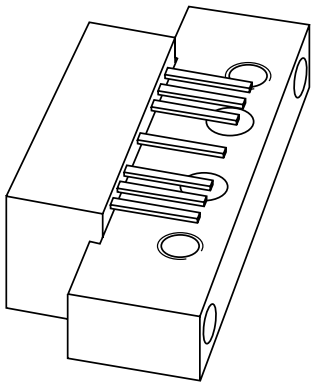
DATA SHEET



BGY84; BGY85
CATV amplifier modules

Product specification
Supersedes data of 1999 Mar 22

1999 Mar 26

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FEATURES

- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Optimal reliability ensured by TiPtAu metallized crystals.

DESCRIPTION

Hybrid amplifier modules for CATV systems operating over a frequency range of 40 to 450 MHz at a voltage supply of 24 V (DC). The BGY84 is intended for use as an input amplifier module and BGY85 as an output amplifier module.

PINNING - SOT115J

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

PIN CONFIGURATION

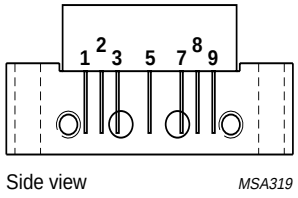


Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 50 MHz	16.5	–	17.5	dB
		f = 450 MHz	17.3	–	18.8	dB
I_{tot}	total current consumption (DC)	V_B = 24 V				
	BGY84		–	180	200	mA
	BGY85		–	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}	mounting base operating temperature	–20	+100	°C

CHARACTERISTICS

Table 1 Bandwidth 40 to 450 MHz; T_{mb} = 30 °C; $Z_S = Z_L$ = 75 Ω

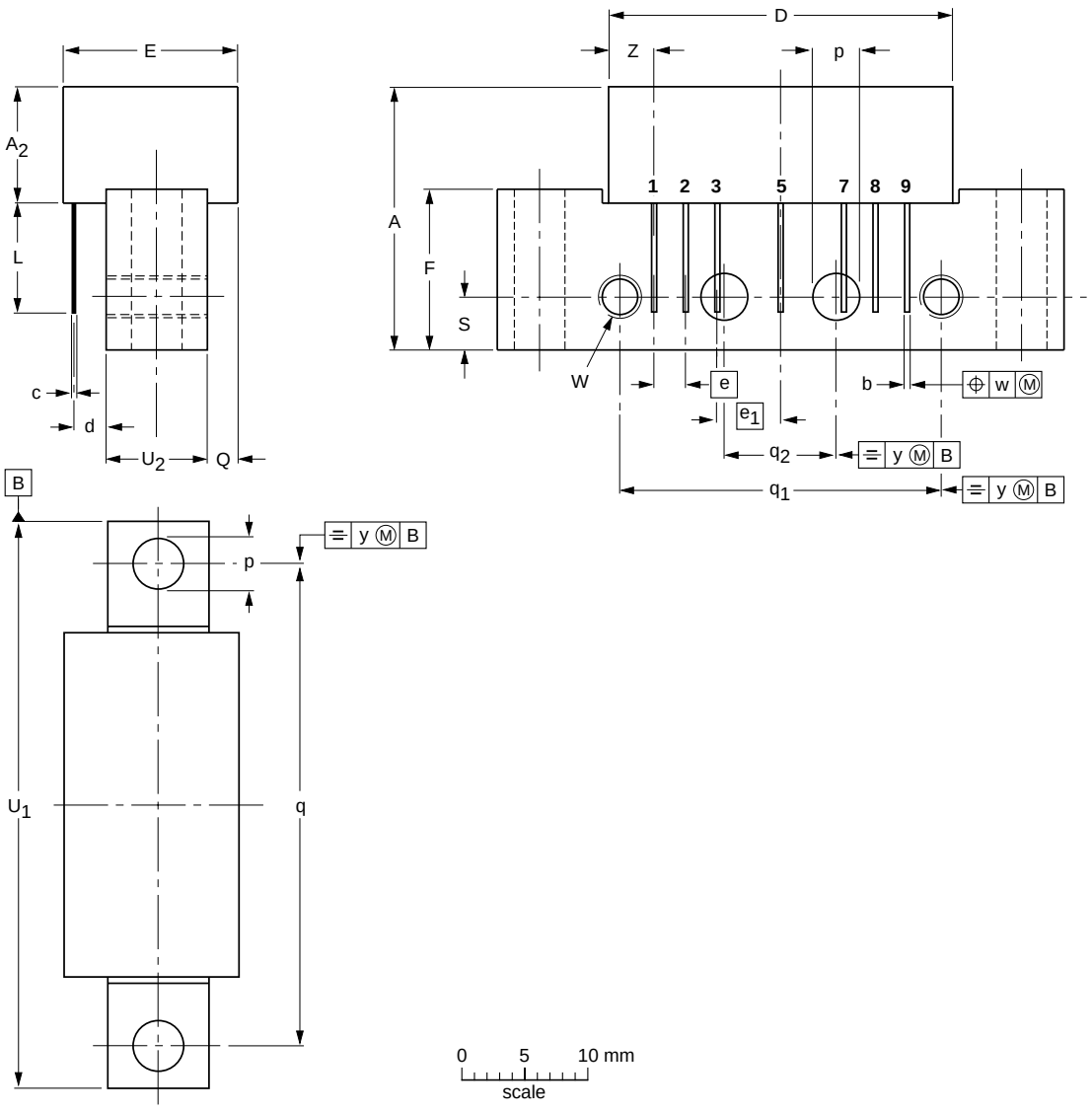
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 50 MHz	16.5	–	17.5	dB
		f = 450 MHz	17.3	–	18.8	dB
SL	slope cable equivalent	f = 40 to 450 MHz	0.5	–	1.5	dB
FL	flatness of frequency response	f = 40 to 450 MHz	–	–	±0.2	dB
S_{11}	input return losses	f = 40 to 80 MHz	20	–	–	dB
		f = 80 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
CTB	composite triple beat	60 channels flat; V_o = 46 dBmV; measured at 445.25 MHz				
	BGY84		–	–	–55	dB
	BGY85		–	–	–58	dB
X_{mod}	cross modulation	60 channels flat; V_o = 46 dBmV; measured at 55.25 MHz				
	BGY84		–	–	–57	dB
	BGY85		–	–	–60	dB
d_2	second order distortion	note 1	–	–	–70	dB
V_o	output voltage	d_{im} = –60 dB; note 2				
	BGY84		60	–	–	dBmV
	BGY85		62.5	–	–	dBmV
F	noise figure	f = 450 MHz				
	BGY84		–	–	6.5	dB
	BGY85		–	–	7	dB
I_{tot}	total current consumption (DC)	V_B = 24 V; note 3				
	BGY84		–	180	200	mA
	BGY85		–	220	240	mA

Notes

1. f_p = 55.25 MHz; V_p = 46 dBmV;
   f_q = 343.25 MHz; V_q = 46 dBmV;
   measured at $f_p + f_q$ = 398.5 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.

PACKAGE OUTLINE

Rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 7 gold-plated in-line leads **SOT115J**



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A_2 max.	b	c	D max.	d max.	E max.	e	e_1	F	L min.	p	Q max.	q	q_1	q_2	S	U_1 max.	U_2	W	w	y	Z max.
mm	20.8	9.1	0.51 0.38	0.25	27.2	2.54	13.75	2.54	5.08	12.7	8.8	4.15 3.85	2.4	38.1	25.4	10.2	4.2	44.75	8	6-32 UNC	0.25	0.1	3.8

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT115J						99-02-06

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.

NOTES

NOTES

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