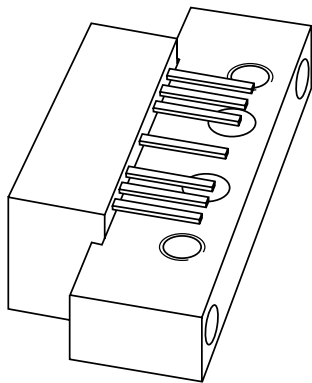


# DATA SHEET



## **BGY86; BGY87** CATV amplifier modules

Product specification  
Supersedes data of February 1994

1999 Mar 25

# CATV amplifier modules

# BGY86; BGY87

### FEATURES

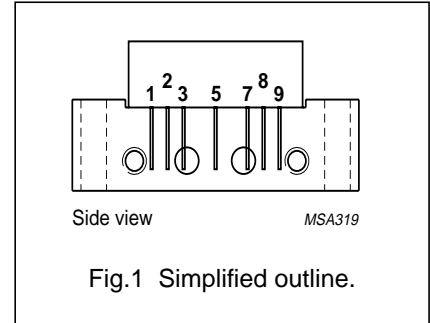
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- TiPtAu metallized crystals ensure optimal reliability.

### DESCRIPTION

Hybrid amplifier modules for CATV systems operating over a frequency range of 40 to 450 Mhz at a voltage supply of 24 V (DC). The BGY86 is intended for use as a pre-amplifier and the BGY87 as a final amplifier.

### 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.	TYP.	MAX.	UNIT
G <sub>p</sub>	power gain	f = 50 MHz	21.5	–	22.5	dB
		f = 450 MHz	21.7	–	23.5	dB
I <sub>tot</sub>	total current consumption (DC) BGY86 BGY87	V <sub>B</sub> = 24 V	–	180	200	mA
			–	220	240	mA

### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V <sub>i</sub>	RF input voltage	–	65	dBmV
T <sub>stg</sub>	storage temperature	–40	+100	°C
T <sub>mb</sub>	operating mounting base temperature	–20	+100	°C

## CATV amplifier modules

## BGY86; BGY87

**CHARACTERISTICS**Bandwidth 40 to 450 MHz;  $V_B = 24$  V;  $T_{mb} = 30$  °C;  $Z_S = Z_L = 75$   $\Omega$ 

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$G_p$	power gain	f = 50 MHz	21.5	–	22.5	dB
		f = 450 MHz	21.7	–	23.5	dB
SL	slope cable equivalent	f = 40 to 450 MHz	0	–	1.5	dB
FL	flatness of frequency response	f = 40 to 450 MHz	–	–	$\pm 0.2$	dB
$S_{11}$	input return losses	f = 40 to 80 MHz	20	–	–	dB
		f = 80 to 160 MHz	19	–	–	dB
		f = 160 to 450 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 450 MHz	18	–	–	dB
$S_{21}$	phase response	f = 50 MHz	+135	–	+225	deg
CTB	composite triple beat BGY86 BGY87	60 channels flat; $V_o = 46$ dBmV; measured at 445.25 MHz	–	–	–54	dB
			–	–	–58	dB
$X_{mod}$	cross modulation BGY86 BGY87	60 channels flat; $V_o = 46$ dBmV; measured at 55.25 MHz	–	–	–51	dB
			–	–	–55	dB
CSO	composite second order distortion BGY86 BGY87	60 channels flat; $V_o = 46$ dBmV; measured at 446.5 MHz	–	–	–	–
			–	–	–53	dB
			–	–	–57	dB
$d_2$	second order distortion BGY86 BGY87	note 1				
			–	–	–68	dB
			–	–	–72	dB
$V_o$	output voltage BGY86 BGY87	$d_{im} = -60$ dB; note 2				
			61.5	–	–	dBmV
			64	–	–	dBmV
F	noise figure BGY86 BGY87	f = 450 MHz				
			–	–	6	dB
			–	–	6.5	dB
$I_{tot}$	total current consumption (DC) BGY86 BGY87	note 3				
			–	180	200	mA
			–	220	240	mA

**Notes**

- $f_p = 55.25$  MHz;  $V_p = 46$  dBmV;  $f_q = 391.25$  MHz;  $V_q = 46$  dBmV; measured at  $f_p + f_q = 446.5$  MHz.
- Measured according to DIN45004B:  $f_p = 440.25$  MHz;  $V_p = V_o$ ;  $f_q = 447.25$  MHz;  $V_q = V_o - 6$  dB;  $f_r = 449.25$  MHz;  $V_r = V_o - 6$  dB; measured at  $f_p + f_q - f_r = 438.25$  MHz.
- The modules normally operate at  $V_B = 24$  V, but are able to withstand supply transients up to 30 V.

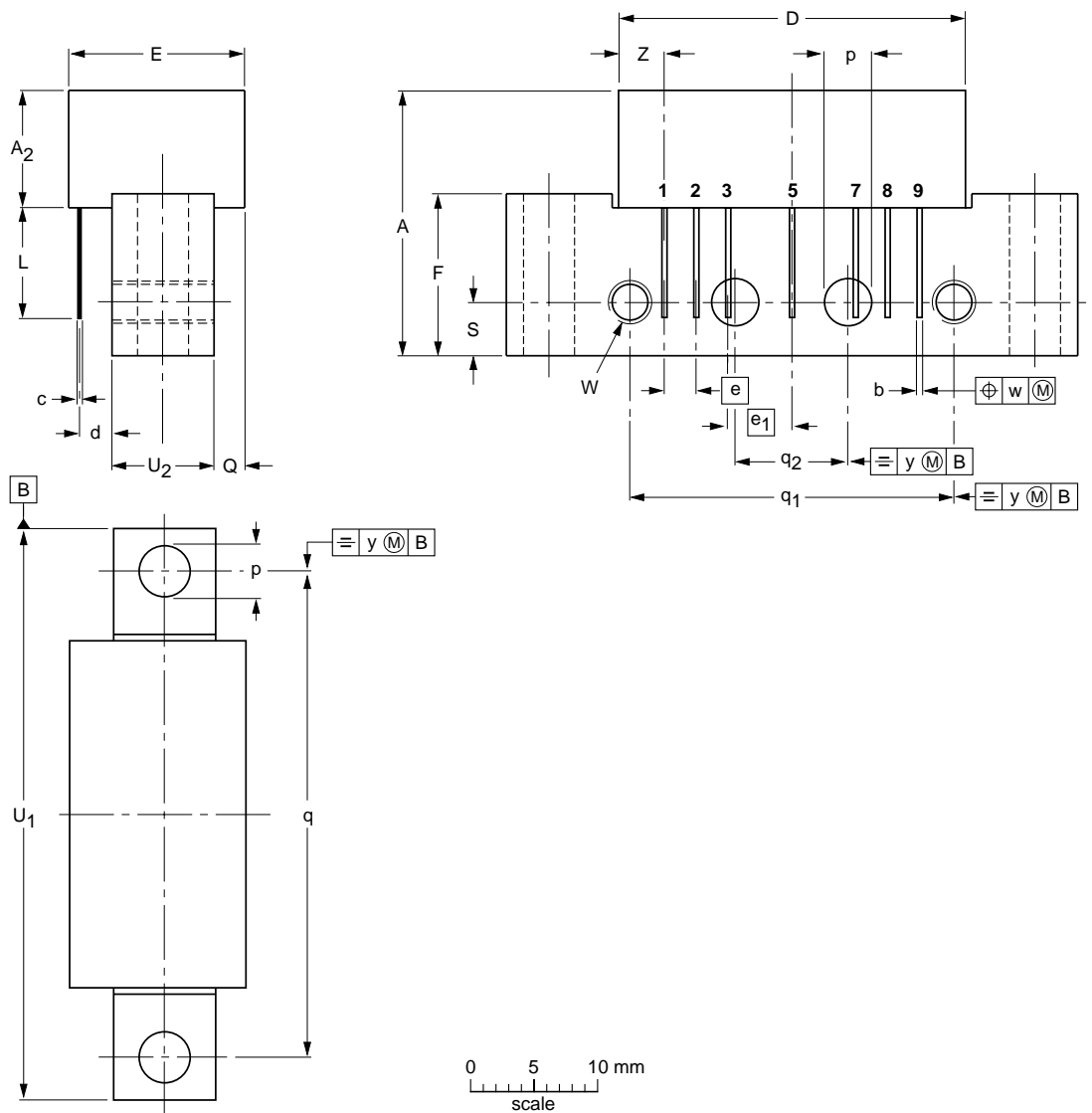
CATV amplifier modules

BGY86; BGY87

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 modules

## BGY86; BGY87

**DEFINITIONS**

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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CATV amplifier modules

BGY86; BGY87

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**NOTES**

CATV amplifier modules

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**NOTES**

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