

BGY67A

200 MHz, 24 dB gain reverse amplifier

Rev. 5 — 19 September 2011 Product data sheet

1. Product profile

1.1 General description

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

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

- Reverse amplifier in two-way CATV systems in the 5 MHz to 200 MHz frequency range

1.4 Quick reference data

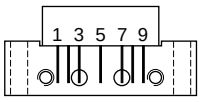
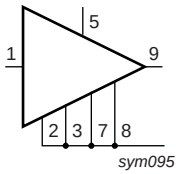
Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
G_p	power gain	f = 10 MHz		23.5	-	24.5	dB
I_{tot}	total current consumption (DC)		[1]	-	215	230	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
BGY67A	-	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		-	65	dBmV
T_{stg}	storage temperature		−40	+100	°C
T_{mb}	mounting base temperature		−20	+90	°C

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5. Characteristics

Table 5. Characteristics

Bandwidth 5 MHz to 200 MHz; V_B = 24 V; T_{mb} = 30 °C; Z_S = Z_L = 75 Ω; unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
G_p	power gain	f = 10 MHz		23.5	-	24.5	dB
SL	slope cable equivalent	f = 5 MHz to 200 MHz		–0.2	-	+0.5	dB
FL	flatness of frequency response	f = 5 MHz to 200 MHz		-	-	±0.2	dB
s_{11}	input return losses	f = 5 MHz to 200 MHz		20	-	-	dB
s_{22}	output return losses	f = 5 MHz to 200 MHz		20	-	-	dB
CTB	composite triple beat	22 channels flat; V_o = 50 dBmV; measured at 175.25 MHz		-	-	–67	dB
X_{mod}	cross modulation	22 channels flat; V_o = 50 dBmV; measured at 55.25 MHz		-	-	–59	dB
d_2	second order distortion	V_o = 50 dBmV	[1]	-	-	–67	dB
V_o	output voltage	d_{im} = –60 dB	[2]	67	-	-	dBmV
			[3]	64	-	-	dBmV
F	noise figure	f = 200 MHz		-	-	5.5	dB
I_{tot}	total current consumption (DC)		[4]	-	215	230	mA

[1] f_p = 83.25 MHz; V_p = 50 dBmV; f_q = 109.25 MHz; V_q = 50 dBmV; measured at $f_p + f_q$ = 192.5 MHz.

[2] Measured according to DIN45004B;
f_p = 35.25 MHz; $V_o = V_p$; f_q = 42.25 MHz; $V_q = V_o$ – 6 dB; f_r = 44.25 MHz; $V_r = V_o$ – 6 dB; measured at $f_p + f_q - f_r$ = 33.25 MHz.

[3] Measured according to DIN45004B;
f_p = 187.25 MHz; $V_o = V_p$; f_q = 194.25 MHz; $V_q = V_o$ – 6 dB; f_r = 196.25 MHz; $V_r = V_o$ – 6 dB; measured at $f_p + f_q - f_r$ = 185.25 MHz.

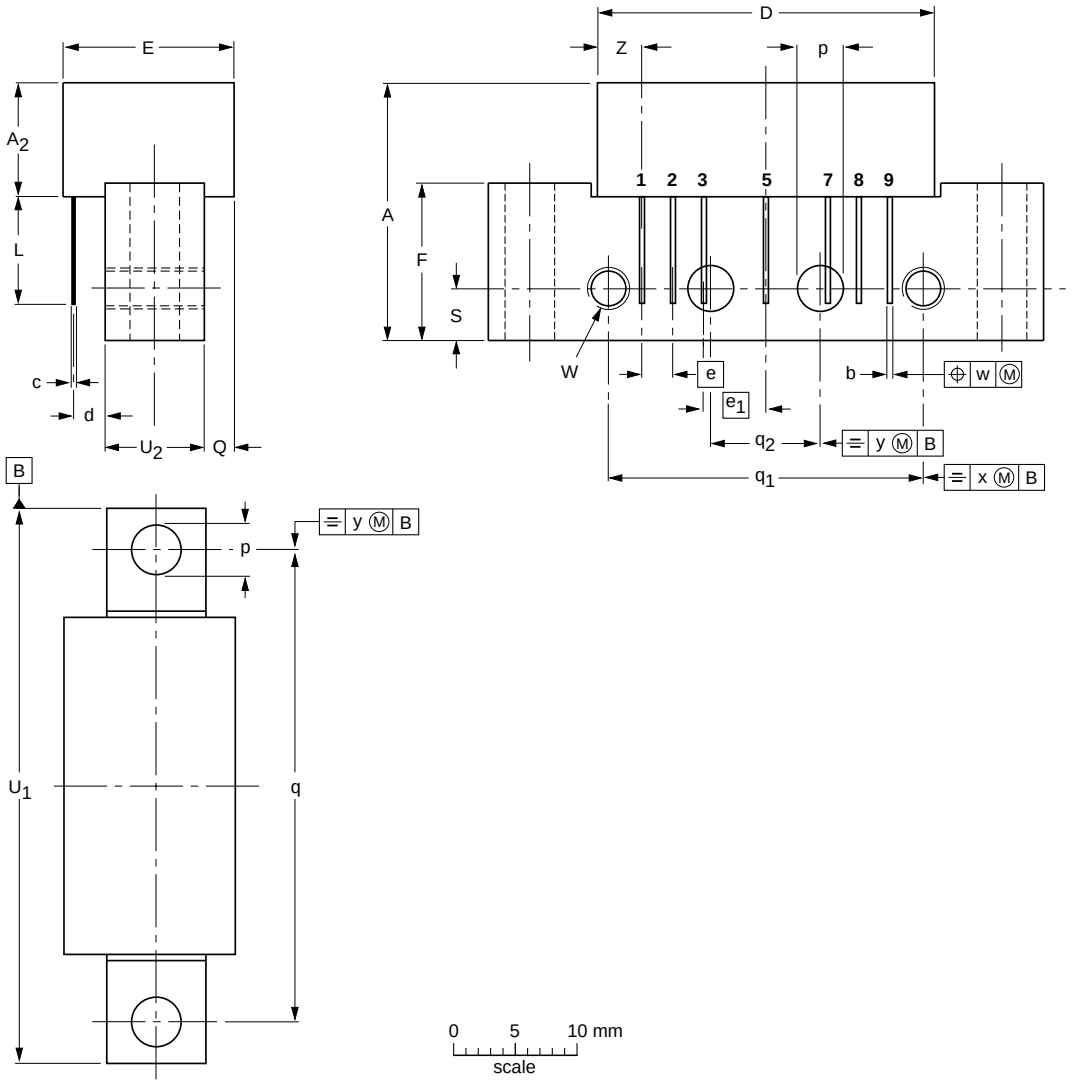
[4] The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

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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	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

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7. Revision history

Table 6. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BGY67A v.5	20110919	Product data sheet	-	BGY67A v.4
Modifications:	• 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.			
BGY67A v.4 (9397 750 14755)	20050314	Product data sheet	-	BGY67A v.3
BGY67A v.3 (9397 750 08801)	20011018	Product specification	-	BGY67A v.2
BGY67 v.2 (9397 750 02104)	19970409	Product specification	-	BGY67A v.1

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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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