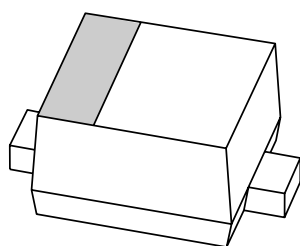


# DATA SHEET



## **1PS79SB40** Schottky barrier diode

Product specification  
Supersedes data of 1999 Mar 08

1999 Apr 26

## Schottky barrier diode

## 1PS79SB40

## FEATURES

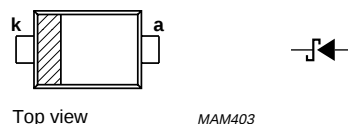
- Low forward voltage
- Guard ring protected
- Ultra small SMD package
- Low diode capacitance.

## APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

## DESCRIPTION

Planar Schottky barrier diode encapsulated in an SC-79 (SOD523) ultra small plastic SMD package.



**Marking code:** T.

The marking bar indicates the cathode.

Fig.1 Simplified outline SC-79 (SOD523) and symbol.

## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL    | PARAMETER                           | CONDITIONS                              | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|-----------------------------------------|------|------|------|
| $V_R$     | continuous reverse voltage          |                                         | —    | 40   | V    |
| $I_F$     | continuous forward current          |                                         | —    | 120  | mA   |
| $I_{FRM}$ | repetitive peak forward current     | $t_p \leq 1 \text{ s}; \delta \leq 0.5$ | —    | 120  | mA   |
| $I_{FSM}$ | non-repetitive peak forward current | $t_p < 10 \text{ ms}$                   | —    | 200  | mA   |
| $T_{stg}$ | storage temperature                 |                                         | –65  | +150 | °C   |
| $T_j$     | junction temperature                |                                         | —    | 150  | °C   |
| $T_{amb}$ | operating ambient temperature       |                                         | –65  | +150 | °C   |

## Schottky barrier diode

## 1PS79SB40

**ELECTRICAL CHARACTERISTICS**

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

| SYMBOL | PARAMETER                  | CONDITIONS                                                                       | MAX.            | UNIT          |
|--------|----------------------------|----------------------------------------------------------------------------------|-----------------|---------------|
| $V_F$  | continuous forward voltage | see Fig.2<br>$I_F = 1\text{ mA}$<br>$I_F = 10\text{ mA}$<br>$I_F = 40\text{ mA}$ | 380<br>500<br>1 | mV<br>mV<br>V |
| $I_R$  | continuous reverse current | $V_R = 30\text{ V}$ ; note 1; see Fig.3                                          | 1               | $\mu\text{A}$ |
|        |                            | $V_R = 40\text{ V}$ ; note 1; see Fig.3                                          | 10              | $\mu\text{A}$ |
| $C_d$  | diode capacitance          | $V_R = 0$ ; $f = 1\text{ MHz}$ ; see Fig.5                                       | 5               | pF            |

**Note**

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

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|---------------|---------------------------------------------|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1     | 450   | K/W  |

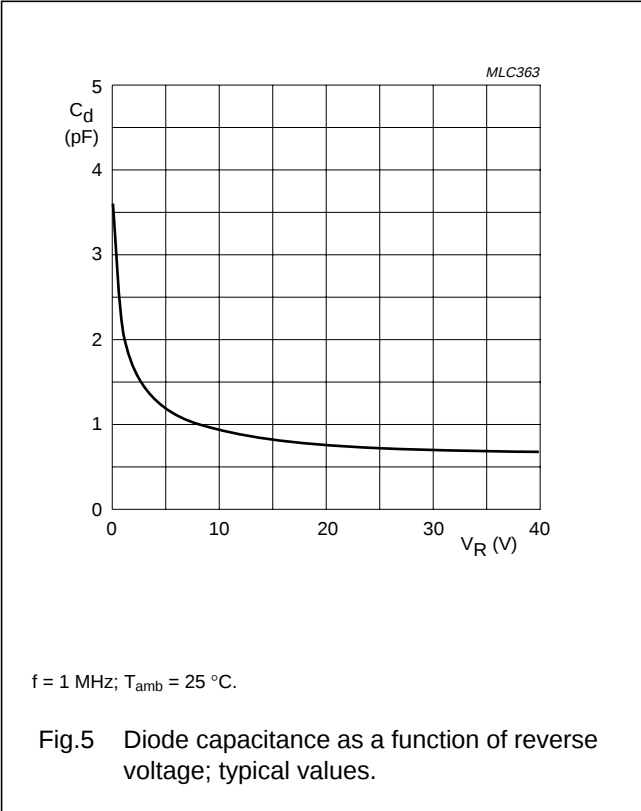
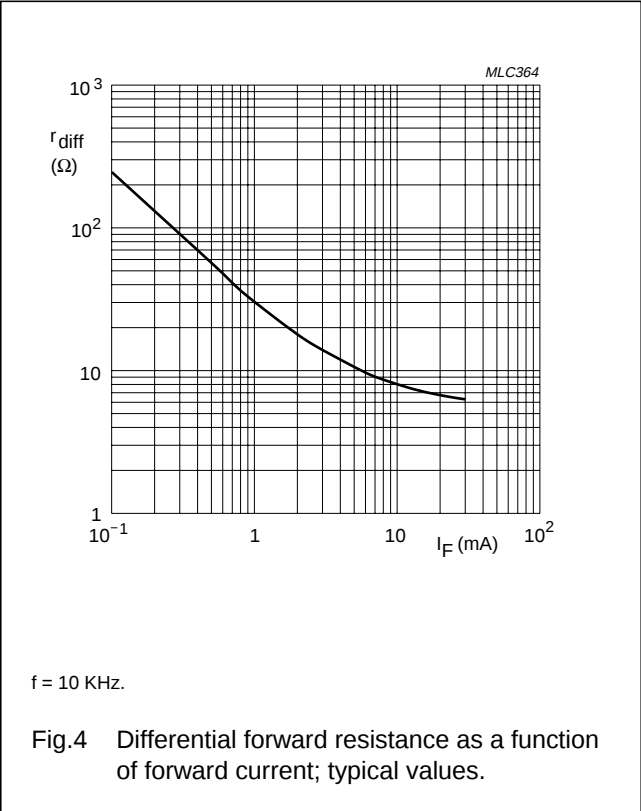
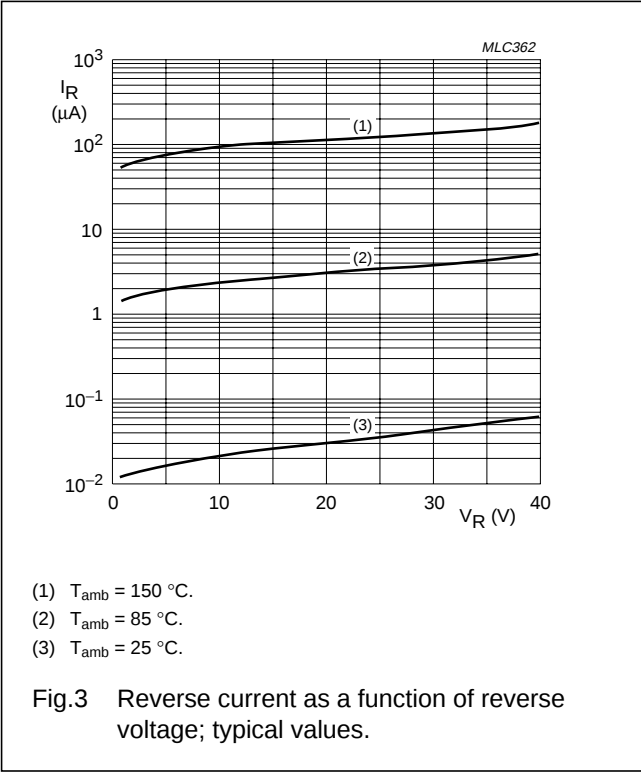
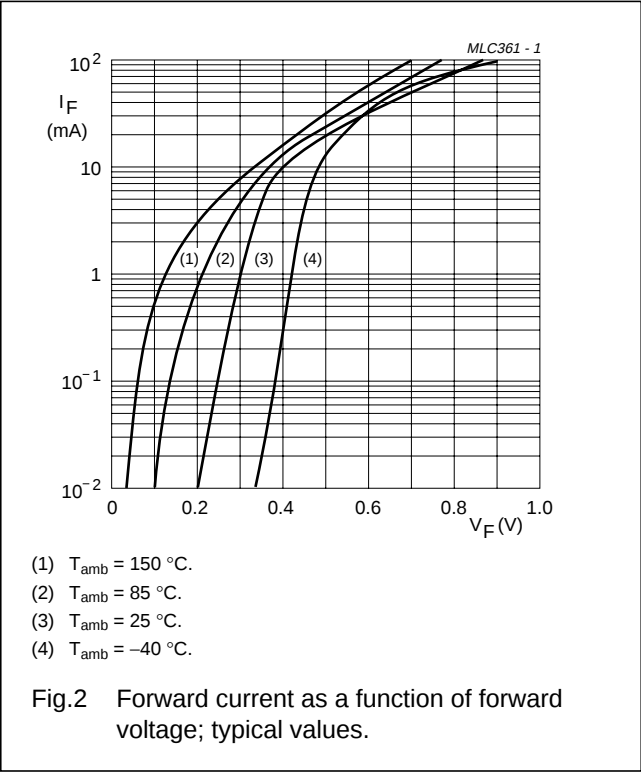
**Note**

1. Refer to SC-79 (SOD523) standard mounting conditions.

Schottky barrier diode

1PS79SB40

GRAPHICAL DATA



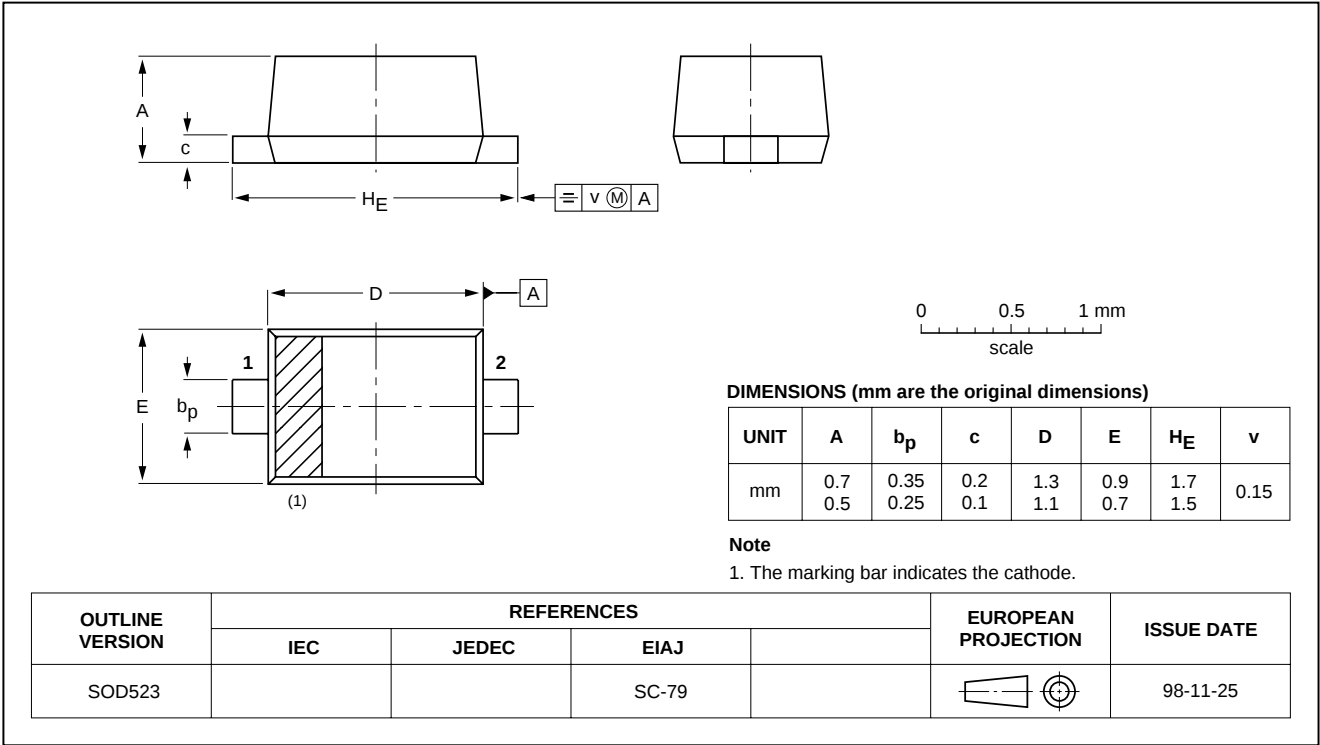
Schottky barrier diode

1PS79SB40

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523



DEFINITIONS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Data Sheet Status</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                       |
| Objective specification                                                                                                                                                                                                                                                                                                                                                                                                                                   | This data sheet contains target or goal specifications for product development.       |
| Preliminary specification                                                                                                                                                                                                                                                                                                                                                                                                                                 | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification                                                                                                                                                                                                                                                                                                                                                                                                                                     | This data sheet contains final product specifications.                                |
| <b>Limiting values</b>                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                       |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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. |                                                                                       |
| <b>Application information</b>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |
| Where application information is given, it is advisory and does not form part of the specification.                                                                                                                                                                                                                                                                                                                                                       |                                                                                       |

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Schottky barrier diode

1PS79SB40

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**NOTES**

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**Schottky barrier diode****1PS79SB40**

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**NOTES**

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