DATA SHEET

BGY172
UHF amplifier module

Objective specification
File under Discrete Semiconductors, SC09

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Philips
Semiconductors

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UHF amplifier module BGY172

FEATURES

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

APPLICATIONS

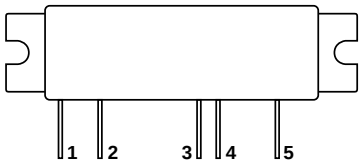
- Portable communication equipment operating in the 800 to 870 MHz frequency range.

DESCRIPTION

The BGY172 is a four-stage UHF amplifier module in a SOT434A package. The module consists of four NPN silicon planar transistor dies mounted together with matching and bias circuit components on a metallized ceramic substrate.

PINNING - SOT434A

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



Top view MSA491

Fig.1 Simplified outline.

QUICK REFERENCE DATA

RF performance at T_{mb} = 25 °C.

MODE OF OPERATION	f (MHz)	V_{S1-2} (V)	V_C (V)	P_L (W)	G_p (dB)	η (%)	Z_S; Z_L (Ω)
CW	800 to 870	7.2	3.75	5	≥37	≥35	50

LIMITING VALUES

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

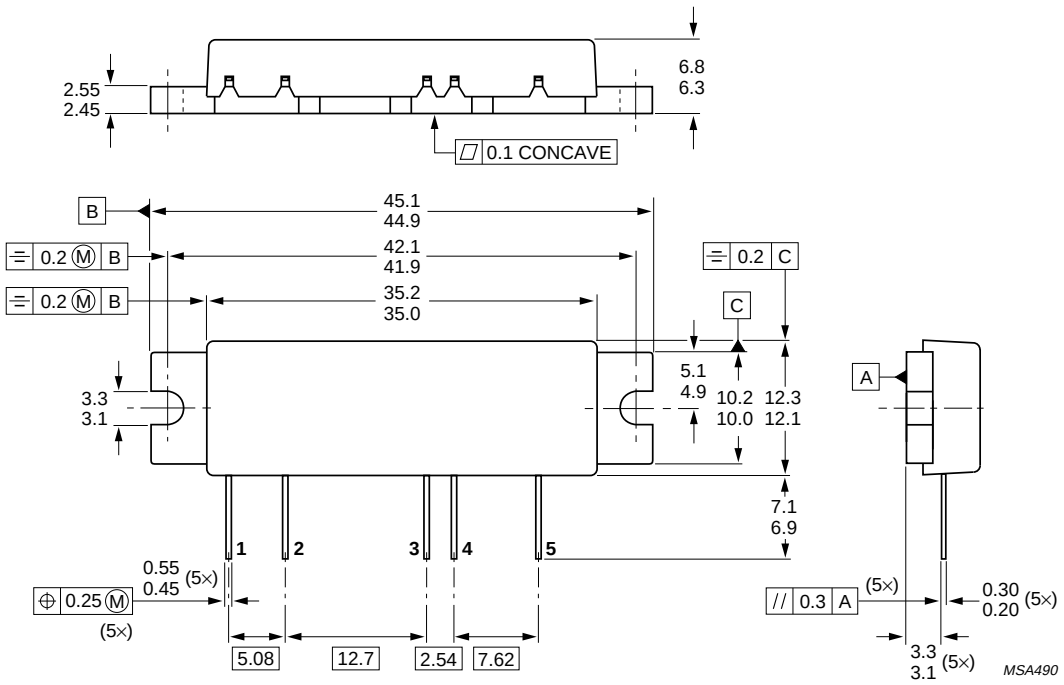
SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_{S1}	DC supply voltage	–	10	V
V_{S2}	DC supply voltage	–	10	V
V_C	DC control voltage	–	4	V
P_D	input drive power	–	2	mW
P_L	load power	–	6	W
T_{stg}	storage temperature	–40	+100	°C
T_{mb}	operating mounting base temperature	–30	+100	°C

CHARACTERISTICS

$Z_S = Z_L = 50\ \Omega$; $P_D = 1$ mW; $V_{S1} = V_{S2} = 7.2$ V; $V_C \leq 3.75$ V; f = 800 to 870 MHz; $T_{mb} = 25$ °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{Q2}	quiescent current	$V_C < 0.5$ V	–	200	µA
I_C	control current	adjust V_C for $P_L = 5$ W	–	500	µA
P_L	load power	$V_C = 3.75$ V	5	–	W
G_p	power gain	adjust V_C for $P_L = 5$ W	37	–	dB
η	efficiency	adjust V_C for $P_L = 5$ W	35	–	%
H_2	second harmonic	adjust V_C for $P_L = 5$ W	–	–35	dBc
H_3	third harmonic	adjust V_C for $P_L = 5$ W	–	–35	dBc
$VSWR_{in}$	input VSWR	adjust V_C for $P_L = 5$ W	–	2 : 1	
	stability	$P_D = 0.5$ to 2 mW; $V_{S1-2} = 6$ to 9 V; $V_C = 0.5$ to 3.75 V; $P_L \leq 5$ W; VSWR ≤ 6 : 1 through all phases	–	–60	dBc
	isolation	$V_C < 0.5$ V	–	–36	dBm
	ruggedness	$V_{S1-2} = 9$ V; adjust V_C for $P_L = 6$ 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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