

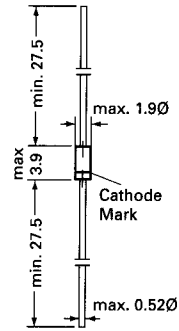
# BB221, BB222

## Tuner Diodes

Silicon Epitaxial Planar Capacitance Diodes with very wide effective capacitance variation for tuning the whole range of VHF or UHF television bands.

These diodes are available as singles or as matched sets of two or more units according to the tracking condition described below.

The diodes are delivered taped.  
Details see "Taping".

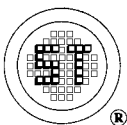


Glass case JEDEC DO-35  
54 A 2 according to DIN 41 880

Weight approx. 0.13 g  
Dimensions in mm

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

	Symbol	Value	Unit
Reverse Voltage	$V_R$	32	V
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +150	$^\circ\text{C}$



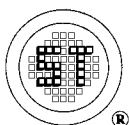
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Characteristics at  $T_{amb} = 25\text{ }^{\circ}\text{C}$

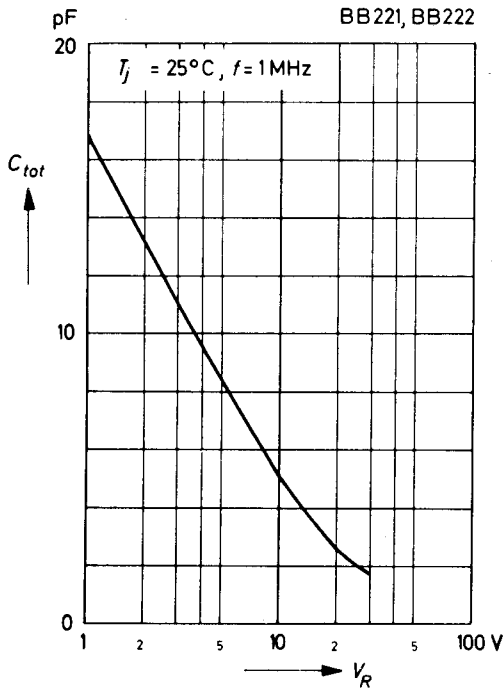
		Symbol	Min.	Typ.	Max.	Unit
Capacitance at $V_R = 1\text{ V}$ at $V_R = 3\text{ V}$ at $V_R = 28\text{ V}$	<b>BB221</b>	$C_{tot}$	-	17	-	pF
	<b>BB222</b>	$C_{tot}$	-	11	-	pF
	<b>BB221</b>	$C_{tot}$	1.8	-	2.2	pF
	<b>BB222</b>	$C_{tot}$	1.8	-	2.5	pF
Effective Capacitance Ratio at $V_R = 1\text{ to }28\text{ V}$	<b>BB221</b>	$\frac{C_{tot}(1V)}{C_{tot}(28V)}$	8	-	9.5	-
	<b>BB222</b>	$\frac{C_{tot}(1V)}{C_{tot}(28V)}$	7.3	-	9.5	-
Series Resistance at $f = 470\text{ MHz}$ , $C_{tot} = 9\text{ pF}$	<b>BA221</b>	$r_s$	-	0.55	0.7	$\Omega$
	<b>BA222</b>	$r_s$	-	0.8	1	$\Omega$
Cutoff Frequency for $Q = 1$ at $V_R = 3\text{ V}$	<b>BA221</b>	$f_{Q1}$	-	24	-	GHz
	<b>BA222</b>	$f_{Q1}$	-	16	-	GHz
Series Resonance Frequency at $V_R = 25\text{ V}$	<b>BA221</b>	$f_0$	-	2	-	GHz
	<b>BA222</b>	$f_0$	-	1.8	-	GHz
Series Inductance measured in 1.5 mm Distance from case		$L_s$	-	2.5	-	nH
Leakage Current at $V_R = 30\text{ V}$		$I_R$	-	-	30	nA
Reverse Breakdown Voltage at $I_R = 10\text{ }\mu\text{A}$		$V_{(BR)R}$	32	-	-	V
For any two diodes of a matched group the following tracking condition applies: In the reverse bias voltage range of $V_R = 0.5\text{ V}$ to $V_R = 28\text{ V}$ the maximum capacitance deviation is 2.5 %.						



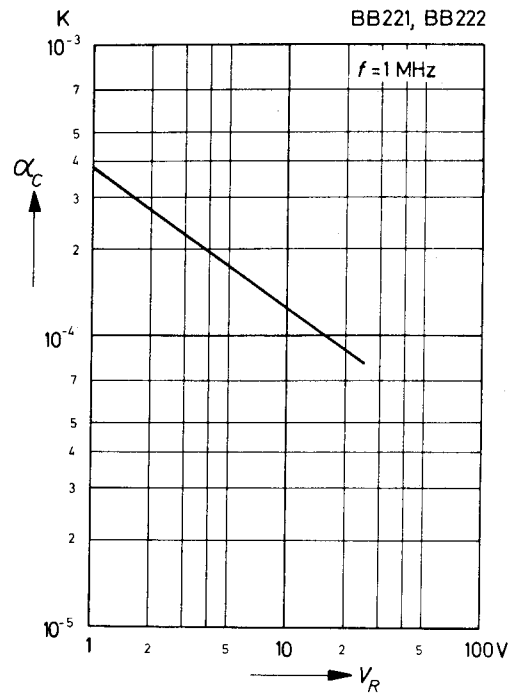
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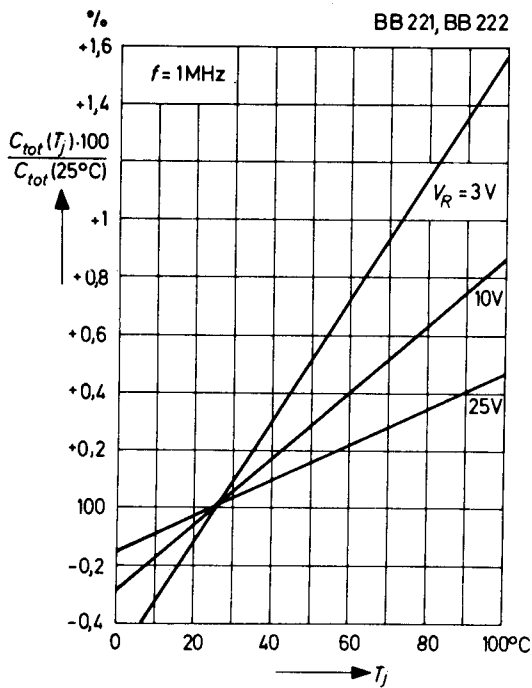
Capacitance versus reverse voltage



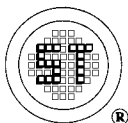
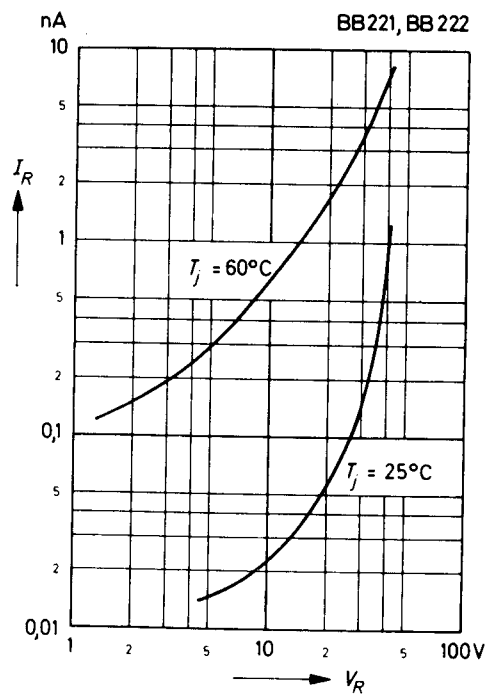
Temperature coefficient of capacitance versus reverse voltage



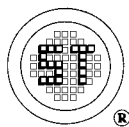
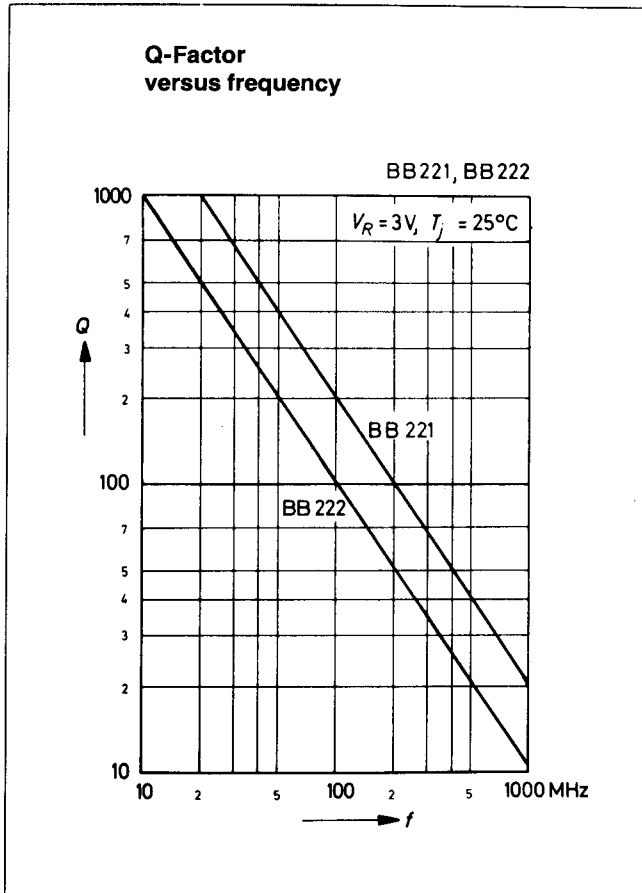
Relative capacitance versus junction temperature



Leakage current versus reverse voltage



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