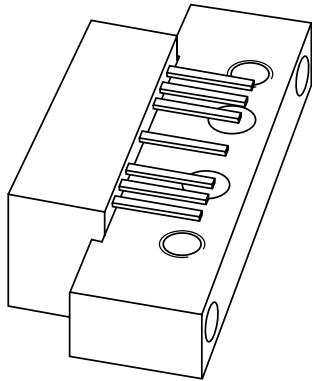


# DATA SHEET



## **BGY883**

**860 MHz, 15 dB gain push-pull  
amplifier**

Product specification  
Supersedes data of 1997 Apr 14

2001 Oct 31

# 860 MHz, 15 dB gain push-pull amplifier

# BGY883

### FEATURES

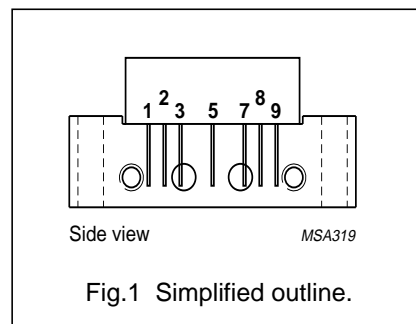
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

### DESCRIPTION

Hybrid amplifier module designed for CATV systems operating over a frequency range of 40 to 860 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	14.5	15.5	dB
		f = 860 MHz	15	–	dB
I <sub>tot</sub>	total current consumption (DC)	V <sub>B</sub> = 24 V	–	235	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	–	65	dBmV
T <sub>stg</sub>	storage temperature	–40	+100	°C
T <sub>mb</sub>	operating mounting base temperature	–20	+100	°C

## 860 MHz, 15 dB gain push-pull amplifier

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$G_p$	power gain	$f = 50$ MHz	14.5	–	15.5	dB
		$f = 860$ MHz	15	–	–	dB
SL	slope cable equivalent	$f = 40$ to 860 MHz	0	–	2	dB
FL	flatness of frequency response	$f = 40$ to 860 MHz	–	–	$\pm 0.3$	dB
$S_{11}$	input return losses	$f = 40$ to 80 MHz	20	–	–	dB
		$f = 80$ to 160 MHz	18.5	–	–	dB
		$f = 160$ to 320 MHz	17	–	–	dB
		$f = 320$ to 640 MHz	15.5	–	–	dB
		$f = 640$ to 860 MHz	14	–	–	dB
$S_{22}$	output return losses	$f = 40$ to 80 MHz	20	–	–	dB
		$f = 80$ to 160 MHz	18.5	–	–	dB
		$f = 160$ to 320 MHz	17	–	–	dB
		$f = 320$ to 640 MHz	15.5	–	–	dB
		$f = 640$ to 860 MHz	14	–	–	dB
$S_{21}$	phase response	$f = 50$ MHz	–45	–	+45	deg
CTB	composite triple beat	49 channels flat; $V_o = 44$ dBmV; measured at 859.25 MHz	–	–	–61	dB
$X_{mod}$	cross modulation	49 channels flat; $V_o = 44$ dBmV; measured at 55.25 MHz	–	–	–61	dB
CSO	composite second order distortion	49 channels flat; $V_o = 44$ dBmV; measured at 860.5 MHz	–	–	–61	dB
$d_2$	second order distortion	note 1	–	–	–68	dB
$V_o$	output voltage	$d_{im} = -60$ dB; note 2	58.5	60	–	dBmV
F	noise figure	$f = 50$ MHz	–	–	6	dB
		$f = 550$ MHz	–	–	7	dB
		$f = 650$ MHz	–	–	7.5	dB
		$f = 750$ MHz	–	–	8	dB
		$f = 860$ MHz	–	–	8.5	dB
$I_{tot}$	total current consumption (DC)	note 3	–	–	235	mA

## Notes

- $f_p = 55.25$  MHz;  $V_p = 44$  dBmV;  
 $f_q = 805.25$  MHz;  $V_q = 44$  dBmV;  
measured at  $f_p + f_q = 860.5$  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.

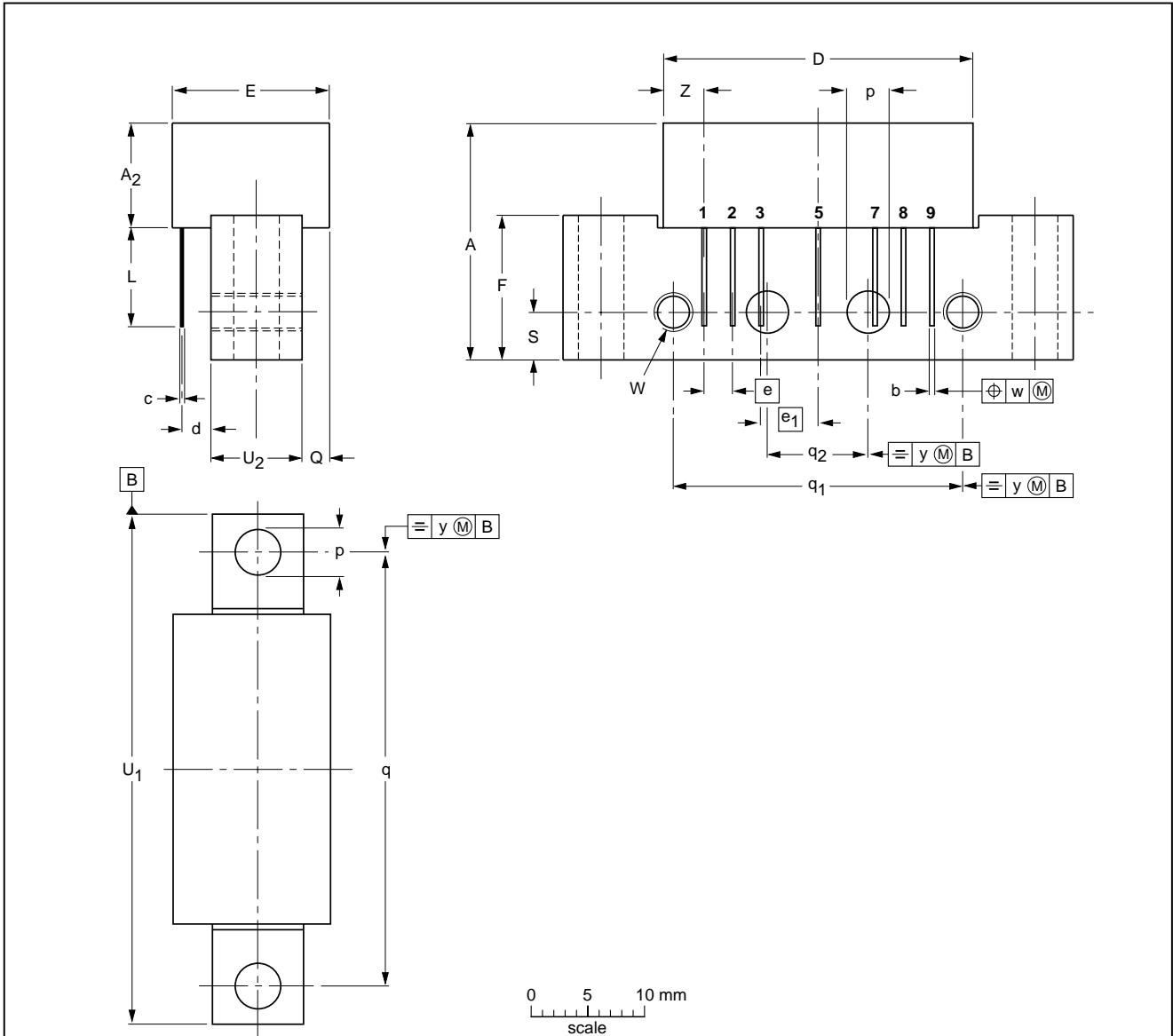
860 MHz, 15 dB gain push-pull amplifier

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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; 7 gold-plated in-line leads

SOT115J



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A2 max.	b	c	D max.	d max.	E max.	e	e1	F	L min.	p	Q max.	q	q1	q2	S	U1 max.	U2	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

## 860 MHz, 15 dB gain push-pull amplifier

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## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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**NOTES**

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**NOTES**

# ***Philips Semiconductors – a worldwide company***

## **Contact information**

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com).

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