SILICON PLANAR
VARIABLE CAPACITANCE DOUBLE DIODES

The BB204B and BB204G are double diodes with common cathode in a plastic TO-92 variant, primarily intended for electronic tuning in band II (f.m.). They are recommended for stages where large signals occur (e.g. oscillator circuits).

QUICK REFERENCE DATA

For each diode:

Continuous reverse voltage	V_R	max.	30	V
Junction temperature	T_j	max.	100	°C
Reverse current at V_R = 30 V	i_R	<	50	nA

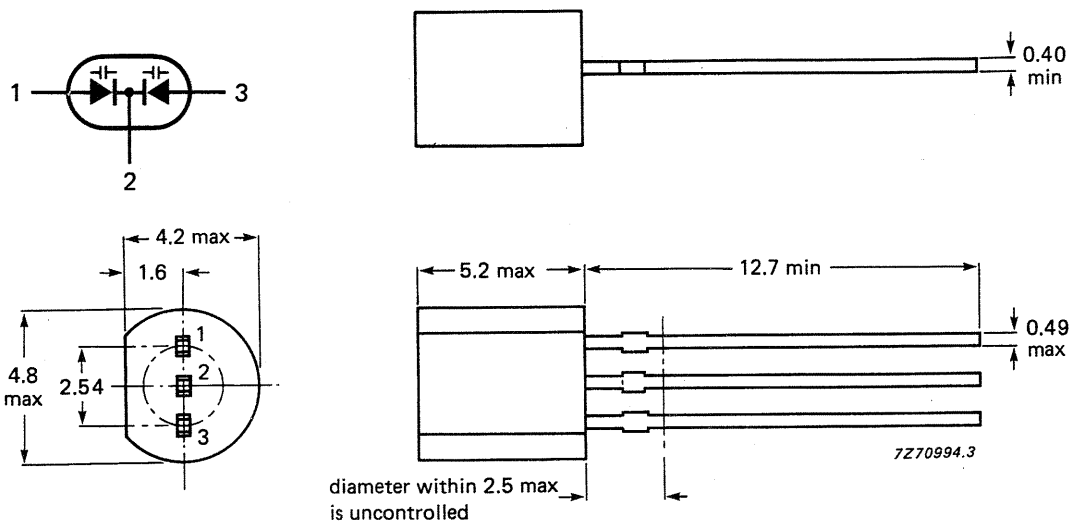
		BB204G	BB204B	
Diode capacitance at f = 1 MHz				
V_R = 3 V	C_d	34 – 39	37 – 42	pF
V_R = 8 V	C_d	22 – 27	24 – 29	pF
Capacitance ratio at f = 1 MHz	$\frac{C_d\ (V_R = 3\ V)}{C_d\ (V_R = 30\ V)}$	2,5 to 2,8		

Series resistance at f = 100 MHz V_R is that value at which C_d = 38 pF	r_D	typ. <	0,2 0,4	Ω Ω

MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92 variant.



RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

For each diode:

Continuous reverse voltage	V_R	max.	30	V
Forward current (d.c.)	I_F	max.	100	mA
Storage temperature	T_{stg}		−55 to +100	°C
Junction temperature	T_j	max.	100	°C

CHARACTERISTICS

For each diode:

T_j = 25 °C

Reverse current at V_R = 30 V	I_R	<	50		nA
Diode capacitance at f = 1 MHz			BB204G	BB204B	
V_R = 3 V	C_d		34 – 39	37 – 42	pF
V_R = 8 V	C_d		22 – 27	24 – 29	pF
V_R = 30 V	C_d	typ.	14		pF
Capacitance ratio at f = 1 MHz	$\frac{C_d\ (V_R = 3\ V)}{C_d\ (V_R = 30\ V)}$		2,5 to 2,8		
Series resistance at f = 100 MHz V_R is that value at which C_d = 38 pF	r_D	typ. <	0,2 0,4		Ω Ω

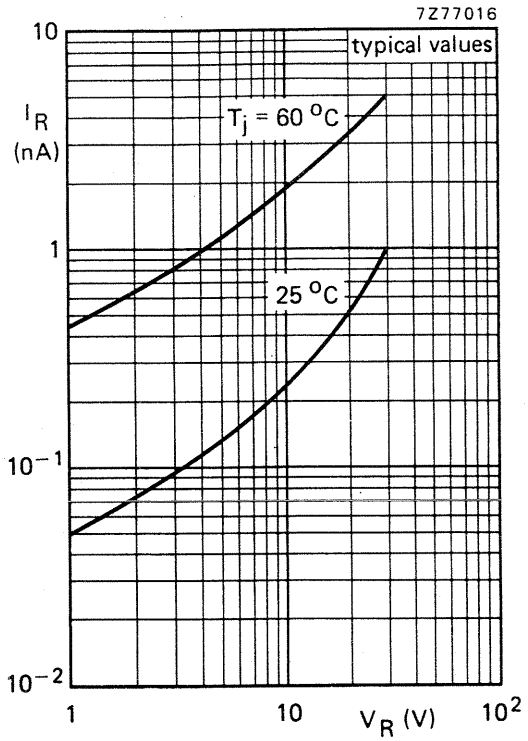

7Z77016
typical values
T_j = 60 °C
25 °C
I_R (nA)
10
1
10^{-1}
10^{-2}
1
10
V_R (V)
10^2

Fig. 2.

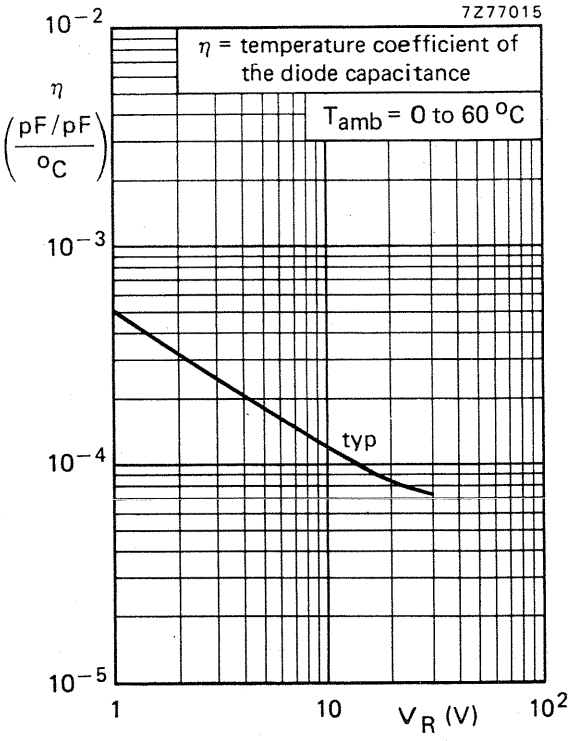

7Z77015
η = temperature coefficient of the diode capacitance
T_{amb} = 0 to 60 °C
η $\left(\frac{pF/pF}{°C}\right)$
10^{-2}
10^{-3}
10^{-4}
10^{-5}
typ
1
10
V_R (V)
10^2

Fig. 3.

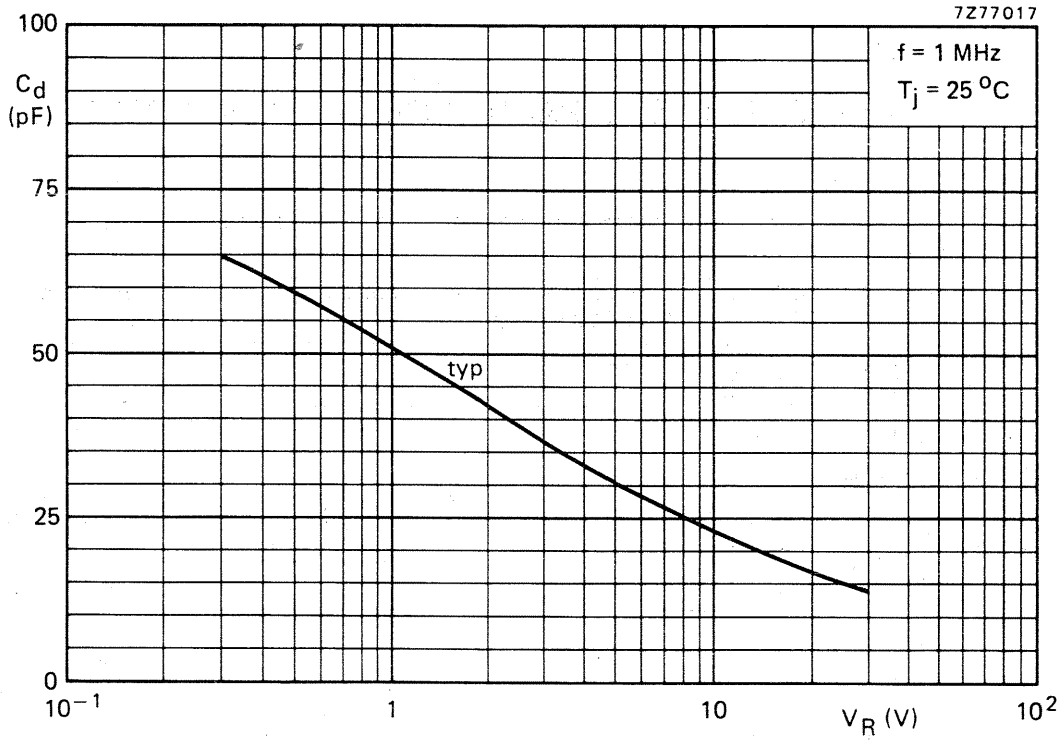

7Z77017
f = 1 MHz
T_j = 25 °C
C_d (pF)
100
75
50
25
0
typ
10^{-1}
1
10
V_R (V)
10^2

Fig. 4.

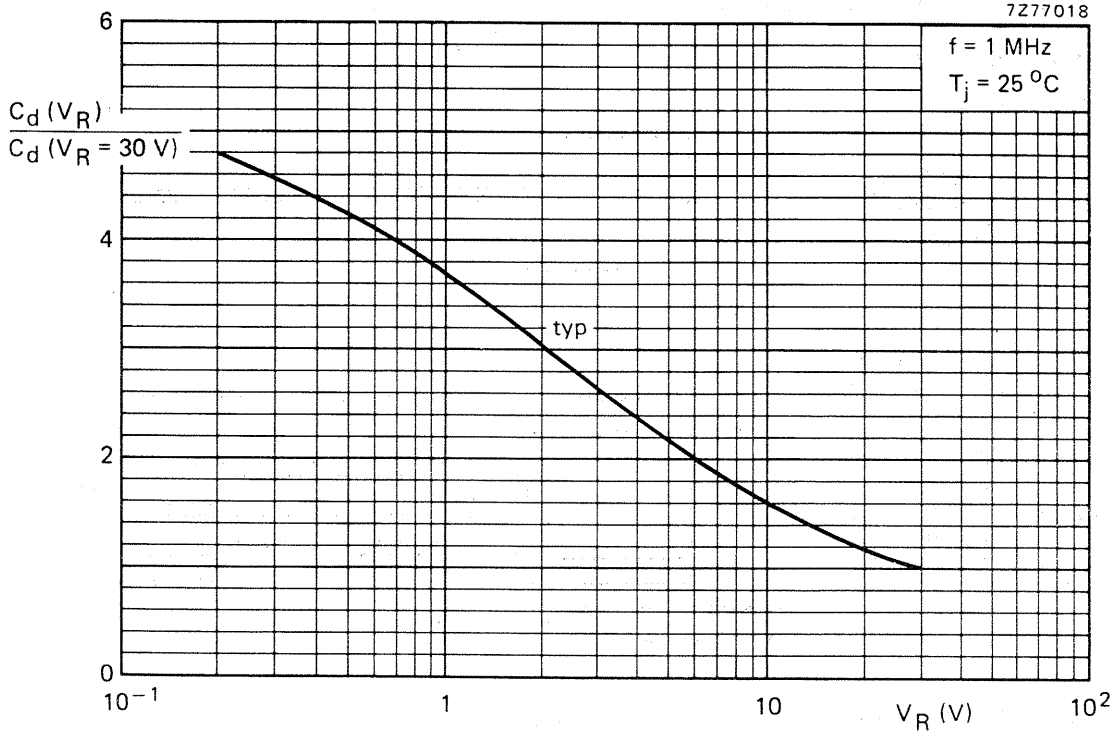

7Z77018
f = 1 MHz
T_j = 25 °C
$\frac{C_d (V_R)}{C_d (V_R = 30\ V)}$
6
4
2
0
typ
10^{-1}
1
10
V_R (V)
10^2

Fig. 5.