SILICON PLANAR VARIABLE CAPACITANCE DIODE

The BB112 is a single 9 V variable capacitance diode in a plastic encapsulation for application in tuning circuits in a.m. receivers. The diodes are supplied in matched sets of three items.

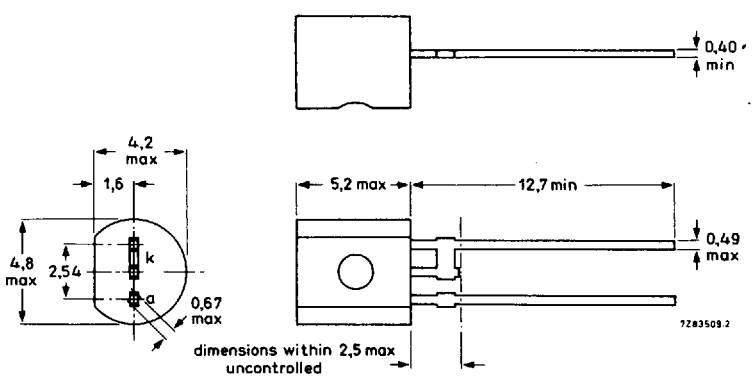
QUICK REFERENCE DATA

Continuous reverse voltage	V_R	max.	12 V
Operating junction temperature	T_j	max.	85 °C
Forward current	I_F	max.	50 mA
Reverse current at T_{amb} = 25 °C V_R = 12 V	I_R	<	50 nA
Diode capacitance at f = 1 MHz V_R = 1 V V_R = 8,5 V	C_d C_d		440 to 540 pF 17 to 29 pF
Series resistance at f = 500 kHz V_R = 1 V	r_s	<	1,5 Ω

MECHANICAL DATA

Dimensions in mm

Fig. 1 SOD-69



RATINGS

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

Continuous reverse voltage	V_R	max.	12 V
Forward current (d.c.)	I_F	max.	50 mA
Operating junction temperature	T_j	max.	85 °C
Storage temperature	T_{stg}		−55 to + 125 °C

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified

Reverse current			
V_R = 12 V	I_R	<	50 nA
V_R = 12 V; T_{amb} = 85 °C	I_R	<	300 nA
Diode capacitance at f = 1 MHz			
V_R = 1 V	C_d		440 to 540 pF
V_R = 8,5 V	C_d		17 to 29 pF
Capacitance ratio at f = 1 MHz	$\frac{C_d\ (V_R = 1\ V)}{C_d\ (V_R = 8{,}5\ V)}$	>	18
Series resistance at f = 500 kHz			
V_R = 1 V	r_s	<	1,5 Ω
Temperature coefficient of the diode capacitance at f = 1 MHz; T_{amb} = −40 to + 85 °C; V_R = 1 V	η	typ.	0,05 %/K

Matching properties

D.C. capacitance ratio for a set of 3 diodes; V_P = 1 to 9 V	ΔC	⩽	3 %

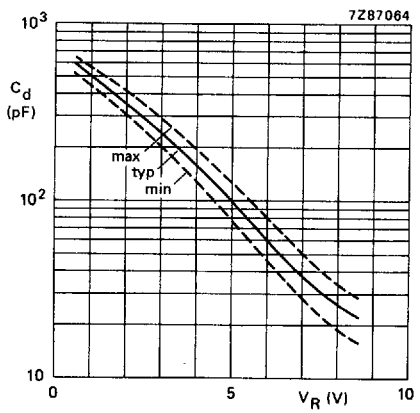


Fig. 2 Diode capacitance at f = 1 MHz as a function of the reverse voltage.

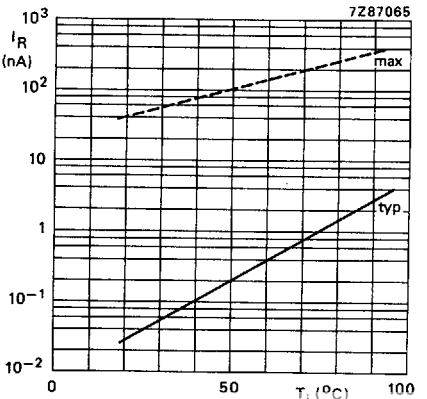


Fig. 3 Reverse current as a function of junction temperature at V_R = 12 V.