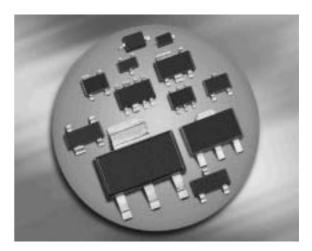


Silicon Variable Capacitance Diode

- For VHF tuned circuit applications
- High figure of merit
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101





BB439



Туре	Package	Configuration	L s(nH)	Marking
BB439	SOD323	single	1.8	white 2

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

Parameter	Symbol	Value	Unit					
Diode reverse voltage	V _R	28	V					
Peak reverse voltage	V _{RM}	30						
($R \ge 5 \mathrm{k} \Omega$)								
Forward current	/ _F	20	mA					
Operating temperature range		-55 125	°C					
Storage temperature	T _{stg}	-55 150						

¹Pb-containing package may be available upon special request



Parameter	Symbol	Values			Unit
		min.	typ.	max.	1
DC Characteristics					
Reverse current	I _R				nA
V _R = 28 V		-	-	20	
$V_{\rm R} = 28 \text{ V}, \ T_{\rm A} = 85 \ ^{\circ}\text{C}$		-	-	200	
AC Characteristics					
Diode capacitance	CT				pF
$V_{R} = 1 \text{ V}, f = 1 \text{ MHz}$		-	43	-	
$V_{R} = 2 \text{ V}, f = 1 \text{ MHz}$		31.5	34.5	37.5	
$V_{R} = 3 \text{ V}, f = 1 \text{ MHz}$		26.5	29	31.5	
$V_{\rm R} = 25 {\rm V}, f = 1 {\rm MHz}$		4.3	5.1	6	
Capacitance ratio	C _{T2} /C _{T25}	6	6.9	8	
$V_{\rm R} = 2 \text{ V}, V_{\rm R} = 25 \text{ V}, f = 1 \text{ MHz}$					
Capacitance ratio	C _{T3} /C _{T25}	5	5.8	6.5	
$V_{\rm R} = 3 \text{ V}, V_{\rm R} = 25 \text{ V}, f = 1 \text{ MHz}$					
Capacitance matching ¹⁾	$\Delta C_{\rm T}/C_{\rm T}$	-	-	3	%
$V_{\rm R} = 3 \text{ V}, V_{\rm R} = 25 \text{ V}, f = 1 \text{ MHz}$					
Series resistance	r _S	-	0.35	0.5	Ω
V _R = 10 V, <i>f</i> = 100 MHz					
Figure of merit	Q				
$V_{R} = 3 \text{ V}, f = 50 \text{ MHz}$		-	280	-	
$V_{\rm R} = 25 \text{ V}, f = 200 \text{ MHz}$		-	600	-	

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

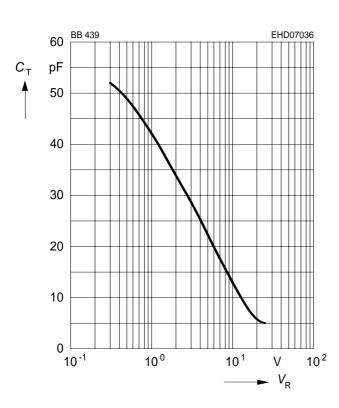
¹For details please refer to Application Note 047.



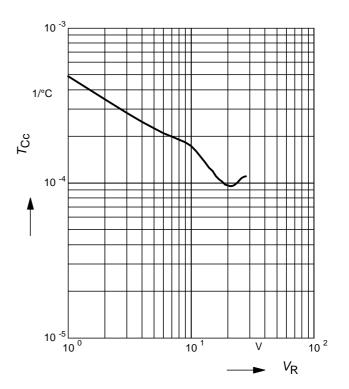
BB439...

Diode capacitance $C_{\rm T} = f (V_{\rm R})$

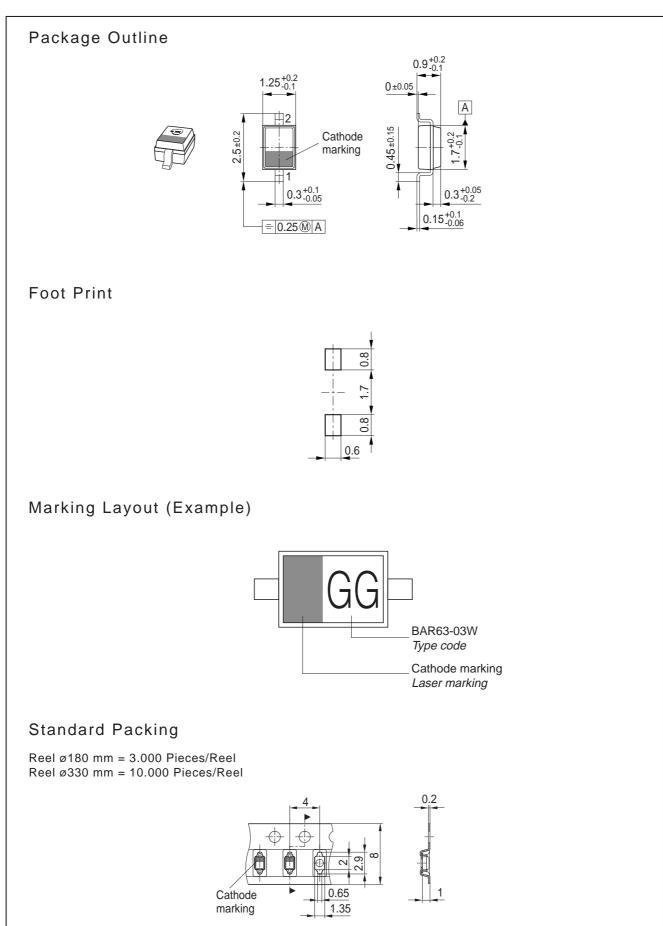
f = 1 MHz



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









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