

Tuning diodes for the VHF-range

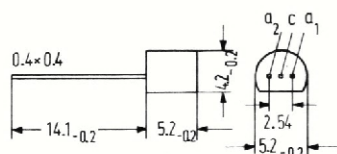
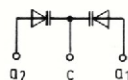
BB 103 is a single silicon planar capacitance diode in a glass-package 51 A 2 DIN 41880 (DO-7). It is particularly suitable for use as tuning diode for the VHF-range. The capacity spread from 27 to 33 pf at reverse voltages of 3 V is divided into two groups (green and blue). The type number and cathode ring are marked in the color of the appropriate group on the unvarnished glass case.

BB 104 is an plastic encased double diode with a common cathode. The diode is particularly suitable for VHF tuners for tuning two separate circuits, as well as for push-pull application in especially high-quality tuners. The capacity range (at $V_R = 3$ V) from 34 to 42 pf is divided into two groups (green and blue), the type number being printed on the diode case in the color of the respective capacitance group.

BB 204, like BB 104, is a double tuning diode with a common cathode in the plastic case 10 B 3 DIN 41868 (TO-92).

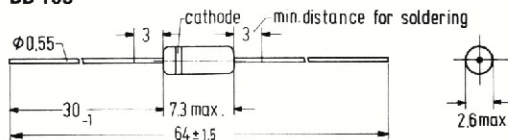
Type	Order number
BB 103 blue	Q62702-B2
BB 103 green	Q62702-B4
BB 104 blue	Q62702-B5
BB 104 green	Q62702-B6
BB 204 blue	Q62702-B58-X06
BB 204 green	Q62702-B57-X05

BB 204



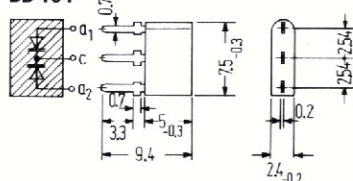
Weight approx. 0.25 g; Dimensions in mm
For wafer mounting: hole $\varnothing$ 0.6 mm

BB 103



Weight approx. 0.2 g Dimensions in mm

BB 104



Weight approx. 0.3 g Dimensions in mm

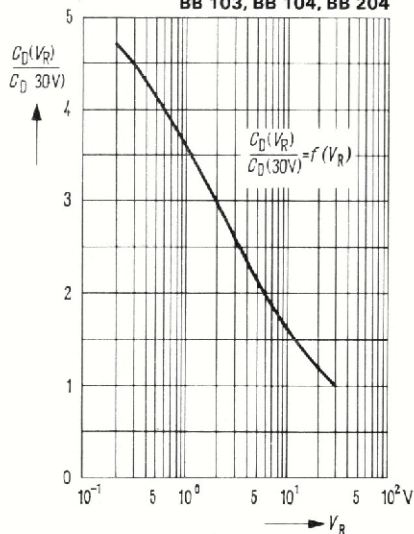
Maximum ratings

	BB 103	BB 104 BB 204	
Reverse voltage	30	30	V
Reverse voltage, max.	32	32	V
Forward current ($T_{amb} \leq 60^\circ\text{C}$)	100	100	mA
Ambient temperature	-55 to +125	-55 to +100	$^\circ\text{C}$

Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)		BB 103	BB 104 BB 204	
Breakdown voltage ($I_R = 10\ \mu\text{A}$)	V_{BR}	> 32	> 32	V
Reverse current ($V_R = 30\text{ V}$)	I_R	< 50	< 50	nA
Reverse current ($V_R = 30\text{ V}$; $T_{amb} = 60^{\circ}\text{C}$)	I_R	< 0.5	< 0.5	μA
Dynamic characteristics ($T_{amb} = 25^{\circ}\text{C}$) (for each diode of BB 104)				
Capacitance ($V_R = 3\text{ V}$; $f = 1\text{ MHz}$)	C_D	27 to 31 (green)	34 to 39 (green)	pf
	C_D	29 to 33 (blue)	37 to 42 (blue)	pf
Capacitance ($V_R = 30\text{ V}$; $f = 1\text{ MHz}$)	C_D	11	14	pf
Capacitance ratio	$\frac{C_{D3V}}{C_{D30V}}$	2.65 (2.5-2.8)	2.65 (2.4-2.8)	—
Quality factor				
at $C_D = 38\text{ pf}$; $f = 100\text{ MHz}$	Q	—	200 (> 100)	—
at $C_D = 30\text{ pf}$; $f = 100\text{ MHz}$	Q	175 (> 100)	—	—
Series resistance				
($C_D = 38\text{ pf}$; $f = 100\text{ MHz}$)	r_S	—	0.2 (< 0.4)	Ω
($C_D = 30\text{ pf}$; $f = 100\text{ MHz}$)	r_S	0.3 (< 0.5)	—	Ω
Junction capacitance temperature coefficient ($V_R = 3\text{ V}$)	TC_C	0.03	0.03	%/K

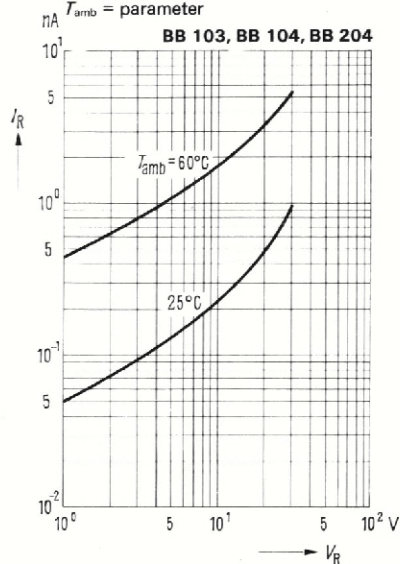
Dependence of diode capacitance on reverse voltage
 $\frac{C_D(V_R)}{C_D(30\text{ V})} = f(V_R)$

BB 103, BB 104, BB 204



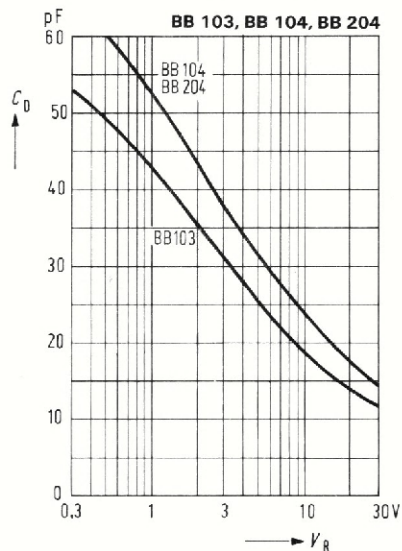
Dependence of reverse current on voltage $I_R = f(V_R)$
 $T_{\text{amb}} = \text{parameter}$

BB 103, BB 104, BB 204



Dependence of diode capacitance on reverse voltage $C_D = f(V_R)$

BB 103, BB 104, BB 204



Temperature coefficient of the junction capacitance as a function of reverse voltage $TC_C = f(V_R)$

BB 103, BB 104, BB 204

