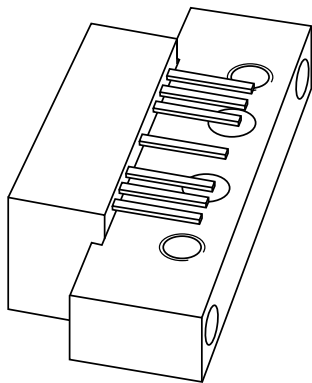


DATA SHEET



BGY1085A

1000 MHz, 18.5 dB gain push-pull
amplifier

Product specification
Supersedes data of 1997 Apr 15

2001 Oct 25



1000 MHz, 18.5 dB gain push-pull amplifier

BGY1085A

FEATURES

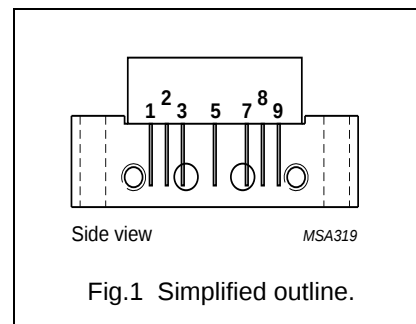
- Excellent linearity
- Extremely low noise
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability.

DESCRIPTION

Hybrid high amplifier module for CATV systems operating over a frequency range of 40 to 1000 MHz at a supply voltage of +24 V (DC).

PINNING - SOT115J

PIN	DESCRIPTION
1	input
2	common
3	common
5	+V _B
7	common
8	common
9	output



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	power gain	f = 50 MHz	18	19	dB
		f = 1000 MHz	18.5	–	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 _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 1000 MHz; $T_{\text{case}} = 30\text{ }^{\circ}\text{C}$; $Z_S = Z_L = 75\text{ }\Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
G_p	power gain	$f = 50\text{ MHz}$	18	–	19	dB
		$f = 1000\text{ MHz}$	18.5	–	–	dB
SL	slope cable equivalent	$f = 40\text{ to }1000\text{ MHz}$	0	–	2	dB
FL	flatness of frequency response	$f = 40\text{ to }1000\text{ MHz}$	–	–	± 0.3	dB
S_{11}	input return losses	$f = 40\text{ to }80\text{ MHz}$	20	–	–	dB
		$f = 80\text{ to }160\text{ MHz}$	18.5	–	–	dB
		$f = 160\text{ to }320\text{ MHz}$	17	–	–	dB
		$f = 320\text{ to }640\text{ MHz}$	15.5	–	–	dB
		$f = 640\text{ to }1000\text{ MHz}$	14	–	–	dB
S_{22}	output return losses	$f = 40\text{ to }80\text{ MHz}$	20	–	–	dB
		$f = 80\text{ to }160\text{ MHz}$	18.5	–	–	dB
		$f = 160\text{ to }320\text{ MHz}$	17	–	–	dB
		$f = 320\text{ to }640\text{ MHz}$	15.5	–	–	dB
		$f = 640\text{ to }1000\text{ MHz}$	14	–	–	dB
CTB	composite triple beat	85 channels flat; $V_o = 44\text{ dBmV}$; measured at 595.25 MHz	–	–	–58	dB
		110 channels flat; $V_o = 44\text{ dBmV}$; measured at 745.25 MHz	–	–	–53	dB
		150 channels flat; $V_o = 40\text{ dBmV}$; measured at 985.25 MHz	–	–53	–	dB
X_{mod}	cross modulation	85 channels flat; $V_o = 44\text{ dBmV}$; measured at 55.25 MHz	–	–	–58	dB
		110 channels flat; $V_o = 44\text{ dBmV}$; measured at 55.25 MHz	–	–	–54	dB
		150 channels flat; $V_o = 40\text{ dBmV}$; measured at 55.25 MHz	–	–54	–	dB
CSO	composite second order distortion	85 channels flat; $V_o = 44\text{ dBmV}$; measured at 596.5 MHz	–	–	–60	dB
		110 channels flat; $V_o = 44\text{ dBmV}$; measured at 746.5 MHz	–	–	–56	dB
		150 channels flat; $V_o = 40\text{ dBmV}$; measured at 986.5 MHz	–	–56	–	dB

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SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
d_2	second order distortion	note 1	—	—	−72	dB
		note 2	—	—	−65	dB
		note 3	—	−68	—	dB
V_o	output voltage	$d_{im} = -60$ dB				
		note 4	61	—	—	dBmV
		note 5	60	—	—	dBmV
		note 6	57	—	—	dBmV
F	noise figure	f = 50 MHz	—	—	5.5	dB
		f = 550 MHz	—	—	6	dB
		f = 600 MHz	—	—	6	dB
		f = 650 MHz	—	—	6.5	dB
		f = 750 MHz	—	—	7	dB
		f = 860 MHz	—	—	7.5	dB
		f = 1000 MHz	—	—	7.5	dB
I_{tot}	total current consumption (DC)	note 7	—	—	240	mA

Notes

- $f_p = 55.25$ MHz; $V_p = 44$ dBmV;
 $f_q = 541.25$ MHz; $V_q = 44$ dBmV;
measured at $f_p + f_q = 596.5$ MHz.
- $f_p = 55.25$ MHz; $V_p = 44$ dBmV;
 $f_q = 691.25$ MHz; $V_q = 44$ dBmV;
measured at $f_p + f_q = 746.5$ MHz.
- $f_p = 55.25$ MHz; $V_p = 40$ dBmV;
 $f_q = 931.25$ MHz; $V_q = 40$ dBmV;
measured at $f_p + f_q = 986.5$ MHz.
- $f_p = 590.25$ MHz; $V_p = V_o$;
 $f_q = 597.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 599.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 588.25$ MHz.
- $f_p = 740.25$ MHz; $V_p = V_o$;
 $f_q = 747.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 749.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 738.25$ MHz.
- $f_p = 980.25$ MHz; $V_p = V_o$;
 $f_q = 987.25$ MHz; $V_q = V_o - 6$ dB;
 $f_r = 989.25$ MHz; $V_r = V_o - 6$ dB;
measured at $f_p + f_q - f_r = 978.25$ MHz.
- The module normally operates at $V_B = 24$ V, but is able to withstand supply transients up to 30 V.

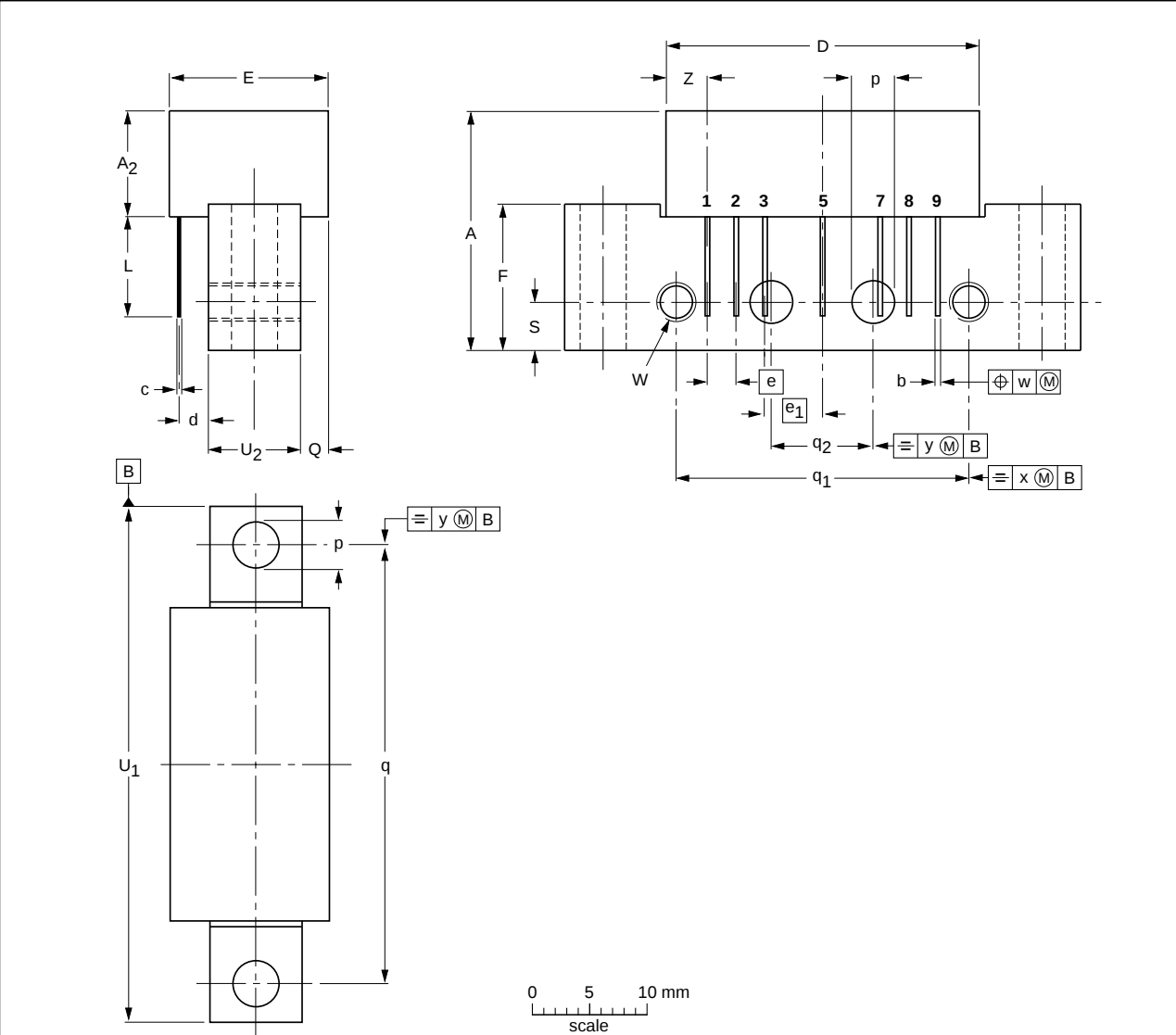
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PACKAGE OUTLINE

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 ₂ max.	b	c	D max.	d	E max.	e	e ₁	F	L min.	p	Q max.	q	q ₁	q ₂	S	U ₁	U ₂	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 ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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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