

## Important notice

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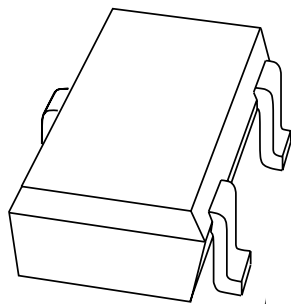
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



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

Product data sheet

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

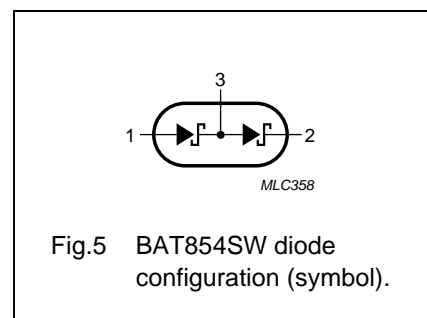
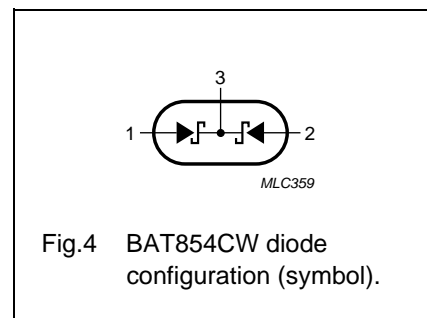
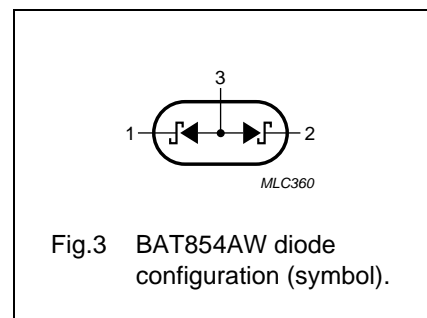
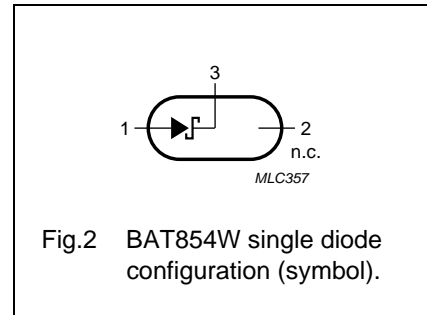
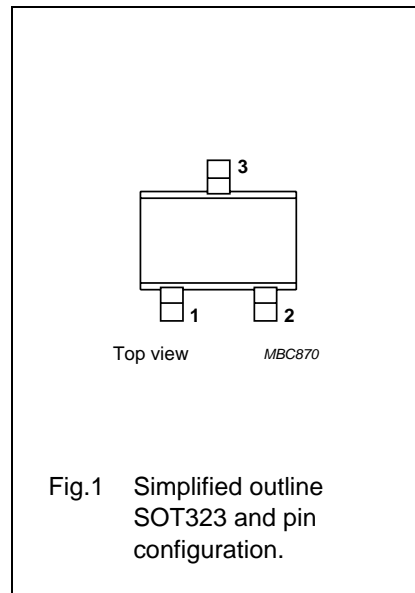
Planar Schottky barrier diodes encapsulated in a SOT323 very small SMD plastic package. Single diodes and double diodes with different pinning are available.

### 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

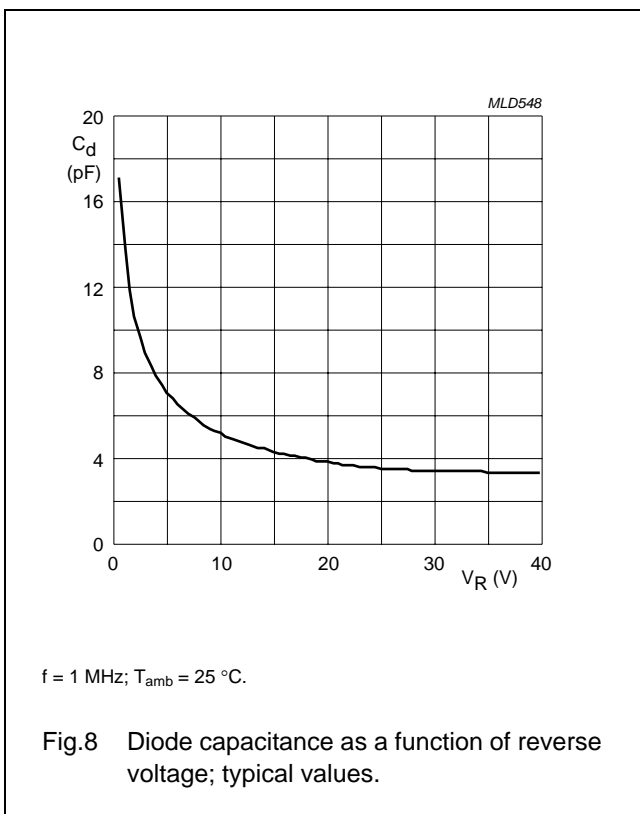
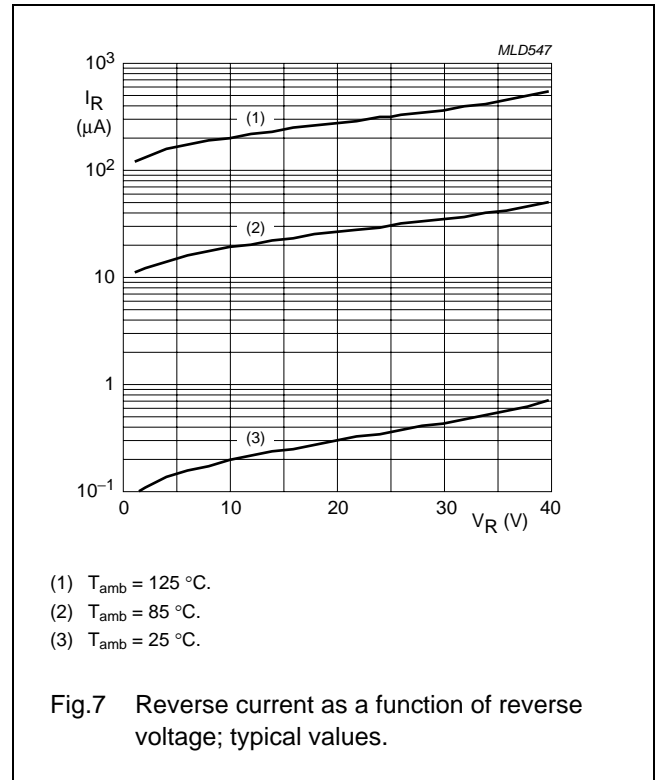
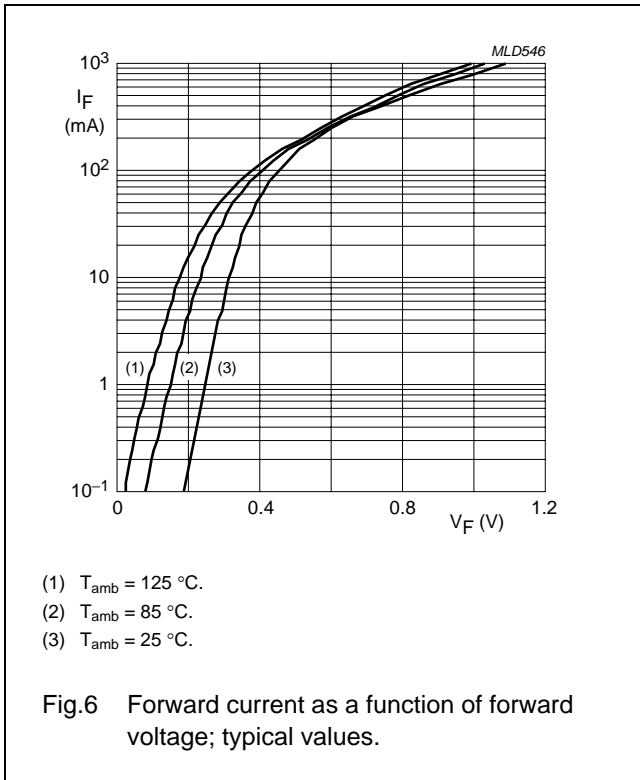
**Note**

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

BAT854W series

GRAPHICAL DATA



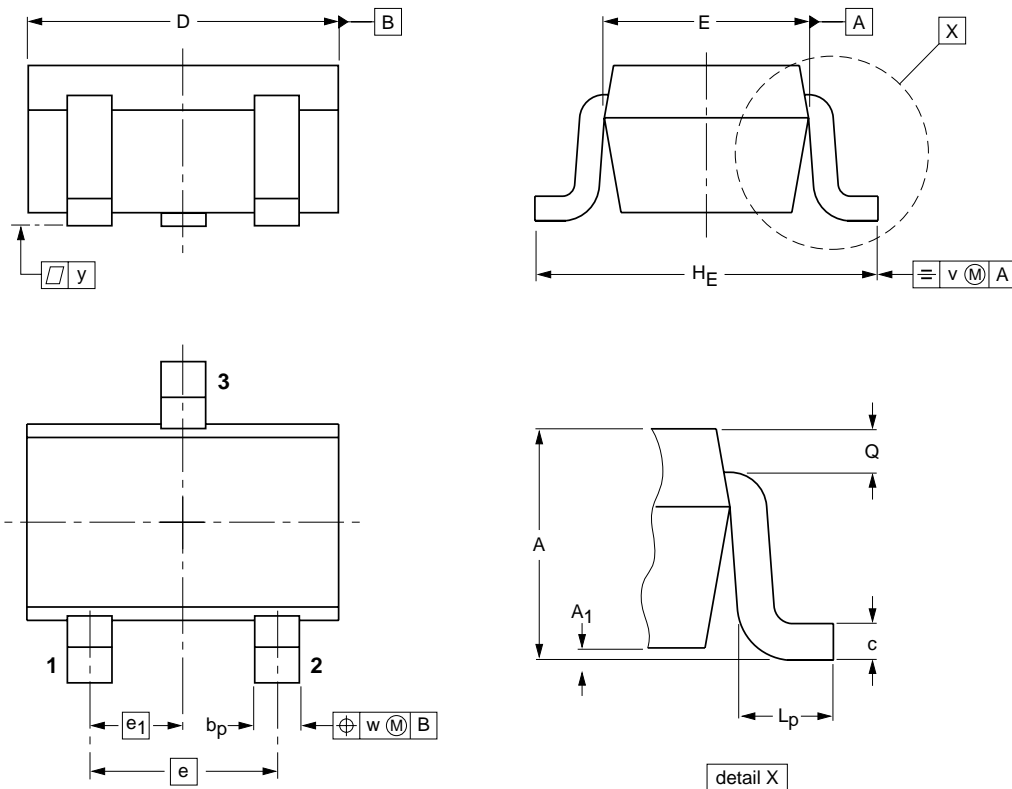
# Schottky barrier (double) diodes

# 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

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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.
2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

For additional information please visit: **<http://www.nxp.com>**

For sales offices addresses send e-mail to: **[salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)**

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