DATA SHEET

BGX881
CATV amplifier module

Product specification
File under Discrete Semiconductors, SC16

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Philips Semiconductors

PHILIPS

CATV amplifier module BGX881

FEATURES

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

DESCRIPTION

Hybrid amplifier module for CATV/MATV systems operating over a frequency range of 40 to 860 MHz at a voltage supply of 24 V (DC).

PINNING - SOT115D

PIN	DESCRIPTION
1	input; note1
2	common
3	common
4	12 V, 60 mA supply terminal
5	common
6	common
7	common
8	$+V_B$
9	output; note1

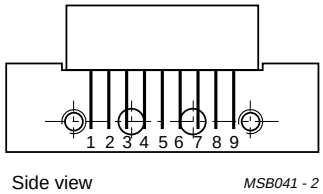


Fig.1 Simplified outline.

Note

1. Pins 1 and 9 carry DC voltages.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	f = 50 MHz	12	13	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_B	DC supply voltage	–	26	V
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 860 MHz; V_B = 24 V; T_{mb} = 30 °C; $Z_S = Z_L$ = 75 Ω.

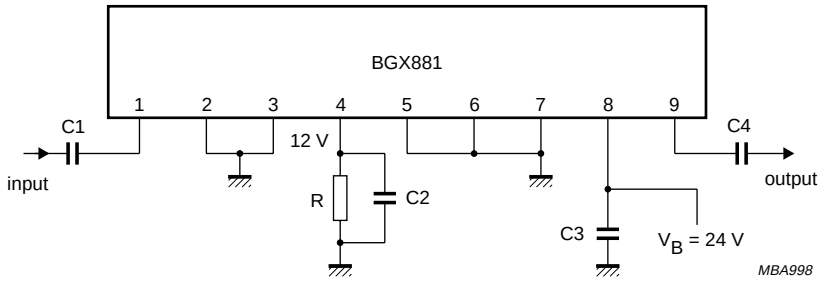
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	f = 50 MHz	12	13	dB
SL	slope cable equivalent	f = 40 to 860 MHz	0.2	1.2	dB
FL	flatness of frequency response	f = 40 to 860 MHz	–	±0.3	dB
S_{11}	input return losses	f = 40 MHz; note 1	20	–	dB
		f = 800 to 860 MHz	10	–	dB
S_{22}	output return losses	f = 40 MHz; note 1	20	–	dB
		f = 640 to 860 MHz	15	–	dB
d_2	second order distortion	note 2	–	–53	dB
V_o	output voltage	d_{im} = –60 dB; note 3	60.5	–	dBmV
		d_{im} = –60 dB; note 4	59.5	–	dBmV
F	noise figure	f = 350 MHz	–	8.5	dB
		f = 860 MHz	–	9	dB
I_{tot}	total current consumption (DC)	note 5	–	240	mA

Notes

1. Decreases 1.5 dB per octave.
2. f_p = 349.25 MHz; V_p = 59 dBmV;
   f_q = 403.25 MHz; V_q = 59 dBmV;
   measured at $f_p + f_q$ = 752.5 MHz.
3. Measured according to DIN45004B:
   f_p = 341.25 MHz; $V_p = V_o$;
   f_q = 348.25 MHz; $V_q = V_o$ –6 dB;
   f_r = 350.25 MHz; $V_r = V_o$ –6 dB;
   measured at $f_p + f_q - f_r$ = 339.25 MHz.
4. Measured according to DIN45004B:
   f_p = 851.25 MHz; $V_p = V_o$;
   f_q = 858.25 MHz; $V_q = V_o$ –6 dB;
   f_r = 860.25 MHz; $V_r = V_o$ –6 dB;
   measured at $f_p + f_q - f_r$ = 849.25 MHz.
5. The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

List of components (see Fig.2)

COMPONENT	DESCRIPTION	VALUE
C1, C3, C4	ceramic multilayer capacitor	1 nF
C2	ceramic multilayer capacitor	1 nF (max.)
R	resistor	200 Ω, 1 W



Pins 1 and 9 carry DC voltages.

Fig.2 Test circuit.

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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