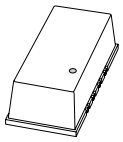

BGS67A

65 MHz, 25.5 dB gain reverse amplifier

Rev. 05 — 11 March 2005 Product data sheet

1. Product profile

1.1 General description

Hybrid high dynamic range amplifier module in a leadless SOT567A package, operating at a supply voltage of 12 V.

CAUTION

This device is sensitive to ElectroStatic Discharge (ESD). Therefore care should be taken during transport and handling.

1.2 Features

- Extremely low noise
- Excellent linearity
- Silicon nitride passivation
- Rugged construction
- Gold metallization ensures excellent reliability

1.3 Applications

- Reverse amplifier in two-way CATV systems in the 5 MHz to 65 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		25	-	26	dB
I_{tot}	total current consumption (DC)	V_B = 12 V	[1]	75	-	95	mA

[1] The module normally operates at V_B = 12 V, but is able to withstand supply transients of up to 30 V.

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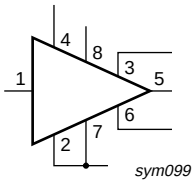
2. Pinning information

Table 2: Pinning

Pin	Description	Simplified outline	Symbol
1	input		
2	common		
3	provision		
4	$+V_B$		
5	output		
6	provision		
7	common		
8	$+V_B$		

3. Ordering information

Table 3: Ordering information

Type number	Package		
	Name	Description	Version
BGS67A	-	leadless surface mounted package; plastic cap; 8 terminations	SOT567A

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 5 MHz to 65 MHz; V_B = 12 V; T_{mb} = 30 °C; Z_S = Z_L = 75 Ω; unless otherwise specified.

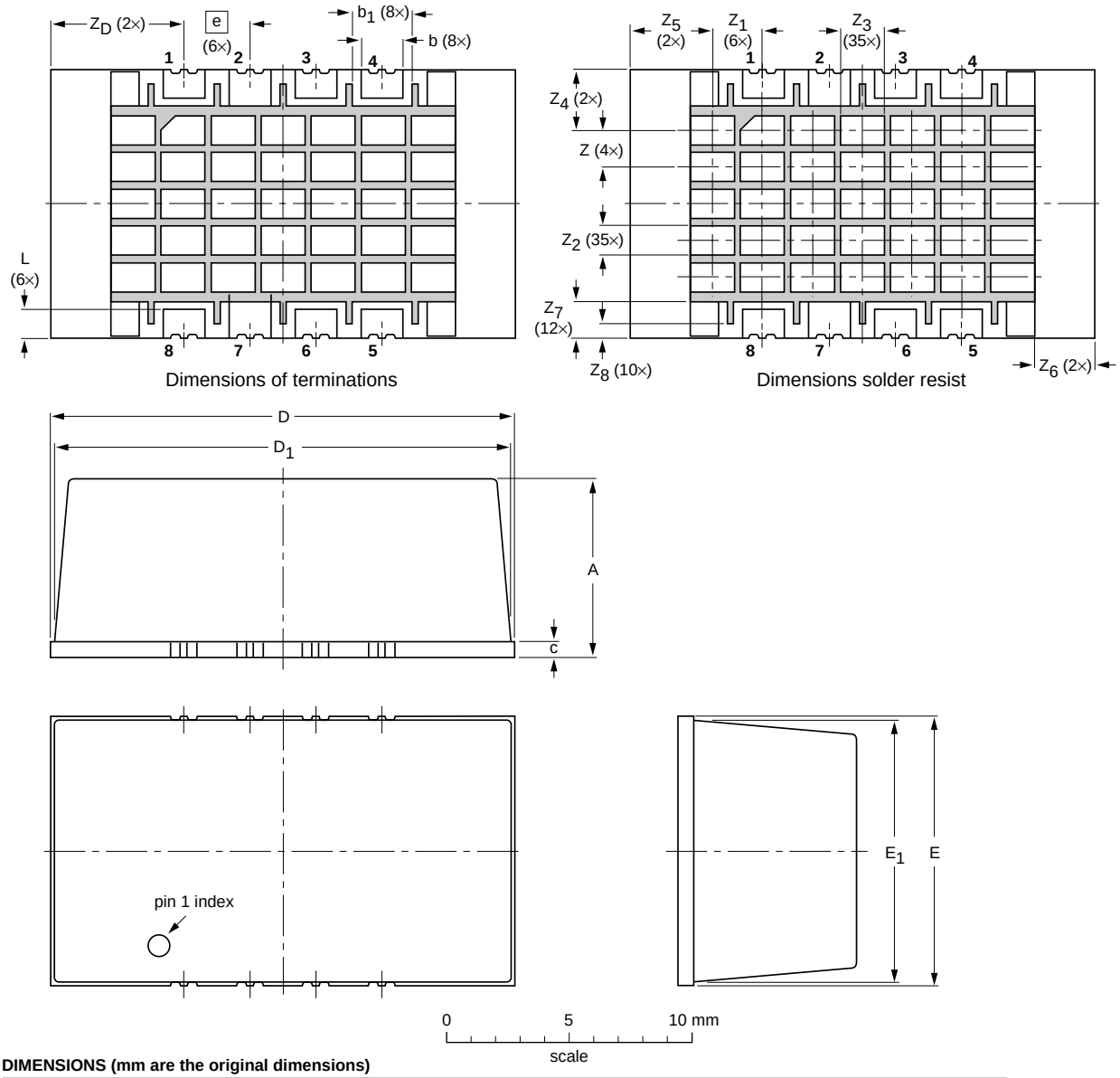
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
G_p	power gain	f = 10 MHz		25	-	26	dB
SL	slope cable equivalent	f = 5 MHz to 65 MHz		–0.1	-	+0.6	dB
FL	flatness of frequency response	f = 5 MHz to 65 MHz		-	-	±0.2	dB
s_{11}	input return losses	f = 5 MHz to 65 MHz		20	-	-	dB
s_{22}	output return losses	f = 5 MHz to 65 MHz		20	-	-	dB
CTB	composite triple beat	4 channels flat; V_o = 50 dBmV; measured at 25 MHz		-	-	–64	dB
X_{mod}	cross modulation	4 channels flat; V_o = 50 dBmV; measured at 25 MHz		-	-	–54	dB
d_2	second order distortion		[1]	-	-	–70	dB
NF	noise figure	f = 65 MHz		-	-	3.5	dB
I_{tot}	total current consumption		[2]	75	-	95	mA

[1] f_p = 19 MHz; V_p = 50 dBmV; f_q = 31 MHz; V_q = 50 dBmV; measured at $f_p + f_q$ = 50 MHz.

[2] The module normally operates at V_B = 12 V, but is able to withstand supply transients up to 30 V.

6. Package outline

Leadless surface mounted package; plastic cap; 8 terminations **SOT567A**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b_1	c	D	D_1	E	E_1	e	L	Z	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_D
mm	7.6 7.1	1.8 1.6	2.55 2.35	0.71 0.57	19.3 18.7	18.85 18.55	11.3 10.7	10.85 10.55	2.7	1.3 1.1	1.6 1.4	2.15 1.95	1.3 1.1	1.9 1.7	2.6 2.4	3.45 3.25	2.55 2.35	1.6 1.4	0.7 0.5	5.55 5.35

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT567A						~~02-02-28~~ 02-06-06

Fig 1. Package outline SOT567A

7. Revision history

Table 6: Revision history

Document ID	Release date	Data sheet status	Change notice	Doc. number	Supersedes
BGS67A_5	20050311	Product data sheet	-	9397 750 14736	BGS67A_4
Modifications:	• The format of this data sheet has been redesigned to comply with the new presentation and information standard of Philips Semiconductors.				
BGS67A_4	20020906	Product specification	-	9397 750 10107	BGS67A_N_3
BGS67A_N_3	20020606	Preliminary specification	-	9397 750 10083	BGS67A_N_2
BGS67A_N_2	20011016	Preliminary specification	-	9397 750 08961	BGS67A_N_1
BGS67A_N_1	20010417	Preliminary specification	-	9397 750 08265	-

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.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

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

[2] The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.

[3] For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

9. Definitions

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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12. Contents

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