



**THE DATASHEET OF
BAT854SW,115**



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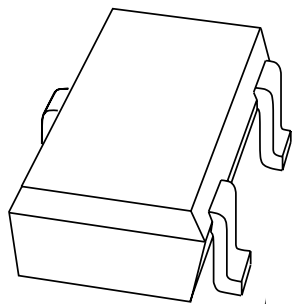
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Kind regards,

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

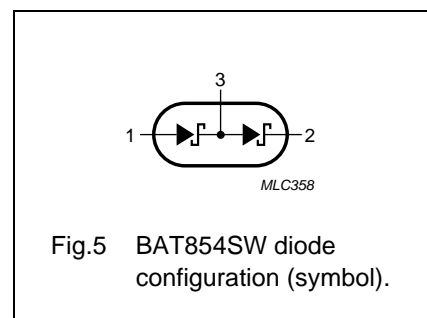
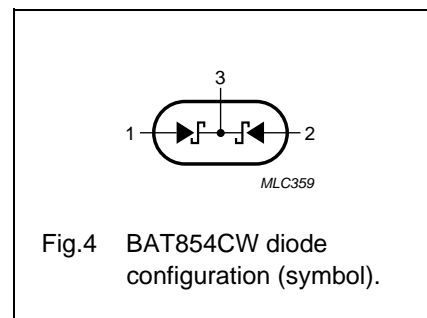
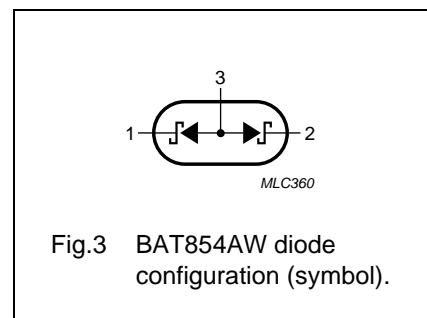
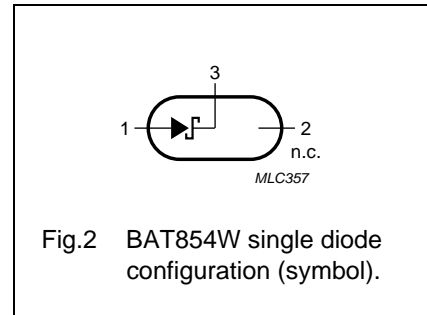
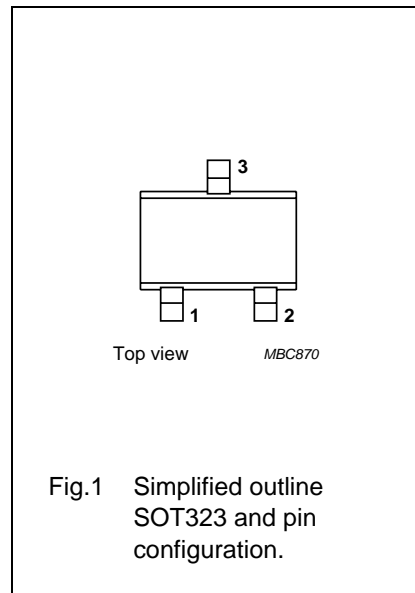
Planar Schottky barrier diodes encapsulated in a SOT323 very small SMD plastic package. Single diodes and double diodes with different pinning are available.

MARKING

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

PINNING

| PIN | SYMBOL |
|-----------------|---------------------------------|
| 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 |

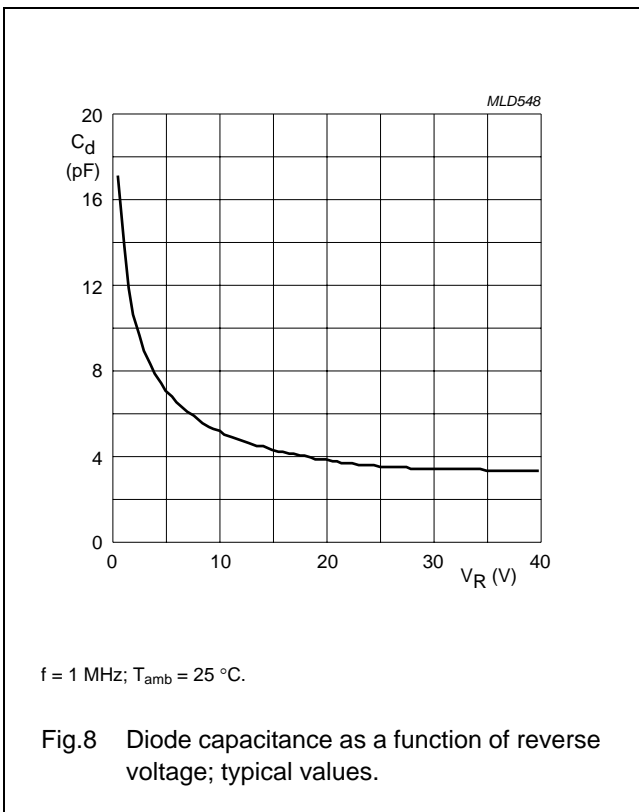
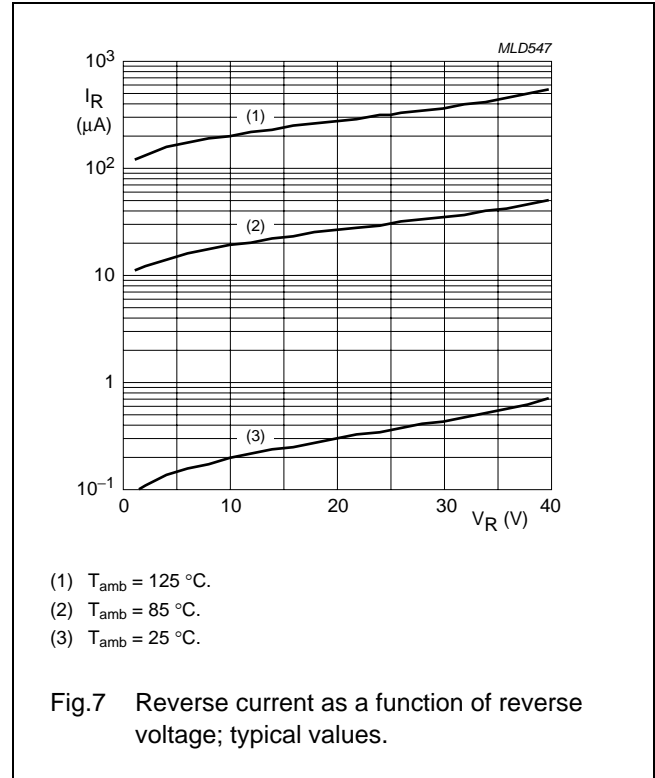
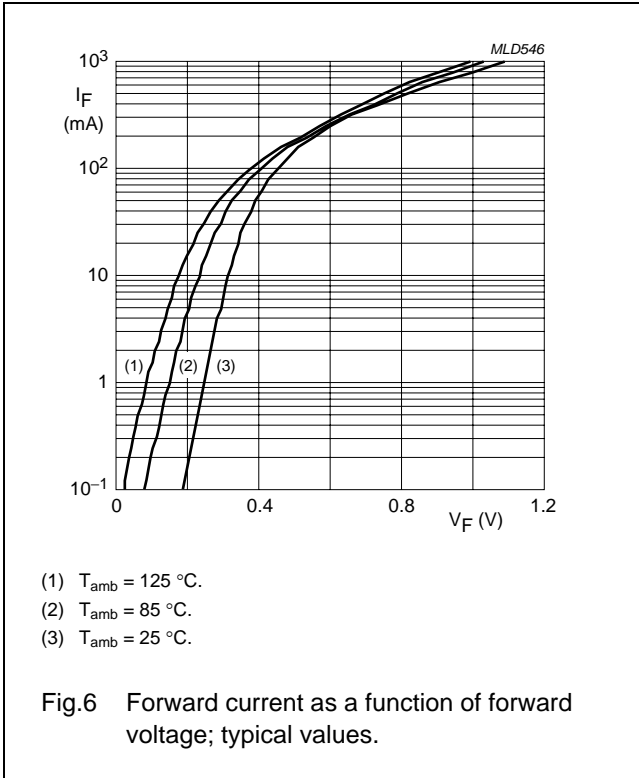
Note

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

BAT854W series

GRAPHICAL DATA



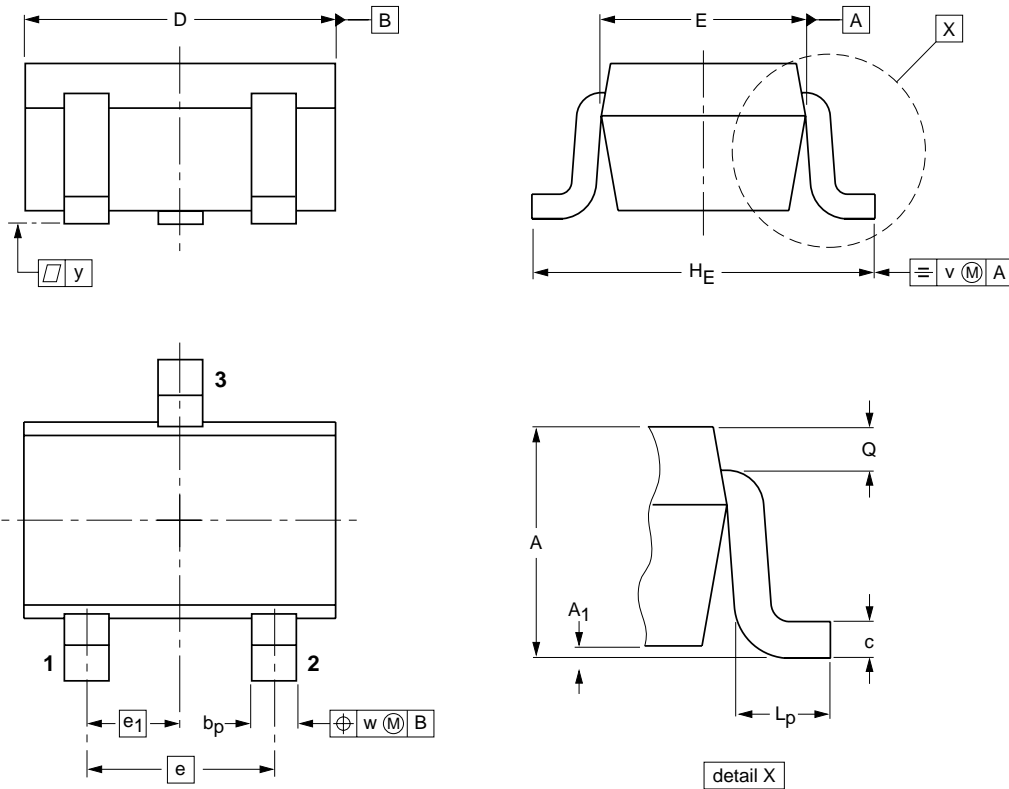
Schottky barrier (double) diodes

BAT854W series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max | b _p | c | D | E | e | e ₁ | H _E | L _p | 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 ⁽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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NXP Semiconductors

Customer notification

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Contact information

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

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