

# **BGY67A**

# 200 MHz, 24 dB gain reverse amplifier Rev. 04 — 14 March 2005

**Product data sheet** 



#### 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

- 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	•	Тур	Max	Unit
Gp	power gain	f = 10 MHz	23.5	; -	-	24.5	dB
I <sub>tot</sub>	total current consumption (DC)		[1] _	2	215	230	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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## 2. Pinning information

Table 2: Pinning

Pin	Description	Simplified outline	Symbol
1	input		
2	common	1 3 5 7 9	5
3	common		$\frac{1}{2}$
5	+V <sub>B</sub>		2 3 7 8
7	common		sym095
8	common		
9	output		

## 3. Ordering information

**Table 3: Ordering information** 

Туре	Packag	e	
number	Name	Description	Version
BGY67A	-	rectangular single-ended package; aluminium flange; 2 vertical mounting holes; $2 \times 6$ -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
Vi	RF input voltage		-	65	dBmV
T <sub>stg</sub>	storage temperature		-40	+100	°C
T <sub>mb</sub>	mounting base temperatur	e	-20	+90	°C

**Characteristics** 



#### Table 5: Characteristics

Bandwidth 5 MHz to 200 MHz;  $V_B = 24 \text{ V}$ ;  $T_{mb} = 30 \,^{\circ}\text{C}$ ;  $Z_S = Z_L = 75 \,\Omega$ ; unless otherwise specified.

Symbol	Parameter	Conditions	ı	Min	Тур	Max	Unit
Gp	power gain	f = 10 MHz	2	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 <sub>11</sub>	input return losses	f = 5 MHz to 200 MHz	2	20	-	-	dB
s <sub>22</sub>	output return losses	f = 5 MHz to 200 MHz	2	20	-	-	dB
СТВ	composite triple beat	22 channels flat; $V_0 = 50 \text{ dBmV}$ ; measured at 175.25 MHz	-	-	-	-67	dB
X <sub>mod</sub>	cross modulation	22 channels flat; $V_0 = 50 \text{ dBmV}$ ; measured at 55.25 MHz	-	-	-	-59	dB
$d_2$	second order distortion	$V_0 = 50 \text{ dBmV}$	<u>[1]</u> .	-	-	-67	dB
Vo	output voltage	$d_{im} = -60 \text{ dB}$	[2]	67	-	-	dBmV
			[3]	64	-	-	dBmV
F	noise figure	f = 200 MHz		-	-	5.5	dB
I <sub>tot</sub>	total current consumption (DC)		<u>[4]</u> .	-	215	230	mA

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

<sup>[2]</sup> Measured according to DIN45004B;  $f_p = 35.25 \text{ MHz}; \ V_o = V_p; \ f_q = 42.25 \text{ MHz}; \ V_q = V_o - 6 \text{ dB}; \ f_r = 44.25 \text{ MHz}; \ V_r = V_o - 6 \text{ dB}; \ \text{measured at } f_p + f_q - f_r = 33.25 \text{ MHz}.$ 

<sup>[3]</sup> Measured according to DIN45004B;  $f_p = 187.25 \text{ MHz}; \ V_o = V_p; \ f_q = 194.25 \text{ MHz}; \ V_q = V_o - 6 \text{ dB}; \ f_r = 196.25 \text{ MHz}; \ V_r = V_o - 6 \text{ dB}; \ measured at \ f_p + f_q - f_r = 185.25 \text{ MHz}.$ 

<sup>[4]</sup> The module normally operates at  $V_B = 24 \text{ V}$ , but is able to withstand supply transients up to 30 V.

### **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

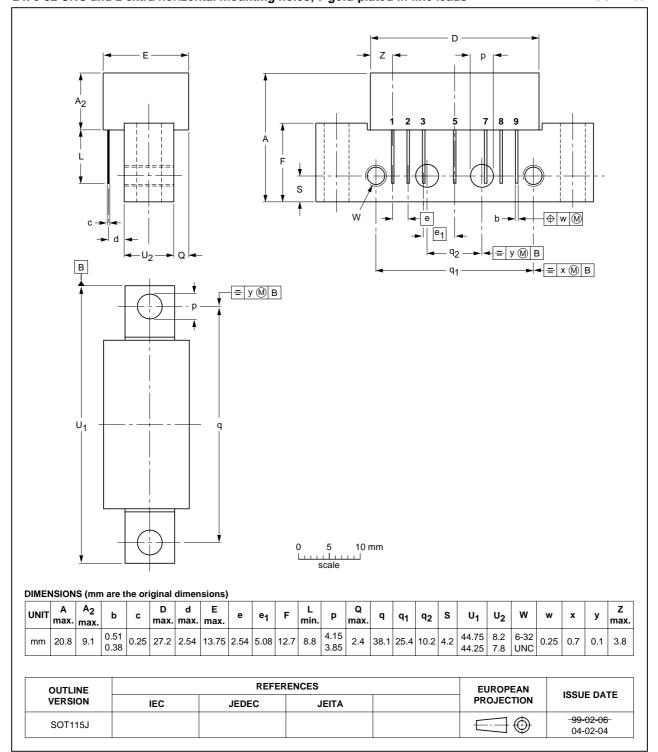


Fig 1. Package outline SOT115J

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# 7. Revision history

#### Table 6: Revision history

Document ID	Release date	Data sheet status	Change notice	Doc. number	Supersedes
BGY67A_4	20050314	Product data sheet	-	9397 750 14755	BGY67A_3
Modifications:		t of this data sheet has be n standard of Philips Sem		comply with the nev	v presentation and
BGY67A_3	20011018	Product specification	-	9397 750 08801	BGY67A_2
BGY67A_2	19970409	Product specification	-	9397 750 02104	BGY67A_1



#### 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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