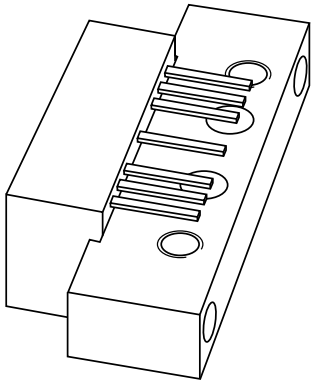
DATA SHEET



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

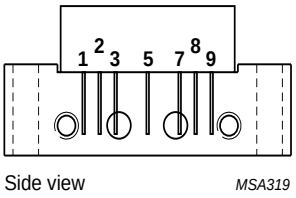


Fig.1 Simplified outline.

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

CHARACTERISTICS

Bandwidth 40 to 600 MHz; T_{case} = 30 °C; $Z_S = Z_L$ = 75 Ω.

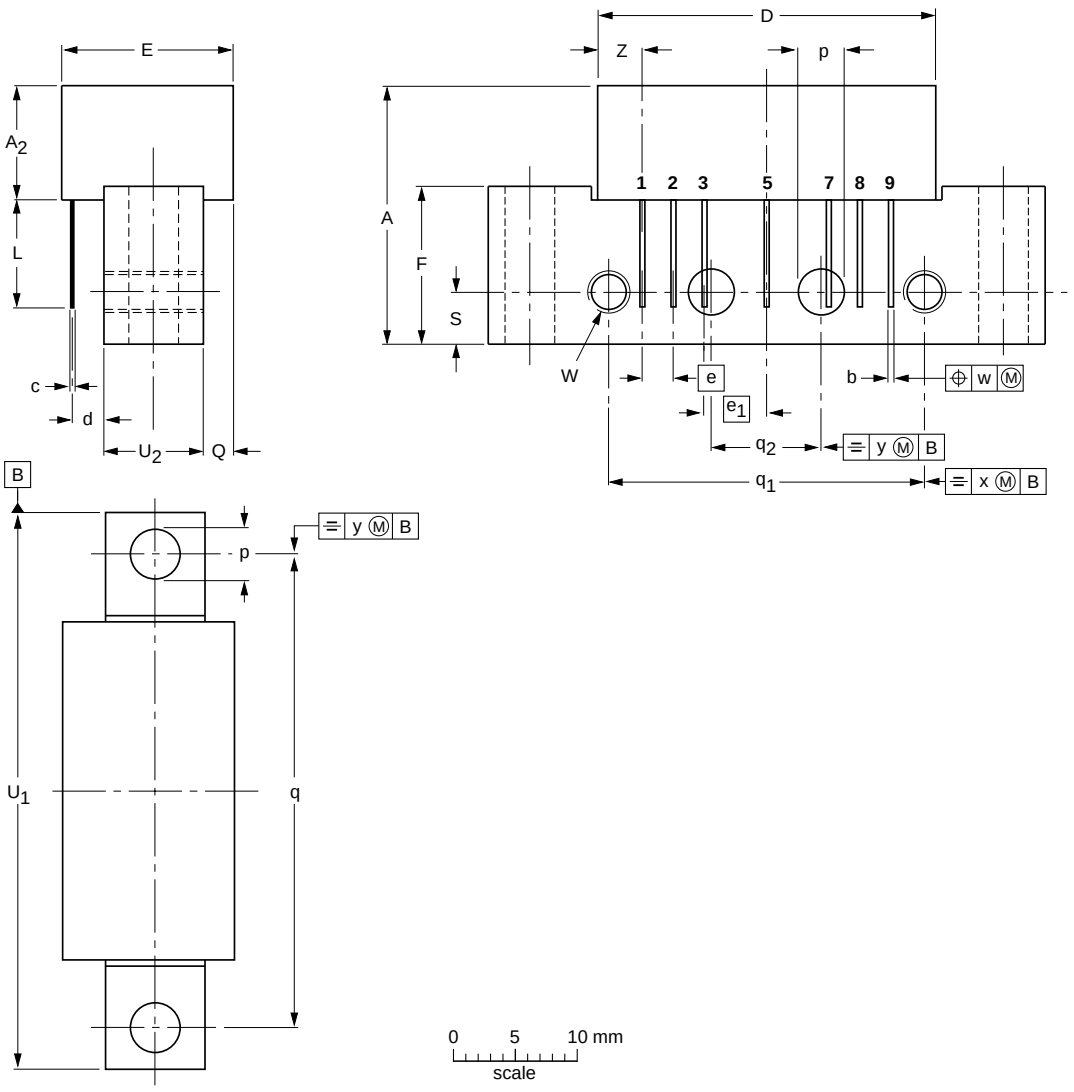
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G_p	power gain	f =50 MHz	21	22	dB
		f = 600 MHz	22	–	dB
SL	slope cable equivalent	f = 40 to 600 MHz	0.8	2.2	dB
FL	flatness of frequency response	f = 40 to 600 MHz	–	±0.2	dB
S_{11}	input return losses	f = 40 to 80 MHz	20	–	dB
		f = 80 to 160 MHz	19	–	dB
		f = 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 MHz; V_p = 44 dBmV; f_q = 541.25 MHz; V_q = 44 dBmV; measured at $f_p + f_q$ = 596.5 MHz.
2. f_p = 590.25 MHz; $V_p = V_o$; f_q = 597.25 MHz; $V_q = V_o$ −6 dB; f_r = 599.25 MHz; $V_r = V_o$ −6 dB; measured at $f_p + f_q - f_r$ = 588.25 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	E max.	e	e_1	F	L min.	p	Q max.	q	q_1	q_2	S	U_1	U_2	W	w	x	y	Z max.
mm	20.8	9.5	0.51 0.38	0.25	27.2	2.04 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 44.25	8.2 7.8	6-32 UNC	0.25	0.7	0.1	3.8

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT115J						~~04-02-04~~ 10-06-18

DATA SHEET STATUS

DOCUMENT STATUS[1]	PRODUCT STATUS[2]	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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