



# 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;  $Z_S = Z_L = 75$   $\Omega$ ; 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 <sub>B</sub>		
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 <sub>i</sub>	RF input voltage		-	55	dBmV
T <sub>stg</sub>	storage temperature		-40	+100	°C
T <sub>mb</sub>	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.

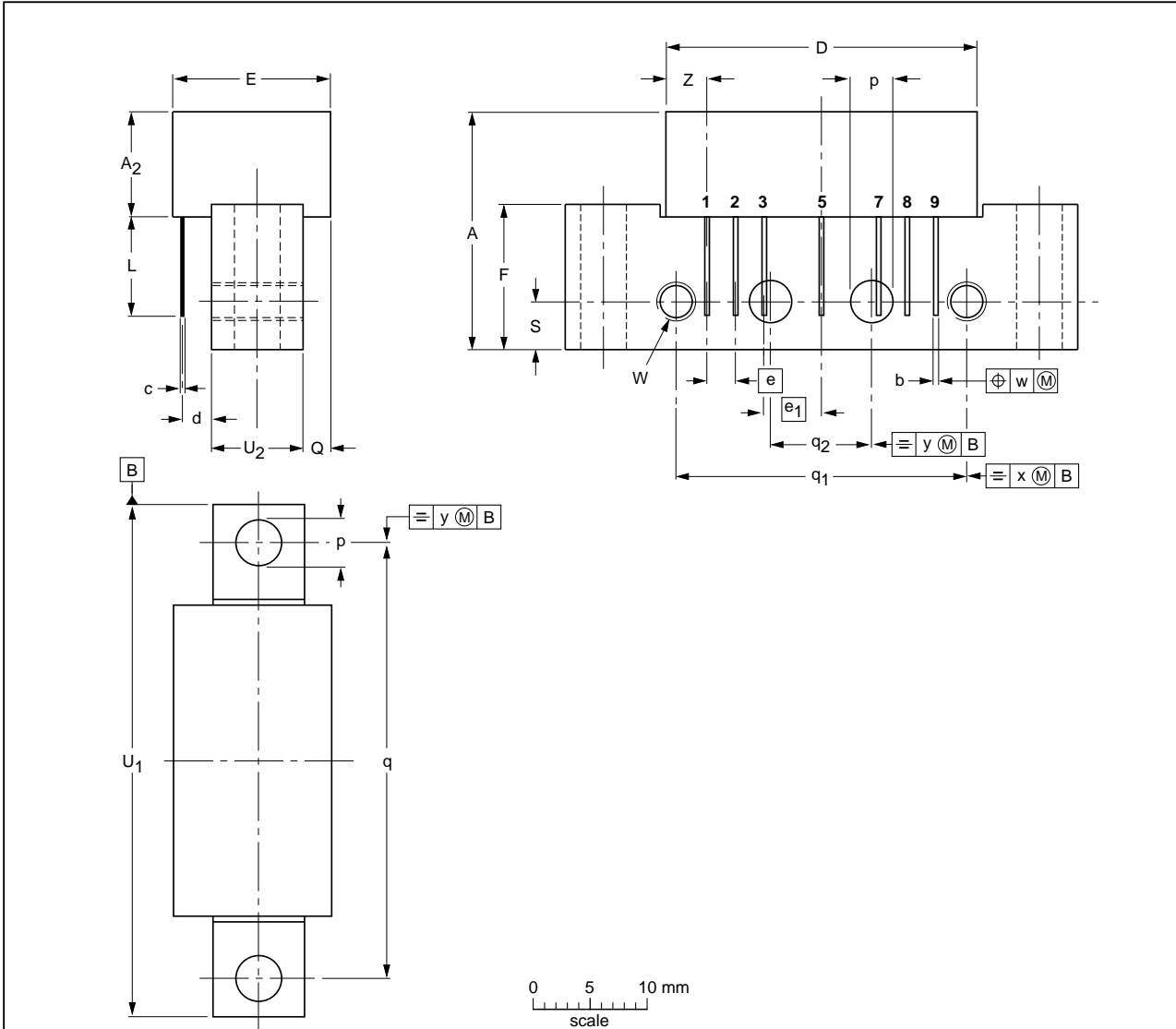
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$G_p$	power gain	$f = 50\text{ MHz}$	33.5	-	35.5	dB
		$f = 550\text{ MHz}$	33.7	-	-	dB
SL	slope cable equivalent	$f = 40\text{ MHz to }550\text{ MHz}$	0.2	-	1.7	dB
FL	flatness of frequency response	$f = 40\text{ MHz to }550\text{ MHz}$	-	-	$\pm 0.5$	dB
$ S_{11} ^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	$V_B = 24\text{ V}$	<a href="#">1</a> 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 <sub>2</sub> max.	b	c	D max.	d	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>	U <sub>2</sub>	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"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.</li><li>• Legal texts have been adapted to the new company name where appropriate.</li><li>• Package outline drawings have been updated to the latest version.</li></ul>		
BGY588C v.1 (9397 750 14608)	20050411	Product data sheet	-	-

## 8. Legal information

### 8.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	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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