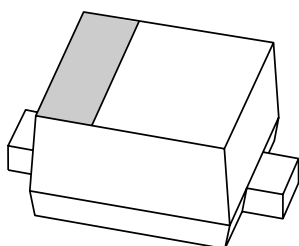


# DATA SHEET



**BB179**

UHF variable capacitance diode

Product specification

1997 Nov 13

## UHF variable capacitance diode

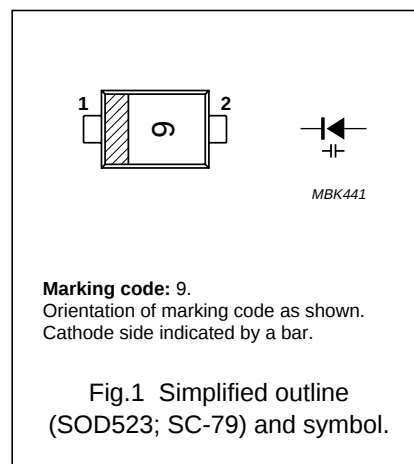
## BB179

## FEATURES

- Excellent linearity
- Excellent matching to 2% DMA
- Ultra small plastic SMD package
- C28: 2.1 pF; ratio: 9
- Low series resistance.

## DESCRIPTION

The BB179 is a planar technology variable capacitance diode, in a SOD523 (SC-79) package. The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.



## APPLICATIONS

- Electronic tuning in UHF television tuners
- Voltage controlled oscillators (VCO).

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | cathode     |
| 2   | anode       |

## LIMITING VALUES

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

| SYMBOL    | PARAMETER                      | CONDITIONS                              | MIN. | MAX. | UNIT |
|-----------|--------------------------------|-----------------------------------------|------|------|------|
| $V_R$     | continuous reverse voltage     |                                         | —    | 30   | V    |
| $V_{RM}$  | peak reverse voltage           | in series with a 10 k $\Omega$ resistor | —    | 35   | V    |
| $I_F$     | continuous forward current     |                                         | —    | 20   | mA   |
| $T_{stg}$ | storage temperature            |                                         | –55  | +150 | °C   |
| $T_j$     | operating junction temperature |                                         | –55  | +125 | °C   |

## ELECTRICAL CHARACTERISTICS

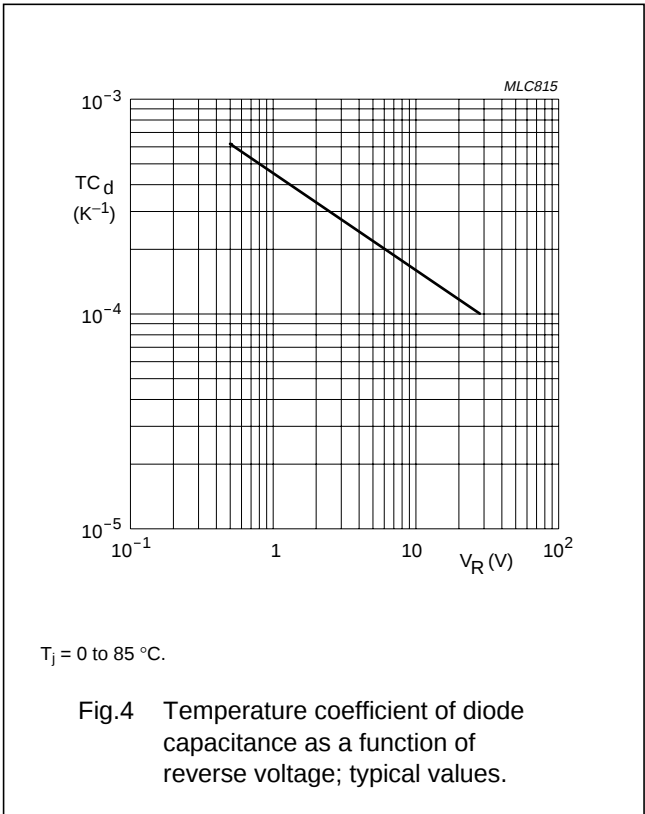
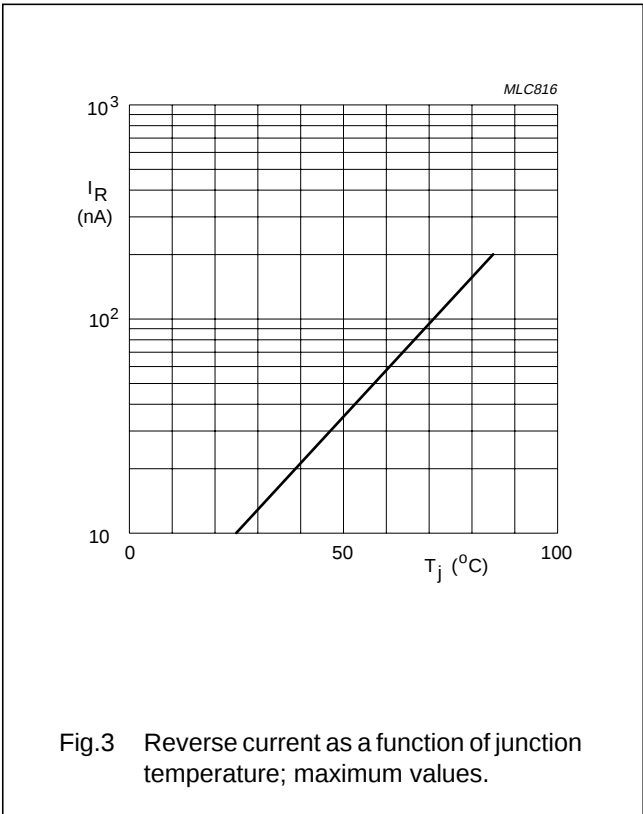
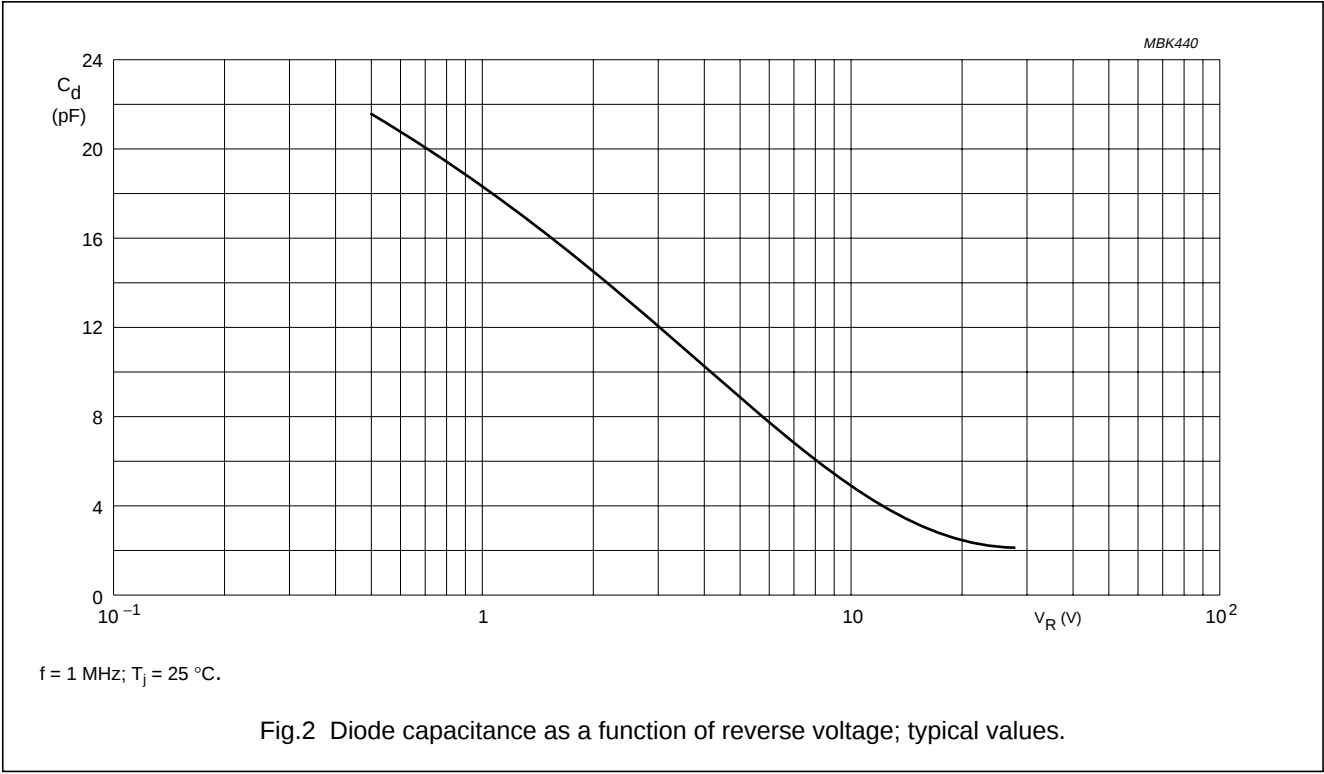
$T_j = 25\text{ °C}$  unless otherwise specified.

| SYMBOL                          | PARAMETER               | CONDITIONS                                                                | MIN.  | TYP. | MAX.  | UNIT     |
|---------------------------------|-------------------------|---------------------------------------------------------------------------|-------|------|-------|----------|
| $I_R$                           | reverse current         | $V_R = 30\text{ V}$ ; see Fig.3                                           | —     | —    | 10    | nA       |
|                                 |                         | $V_R = 30\text{ V}$ ; $T_j = 85\text{ °C}$ ; see Fig.3                    | —     | —    | 200   | nA       |
| $r_s$                           | diode series resistance | $f = 470\text{ MHz}$ ;<br>$V_R$ is the value at which $C_d = 9\text{ pF}$ | —     | 0.6  | 0.75  | $\Omega$ |
| $C_d$                           | diode capacitance       | $V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4                | 18.22 | —    | 21.26 | pF       |
|                                 |                         | $V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4               | 1.951 | —    | 2.225 | pF       |
| $\frac{C_{d(1V)}}{C_{d(2V)}}$   | capacitance ratio       | $f = 1\text{ MHz}$                                                        | —     | 1.27 | —     |          |
| $\frac{C_{d(1V)}}{C_{d(28V)}}$  | capacitance ratio       | $f = 1\text{ MHz}$                                                        | 8.45  | —    | 10.9  |          |
| $\frac{C_{d(25V)}}{C_{d(28V)}}$ | capacitance ratio       | $f = 1\text{ MHz}$                                                        | —     | 1.05 | —     |          |
| $\frac{\Delta C_d}{C_d}$        | capacitance matching    | $V_R = 1\text{ to }28\text{ V}$ ; in a sequence of 15 diodes (gliding)    | —     | —    | 2     | %        |

UHF variable capacitance diode

BB179

GRAPHICAL DATA



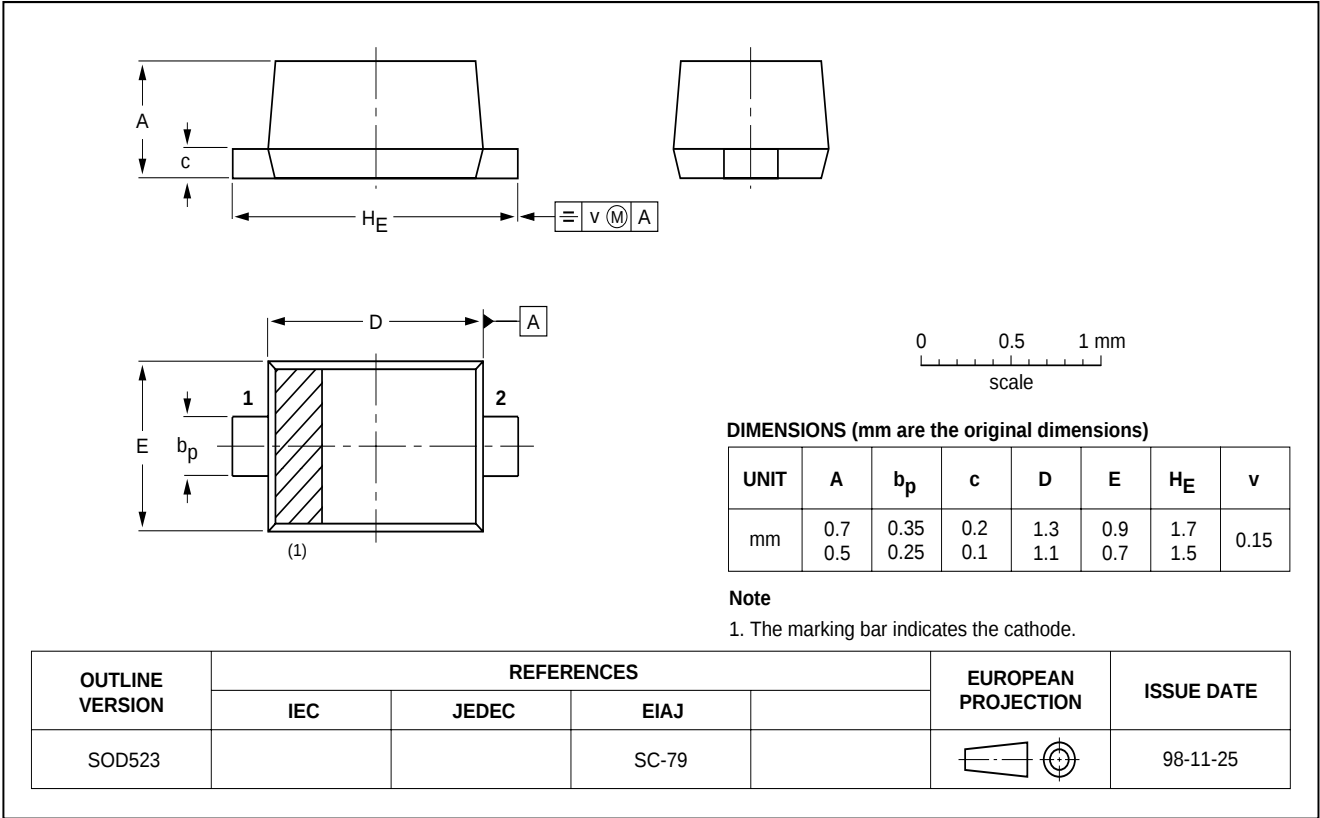
UHF variable capacitance diode

BB179

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523



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UHF variable capacitance diode

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BB179

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**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.                                                                                                                                                                                                                                                                                                                                                       |                                                                                       |

**LIFE SUPPORT APPLICATIONS**

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UHF variable capacitance diode

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**NOTES**

UHF variable capacitance diode

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**NOTES**

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