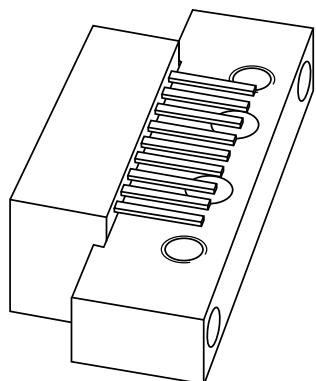


# DATA SHEET



## **BGX885N**

860 MHz, 17 dB gain push-pull  
amplifier

Product specification  
Supersedes data of 1997 Mar 26

2001 Nov 14



## 860 MHz, 17 dB gain push-pull amplifier

BGX885N

## FEATURES

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

## DESCRIPTION

The BGX885N is a hybrid amplifier module designed for CATV/MATV systems operating over a frequency range of 40 to 860 MHz at a voltage supply of 24 V (DC).

## PINNING - SOT115D

PIN	DESCRIPTION
1	input; note 1
2, 3	common
4	60 mA supply terminal
5, 6, 7	common
8	$+V_B$
9	output; note 1

## Note

1. Pins 1 and 9 carry DC voltages.

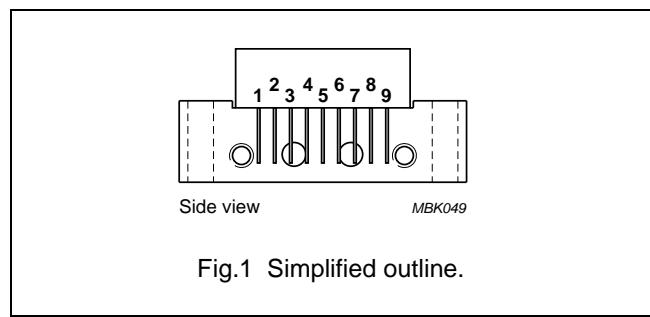


Fig.1 Simplified outline.

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$G_p$	power gain	$f = 50$ MHz	16.5	17.5	dB
		$f = 750$ MHz	17.3	–	dB
$I_{tot}$	total current consumption (DC)	$V_B = 24$ V	–	240	mA

## LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_B$	DC supply voltage	–	26	V
$V_i$	RF input voltage	–	65	dBmV
$T_{stg}$	storage temperature	–40	+100	°C
$T_{mb}$	operating mounting base temperature	–20	+100	°C

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## CHARACTERISTICS

**Table 1** Bandwidth 40 to 860 MHz;  $V_B = 24$  V;  $T_{mb} = 30$  °C;  $Z_S = Z_L = 75$  Ω

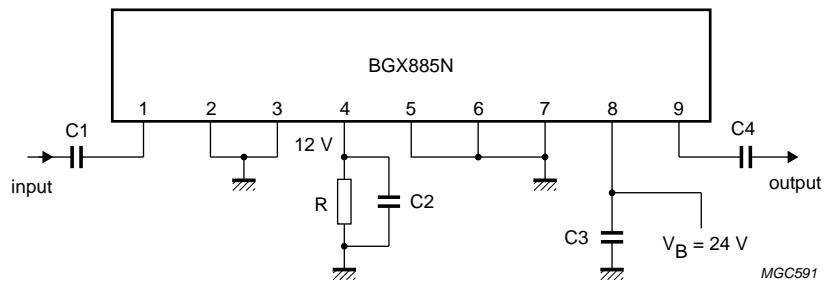
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$G_p$	power gain	$f = 50$ MHz	16.5	17.5	dB
		$f = 750$ MHz	17.3	—	dB
SL	slope cable equivalent	$f = 40$ to 860 MHz	0.2	1.4	dB
FL	flatness of frequency response	$f = 40$ to 860 MHz	—	$\pm 0.3$	dB
$S_{11}$	input return losses	$f = 40$ MHz; note 1	20	—	dB
		$f = 800$ to 860 MHz	10	—	dB
$S_{22}$	output return losses	$f = 40$ MHz; note 1	20	—	dB
		$f = 640$ to 860 MHz	15	—	dB
$d_2$	second order distortion	note 2	—	-53	dB
$V_o$	output voltage	$d_{im} = -60$ dB; note 3	61	—	dBmV
		$d_{im} = -60$ dB; note 4	60	—	dBmV
NF	noise figure	$f = 50$ MHz	—	7.5	dB
		$f = 350$ MHz	—	7.5	dB
		$f = 550$ MHz	—	7.5	dB
		$f = 650$ MHz	—	7.5	dB
		$f = 750$ MHz	—	8	dB
		$f = 860$ MHz	—	8	dB
$I_{tot}$	total current consumption (DC)	note 5	—	240	mA

## Notes

- Decrease per octave of 1.5 dB.
- $f_p = 349.25$  MHz;  $V_p = V_o = 59$  dBmV;  
 $f_q = 403.25$  MHz;  $V_q = V_o$ ;  
measured at  $f_p + f_q = 752.5$  MHz.
- Measured according to DIN45004B:  
 $f_p = 341.25$  MHz;  $V_p = V_o$ ;  
 $f_q = 348.25$  MHz;  $V_q = V_o - 6$  dB;  
 $f_r = 350.25$  MHz;  $V_r = V_o - 6$  dB;  
measured at  $f_p + f_q - f_r = 339.25$  MHz.
- Measured according to 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.
- The module normally operates at  $V_B = 24$  V, but is able to withstand supply transients up to 30 V.

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Pins 1 and 9 carry DC voltages.

Fig.2 Test circuit.

**List of components** (see Fig.2)

COMPONENT	DESCRIPTION	VALUE
C1, C3, C4	ceramic multilayer capacitor	1 nF (max.)
C2	ceramic multilayer capacitor	1 nF
R	resistor	200 Ω, 1 W

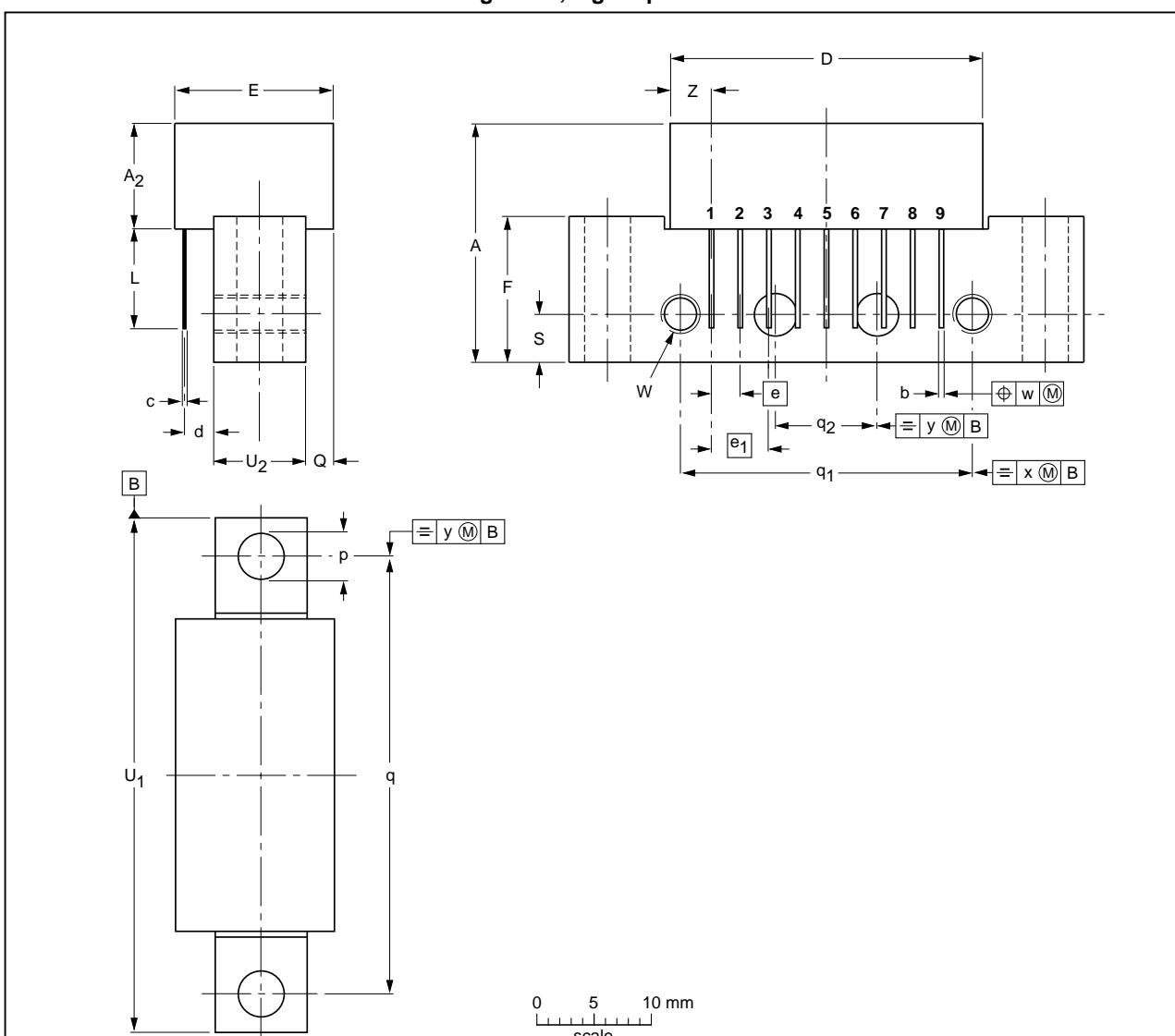
## 860 MHz, 17 dB gain push-pull amplifier

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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; 9 gold-plated in-line leads

SOT115D



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>	U <sub>2</sub>	W	w	x	y	z max.
mm	20.8	9.5	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 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			
SOT115D						-04-02-04- 10-06-18

## 860 MHz, 17 dB gain push-pull amplifier

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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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