

# DATA SHEET

## **BGY66B** CATV amplifier module

Product specification  
Supersedes data of 1995 Sep 11  
File under Discrete Semiconductors, SC16

1997 Apr 14

# CATV amplifier module

# BGY66B

## FEATURES

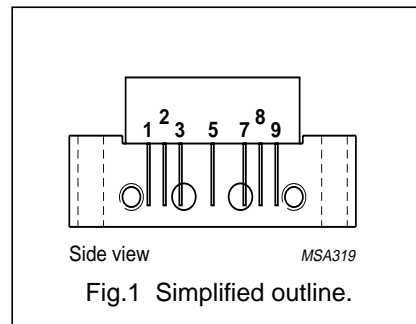
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

## APPLICATIONS

- Intended as a reverse amplifier for use in two-way systems.

## PINNING - SOT115J

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



## DESCRIPTION

Hybrid high dynamic range amplifier module designed for applications in CATV systems with a bandwidth of 5 to 120 MHz operating with a voltage supply of 24 V (DC).

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G <sub>p</sub>	power gain	f = 10 MHz	24.5	25.5	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> = 24 V	115	135	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

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## CHARACTERISTICS

**Table 1** Bandwidth 5 to 120 MHz;  $V_B = 24$  V;  $T_{mb} = 30$  °C;  $Z_S = Z_L = 75$   $\Omega$ 

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$G_p$	power gain	$f = 10$ MHz	24.5	25.5	dB
SL	slope cable equivalent		-0.2	+0.5	dB
FL	flatness of frequency response		-	$\pm 0.2$	dB
$S_{11}$	input return losses		20	-	dB
$S_{22}$	output return losses		20	-	dB
CTB	composite triple beat	14 channels flat; $V_o = 48$ dBmV; measured at 67.25 MHz	-	-66	dB
$X_{mod}$	cross modulation	14 channels flat; $V_o = 48$ dBmV; measured at 67.25 MHz	-	-54	dB
$d_2$	second order distortion	note 1	-	-70	dB
$V_o$	output voltage	$d_{im} = -60$ dB; note 2	60	-	dBmV
F	noise figure	$f = 120$ MHz	-	5	dB
$I_{tot}$	total current consumption (DC)	note 3	115	135	mA

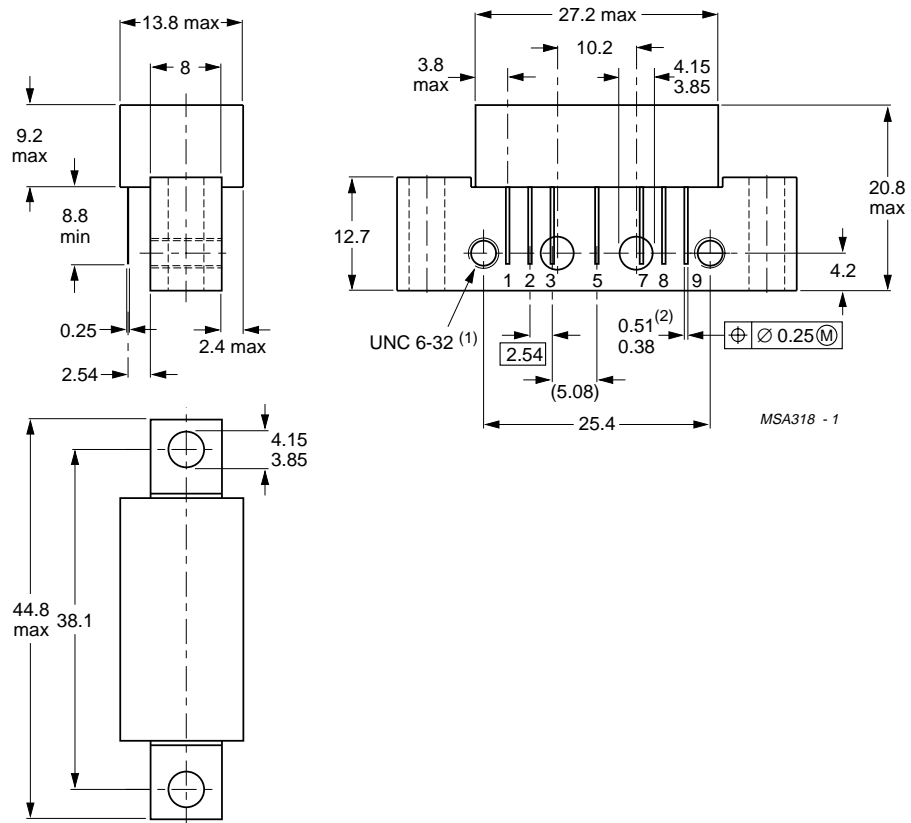
## Notes

- $f_p = 55.25$  MHz;  $V_p = 48$  dBmV;  
 $f_q = 61.25$  MHz;  $V_q = 48$  dBmV;  
measured at  $f_p + f_q = 116.5$  MHz.
- Measured according to DIN45004B:  
 $f_p = 111.25$  MHz;  $V_p = V_o$ ;  
 $f_q = 118.25$  MHz;  $V_q = V_o - 6$  dB;  
 $f_r = 120.25$  MHz;  $V_r = V_o - 6$  dB;  
measured at  $f_p + f_q - f_r = 109.25$  MHz.
- The module normally operates at  $V_B = 24$  V, but is able to withstand supply transients up to 30 V.

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PACKAGE OUTLINE



Dimensions in mm.

(1) Screw 6-32 UNC-2A available on request.

(2) Leads gold plated.

Fig.2 SOT115J.

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**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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**NOTES**

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**NOTES**

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