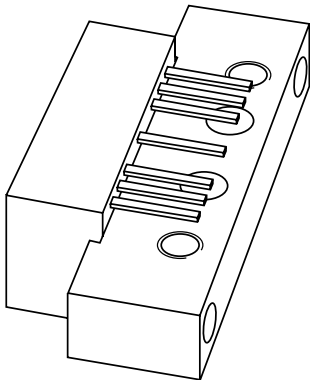


# DATA SHEET



## **CGY887A** CATV amplifier module

Product specification  
Supersedes data of 1999 Mar 30

2000 Mar 24

# CATV amplifier module

# CGY887A

### FEATURES

- High gain
- Superior linearity
- Extremely low noise
- Rugged construction
- Gold metallization ensures excellent reliability.

### APPLICATIONS

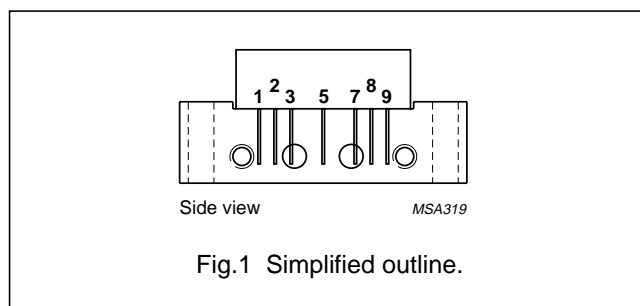
- CATV systems operating in the 40 to 870 MHz frequency range.

### DESCRIPTION

Hybrid dynamic range amplifier module in a SOT115J package operating with a voltage supply of 24 V (DC), employing both GaAs and Si dies.

### PINNING - SOT115J

PIN	DESCRIPTION
1	input
2	common
3	common
5	+V <sub>B</sub>
7	common
8	common
9	output



### QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G <sub>p</sub>	power gain	f = 50 MHz	25.2	25.8	dB
		f = 870 MHz	25.6	26.6	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> = 24 V	–	240	mA

### LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V <sub>i</sub>	RF input voltage	–	75	dBmV
T <sub>stg</sub>	storage temperature	–40	+100	°C
T <sub>mb</sub>	operating mounting base temperature	–20	+100	°C

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**CHARACTERISTICS**Bandwidth 40 to 870 MHz;  $V_B = 24$  V;  $T_{case} = 30$  °C;  $Z_S = Z_L = 75$   $\Omega$ .

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G <sub>p</sub>	power gain	f = 50 MHz	25.2	25.8	dB
		f = 870 MHz	25.6	26.6	dB
SL	straight line	f = 40 to 870 MHz	0.2	1	dB
FL	flatness of frequency response	f = 40 to 870 MHz	–	±0.5	dB
S <sub>11</sub>	input return losses	f = 40 to 80 MHz	20	–	dB
		f = 80 to 160 MHz	20	–	dB
		f = 160 to 320 MHz	20	–	dB
		f = 320 to 550 MHz	20	–	dB
		f = 550 to 640 MHz	19	–	dB
		f = 640 to 750 MHz	17	–	dB
		f = 750 to 870 MHz	17	–	dB
S <sub>22</sub>	output return losses	f = 40 to 80 MHz	21	–	dB
		f = 80 to 160 MHz	19	–	dB
		f = 160 to 320 MHz	17	–	dB
		f = 320 to 550 MHz	16	–	dB
		f = 550 to 640 MHz	16	–	dB
		f = 640 to 750 MHz	16	–	dB
		f = 750 to 870 MHz	16	–	dB
S <sub>21</sub>	phase response	f = 50 MHz	–45	+45	deg
CTB	composite triple beat	129 channels flat; V <sub>o</sub> = 40 dBmV; measured at 745.25 MHz	–	–62	dB
X <sub>mod</sub>	cross modulation	129 channels flat; V <sub>o</sub> = 40 dBmV; measured at 55.25 MHz	–	–55	dB
CSO	composite second order distortion	129 channels flat; V <sub>o</sub> = 40 dBmV; measured at 860.5 MHz	–	–57	dB
d <sub>2</sub>	second order distortion	note 1	–	–67	dB
V <sub>o</sub>	output voltage	d <sub>im</sub> = –60 dB; note 2	62	–	dBmV
F	noise figure	f = 50 MHz	–	5.5	dB
		f = 100 to 870MHz	–	5	dB
I <sub>tot</sub>	total current consumption (DC)	note 3	–	240	mA

**Notes**

1.  $f_p = 55.25$  MHz;  $V_p = 50$  dBmV;  
 $f_q = 805.25$  MHz;  $V_q = 50$  dBmV;  
measured at  $f_p + f_q = 860.5$  MHz.
2. Measured according 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.
3. The module normally operates at  $V_B = 24$  V, but is able to withstand supply transients up to 30 V.

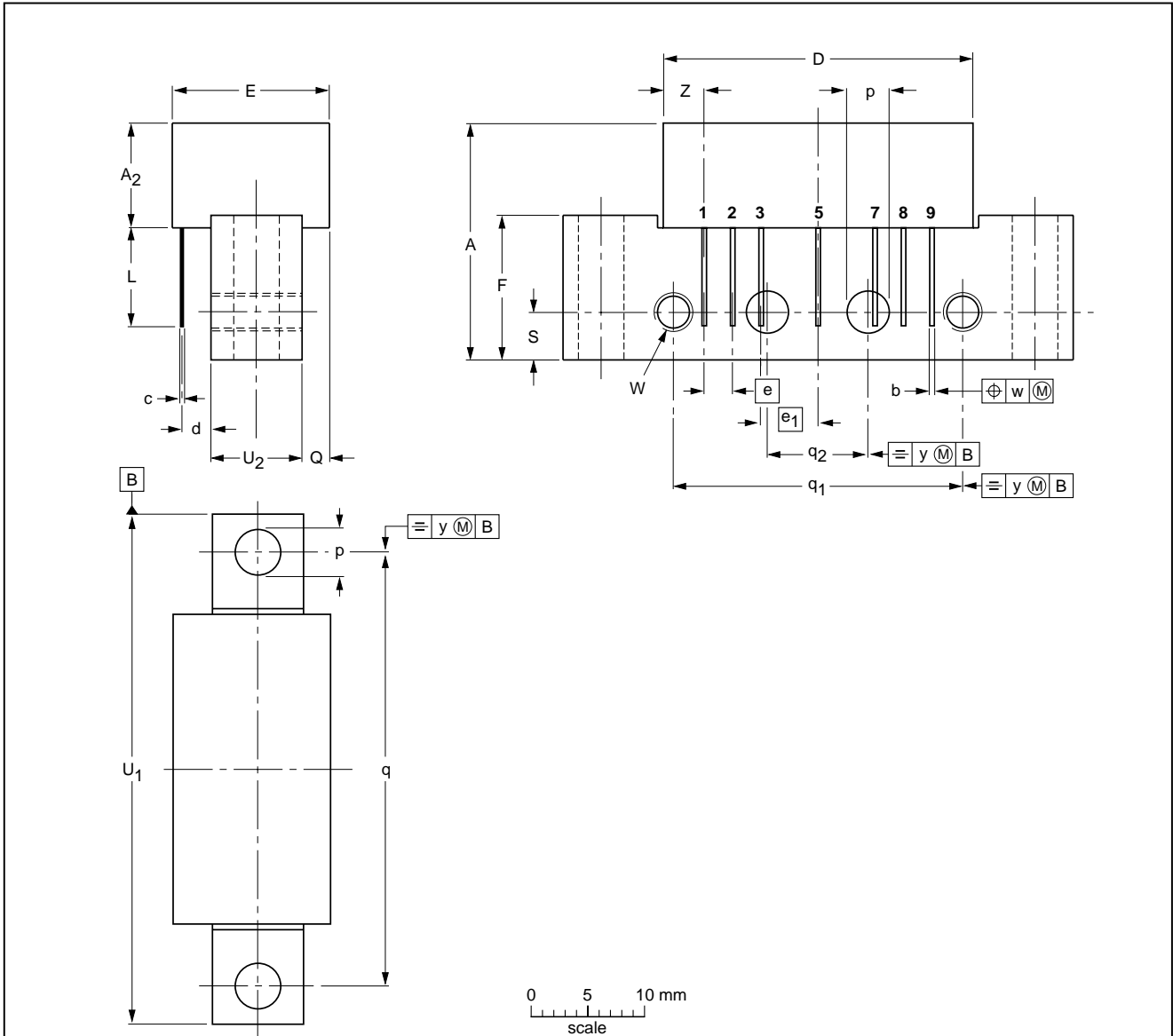
CATV amplifier module

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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 <sub>2</sub> max.	b	c	D max.	d max.	E max.	e	e <sub>1</sub>	F	L min.	p	Q max.	q	q <sub>1</sub>	q <sub>2</sub>	S	U <sub>1</sub> max.	U <sub>2</sub>	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

## CATV amplifier module

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## DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS <sup>(1)</sup>
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.

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**NOTES**

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Printed in The Netherlands

603510/03/pp8

Date of release: 2000 Mar 24

Document order number: 9397 750 06922

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