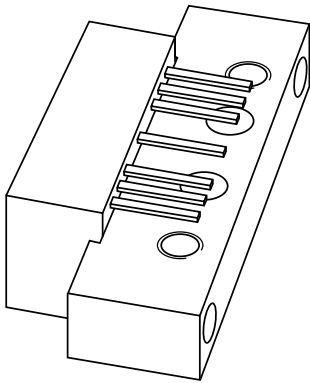


# DATA SHEET



## **BGY588N**

**550 MHz, 34.5 dB gain push-pull  
amplifier**

Product specification  
Supersedes data of 2000 Feb 14

2001 Oct 22



# 550 MHz, 34.5 dB gain push-pull amplifier

# BGY588N

### FEATURES

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

### APPLICATIONS

CATV systems in the 40 to 550 MHz frequency range and intended for use as a line-extender.

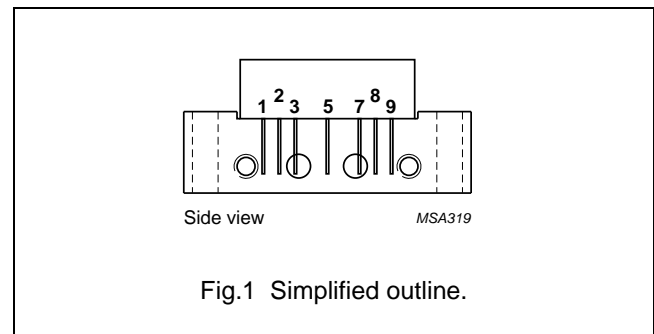
### DESCRIPTION

Hybrid amplifier module in a SOT115J package operating with 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

### PIN CONFIGURATION



### QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G <sub>p</sub>	power gain	f = 50 MHz	34	34.5	35	dB
		f = 550 MHz	35	35.5	36	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> = 24 V	310	325	340	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	-	55	dBmV
T <sub>stg</sub>	storage temperature	-40	+100	°C
T <sub>mb</sub>	operating mounting base temperature	-20	+100	°C

## 550 MHz, 34.5 dB gain push-pull amplifier

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## CHARACTERISTICS

Bandwidth 40 to 550 MHz;  $V_B = 24\text{ V}$ ;  $T_{\text{case}} = 35\text{ °C}$ ;  $Z_S = Z_L = 75\ \Omega$ 

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$G_p$	power gain	$f = 50\text{ MHz}$	34	34.5	35	dB
		$f = 550\text{ MHz}$	35	35.5	36	dB
SL	slope cable equivalent	$f = 40\text{ to }550\text{ MHz}$	0.5	1	1.5	dB
FL	flatness of frequency response	$f = 40\text{ to }550\text{ MHz}$	–	–	$\pm 0.3$	dB
$S_{11}$	input return losses	$f = 40\text{ to }80\text{ MHz}$	20	–	–	dB
		$f = 80\text{ to }160\text{ MHz}$	19	–	–	dB
		$f = 160\text{ to }550\text{ MHz}$	18	–	–	dB
$S_{22}$	output return losses	$f = 40\text{ to }80\text{ MHz}$	20	–	–	dB
		$f = 80\text{ to }160\text{ MHz}$	19	–	–	dB
		$f = 160\text{ to }550\text{ MHz}$	18	–	–	dB
CTB	composite triple beat	77 channels flat; $V_o = 44\text{ dBmV}$ ; measured at 547.25 MHz	–	–	–57	dB
$X_{\text{mod}}$	cross modulation	77 channels flat; $V_o = 44\text{ dBmV}$ ; measured at 55.25 MHz	–	–	–59	dB
CSO	composite second order distortion	77 channels flat; $V_o = 44\text{ dBmV}$ ; measured at 548.5 MHz	–	–	–62	dB
$d_2$	second order distortion	note 1	–	–	–74	dB
$V_o$	output voltage	$d_{\text{im}} = -60\text{ dB}$ ; note 2	61	–	–	dBmV
F	noise figure	$f = 50\text{ MHz}$	–	–	5	dB
		$f = 550\text{ MHz}$	–	–	6	dB
$I_{\text{tot}}$	total current consumption (DC)	value; $V_B = 24\text{ V}$ ; note 3	310	325	340	mA

## Notes

- $f_p = 55.25\text{ MHz}$ ;  $V_p = 44\text{ dBmV}$ ;  
 $f_q = 493.25\text{ MHz}$ ;  $V_q = 44\text{ dBmV}$ ;  
measured at  $f_p + f_q = 548.5\text{ MHz}$ .
- Measured according to DIN45004B;  
 $f_p = 540.25\text{ MHz}$ ;  $V_p = V_o$ ;  
 $f_q = 547.25\text{ MHz}$ ;  $V_q = V_o - 6\text{ dB}$ ;  
 $f_r = 549.25\text{ MHz}$ ;  $V_r = V_o - 6\text{ dB}$ ;  
measured at  $f_p + f_q - f_r = 538.25\text{ MHz}$ .
- The module normally operates at  $V_B = 24\text{ V}$ , but is able to withstand supply transients up to 30 V.

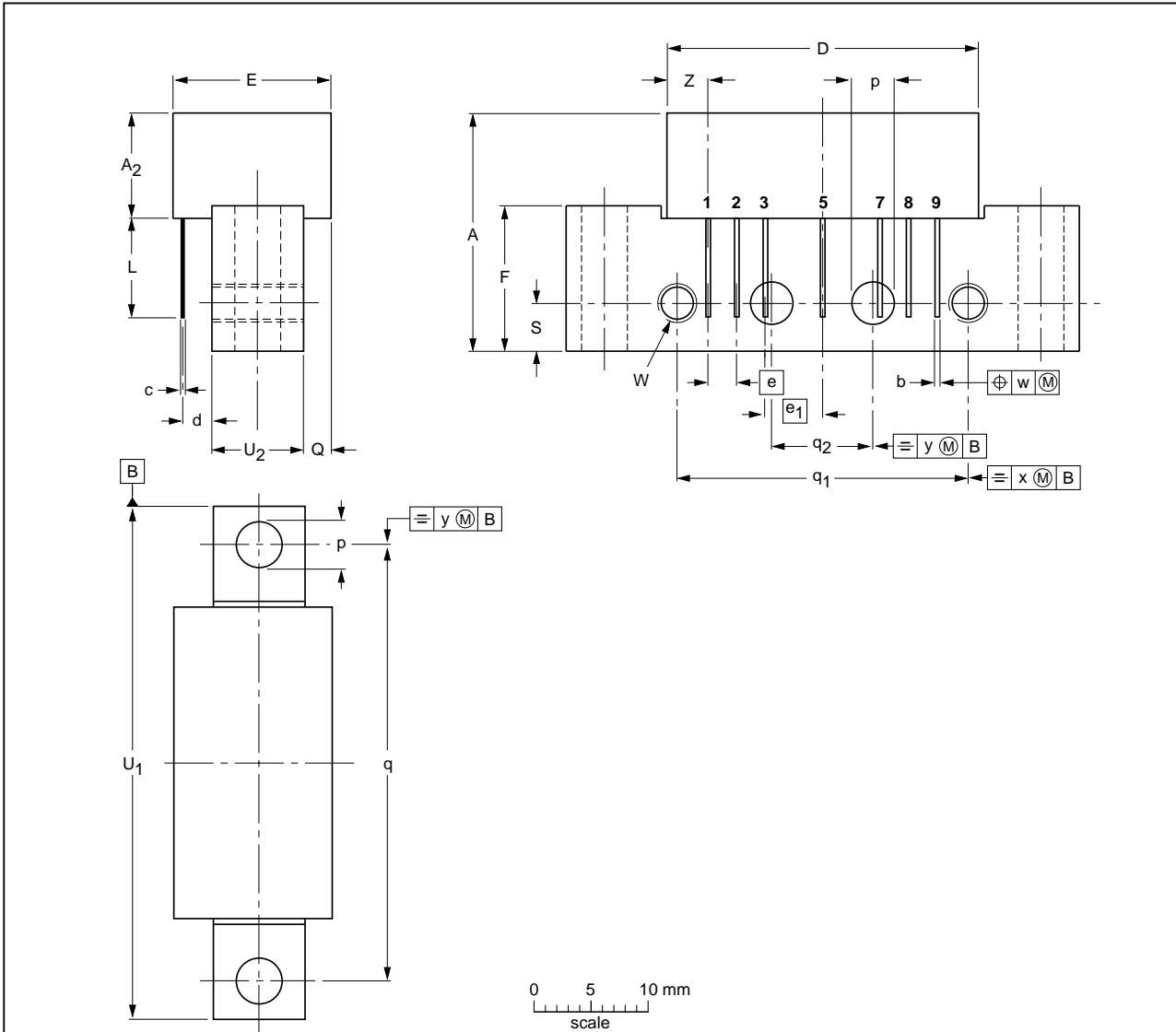
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PACKAGE OUTLINE

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	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>	U <sub>2</sub>	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

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**DATA SHEET STATUS**

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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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## 550 MHz, 34.5 dB gain push-pull amplifier

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## **Contact information**

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