

DATA SHEET

BGY80; BGY81 CATV amplifier modules

Product specification
File under Discrete Semiconductors, SC16

February 1995

Philips Semiconductors



PHILIPS

CATV amplifier modules

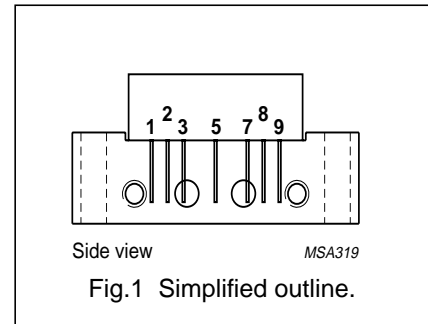
BGY80; BGY81

FEATURES

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

PINNING - SOT115J

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



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.

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

CATV amplifier modules

BGY80; BGY81

CHARACTERISTICSBandwidth 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 BGY80 BGY81	60 channels flat; $V_o = 46$ dBmV; measured at 445.25 MHz	–	–	–54	dB
			–	–	–58	dB
X_{mod}	cross modulation BGY80 BGY81	60 channels flat; $V_o = 46$ dBmV; measured at 55.25 MHz	–	–	–59	dB
			–	–	–62	dB
CSO	composite second order distortion BGY80 BGY81	60 channels flat; $V_o = 46$ dBmV; measured at 446.5 MHz	–	–	–58	dB
			–	–	–61	dB
d_2	second order distortion BGY80 BGY81	note 1	–	–	–72	dB
			–	–	–74	dB
V_o	output voltage BGY80 BGY81	$d_{im} = -60$ dB; note 2	61.5	–	–	dBmV
			64	–	–	dBmV
F	noise figure BGY80 BGY81	f = 450 MHz	–	–	7.5	dB
			–	–	8	dB
I_{tot}	total current consumption (DC) BGY80 BGY81	note 3	–	180	200	mA
			–	220	240	mA

Notes

- $f_p = 55.25$ MHz; $V_p = 46$ dBmV; $f_q = 391.25$ MHz; $V_q = 46$ dBmV; measured at $f_p + f_q = 446.5$ MHz.
- 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.
- The modules normally operate at $V_B = 24$ V, but are able to withstand supply transients up to 30 V.