BGY32 RF Power Module Data sheet

CHARACTERISTICS

T_h = 25 °C

			BGY32	BGY33	BGY35	BGY36	
Quiescent current							
$V_{B1} = V_{B2}$ = 12,5 V; P_D = 0; $R_S = R_L$ = 50 Ω	I_{BQ1}	typ	6	6	6	6	mA
	I_{BQ2}	typ	13	13	13	13	mA
Frequency range	f	>	68	80	132	148	MHz
		<	88	108	156	174	MHz
Load power							
$V_{B1} = V_{B2}$ = 12.5 V; $R_S = R_L$ = 50 Ω; BGY32 and BGY33; P_D = 100 mW	P_L	>	18	18	–	–	W
		typ	23	22			W
	η	>	40	40	–	–	%
		typ	50	50			%
BGY35 and BGY36; P_D = 150 mW	P_L	>	–	–	18	18	W
		typ			22	21	W
	η	>	–	–	40	40	%
		typ			50	50	%
Harmonic output	Any single harmonic will be at least 25 dB down relative to carrier						
Input VSWR with respect to 50 Ω		typ	1,5				

Stability

The module is stable with a load VSWR up to 3 : 1 (all phases) when operated within the following conditions: V_{S1} = 6 to 15 V; V_{S2} = 10 to 15 V; $V_{S1} \leq V_{S2}$; P_D = 50 to 200 mW; frequency within operating frequency range, provided the maximum ratings of the module are not exceeded.

Ruggedness

The modules are capable of withstanding load mismatch of up to 50 VSWR for short period overload conditions, with P_D, V_{B1} and V_{B2} at maximum values providing the combination does not result in the matched RF output power rating being exceeded.

APPLICATION INFORMATION

Supply

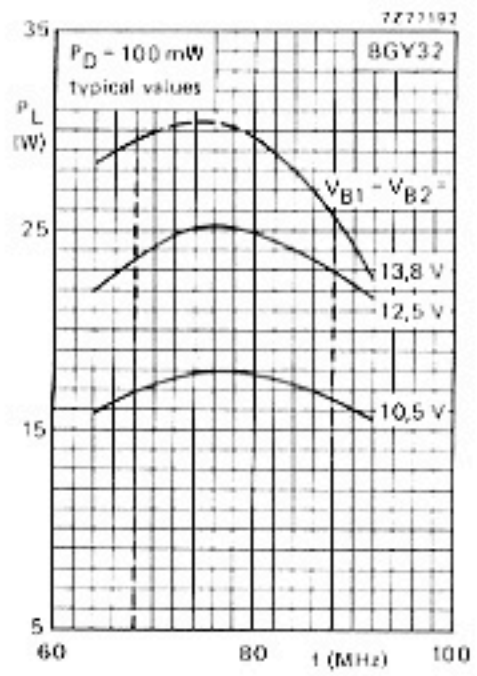
An electrolytic capacitor of 10 μF (25 V), in parallel with a polyester capacitor of 100 nF to earth, is recommended as decoupling arrangement for each power supply pin.

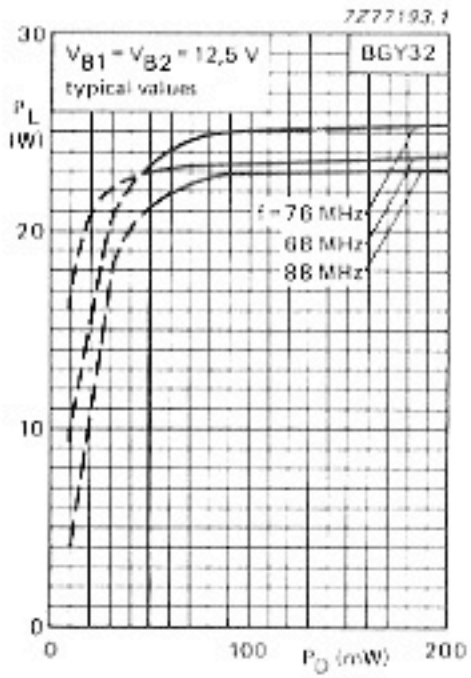
Power rating

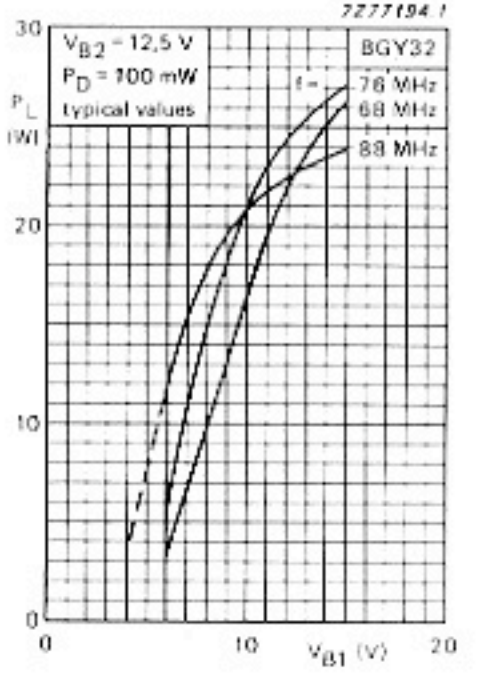
In general it is recommended that the output power from the module under nominal design conditions should not exceed 23 W in order to provide adequate safety margin under fault conditions.

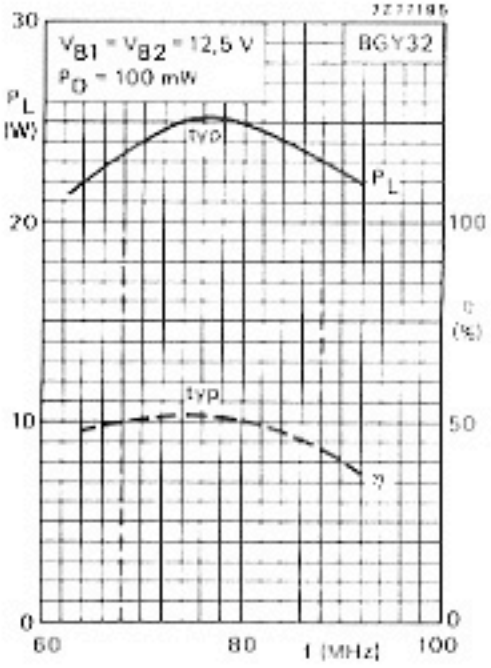
Output power control

The module is not designed to be operated over a large range of output power levels. The purpose of the output power control is to set the nominal output power level. The preferred method of output power control is by varying the drive power between 50 and 200 mW. The next option is by varying V_{S1} between 6 and 12,5 V.


7Z77192
BGY32
P_D = 100 mW
typical values
P_L (W)
$V_{B1} = V_{B2}$ =
13,8 V
12,5 V
10,5 V
35
25
15
5
60
80
f (MHz)
100


7Z77193.1
BGY32
$V_{B1} = V_{B2}$ = 12,5 V
typical values
P_L (W)
f = 76 MHz
68 MHz
88 MHz
30
20
10
0
0
100
P_D (mW)
200

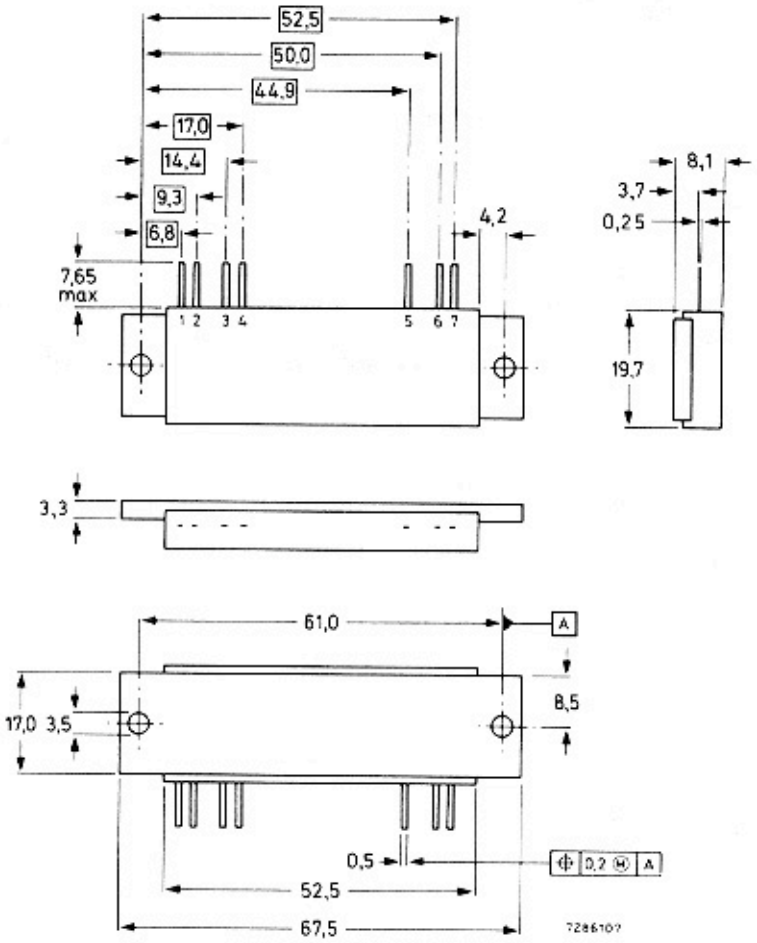

7Z77194.1
BGY32
V_{B2} = 12,5 V
P_D = 100 mW
typical values
P_L (W)
f = 76 MHz
68 MHz
88 MHz
30
20
10
0
0
10
V_{B1} (V)
20


7Z77195
BGY32
$V_{B1} = V_{B2}$ = 12,5 V
P_D = 100 mW
P_L (W)
typ.
P_L
typ.
η
30
20
10
0
100
50
0
(%)
60
80
f (MHz)
100

MECHANICAL DATA
Fig. 1 SOT132B.

BGY32 RF Power Module

Dimensions in mm



Lead reference

1 = Input
2 = Earth
3 = Supply $+V_{B1}$
4 = Earth
5 = Supply $+V_{B2}$
6 = Earth
7 = Output

Mounting and soldering recommendations

To ensure good thermal transfer the module should be mounted using heatsink compound onto a heatsink with a flat surface; if an isolation washer is used heatsink compound should be used on both sides of the insulator. Burrs and thickening of the holes in the heatsink should be removed and 3 mm bolts tightened to torques of 0,5 Nm minimum.

Devices may be soldered directly into a circuit with a soldering iron at maximum iron temperature of 245 °C for 10 seconds at least 1 mm from the plastic.