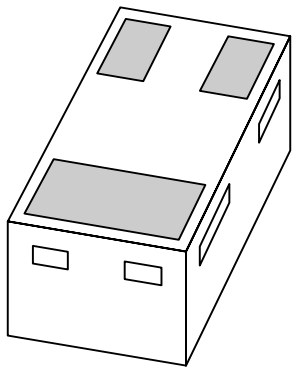


# DATA SHEET



**BAT54CM**

Schottky barrier double diode

# Schottky barrier double diode

# BAT54CM

### FEATURES

- Low forward voltage
- Leadless ultra small plastic package (1.0 × 0.6 × 0.5 mm)
- Boardspace 1.17 mm<sup>2</sup> (approx. 10% of SOT23)
- Power dissipation comparable to SOT23.

### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Mobile communications, digital (still) cameras, PDAs and PCMCIA cards.

### DESCRIPTION

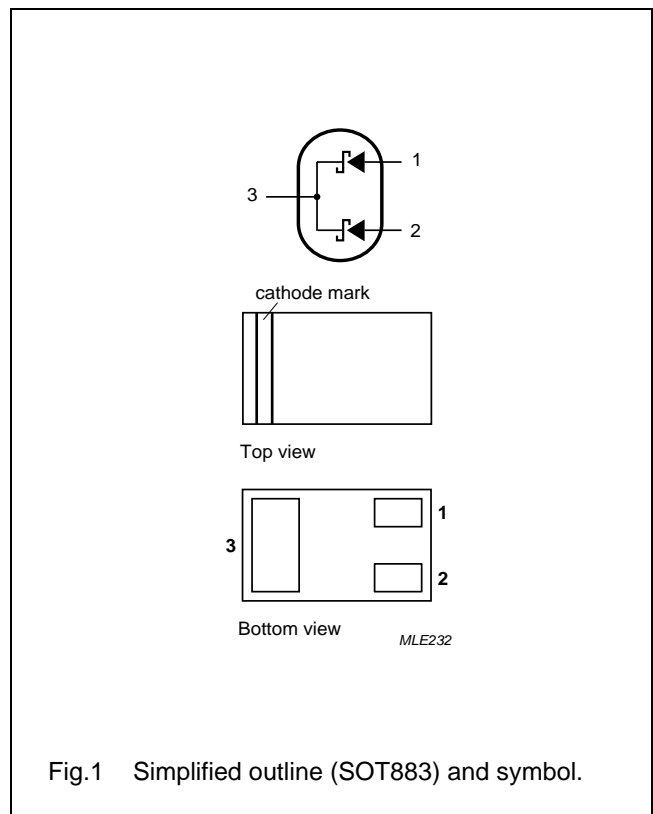
Planar Schottky barrier double diode encapsulated in a SOT883 leadless ultra small plastic package.

### MARKING

| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BAT54CM     | S3           |

### PINNING

| PIN | DESCRIPTION             |
|-----|-------------------------|
| 1   | anode (a <sub>1</sub> ) |
| 2   | anode (a <sub>2</sub> ) |
| 3   | common cathode          |



### ORDERING INFORMATION

| TYPE NUMBER | PACKAGE |   |         |
|-------------|---------|---|---------|
|             | NAME    | DESCRIPTION   | VERSION |
| BAT54CM     | –       | leadless ultra small plastic package; 3 solder lands; body 1.0 × 0.6 × 0.5 mm | SOT883  |

## Schottky barrier double diode

BAT54CM

**LIMITING VALUES**

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

| SYMBOL    | PARAMETER                             | CONDITIONS                        | MIN. | MAX. | UNIT |
|-----------|---------------------------------------|-----------------------------------|------|------|------|
| $V_R$     | continuous reverse voltage            |                                   | –    | 30   | 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   | $t_p < 10$ ms                     | –    | 600  | mA   |
| $T_{stg}$ | storage temperature                   |                                   | –65  | +150 | °C   |
| $T_j$     | junction temperature                  |                                   | –    | 150  | °C   |
| $P_{tot}$ | total power dissipation (per package) | $T_{amb} \leq 25$ °C; note 1      | –    | 250  | mW   |

**Note**

1. Refer to SOT883 standard mounting conditions (footprint); FR4 with 60  $\mu$ m copper strip line.

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1     | 500   | K/W  |

**Note**

1. Refer to SOT883 standard mounting conditions (footprint), FR4 with 60  $\mu$ m copper strip line.

**Soldering**

Reflow soldering is the only recommended soldering method.

**ELECTRICAL CHARACTERISTICS**

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

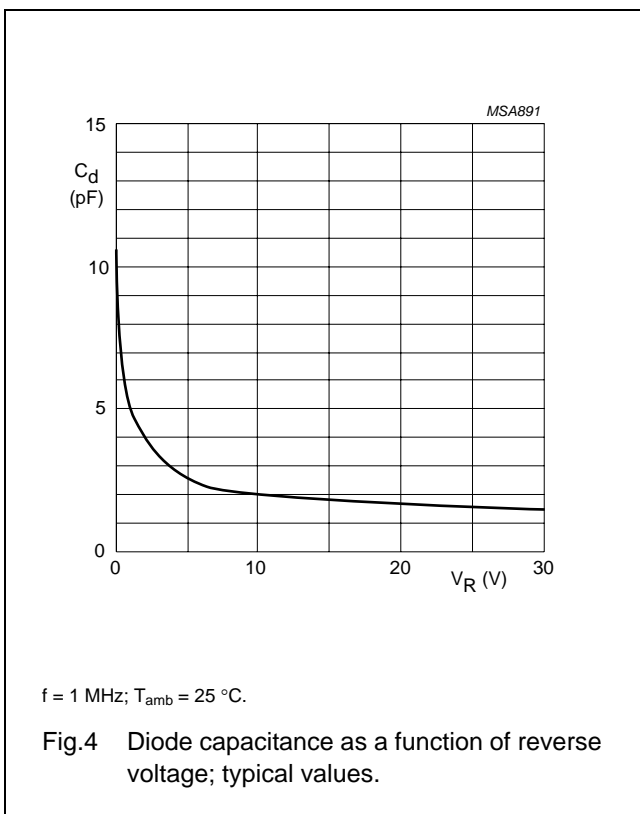
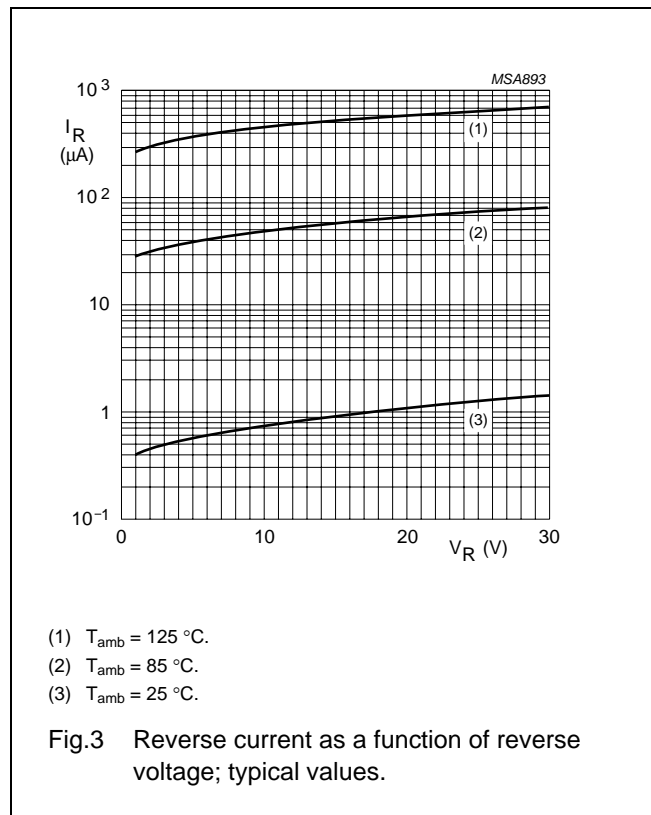
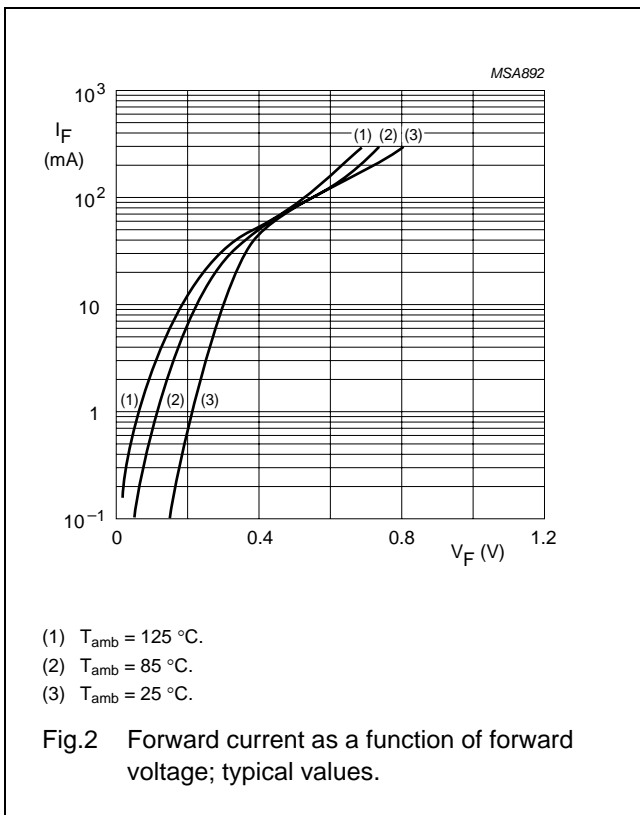
| SYMBOL           | PARAMETER                  | CONDITIONS   | MAX.                            | UNIT                       |
|------------------|----------------------------|--|---------------------------------|----------------------------|
| <b>Per diode</b> |                            |  |                                 |                            |
| $V_F$            | forward voltage            | see Fig.2;<br>$I_F = 0.1$ mA<br>$I_F = 1$ mA<br>$I_F = 10$ mA<br>$I_F = 30$ mA<br>$I_F = 100$ mA | 240<br>320<br>400<br>500<br>800 | mV<br>mV<br>mV<br>mV<br>mV |
| $I_R$            | continuous reverse current | $V_R = 25$ V; note 1; see Fig.3  | 2                               | $\mu$ A                    |
| $C_d$            | diode capacitance          | $f = 1$ MHz; $V_R = 1$ V; see Fig.4  | 10                              | pF                         |

**Note**

1. Pulsed test:  $t_p \leq 300$   $\mu$ s;  $\delta \leq 0.02$ .

Schottky barrier double diode

BAT54CM



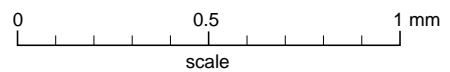
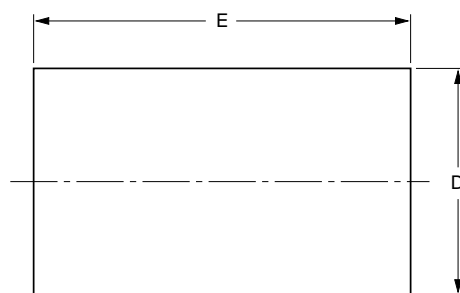
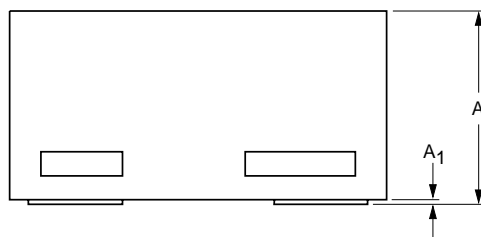
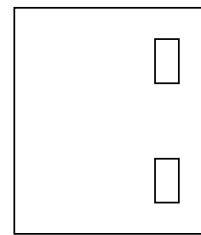
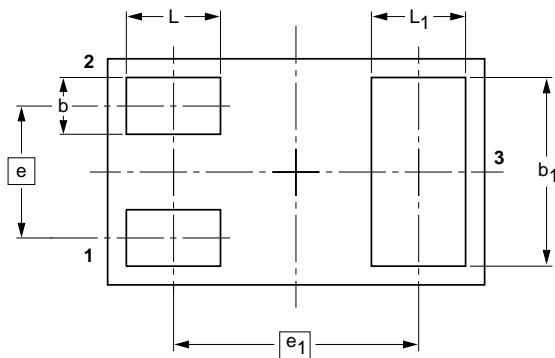
Schottky barrier double diode

BAT54CM

PACKAGE OUTLINE

Leadless ultra small plastic package; 3 solder lands; body 1.0 x 0.6 x 0.5 mm

SOT883



DIMENSIONS (mm are the original dimensions)

| UNIT | A <sup>(1)</sup> | A <sub>1</sub> max. | b            | b <sub>1</sub> | D            | E            | e    | e <sub>1</sub> | L            | L <sub>1</sub> |
|------|------------------|---------------------|--------------|----------------|--------------|--------------|------|----------------|--------------|----------------|
| mm   | 0.50<br>0.46     | 0.03                | 0.20<br>0.12 | 0.55<br>0.47   | 0.62<br>0.55 | 1.02<br>0.95 | 0.35 | 0.65           | 0.30<br>0.22 | 0.30<br>0.22   |

Note

1. Including plating thickness

| OUTLINE VERSION | REFERENCES |       |        |  | EUROPEAN PROJECTION | ISSUE DATE           |
|-----------------|------------|-------|--------|--|---------------------|----------------------|
|                 | IEC        | JEDEC | JEITA  |  |                     |                      |
| SOT883          |            |       | SC-101 |  |                     | 03-02-05<br>03-04-03 |

# Schottky barrier double diode

# BAT54CM

## 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.                                     |

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