



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		Version
	Name	Description	
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; $V_B = 24\text{ V}$; $T_{mb} = 35\text{ }^\circ\text{C}$; $Z_S = Z_L = 75\ \Omega$; 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

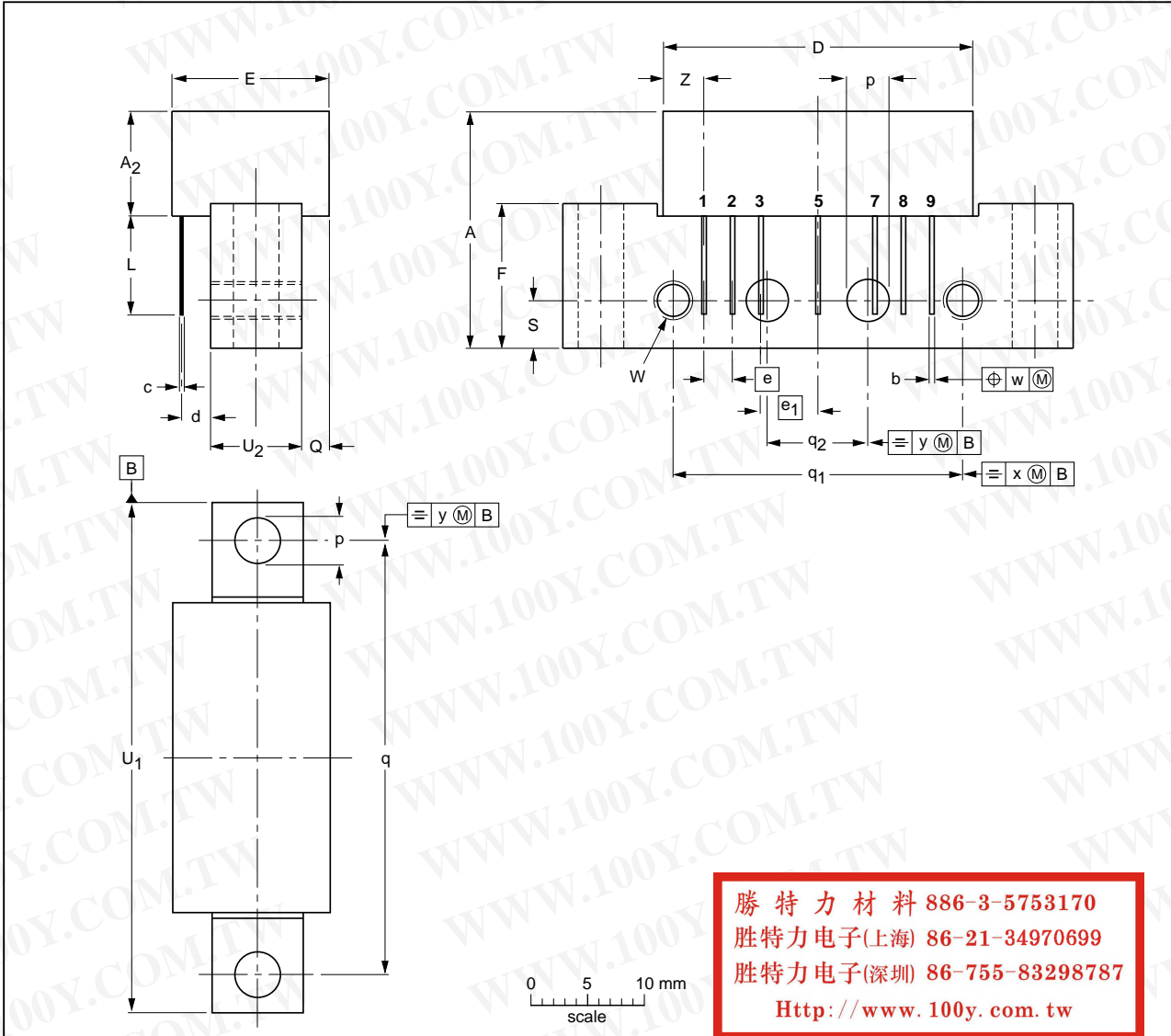
[1] The module normally operates at $V_B = 24\text{ V}$, but is able to withstand supply transients up to 30 V.

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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	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	-	-

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8. Legal information

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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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