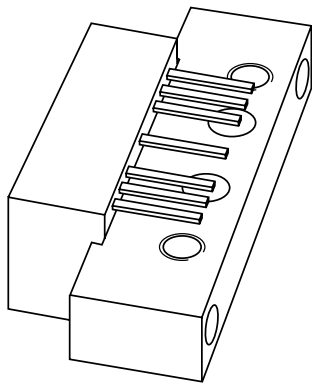


# DATA SHEET



## **BGD104** CATV power doubler amplifier module

Product specification  
Supersedes data of February 1995

1999 Mar 22

# CATV power doubler amplifier module

# BGD104

## FEATURES

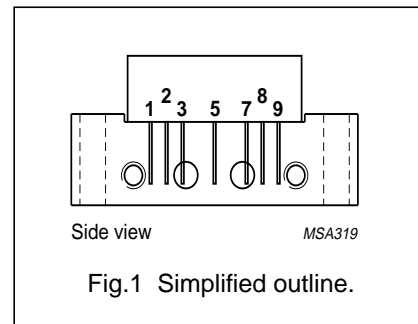
- Excellent linearity
- High output level
- Silicon nitride passivation
- Rugged construction
- TiPtAu metallized crystals ensure optimal reliability.

## DESCRIPTION

Power doubler amplifier module for CATV systems operating over a frequency range of 40 to 450 MHz at a voltage supply of 24 V (DC).

## 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	19.5	20.5	dB
		f = 450 MHz	20.5	22.5	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> = 24 V	–	435	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 power doubler amplifier module

BGD104

**CHARACTERISTICS**Bandwidth 40 to 450 MHz;  $V_B = 24$  V;  $T_{mb} = 35$  °C;  $Z_S = Z_L = 75$   $\Omega$ 

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$G_p$	power gain	$f = 50$ MHz	19.5	20.5	dB
		$f = 450$ MHz	20.5	22.5	dB
SL	slope cable equivalent	$f = 40$ to 450 MHz	0.5	2.5	dB
FL	flatness of frequency response	$f = 40$ to 450 MHz	–	$\pm 0.3$	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	60 channels flat; $V_o = 46$ dBmV; measured at 445.25 MHz	–	–64	dB
$X_{mod}$	cross modulation	60 channels flat; $V_o = 46$ dBmV; measured at 55.25 MHz	–	–66	dB
$d_2$	second order distortion	note 1	–	–73	dB
$V_o$	output voltage	$d_{im} = -60$ dB; note 2	64.5	–	dBmV
F	noise figure	$f = 40$ to 450 MHz	–	7	dB
$I_{tot}$	total current consumption (DC)	note 3	–	435	mA

**Notes**

- $f_p = 55.25$  MHz;  $V_o = 46$  dBmV;  
 $f_q = 343.25$  MHz;  $V_q = 46$  dBmV;  
measured at  $f_p + f_q = 398.5$  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 module normally operates at  $V_B = 24$  V, but is able to withstand supply transients up to 30 V.

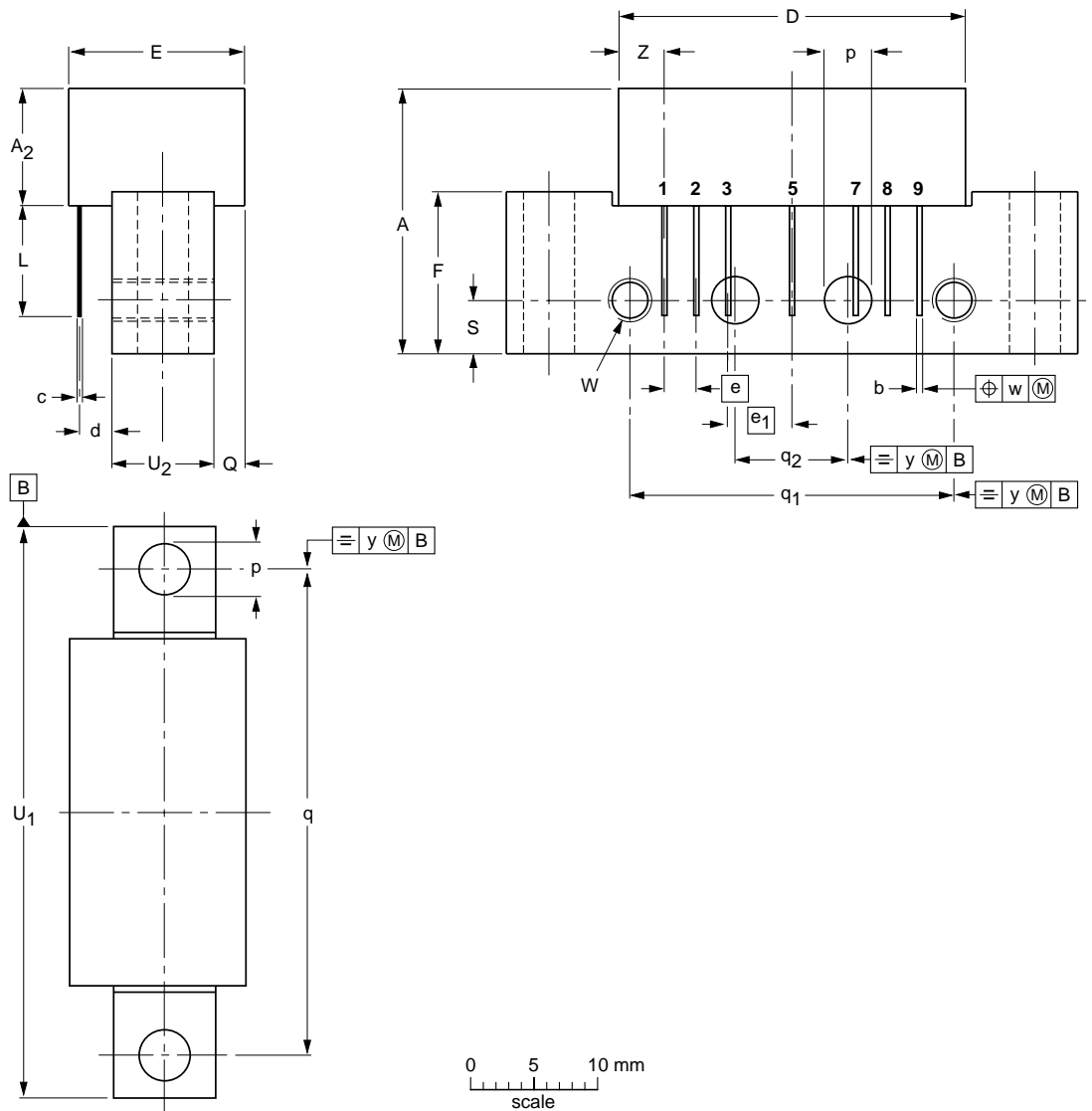
# CATV power doubler amplifier module

# BGD104

## 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 power doubler amplifier module

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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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