DATA SHEET

BGY152A; BGY152B
UHF amplifier modules

Preliminary specification
File under Discrete Semiconductors, SC09

1996 May 21

Philips
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UHF amplifier modules BGY152A; BGY152B

FEATURES

- 7.2 V nominal supply voltage
- 7 W output power
- Easy output power control by DC voltage.

APPLICATIONS

- Portable communication equipment operating in the 400 to 470 MHz and 450 to 512 MHz frequency ranges respectively.

DESCRIPTION

The BGY152A and BGY152B are four-stage power amplifier modules in a SOT434A package. Each module consists of three MOSFET's and one bipolar transistor chip mounted together with matching and bias circuit components on a metallized ceramic substrate.
These modules produce an output power of 7 W into a load of 50 Ω at a supply voltage of 7.2 V with an RF drive power of 1 mW.

PINNING - SOT434A

PIN	DESCRIPTION
1	RF input + V_C
2	V_{S1}
3	V_{S2}
4	V_{S3}
5	RF output
Flange	ground

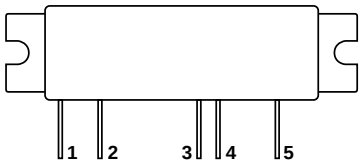


Fig.1 Simplified outline.

QUICK REFERENCE DATA

RF performance at T_{mb} = 25 °C.

TYPE	MODE OF OPERATION	f (MHz)	V_S (V)	P_L (W)	G_p (dB)	η (%)	Z_S; Z_L (Ω)
BGY152A	CW	400 to 470	7.2	7	≥38.5	≥40	50
BGY152B	CW	450 to 512	7.2	7	≥38.5	≥40	50

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

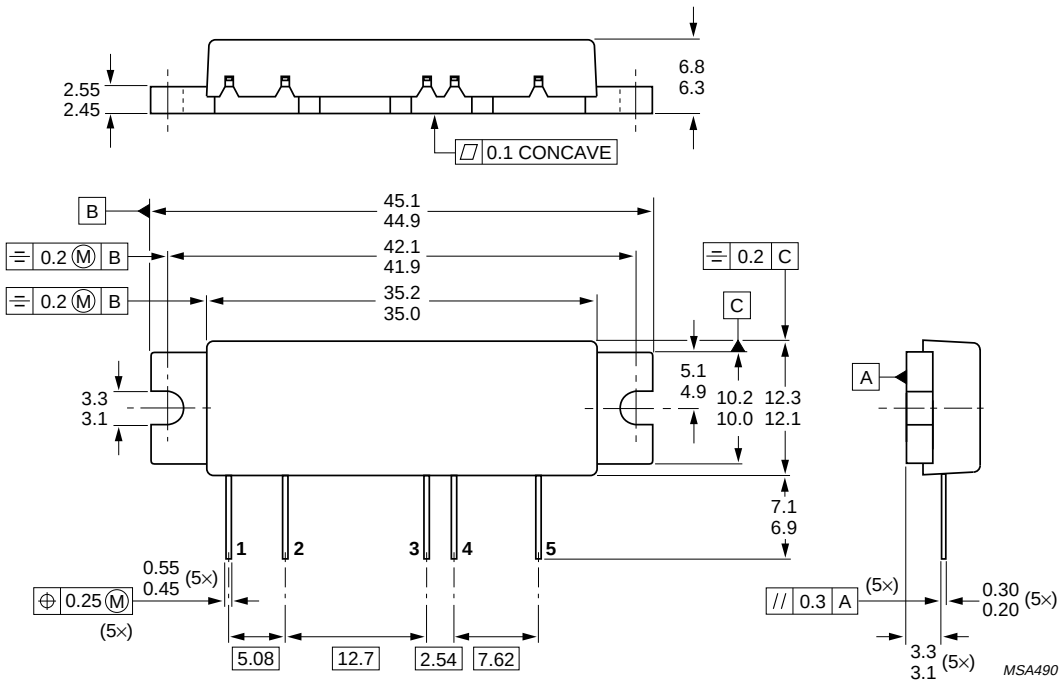
SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_{S1}	DC supply voltage	–	9	V
V_{S2}	DC supply voltage	–	9	V
V_{S3}	DC supply voltage	–	9	V
V_C	DC control voltage	–	7.5	V
P_D	input drive power	–	5	mW
P_L	load power	–	9	W
T_{stg}	storage temperature	–40	+100	°C
T_{mb}	operating mounting base temperature	–30	+100	°C

CHARACTERISTICS

$Z_S = Z_L = 50\ \Omega$; $P_D = 1$ mW; $V_{S1} = V_{S2} = V_{S3} = 7.2$ V; $V_C \leq 7.2$ V; $T_{mb} = 25$ °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
f	frequency					
	BGY152A		400	–	470	MHz
	BGY152B		450	–	512	MHz
$I_{Q1}+I_{Q2}+I_{Q3}$	total leakage current	$V_C = 0$; $P_D = 0$	–	–	200	μA
P_L	load power		7	–	–	W
G_p	power gain	adjust V_C for $P_L = 7$ W	38.5	–	–	dB
η	efficiency	adjust V_C for $P_L = 7$ W	40	43	–	%
H_2	second harmonic	adjust V_C for $P_L = 7$ W	–	–	–35	dBc
H_3	third harmonic	adjust V_C for $P_L = 7$ W	–	–	–40	dBc
$VSWR_{in}$	input VSWR	adjust V_C for $P_L = 7$ W	–	–	2 : 1	
	control range	$V_C = 0$ to 7.2 V; $P_D = 1$ mW	70	–	–	dB
	stability	$P_D = 0.5$ to 2 mW; $V_S = 6$ to 9 V; adjust V_C for $P_L \leq 9$ W; VSWR ≤ 8 : 1 through all phases	–	–	–60	dBc
	ruggedness	$V_S = 9$ V; adjust V_C for $P_L \leq 9$ W VSWR ≤ 20 : 1 through all phases	no degradation			

PACKAGE OUTLINE



Dimensions in mm.

Fig.2 SOT434A.

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

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