

BGY588C

550 MHz, 34.5 dB gain push-pull amplifier

Rev. 01 — 11 April 2005 Product data sheet

1. Product profile

1.1 General description

Hybrid amplifier module operating at a supply voltage of 24 V (DC) in a SOT115J package.

CAUTION



This device is sensitive to ElectroStatic Discharge (ESD). Therefore care should be taken during transport and handling.

1.2 Features

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

1.3 Applications

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

1.4 Quick reference data

Table 1: Quick reference data

Bandwidth 40 MHz to 550 MHz; V_B = 24 V; T_{mb} = 35 °C; $Z_S = Z_L$ = 75 Ω; unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
G_p	power gain	f = 50 MHz		33.5	-	35.5	dB
		f = 550 MHz		33.7	-	-	dB
I_{tot}	total current consumption	V_B = 24 V	[1]	305	-	345	mA

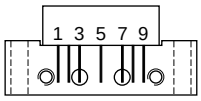
[1] The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

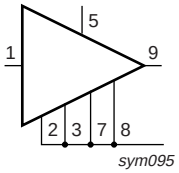
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2. Pinning information

Table 2: Pinning

Pin	Description	Simplified outline	Symbol
1	input		
2	common		
3	common		
5	$+V_B$		
7	common		
8	common		
9	output		





3. Ordering information

Table 3: Ordering information

Type number	Package		
	Name	Description	Version
BGY588C	-	rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 × 6-32 UNC and 2 extra horizontal mounting holes; 7 gold-plated in-line leads	SOT115J

4. Limiting values

Table 4: Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit
V_i	RF input voltage		-	55	dBmV
T_{stg}	storage temperature		–40	+100	°C
T_{mb}	mounting base temperature		–20	+100	°C

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5. Characteristics

Table 5: Characteristics

Bandwidth 40 MHz to 550 MHz; V_B = 24 V; T_{mb} = 35 °C; $Z_S = Z_L$ = 75 Ω; unless otherwise specified.

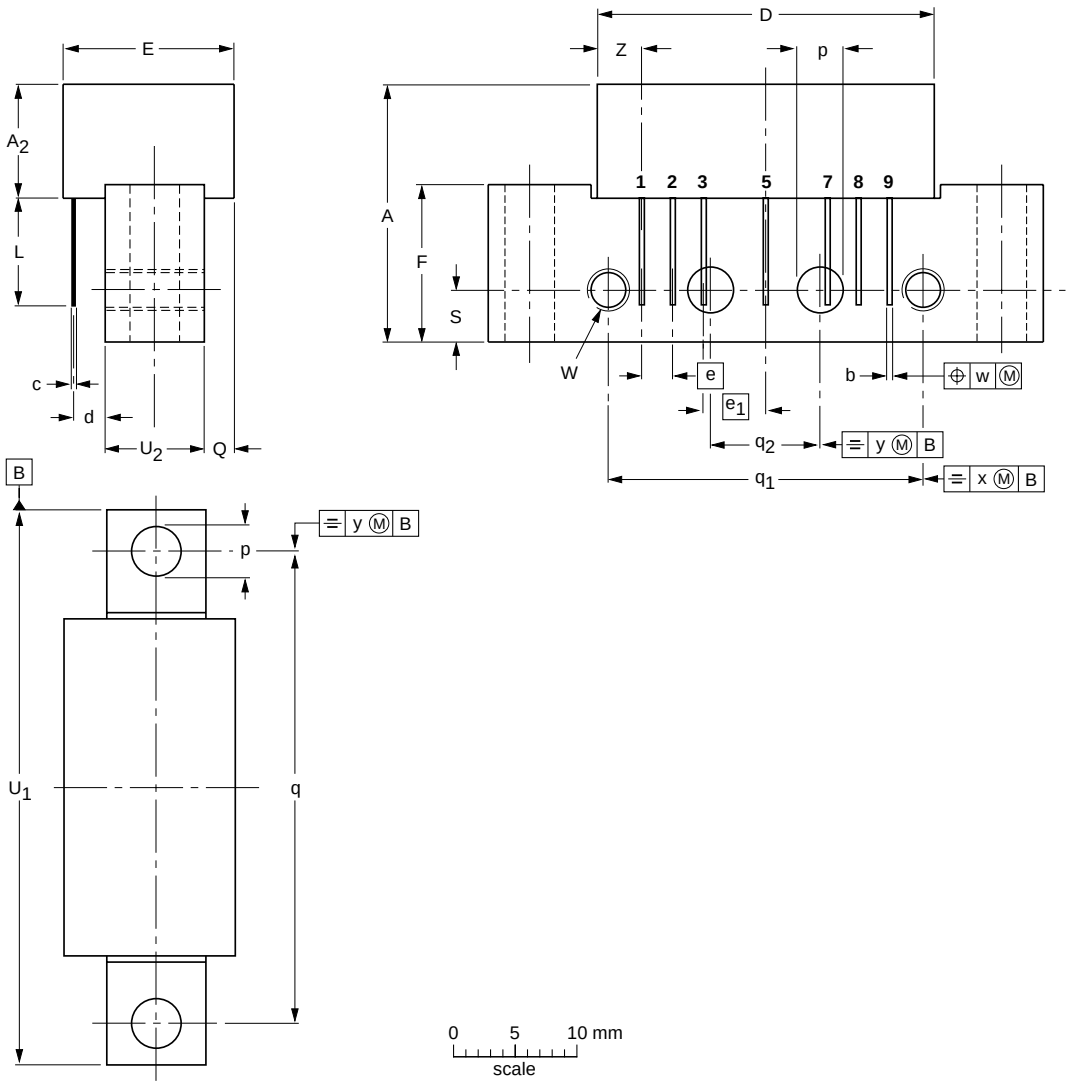
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
G_p	power gain	f = 50 MHz		33.5	-	35.5	dB
		f = 550 MHz		33.7	-	-	dB
SL	slope cable equivalent	f = 40 MHz to 550 MHz		0.2	-	1.7	dB
FL	flatness of frequency response	f = 40 MHz to 550 MHz		-	-	±0.5	dB
$\|s_{11}\|^2$	input return losses	f = 40 MHz to 550 MHz		16	-	-	dB
$\|s_{22}\|^2$	output return losses	f = 40 MHz to 160 MHz		16	-	-	dB
		f = 160 MHz to 550 MHz		15	-	-	dB
CTB	composite triple beat	77 channels flat; V_o = 44 dBmV; measured at 547.25 MHz		-	-	–57	dB
CSO	composite second order distortion	77 channels flat; V_o = 44 dBmV; measured at 548.5 MHz		-	-	–62	dB
NF	noise figure	f = 50 MHz		-	-	8	dB
I_{tot}	total current consumption	V_B = 24 V	[1]	305	-	345	mA

[1] The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

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6. 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 max.	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	9.1	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 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						~~99-02-06~~ 04-02-04

Fig 1. Package outline SOT115J

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7. Revision history

Table 6: Revision history

Document ID	Release date	Data sheet status	Change notice	Doc. number	Supersedes
BGY588C_1	20050411	Product data sheet	-	9397 750 14608	-

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8. Data sheet status

Level	Data sheet status [1]	Product status [2] [3]	Definition
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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[3] For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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