



BGY588C

550 MHz, 34.5 dB gain push-pull amplifier

Rev. 2 — 19 September 2011

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 and benefits

- 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.



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

5. Characteristics

Table 5. Characteristics

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

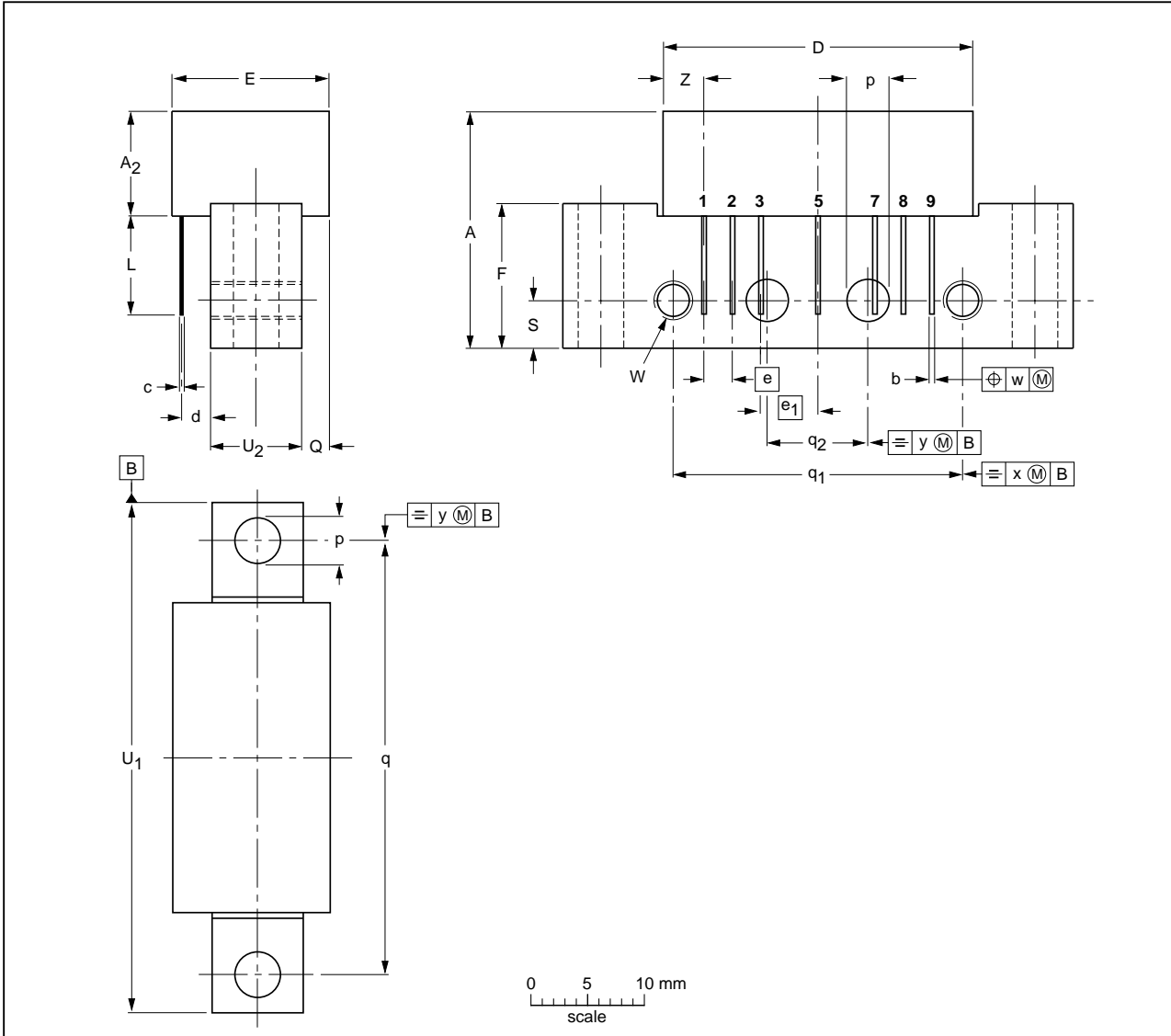
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
G_p	power gain	$f = 50\text{ MHz}$	33.5	-	35.5	dB
		$f = 550\text{ MHz}$	33.7	-	-	dB
SL	slope cable equivalent	$f = 40\text{ MHz to }550\text{ MHz}$	0.2	-	1.7	dB
FL	flatness of frequency response	$f = 40\text{ MHz to }550\text{ MHz}$	-	-	± 0.5	dB
$ S_{11}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

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

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	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

Fig 1. Package outline SOT115J

7. Revision history

Table 6. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BGY588C v.2	20110919	Product data sheet	-	BGY588C v.1
Modifications:		<ul style="list-style-type: none">• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.• Legal texts have been adapted to the new company name where appropriate.• Package outline drawings have been updated to the latest version.		
BGY588C v.1 (9397 750 14608)	20050411	Product data sheet	-	-

8. Legal information

8.1 Data sheet status

Document status ^{[1][2]}	Product status ^[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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