

DATA SHEET

BGY1085A CATV amplifier module

Product specification
Supersedes data of 1995 Sep 11
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CATV amplifier module

BGY1085A

FEATURES

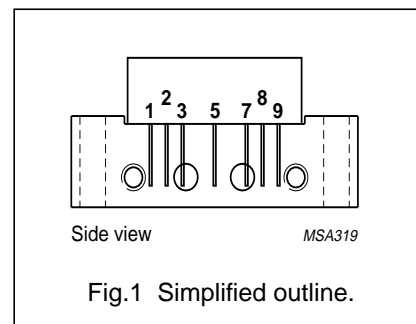
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

DESCRIPTION

Hybrid high amplifier module for CATV systems operating over a frequency range of 40 to 1000 MHz at a supply voltage of +24 V (DC).

PINNING - SOT115J

PIN	DESCRIPTION
1	input
2	common
3	common
5	+V _B
7	common
8	common
9	output



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	18	19	dB
		f = 1000 MHz	18.5	–	dB
I _{tot}	total current consumption (DC)	V _B = 24 V	–	240	mA

LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V _i	RF input voltage	–	65	dBmV
T _{stg}	storage temperature	–40	+100	°C
T _{mb}	operating mounting base temperature	–20	+100	°C

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CHARACTERISTICS

Table 1 Bandwidth 40 to 1000 MHz; $T_{\text{case}} = 30\text{ }^{\circ}\text{C}$; $Z_S = Z_L = 75\ \Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 50 MHz	18	–	19	dB
		f = 1000 MHz	18.5	–	–	dB
SL	slope cable equivalent	f = 40 to 1000 MHz	0	–	2	dB
FL	flatness of frequency response	f = 40 to 1000 MHz	–	–	± 0.3	dB
S_{11}	input return losses	f = 40 to 80 MHz	20	–	–	dB
		f = 80 to 160 MHz	18.5	–	–	dB
		f = 160 to 320 MHz	17	–	–	dB
		f = 320 to 640 MHz	15.5	–	–	dB
		f = 640 to 1000 MHz	14	–	–	dB
S_{22}	output return losses	f = 40 to 80 MHz	20	–	–	dB
		f = 80 to 160 MHz	18.5	–	–	dB
		f = 160 to 320 MHz	17	–	–	dB
		f = 320 to 640 MHz	15.5	–	–	dB
		f = 640 to 1000 MHz	14	–	–	dB
CTB	composite triple beat	85 channels flat; $V_o = 44\text{ dBmV}$; measured at 595.25 MHz	–	–	–58	dB
		110 channels flat; $V_o = 44\text{ dBmV}$; measured at 745.25 MHz	–	–	–53	dB
		150 channels flat; $V_o = 40\text{ dBmV}$; measured at 985.25 MHz	–	–53	–	dB
X_{mod}	cross modulation	85 channels flat; $V_o = 44\text{ dBmV}$; measured at 55.25 MHz	–	–	–58	dB
		110 channels flat; $V_o = 44\text{ dBmV}$; measured at 55.25 MHz	–	–	–54	dB
		150 channels flat; $V_o = 40\text{ dBmV}$; measured at 55.25 MHz	–	–54	–	dB
CSO	composite second order distortion	85 channels flat; $V_o = 44\text{ dBmV}$; measured at 596.5 MHz	–	–	–60	dB
		110 channels flat; $V_o = 44\text{ dBmV}$; measured at 746.5 MHz	–	–	–56	dB
		150 channels flat; $V_o = 40\text{ dBmV}$; measured at 986.5 MHz	–	–56	–	dB

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SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
d ₂	second order distortion	note 1	–	–	–72	dB
		note 2	–	–	–65	dB
		note 3	–	–68	–	dB
V _o	output voltage	d _{im} = –60 dB				
		note 4	61	–	–	dBmV
		note 5	60	–	–	dBmV
		note 6	57	–	–	dBmV
F	noise figure	f = 50 MHz	–	–	5.5	dB
		f = 550 MHz	–	–	6	dB
		f = 600 MHz	–	–	6	dB
		f = 650 MHz	–	–	6.5	dB
		f = 750 MHz	–	–	7	dB
		f = 860 MHz	–	–	7.5	dB
		f = 1000 MHz	–	–	7.5	dB
I _{tot}	total current consumption (DC)	note 7	–	–	240	mA

Notes

- f_p = 55.25 MHz; V_p = 44 dBmV;
f_q = 541.25 MHz; V_q = 44 dBmV;
measured at f_p + f_q = 596.5 MHz.
- f_p = 55.25 MHz; V_p = 44 dBmV;
f_q = 691.25 MHz; V_q = 44 dBmV;
measured at f_p + f_q = 746.5 MHz.
- f_p = 55.25 MHz; V_p = 40 dBmV;
f_q = 931.25 MHz; V_q = 40 dBmV;
measured at f_p + f_q = 986.5 MHz.
- f_p = 590.25 MHz; V_p = V_o;
f_q = 597.25 MHz; V_q = V_o –6 dB;
f_r = 599.25 MHz; V_r = V_o –6 dB;
measured at f_p + f_q – f_r = 588.25 MHz.
- f_p = 740.25 MHz; V_p = V_o;
f_q = 747.25 MHz; V_q = V_o –6 dB;
f_r = 749.25 MHz; V_r = V_o –6 dB;
measured at f_p + f_q – f_r = 738.25 MHz.
- f_p = 980.25 MHz; V_p = V_o;
f_q = 987.25 MHz; V_q = V_o –6 dB;
f_r = 989.25 MHz; V_r = V_o –6 dB;
measured at f_p + f_q – f_r = 978.25 MHz.
- The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

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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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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