

Silicon Variable Capacitance Diode

- For VHF tuned circuit applications
- High figure of merit
- Pb-free (RoHS compliant) package


BB439


| Type | Package | Configuration | L_S (nH) | Marking |
|-------|---------|---------------|------------|---------|
| BB439 | SOD323 | single | 1.8 | white 2 |

Maximum Ratings at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------|
| Diode reverse voltage | V_R | 28 | V |
| Peak reverse voltage ($R \geq 5\text{k}\Omega$) | V_{RM} | 30 | |
| Forward current | I_F | 20 | mA |
| Operating temperature range | T_{op} | -55 ... 125 | °C |
| Storage temperature | T_{stg} | -55 ... 150 | |

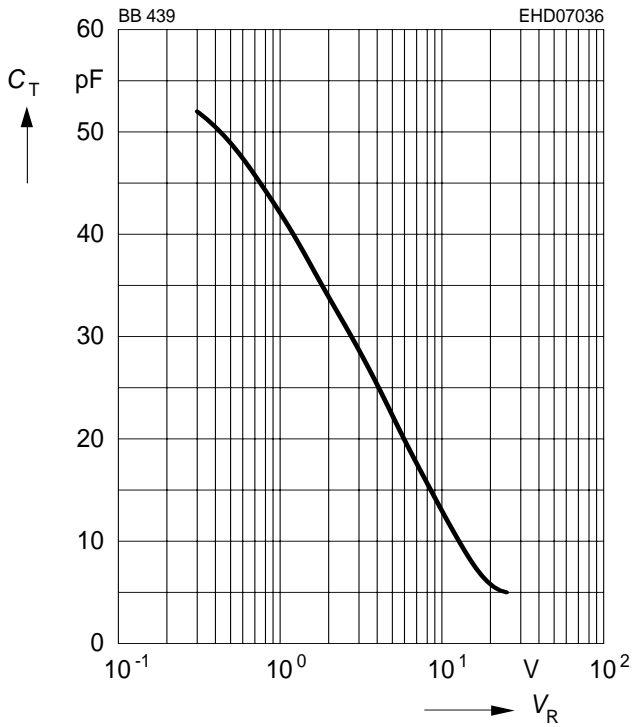
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|--|------------------|--------------------------|-------------------------|------------------------|----------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Reverse current $V_R = 28\text{ V}$ $V_R = 28\text{ V}, T_A = 85^\circ\text{C}$ | I_R | - - | - - | 20 200 | nA |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ | C_T | - 31.5 26.5 4.3 | 43 34.5 29 5.1 | - 37.5 31.5 6 | pF |
| Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$ | C_{T2}/C_{T25} | 6 | 6.9 | 8 | |
| Capacitance ratio $V_R = 3\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$ | C_{T3}/C_{T25} | 5 | 5.8 | 6.5 | |
| Capacitance matching ¹⁾ $V_R = 3\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$ | $\Delta C_T/C_T$ | - | - | 3 | % |
| Series resistance $V_R = 10\text{ V}, f = 100\text{ MHz}$ | r_S | - | 0.35 | 0.5 | Ω |
| Figure of merit $V_R = 3\text{ V}, f = 50\text{ MHz}$ $V_R = 25\text{ V}, f = 200\text{ MHz}$ | Q | - - | 280 600 | - - | |

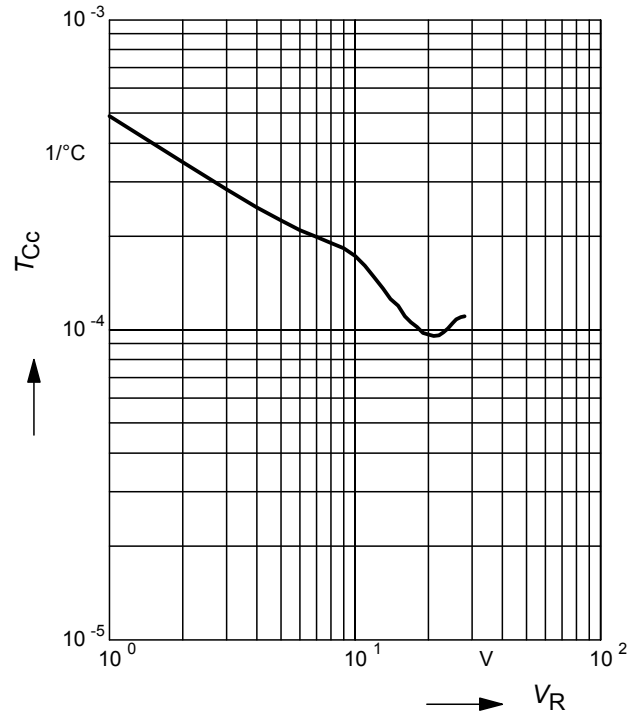
¹For details please refer to Application Note 047.

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



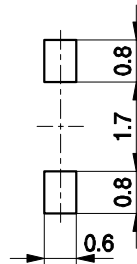
Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
 Reel ø330 mm = 10.000 Pieces/Reel



Edition 2009-11-16

**Published by
Infineon Technologies AG
81726 Munich, Germany**

**© 2009 Infineon Technologies AG
All Rights Reserved.**

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (www.infineon.com).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.

Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Infineon:](#)

[BB 439 E6327](#)