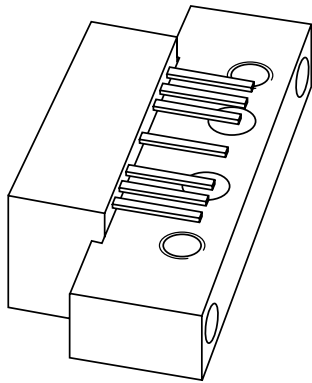


DATA SHEET



BGY687

**600 MHz, 21.5 dB gain push-pull
amplifier**

Product specification
Supersedes data of 1995 Sep 11

2001 Nov 08

600 MHz, 21.5 dB gain push-pull amplifier

BGY687

FEATURES

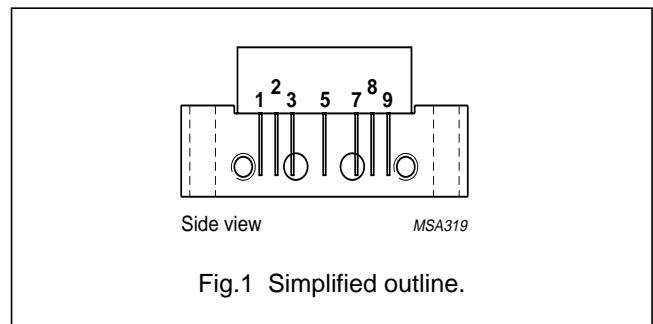
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

DESCRIPTION

Hybrid high dynamic range amplifier module designed for CATV systems operating over a frequency range of 40 to 600 MHz at a voltage supply of 24 V (DC).

PINNING - SOT115J

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



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	21	22	dB
		f = 600 MHz	22	–	dB
I _{tot}	total current consumption (DC)	V _B = 24 V	–	240	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 _{stg}	storage temperature	–40	+100	°C
T _{mb}	operating mounting base temperature	–20	+100	°C

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CHARACTERISTICSBandwidth 40 to 600 MHz; $T_{\text{case}} = 30\text{ }^{\circ}\text{C}$; $Z_S = Z_L = 75\ \Omega$.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	21	22	dB
		f = 600 MHz	22	–	dB
SL	slope cable equivalent	f = 40 to 600 MHz	0.8	2.2	dB
FL	flatness of frequency response	f = 40 to 600 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 600 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 550 MHz	18	–	dB
		f = 550 to 600 MHz	16	–	dB
S ₂₁	phase response	f = 50 MHz	–45	+45	deg
CTB	composite triple beat	85 channels flat; V _o = 44 dBmV; measured at 595.25 MHz	–	–54	dB
X _{mod}	cross modulation	85 channels flat; V _o = 44 dBmV; measured at 55.25 MHz	–	–54	dB
CSO	composite second order distortion	85 channels flat; V _o = 44 dBmV; measured at 596.5 MHz	–	–52	dB
d ₂	second order distortion	note 1	–	–66	dB
V _o	output voltage	d _{im} = –60 dB; note 2	58	–	dBmV
NF	noise figure	f = 600 MHz	–	6.5	dB
I _{tot}	total current consumption (DC)	note 3	–	240	mA

Notes

1. $f_p = 55.25\text{ MHz}$; $V_p = 44\text{ dBmV}$; $f_q = 541.25\text{ MHz}$; $V_q = 44\text{ dBmV}$; measured at $f_p + f_q = 596.5\text{ MHz}$.
2. $f_p = 590.25\text{ MHz}$; $V_p = V_o$; $f_q = 597.25\text{ MHz}$; $V_q = V_o - 6\text{ dB}$; $f_r = 599.25\text{ MHz}$; $V_r = V_o - 6\text{ dB}$; measured at $f_p + f_q - f_r = 588.25\text{ MHz}$.
3. The module normally operates at $V_B = 24\text{ V}$, but is able to withstand supply transients up to 30 V.

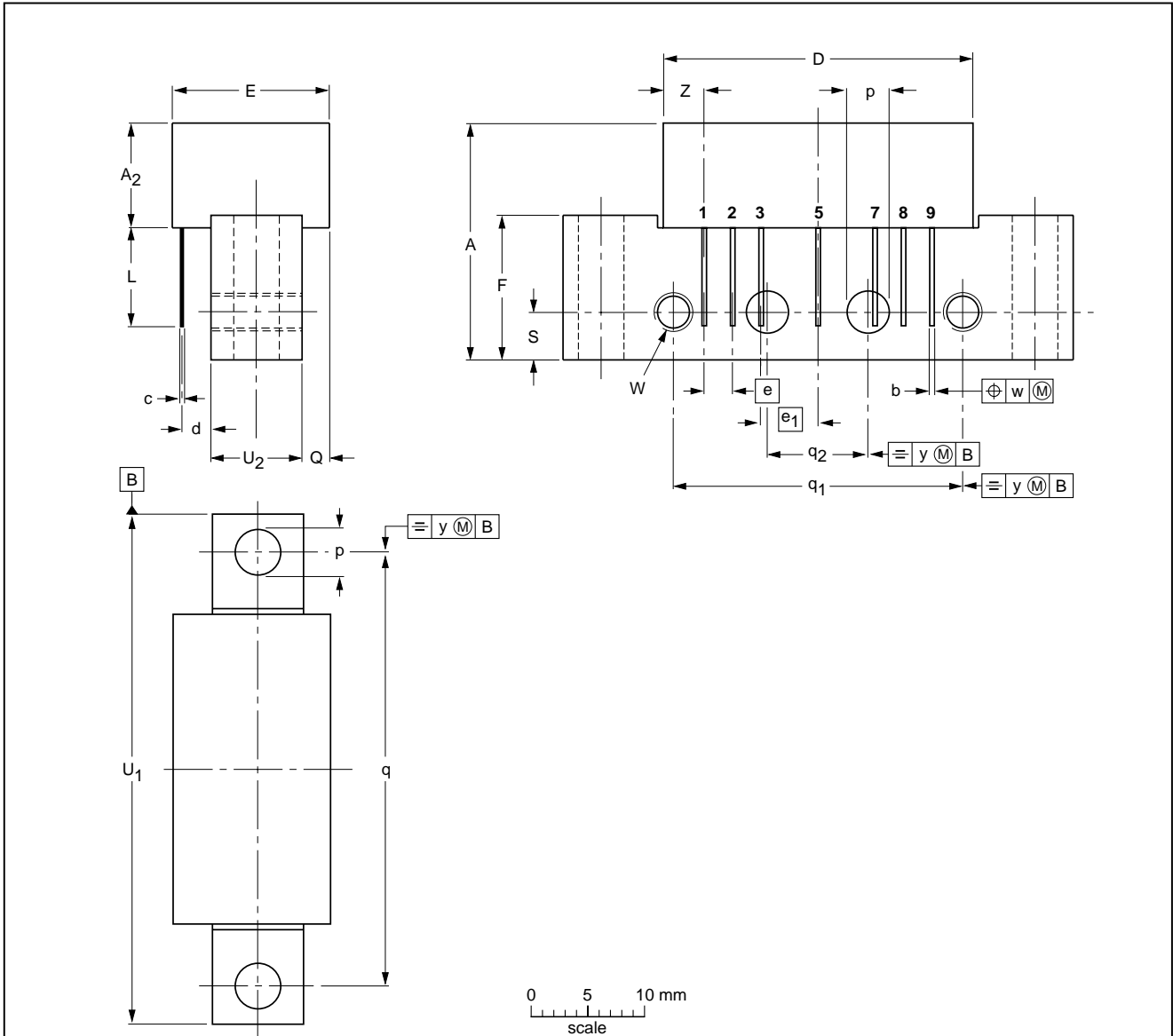
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PACKAGE OUTLINE

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

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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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.

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NOTES

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NOTES

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