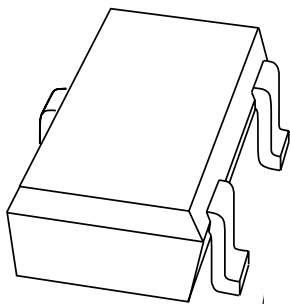


DATA SHEET



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

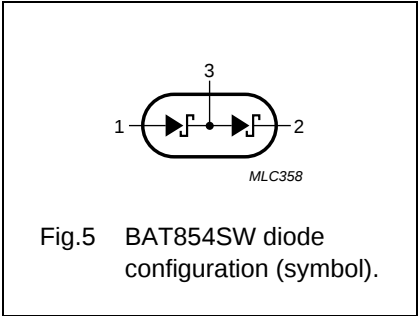
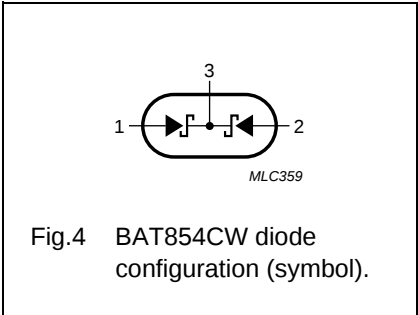
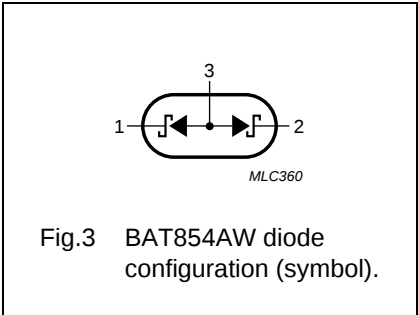
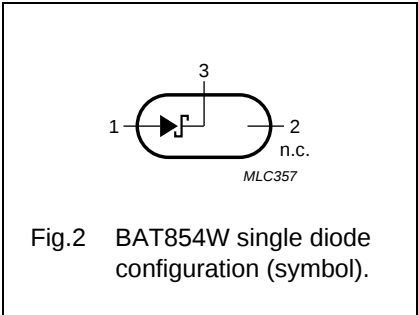
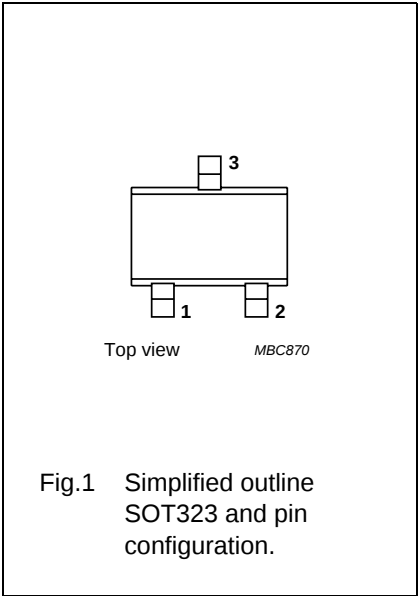
Planar Schottky barrier diodes encapsulated in a SOT323 very small SMD plastic package. Single diodes and double diodes with different pinning are available.

MARKING

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

PINNING

PIN	SYMBOL
BAT854W	
1	a
2	n.c.
3	k
BAT854AW	
1	k ₁
2	k ₂
3	a ₁ , a ₂
BAT854CW	
1	a ₁
2	a ₂
3	k ₁ , k ₂
BAT854SW	
1	a ₁
2	k ₂
3	k ₁ , a ₂



Schottky barrier (double) diodes

BAT854W series

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		–	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
Per diode					
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

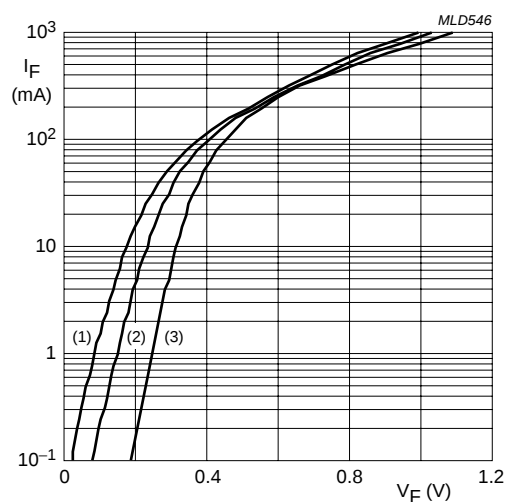
Note

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

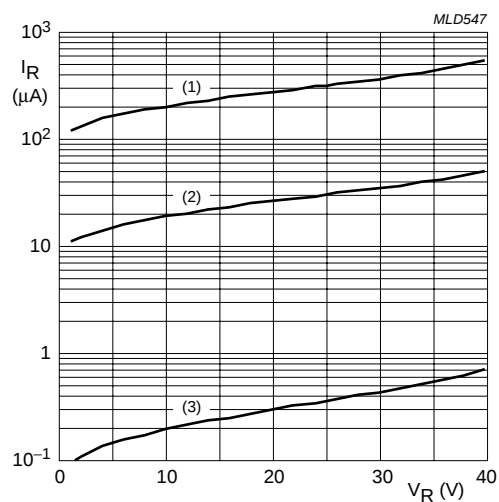
BAT854W series

GRAPHICAL DATA



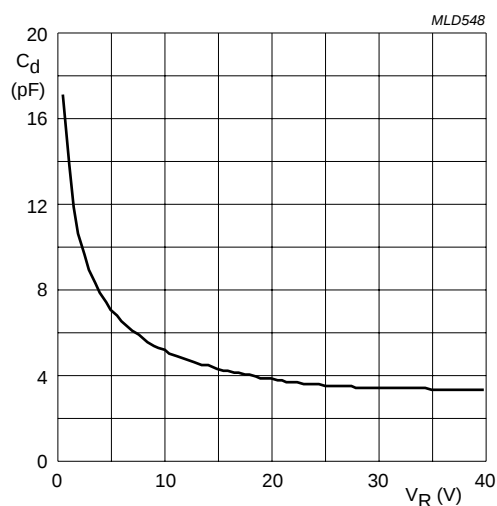
- (1) $T_{amb} = 125^\circ\text{C}$.
 (2) $T_{amb} = 85^\circ\text{C}$.
 (3) $T_{amb} = 25^\circ\text{C}$.

Fig.6 Forward current as a function of forward voltage; typical values.



- (1) $T_{amb} = 125^\circ\text{C}$.
 (2) $T_{amb} = 85^\circ\text{C}$.
 (3) $T_{amb} = 25^\circ\text{C}$.

Fig.7 Reverse current as a function of reverse voltage; typical values.



$f = 1\text{ MHz}$; $T_{amb} = 25^\circ\text{C}$.

Fig.8 Diode capacitance as a function of reverse voltage; typical values.

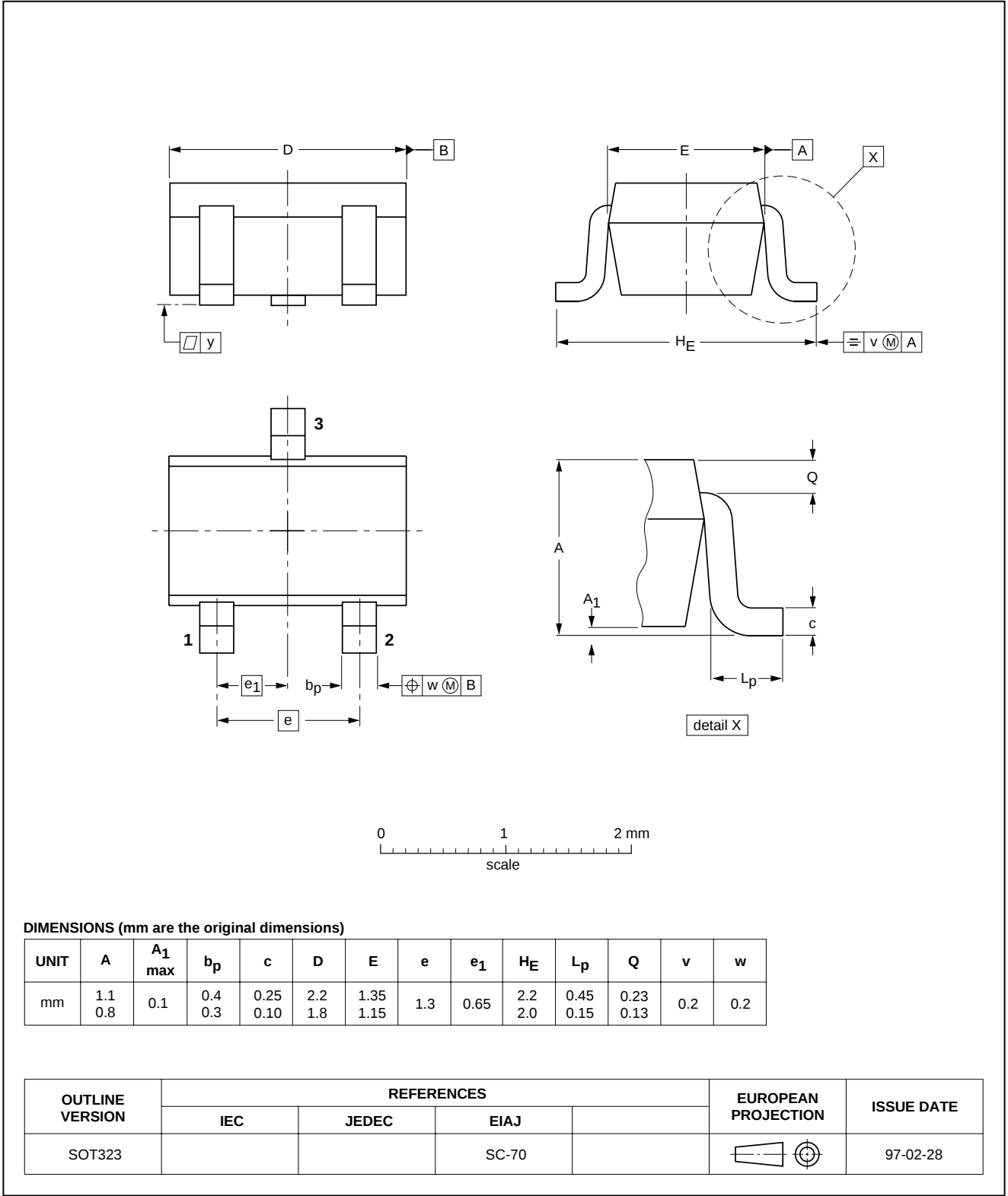
Schottky barrier (double) diodes

BAT854W series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



Schottky barrier (double) diodes

BAT854W series

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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.

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