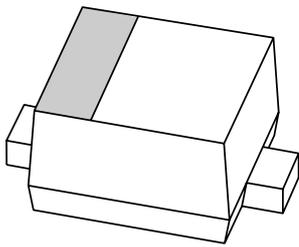


DATA SHEET



BB145B

Low-voltage variable capacitance diode

Product specification

1999 Dec 15

Low-voltage variable capacitance diode

BB145B

FEATURES

- Ultra small plastic SMD package
- C4: 2.75 pF; ratio: 2.4
- Low series resistance.

APPLICATIONS

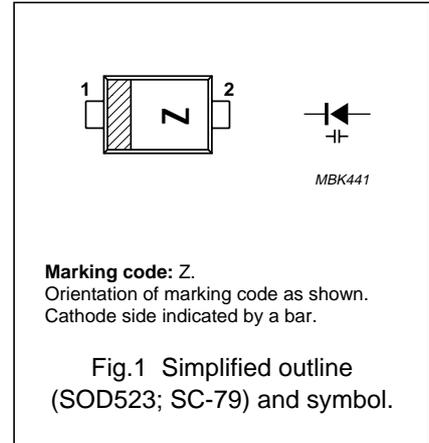
- Voltage controlled oscillators (VCO).

DESCRIPTION

The BB145B is a planar technology variable capacitance diode in a SOD523 (SC-79) package.

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 | | – | 6 | V |
| V_{RM} | peak reverse voltage | in series with a 10 k Ω resistor | – | 8 | V |
| I_F | continuous forward current | | – | 20 | mA |
| T_{stg} | storage temperature | | –55 | +150 | °C |
| T_j | operating junction temperature | | –55 | +150 | °C |

ELECTRICAL CHARACTERISTICS

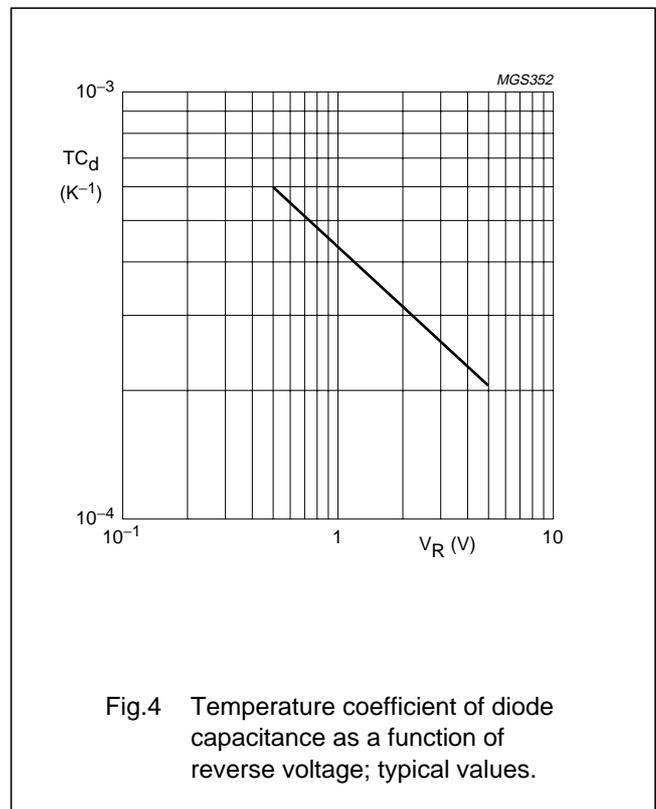
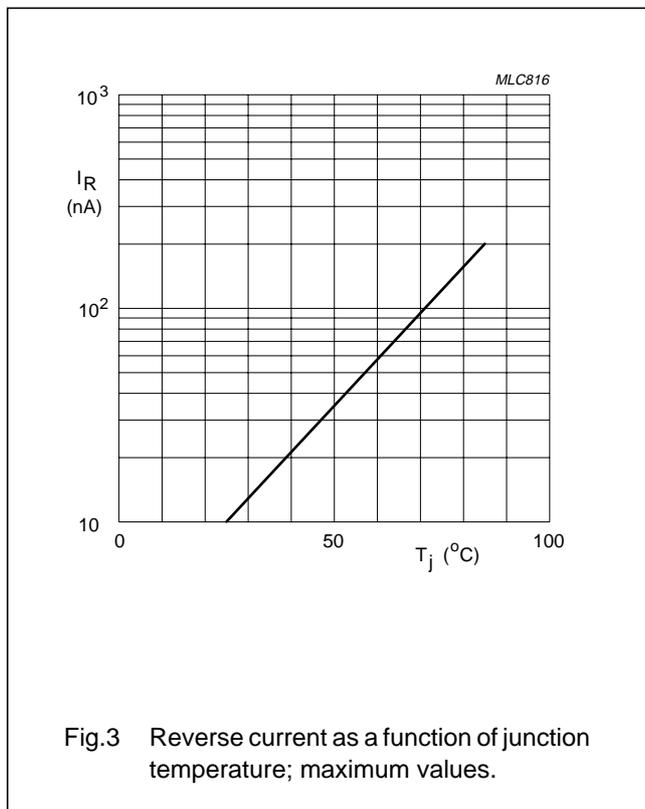
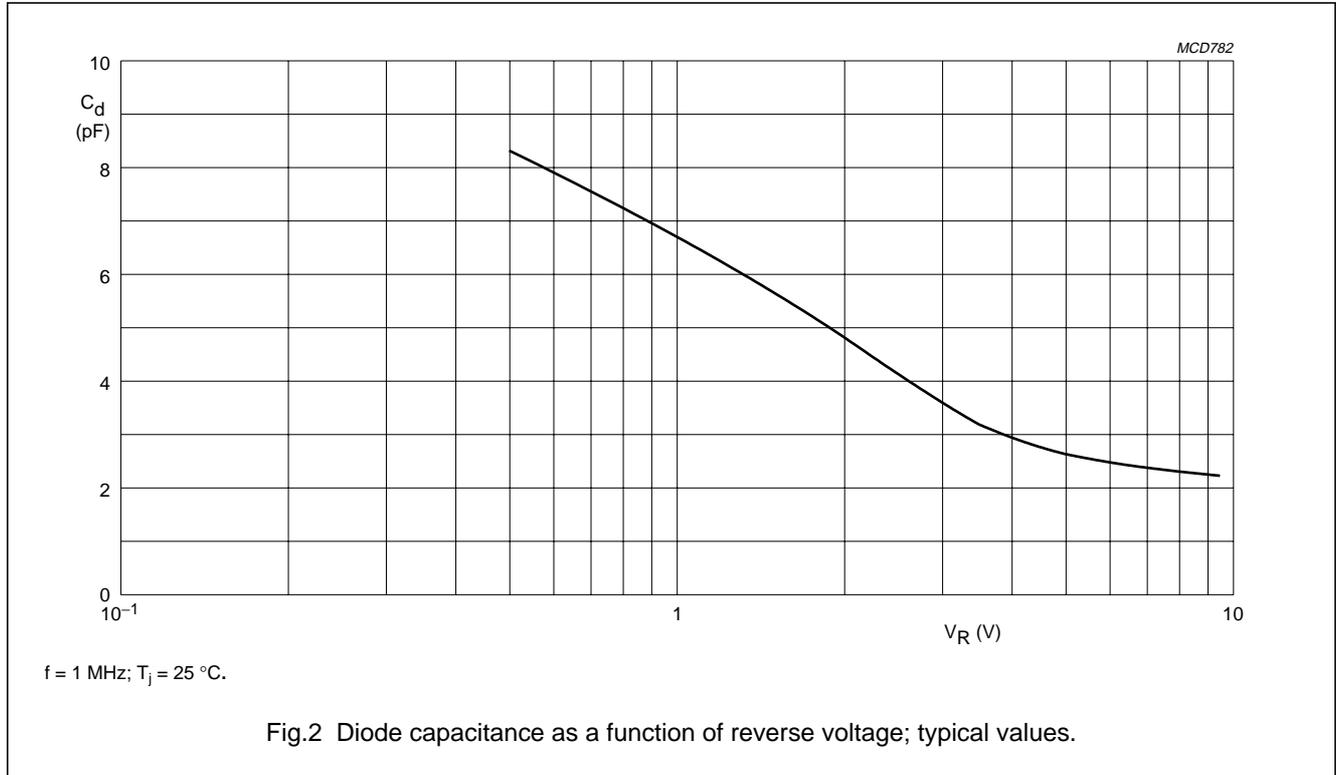
$T_j = 25$ °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------------------------|-------------------------|--|------|------|----------|
| I_R | reverse current | $V_R = 6$ V; see Fig.3 | – | 10 | nA |
| | | $V_R = 6$ V; $T_j = 85$ °C; see Fig.3 | – | 200 | nA |
| r_s | diode series resistance | $f = 470$ MHz; $V_R = 1$ V | – | 0.6 | Ω |
| C_d | diode capacitance | $V_R = 1$ V; $f = 1$ MHz; see Figs 2 and 4 | 6.4 | 7.2 | pF |
| | | $V_R = 4$ V; $f = 1$ MHz; see Figs 2 and 4 | 2.55 | 2.95 | pF |
| $\frac{C_{d(1V)}}{C_{d(4V)}}$ | capacitance ratio | $f = 1$ MHz | 2.2 | – | |

Low-voltage variable capacitance diode

BB145B

GRAPHICAL DATA



Low-voltage variable capacitance diode

BB145B

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523

DIMENSIONS (mm are the original dimensions)

| UNIT | A | bp | c | D | E | HE | v |
|------|------------|--------------|------------|------------|------------|------------|------|
| mm | 0.7 0.5 | 0.35 0.25 | 0.2 0.1 | 1.3 1.1 | 0.9 0.7 | 1.7 1.5 | 0.15 |

Note
1. The marking bar indicates the cathode.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|-------|--|---------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOD523 | | | SC-79 | | | 98-11-25 |

DEFINITIONS

| Data sheet status | |
|---|---|
| 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. |
| Limiting values | |
| 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. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

Low-voltage variable capacitance diode

BB145B

NOTES

Low-voltage variable capacitance diode

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Low-voltage variable capacitance diode

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NOTES

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