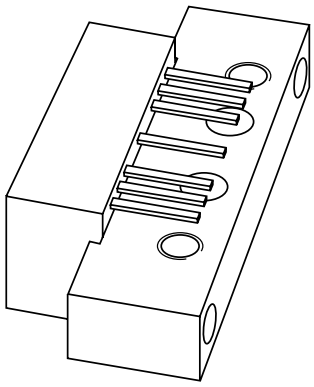
DATA SHEET



BGR269
Hybrid CATV amplifier module

Objective specification

2000 May 01

Philips
Semiconductors

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Hybrid CATV amplifier module BGR269

FEATURES

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

APPLICATIONS

- Reverse amplifier in two-way CATV systems operating in the 5 to 200 MHz frequency range.

DESCRIPTION

High performance amplifier operating at a voltage supply of 24 V DC in a SOT115J package.

PINNING SOT115J

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

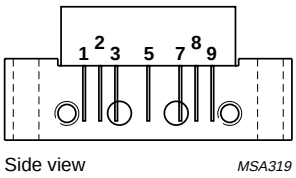


Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 5 MHz	34.5	35	35.5	dB
I_{tot}	total current consumption (DC)	V_B = 24 V	–	–	330	mA

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_i	RF input voltage	–	65	dBmV
T_{mb}	operating mounting base temperature	–20	+100	°C
T_{stg}	storage temperature range	–40	+100	°C

CHARACTERISTICS

Bandwidth 5 to 200 MHz; V_B = 24 V; T_{mb} = 30 °C; $Z_S = Z_L$ = 75 Ω.

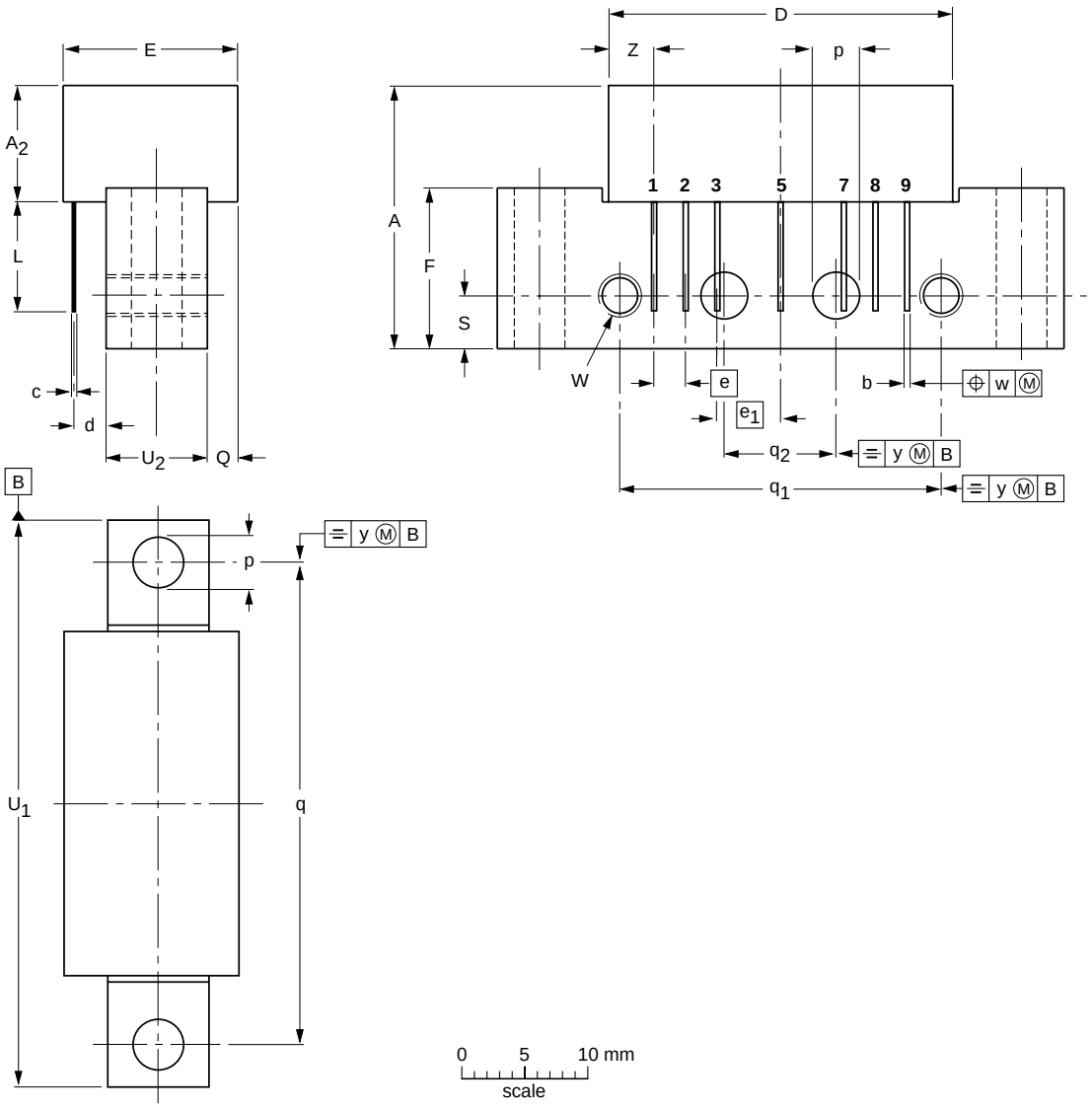
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	f = 5 MHz	34.5	35	35.5	dB
SL	slope straight line	f = 5 to 200 MHz	0	–	0.5	dB
FL	flatness of frequency response	f = 5 to 200 MHz	–	–	±0.2	dB
s_{11}	input return losses	f = 5 to 200 MHz	20	–	–	dB
s_{22}	output return losses	f = 5 to 200 MHz	20	–	–	dB
CTB	composite triple beat	6 chs flat; V_o = 50 dBmV; measured at 37.25 MHz	–	–	–73	dB
		10 chs flat; V_o = 50 dBmV; measured at 61.25 MHz	–	–	–62	dB
		28 chs flat; V_o = 50 dBmV; measured at 199.25 MHz	–	–	–58	dB
X_{mod}	cross modulation	6 chs flat; V_o = 50 dBmV; measured at 37.25 MHz	–	–	–66	dB
		10 chs flat; V_o = 50 dBmV; measured at 61.25 MHz	–	–	–57	dB
		28 chs flat; V_o = 50 dBmV; measured at 61.25 MHz	–	–	–51	dB
CSO	composite second order distortion	6 chs flat; V_o = 50 dBmV; measured at 24 or 38.5 MHz	–	–	–68	dB
		10 chs flat; V_o = 50 dBmV; measured at 24 or 62.5 MHz	–	–	–65	dB
		28 chs flat; V_o = 50 dBmV; measured at 24 or 200.5 MHz	–	–	–56	dB
d_2	second order distortion	note 1	–	–	–70	dB
d_3	third order distortion	note 2	–	–	–80	dB
F	noise figure	f = 65 MHz	–	–	4	dB
		f = 200 MHz	–	–	4.5	dB
I_{tot}	total current consumption	note 3	–	–	330	mA

Notes

1. f_p = 25.25 MHz; V_p = 50 dBmV;
   f_q = 37.25 MHz; V_q = 50 dBmV;
   measured at $f_p + f_q$ = 62.5 MHz.
2. f_p = 7.25 MHz; V_p = 50 dBmV;
   f_q = 19.25 MHz; V_q = 50 dBmV;
   f_r = 37.25 MHz; V_r = 50 dBmV;
   measured at $f_p + f_q + f_r$ = 63.75 MHz.
3. The module normally operates at V_B = 24 V, but is 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

DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS (1)
Objective specification	Development	This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.
Preliminary specification	Qualification	This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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CAUTION
This product is supplied in anti-static packing to prevent damage caused by electrostatic discharge during transport and handling. For further information, refer to Philips specs.: SNW-EQ-608, SNW-FQ-302A and SNW-FQ-302B.

NOTES

NOTES

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