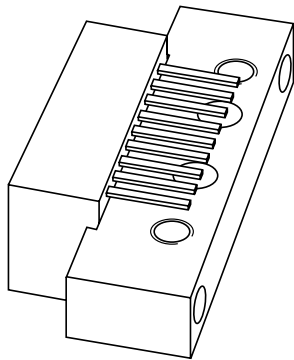


# DATA SHEET



## **BGD885**

**860 MHz, 17 dB gain power  
doubler amplifier**

Product specification  
Supersedes data of 2001 Oct 25

2001 Nov 02

## 860 MHz, 17 dB gain power doubler amplifier

BGD885

## FEATURES

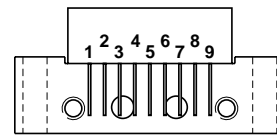
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

## DESCRIPTION

Hybrid amplifier module 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
2, 3, 5, 6, 7	common
4	10 V, 200 mA supply terminal
8	+V <sub>B</sub>
9	output



Side view

MBK049

Fig.1 Simplified outline.

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G <sub>p</sub>	power gain	f = 50 MHz	16.5	17.5	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> = 24 V	–	450	mA

## LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V <sub>B</sub>	DC supply voltage	–	26	V
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 40 to 860 MHz;  $V_B = 24$  V;  $T_{mb} = 35$  °C;  $Z_S = Z_L = 75 \Omega$ 

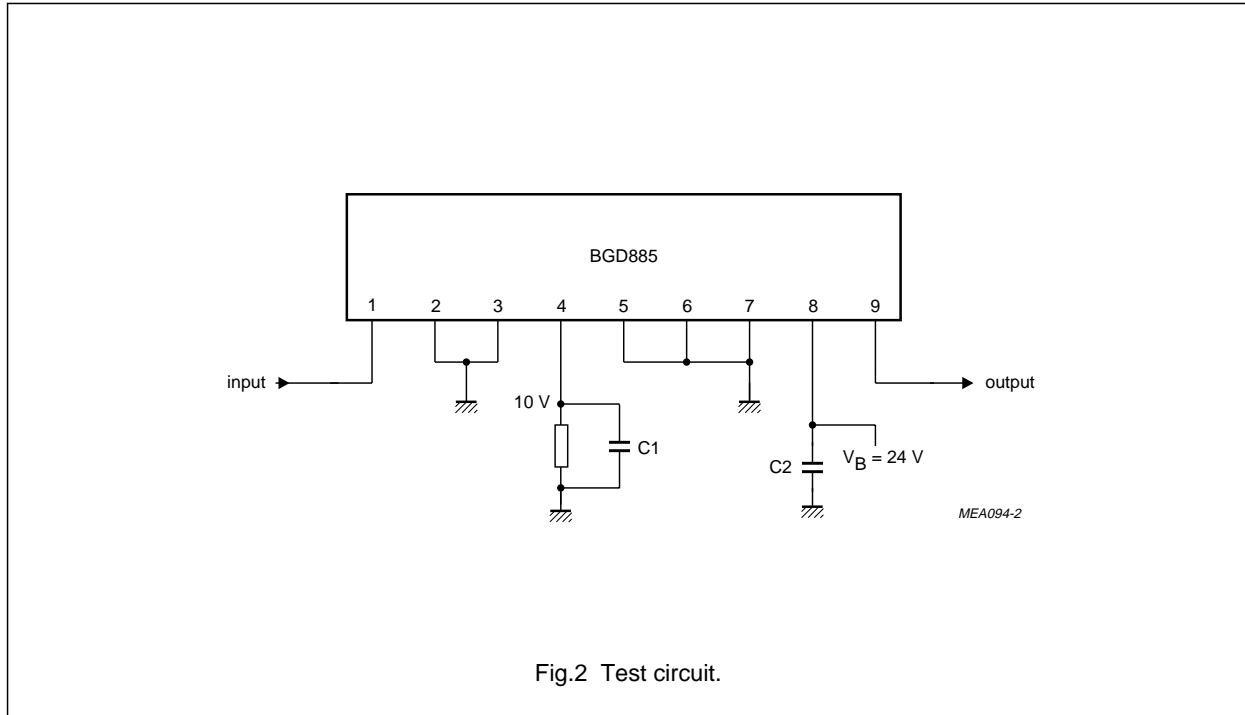
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$G_p$	power gain	$f = 50$ MHz	16.5	17.5	dB
SL	slope cable equivalent	$f = 40$ to 860 MHz	0.2	1.6	dB
FL	flatness of frequency response	$f = 40$ to 860 MHz	–	$\pm 0.5$	dB
$S_{11}$	input return losses	$f = 40$ MHz; note 1	20	–	dB
		$f = 800$ to 860 MHz	10	–	dB
$S_{22}$	output return losses	$f = 40$ MHz; note 1	20	–	dB
		$f = 800$ to 860 MHz	10	–	dB
$d_2$	second order distortion	note 2	–	–53	dB
$V_o$	output voltage	$d_{im} = -60$ dB; note 3	64	–	dBmV
		$d_{im} = -60$ dB; note 4	63	–	dBmV
F	noise figure	$f = 50$ MHz	–	8	dB
		$f = 550$ MHz	–	8	dB
		$f = 650$ MHz	–	8	dB
		$f = 750$ MHz	–	8	dB
		$f = 860$ MHz	–	8	dB
$I_{tot}$	total current consumption (DC)	note 5	–	450	mA

## Notes

- Decrease per octave of 1.5 dB.
- $V_p = 59$  dBmV at  $f_p = 349.25$  MHz;  
 $V_q = 59$  dBmV at  $f_q = 403.25$  MHz;  
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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## List of components (see Fig.2)

COMPONENT	DESCRIPTION	VALUE
C1	ceramic multilayer capacitor	1 nF (max.)
C2	ceramic multilayer capacitor	1 nF
R	resistor	56 $\Omega$ , 2 W

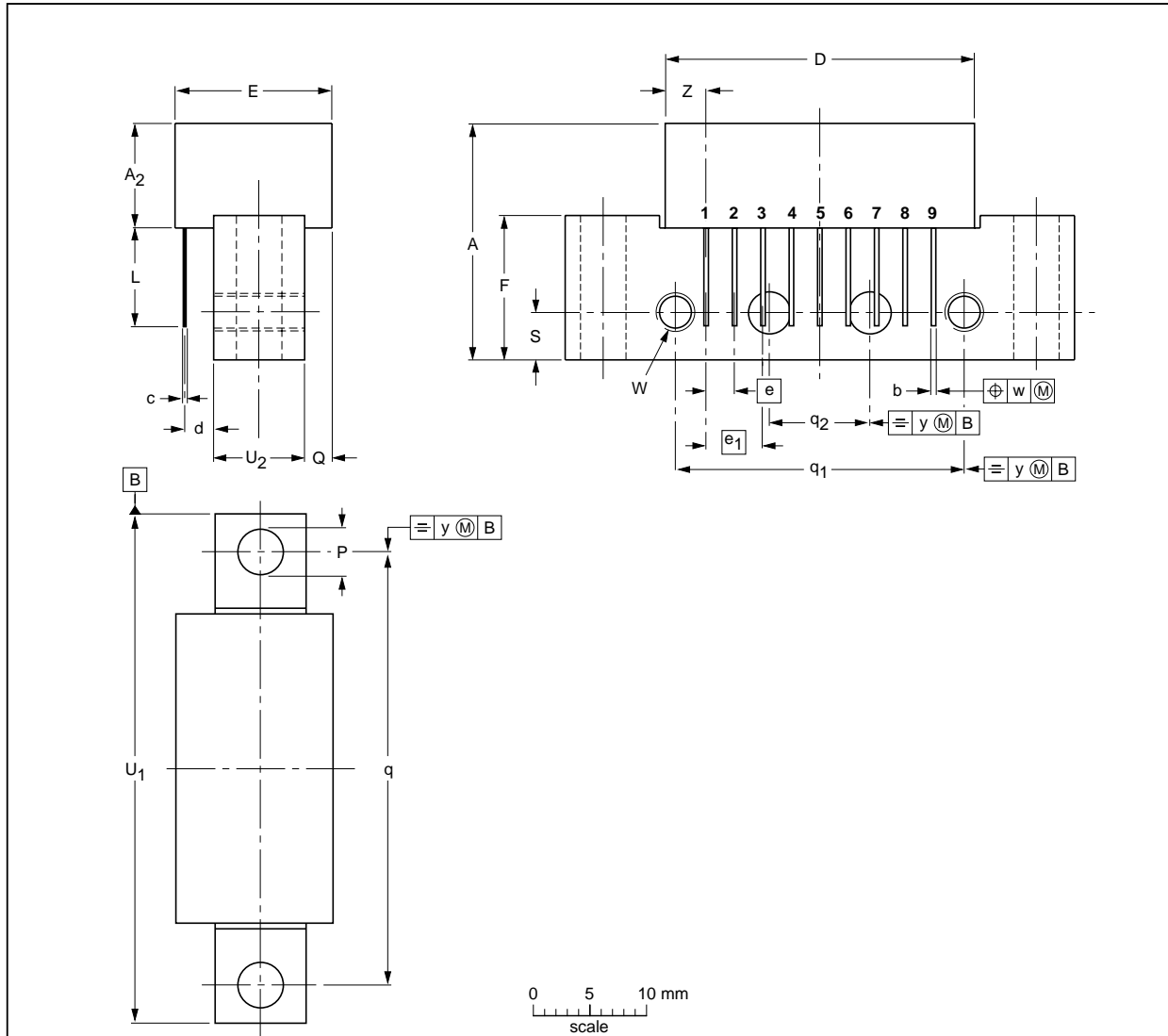
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PACKAGE OUTLINE

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> 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		
SOT115D					97-04-10

## 860 MHz, 17 dB gain power doubler amplifier

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## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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860 MHz, 17 dB gain power doubler amplifier

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