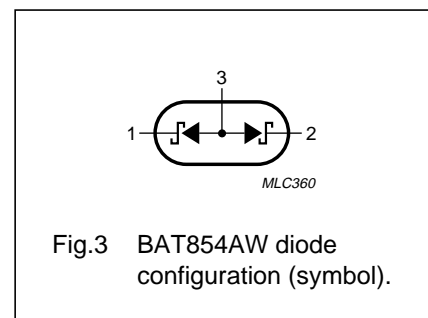
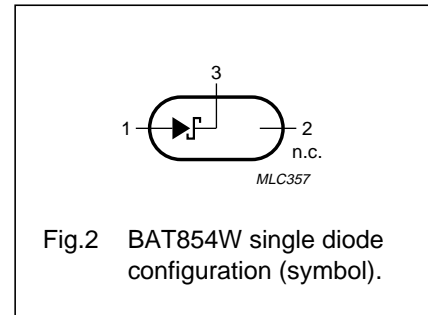
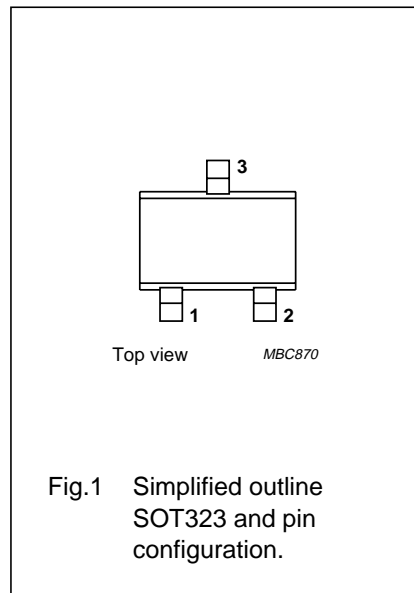
Planar Schottky barrier diodes encapsulated in a SOT323 very small SMD plastic package. Single diodes and double diodes with different pinning are available.

### MARKING

TYPE NUMBER	MARKING CODE
BAT854W	81
BAT854AW	82
BAT854CW	83
BAT854SW	84

### PINNING

PIN	SYMBOL
<b>BAT854W</b>	
1	a
2	n.c.
3	k
<b>BAT854AW</b>	
1	k <sub>1</sub>
2	k <sub>2</sub>
3	a <sub>1</sub> , a <sub>2</sub>
<b>BAT854CW</b>	
1	a <sub>1</sub>
2	a <sub>2</sub>
3	k <sub>1</sub> , k <sub>2</sub>
<b>BAT854SW</b>	
1	a <sub>1</sub>
2	k <sub>2</sub>
3	k <sub>1</sub> , a <sub>2</sub>



## Schottky barrier (double) diodes

## BAT854W series

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	40	V
$I_F$	continuous forward current		–	200	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	300	mA
$I_{FSM}$	non-repetitive peak forward current	$t = 8.3$ ms half sinewave; JEDEC method	–	1	A
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	continuous forward voltage	see Fig.6 $I_F = 0.1$ mA $I_F = 1$ mA $I_F = 10$ mA $I_F = 30$ mA $I_F = 100$ mA	200 260 340 – –	– – – 420 550	mV mV mV mV mV
$I_R$	continuous reverse current	$V_R = 25$ V; note 1; see Fig.7	–	0.5	μA
$C_d$	diode capacitance	$V_R = 1$ V; $f = 1$ MHz; see Fig.8	–	20	pF

**Note**

1. Pulse test:  $t_p = 300$  μs;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

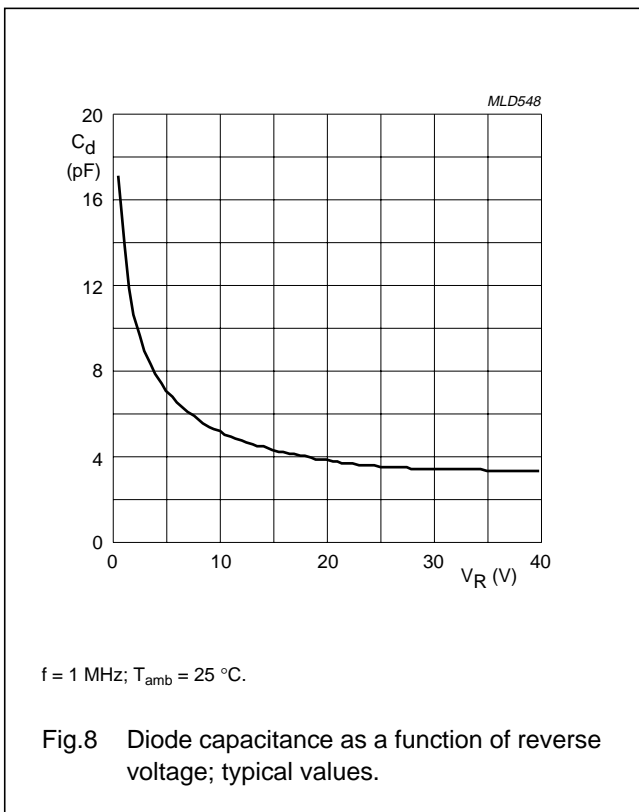
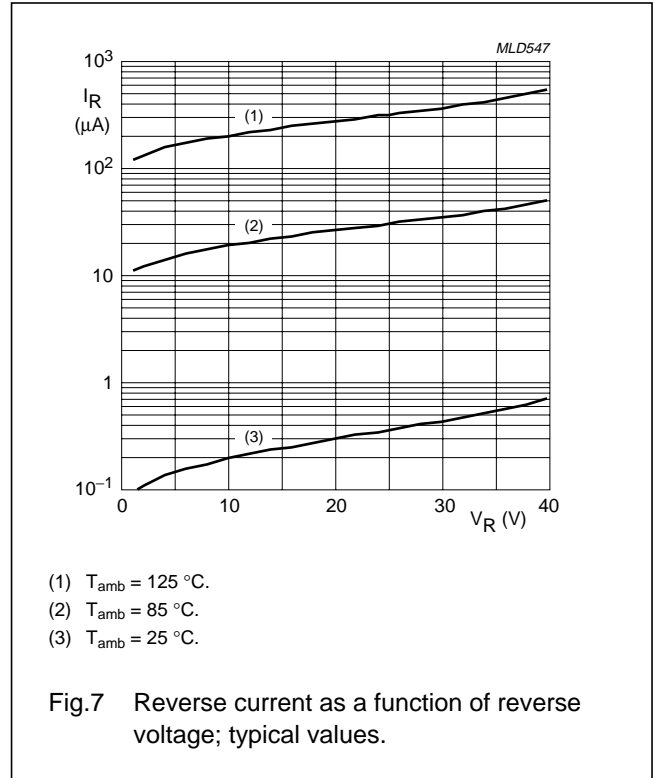
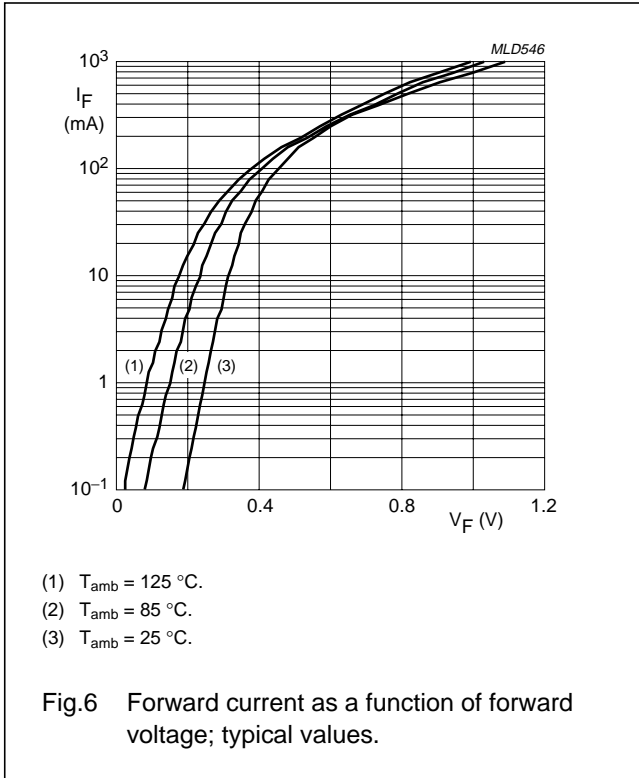
**Note**

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

BAT854W series

GRAPHICAL DATA



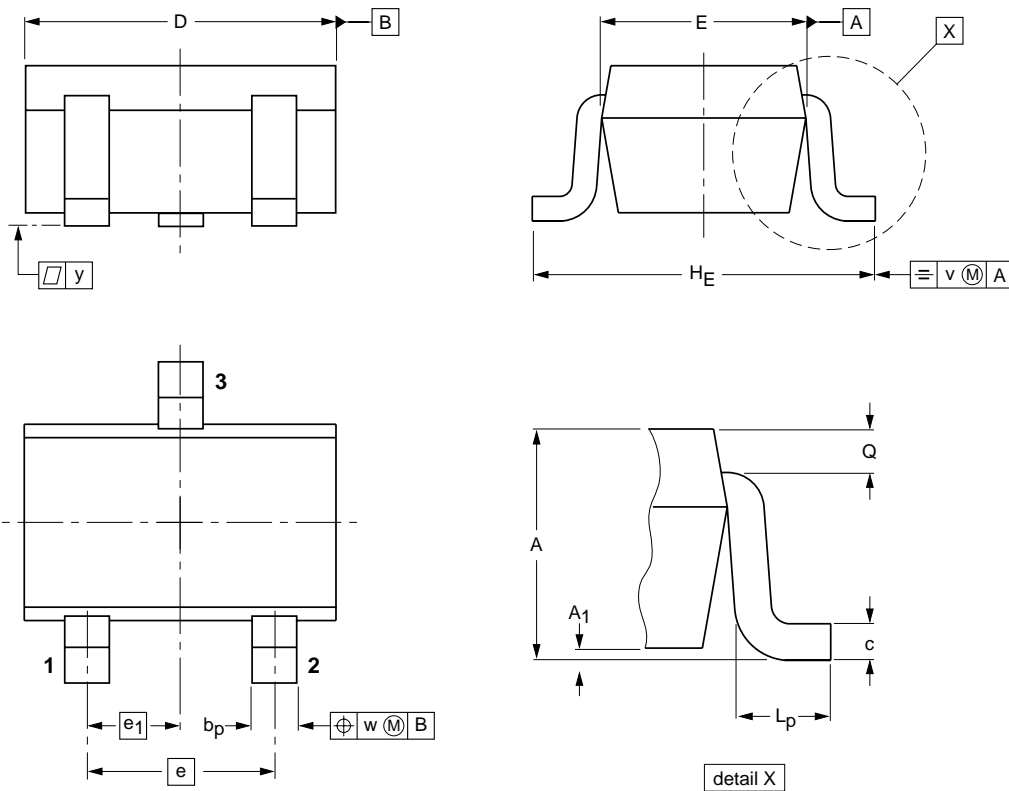
# Schottky barrier (double) diodes

# BAT854W series

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



**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
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

## Schottky barrier (double) diodes

## BAT854W series

## DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS <sup>(1)</sup>
Objective specification	Development	This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.
Preliminary specification	Qualification	This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

## Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

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**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**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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Schottky barrier (double) diodes

BAT854W series

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