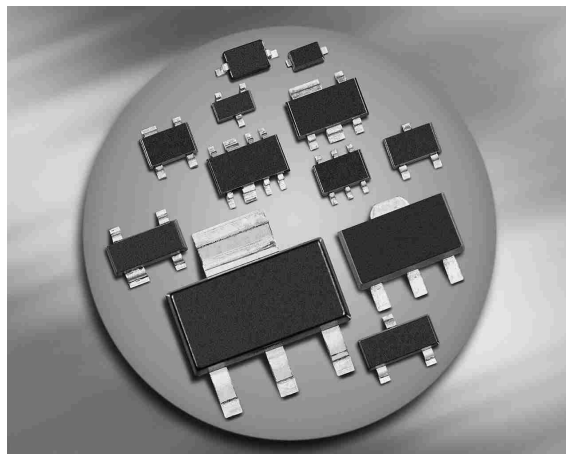
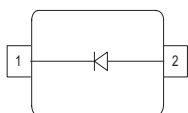


Silicon Variable Capacitance Diode

- 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	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

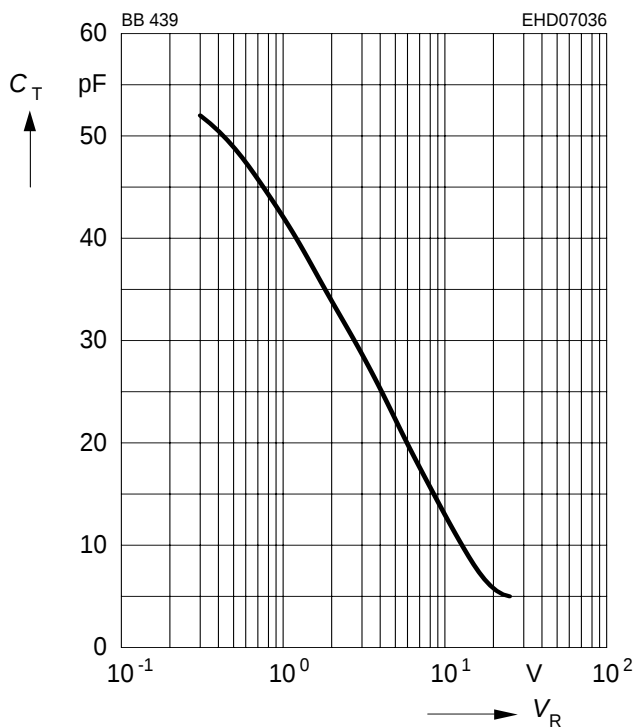
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current $V_R = 28\text{ V}$ $V_R = 28\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$	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	- -	

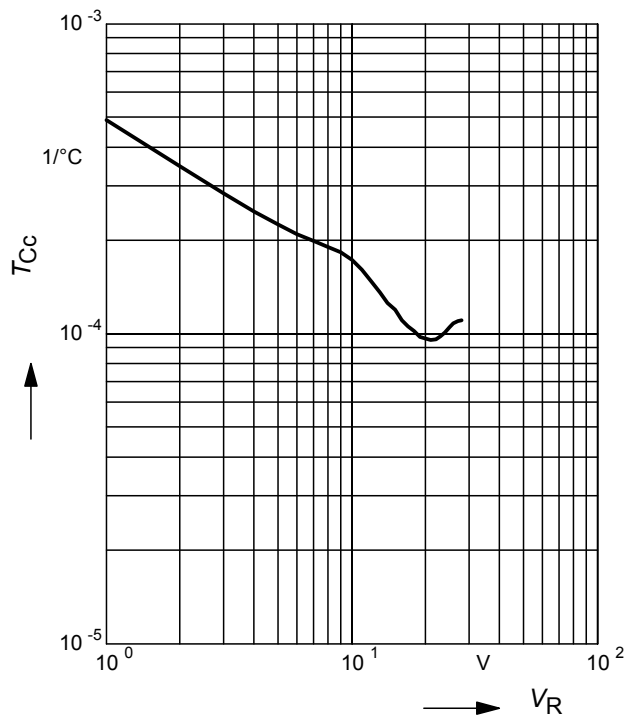
¹For details please refer to Application Note 047.

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



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



Technical drawing of the 025A tube pin, showing dimensions in millimeters (mm) with tolerances.

Top View Dimensions:

- Overall width: 2.5 ± 0.2
- Central pin diameter: 0.3 ± 0.05
- Cathode marking width: $1.25 \begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$
- Pin diameter: 0.25 (M) A

Side View Dimensions:

- Base height: 0.45 ± 0.15
- Pin height: $1.7 \begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$
- Total height: $0.9 \begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$
- Base width: 0.3 ± 0.05
- Pin width: $0.15 \begin{smallmatrix} +0.1 \\ -0.06 \end{smallmatrix}$

BAR63-03W
Type code

Cathode marking
Color ink or laser marking

Technical drawing of a cathode marking. The drawing shows a side view and a cross-section. The side view has a total width of 4, a total height of 8, and a central hole with a diameter of 2.9. There are two smaller holes on either side, each with a diameter of 2. The distance between the centers of the two side holes is 1.35. The distance from the center of the central hole to the right edge is 0.65. The cross-section shows a total width of 0.2 and a height of 1. A label "Cathode marking" points to the central hole.

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