DATA SHEET

BGY80; BGY81
CATV amplifier modules

Product specification
File under Discrete Semiconductors, SC16

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Philips Semiconductors

PHILIPS

CATV amplifier modules BGY80; BGY81

FEATURES

- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- TiPtAu metallized crystals ensure optimal reliability.

DESCRIPTION

Hybrid amplifier modules for CATV systems operating over a frequency range of 40 to 450 MHz at a voltage supply of (DC). The BGY80 is intended for use as a 12.5 dB pre-amplifier and the BGY81 as a 12.5 dB final amplifier.

PINNING - SOT115J

PIN	DESCRIPTION
1	input
2	common
3	common
5	$+V_B$
7	common
8	common
9	output

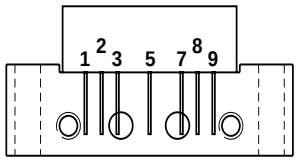

Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 50 MHz	12	–	13	dB
		f = 450 MHz	12.5	–	14	dB
I_{tot}	total current consumption (DC)	V_B = 24 V				
	BGY80		–	180	200	mA
	BGY81		–	220	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

CHARACTERISTICS

Bandwidth 40 to 450 MHz; V_B = 24 V; T_{mb} = 30 °C; $Z_S = Z_L$ = 75 Ω.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 50 MHz	12	–	13	dB
		f = 450 MHz	12.5	–	14	dB
SL	slope cable equivalent	f = 40 to 450 MHz	0.2	–	1.5	dB
FL	flatness of frequency response	f = 40 to 450 MHz	–	–	±0.2	dB
S_{11}	input return losses	f = 40 to 80 MHz	20	–	–	dB
		f = 80 to 160 MHz	19	–	–	dB
		f = 160 to 450 MHz	18	–	–	dB
S_{22}	output return losses	f = 40 to 80 MHz	20	–	–	dB
		f = 80 to 160 MHz	19	–	–	dB
		f = 160 to 450 MHz	18	–	–	dB
S_{21}	phase response	f = 50 MHz	–45	–	+45	deg
CTB	composite triple beat	60 channels flat; V_o = 46 dBmV; measured at 445.25 MHz				
	BGY80		–	–	–54	dB
	BGY81		–	–	–58	dB
X_{mod}	cross modulation	60 channels flat; V_o = 46 dBmV; measured at 55.25 MHz				
	BGY80		–	–	–59	dB
	BGY81		–	–	–62	dB
CSO	composite second order distortion	60 channels flat; V_o = 46 dBmV; measured at 446.5 MHz				
	BGY80		–	–	–58	dB
	BGY81		–	–	–61	dB
d_2	second order distortion	note 1				
	BGY80		–	–	–72	dB
	BGY81		–	–	–74	dB
V_o	output voltage	d_{im} = –60 dB; note 2				
	BGY80		61.5	–	–	dBmV
	BGY81		64	–	–	dBmV
F	noise figure	f = 450 MHz				
	BGY80		–	–	7.5	dB
	BGY81		–	–	8	dB
I_{tot}	total current consumption (DC)	note 3				
	BGY80		–	180	200	mA
	BGY81		–	220	240	mA

Notes

1. f_p = 55.25 MHz; V_p = 46 dBmV; f_q = 391.25 MHz; V_q = 46 dBmV; measured at $f_p + f_q$ = 446.5 MHz.
2. Measured according to DIN45004B: f_p = 440.25 MHz; $V_p = V_o$; f_q = 447.25 MHz; $V_q = V_o$ –6 dB; f_r = 449.25 MHz; $V_r = V_o$ –6 dB; measured at $f_p + f_q - f_r$ = 438.25 MHz.
3. The modules normally operate at V_B = 24 V, but are able to withstand supply transients up to 30 V.