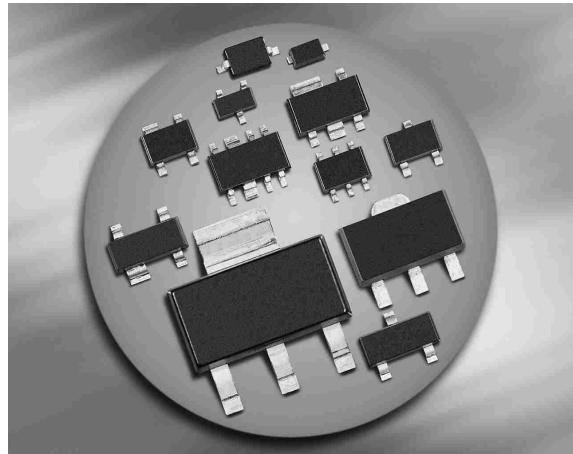
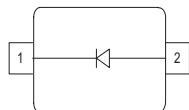


Silicon Variable Capacitance Diode

- 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

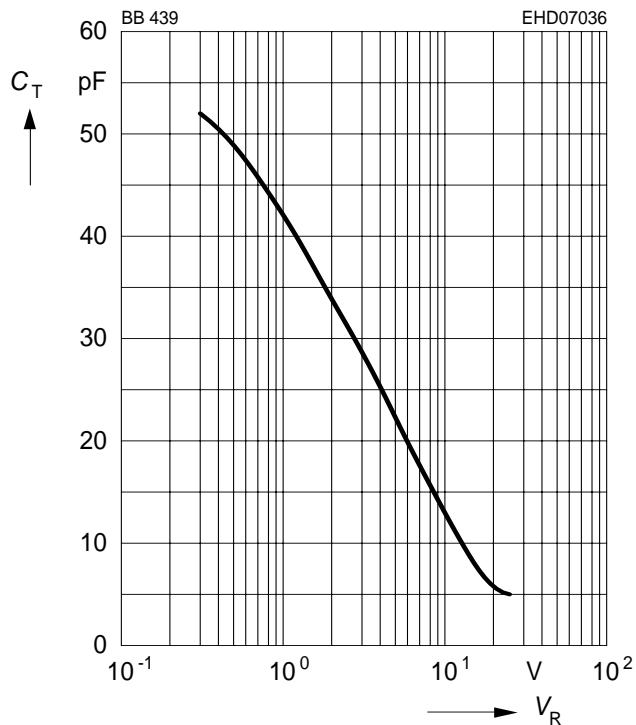
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	28	V
Peak reverse voltage ($R \geq 5\text{k}\Omega$)	V_{RM}	30	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

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

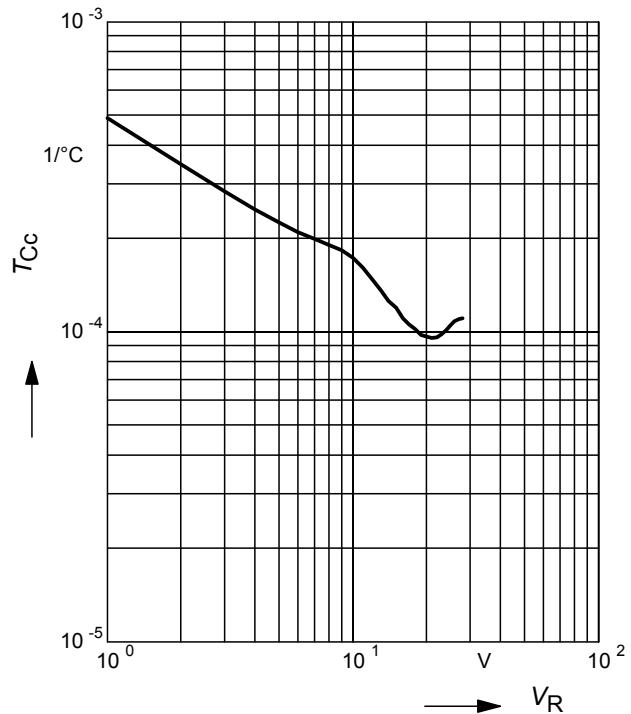
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current $V_R = 28 \text{ V}$ $V_R = 28 \text{ V}, T_A = 85^\circ\text{C}$	I_R	-	-	20 200	nA
AC Characteristics					
Diode capacitance $V_R = 1 \text{ V}, f = 1 \text{ MHz}$ $V_R = 2 \text{ V}, f = 1 \text{ MHz}$ $V_R = 3 \text{ V}, f = 1 \text{ MHz}$ $V_R = 25 \text{ V}, f = 1 \text{ MHz}$	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.

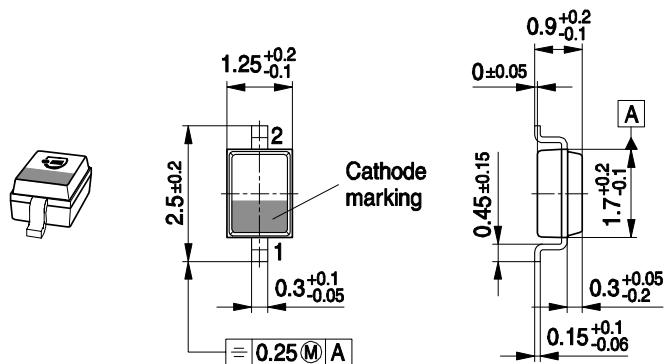
Diode capacitance $C_T = f (V_R)$
 $f = 1\text{MHz}$



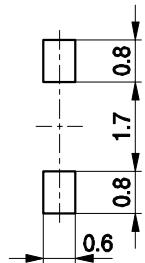
Temperature coefficient of the diode capacitance $T_{Cc} = f (V_R)$



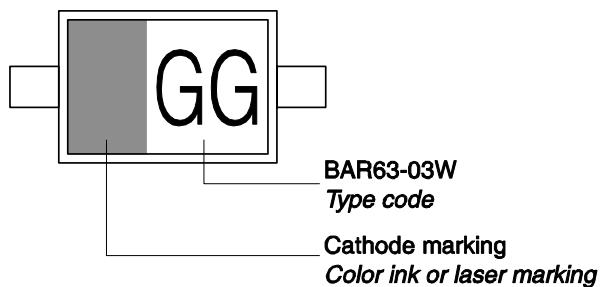
Package Outline



Foot Print

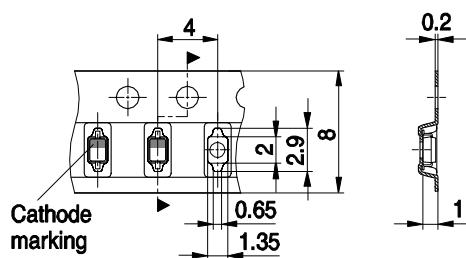


Marking Layout (Example)



Standard Packing

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



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