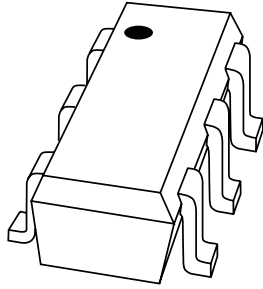


# DATA SHEET



**BAT754L**

Schottky barrier triple diode

Product specification

2001 Jan 18

# Schottky barrier triple diode

# BAT754L

### FEATURES

- Very low forward voltage
- Guard ring protected
- Low diode capacitance
- Three independent diodes in a small plastic SMD package.

### APPLICATIONS

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

### DESCRIPTION

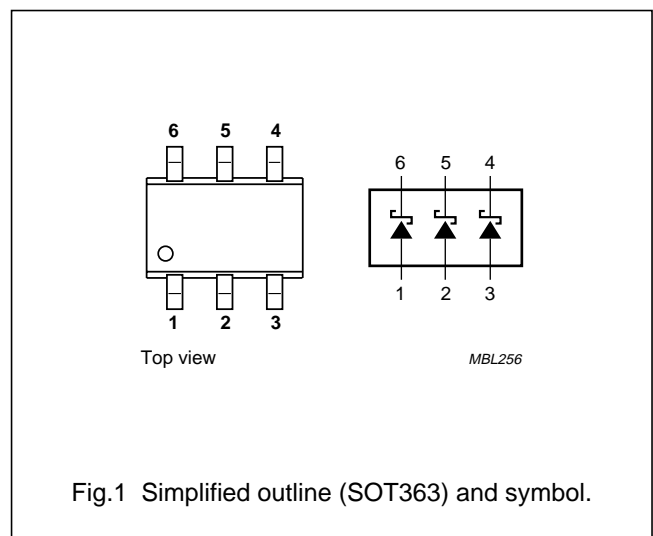
Three internal (galvanic) isolated silicon epitaxial Schottky barrier diodes in a SOT363 small SMD plastic package.

### MARKING

| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BAT754L     | L1           |

### PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | anode 1     |
| 2   | anode 2     |
| 3   | anode 3     |
| 4   | cathode 3   |
| 5   | cathode 2   |
| 6   | cathode 1   |



### 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          |                                  | –    | 30   | V    |
| $I_F$            | continuous forward current          |                                  | –    | 200  | mA   |
| $I_{FRM}$        | repetitive peak forward current     | $t_p < 1\text{ s}; \delta < 0.5$ | –    | 300  | mA   |
| $I_{FSM}$        | non-repetitive peak forward current | $t_p < 10\text{ ms}$             | –    | 600  | mA   |
| $T_{stg}$        | storage temperature                 |                                  | –65  | +150 | °C   |
| $T_j$            | junction temperature                |                                  | –    | 125  | °C   |
| $T_{amb}$        | operating ambient temperature       |                                  | –65  | +125 | °C   |

## Schottky barrier triple diode

BAT754L

## 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.

## ELECTRICAL CHARACTERISTICS

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

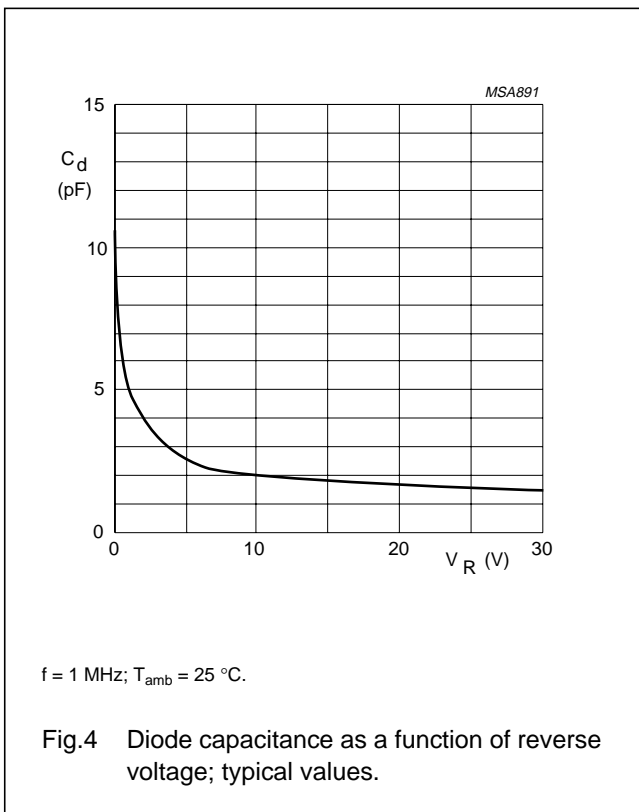
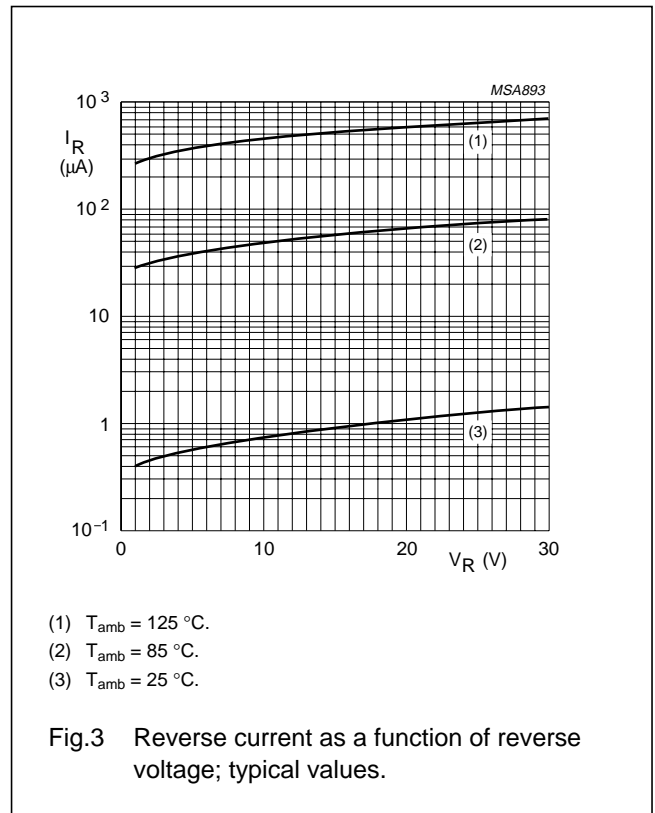
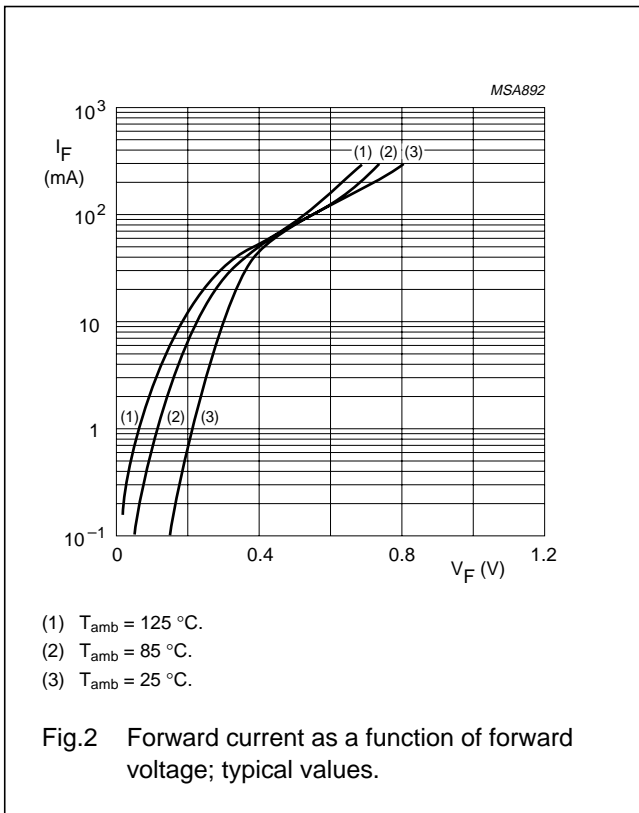
| SYMBOL           | PARAMETER         | CONDITIONS                                          | MAX. | UNIT          |
|------------------|-------------------|-----------------------------------------------------|------|---------------|
| <b>Per diode</b> |                   |                                                     |      |               |
| $V_F$            | forward voltage   | note 1; see Fig.2                                   |      |               |
|                  |                   | $I_F = 0.1\text{ mA}$                               | 200  | mV            |
|                  |                   | $I_F = 1\text{ mA}$                                 | 260  | mV            |
|                  |                   | $I_F = 10\text{ mA}$                                | 340  | mV            |
|                  |                   | $I_F = 30\text{ mA}$                                | 420  | mV            |
|                  |                   | $I_F = 100\text{ mA}$                               | 750  | mV            |
| $I_R$            | reverse current   | $V_R = 25\text{ V}$ ; note 1; see Fig.3             | 2    | $\mu\text{A}$ |
| $C_d$            | diode capacitance | $V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.4 | 10   | pF            |

## Note

1. Pulse test: pulse width =  $300\ \mu\text{s}$ ;  $\delta = 0.02$ .

Schottky barrier triple diode

BAT754L



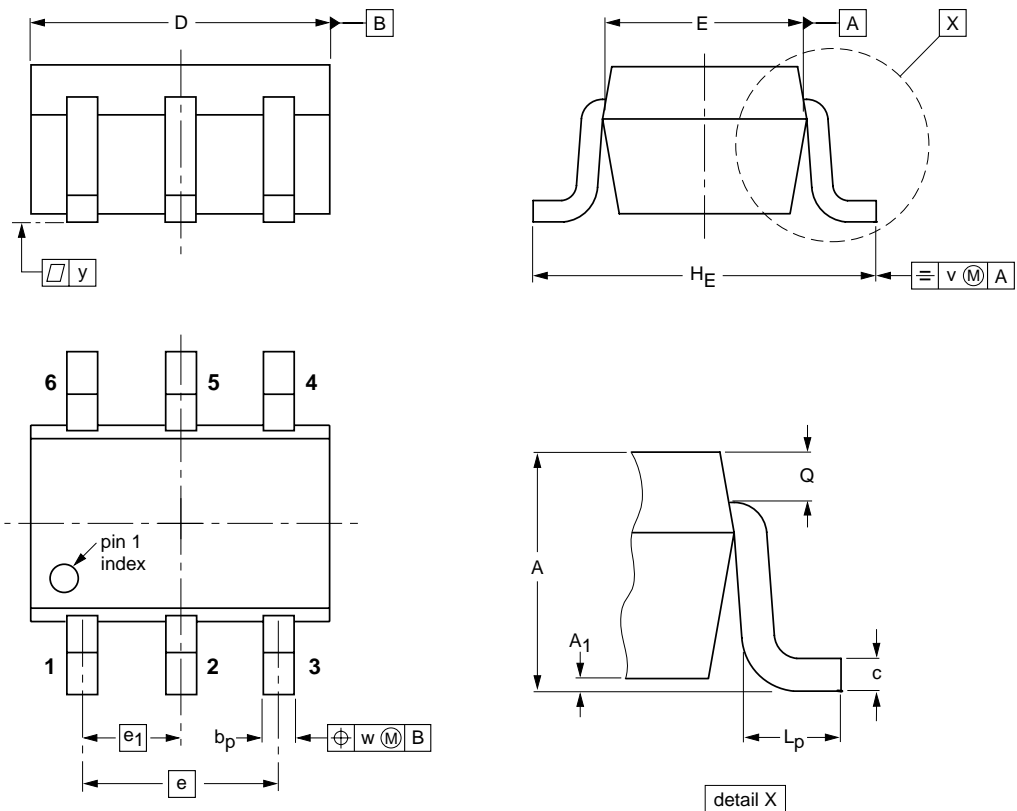
# Schottky barrier triple diode

# BAT754L

## 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<br>0.8 | 0.1                | 0.30<br>0.20   | 0.25<br>0.10 | 2.2<br>1.8 | 1.35<br>1.15 | 1.3 | 0.65           | 2.2<br>2.0     | 0.45<br>0.15   | 0.25<br>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 triple diode

BAT754L

## 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.

## DEFINITIONS

**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 triple diode

BAT754L

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