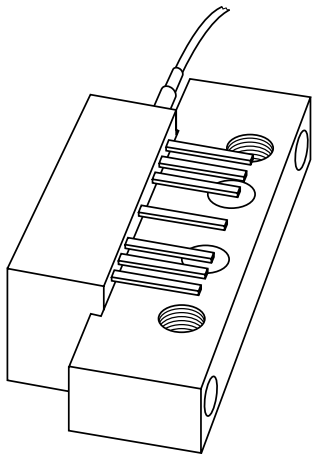
DATA SHEET



BGY67BO/4M
Optical receiver module

Product specification
Supersedes data of 1998 Apr 17

2001 Sep 27

Philips
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Optical receiver module BGY67BO/4M

FEATURES

- Excellent linearity
- Extremely low noise
- Excellent flatness
- Standard CATV outline
- Rugged construction
- Gold metallization ensures excellent reliability.

APPLICATIONS

- Reverse receiver amplifier in two-way CATV systems in the 5 to 400 MHz frequency range.

DESCRIPTION

Hybrid high dynamic range optical amplifier module in a SOT115U package operating at a voltage supply of 24 V (DC). The module contains a monomode optical input suitable for wavelengths from 1290 to 1600 nm, a terminal to monitor the pin diode current and an electrical output with an impedance of 75 Ω.

PINNING - SOT115U

PIN	DESCRIPTION
1	monitor current
2,3,7,8	common
5	$+V_B$
9	output

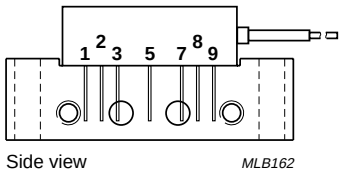


Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
f	frequency range		5	400	MHz
S_{22}	output return losses	f = 5 to 400 MHz	14	–	dB
	optical input return losses		40	–	dB
d_2	second order distortion		–	–70	dBc
F	equivalent noise input	f = 5 to 400 MHz	–	7	pA/√Hz
I_{tot}	total current consumption (DC)	V_B = 24 V	150	180	mA

HANDLING

Fibreglass optical coupling: maximum tensile strength = 5 N; minimum bending radius = 35 mm.

CAUTION
This product is supplied in anti-static packing to prevent damage caused by electrostatic discharge during transport and handling. For further information, refer to Philips specs.: SNW-EQ-608, SNW-FQ-302A, and SNW-FQ-302B.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
f	frequency range		5	400	MHz
T_{stg}	storage temperature		–40	+85	°C
T_{mb}	operating mounting base temperature		–20	+85	°C
P_{in}	optical input power	continuous	–	5	mW
ESD	ESD sensitivity	human body model; R = 1.5 kΩ; C = 100 pF	500	–	V

CHARACTERISTICS

Table 1 Bandwidth 5 to 400 MHz; V_B = 24 V; T_{mb} = 30 °C; Z_L = 75 Ω

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
S	responsivity	λ = 1300 nm	800	–	V/W
FL	flatness of frequency response		–	±0.3	dB
S_{22}	output return losses	f = 5 to 400 MHz	14	–	dB
	optical input return losses		40	–	dB
d_2	second order distortion	note 1	–	–70	dB
		note 2	–	–70	dB
d_3	third order distortion	note 3	–	–80	dB
F	equivalent noise input	f = 5 to 400 MHz	–	7	pA/√Hz
s_λ	spectral sensitivity	λ = 1310 ±20 nm	0.85	–	A/W
		λ = 1550 ±20 nm	0.9	–	A/W
λ	optical wavelength		1290	1600	nm
L	length of optical fibre	fibre; SM type; 9/125 μm	1	–	m
I_{tot}	total current consumption (DC)	note 4	150	180	mA

Notes

1. Two laser test; each laser with 40% modulation index; f_p = 30.25 MHz; P_p = 0.5 mW; f_q = 70 MHz; P_q = 0.5 mW; measured at $f_p + f_q$ = 100.25 MHz.
2. Two laser test; each laser with 40% modulation index; f_p = 200.25 MHz; P_p = 0.5 mW; f_q = 100 MHz; P_q = 0.5 mW; measured at $f_p + f_q$ = 300.25 MHz.
3. Three laser test; each laser with 40% modulation index; f_p = 325.25 MHz; P_p = 0.33 mW; f_q = 210.25 MHz; P_q = 0.33 mW; f_r = 135.25 MHz; P_r = 0.33 mW; measured at $f_p + f_q - f_r$ = 400.25 MHz.
4. The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

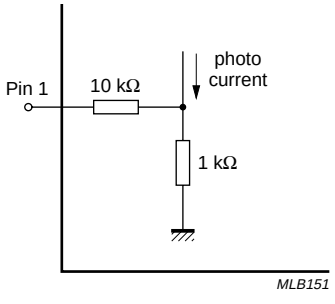
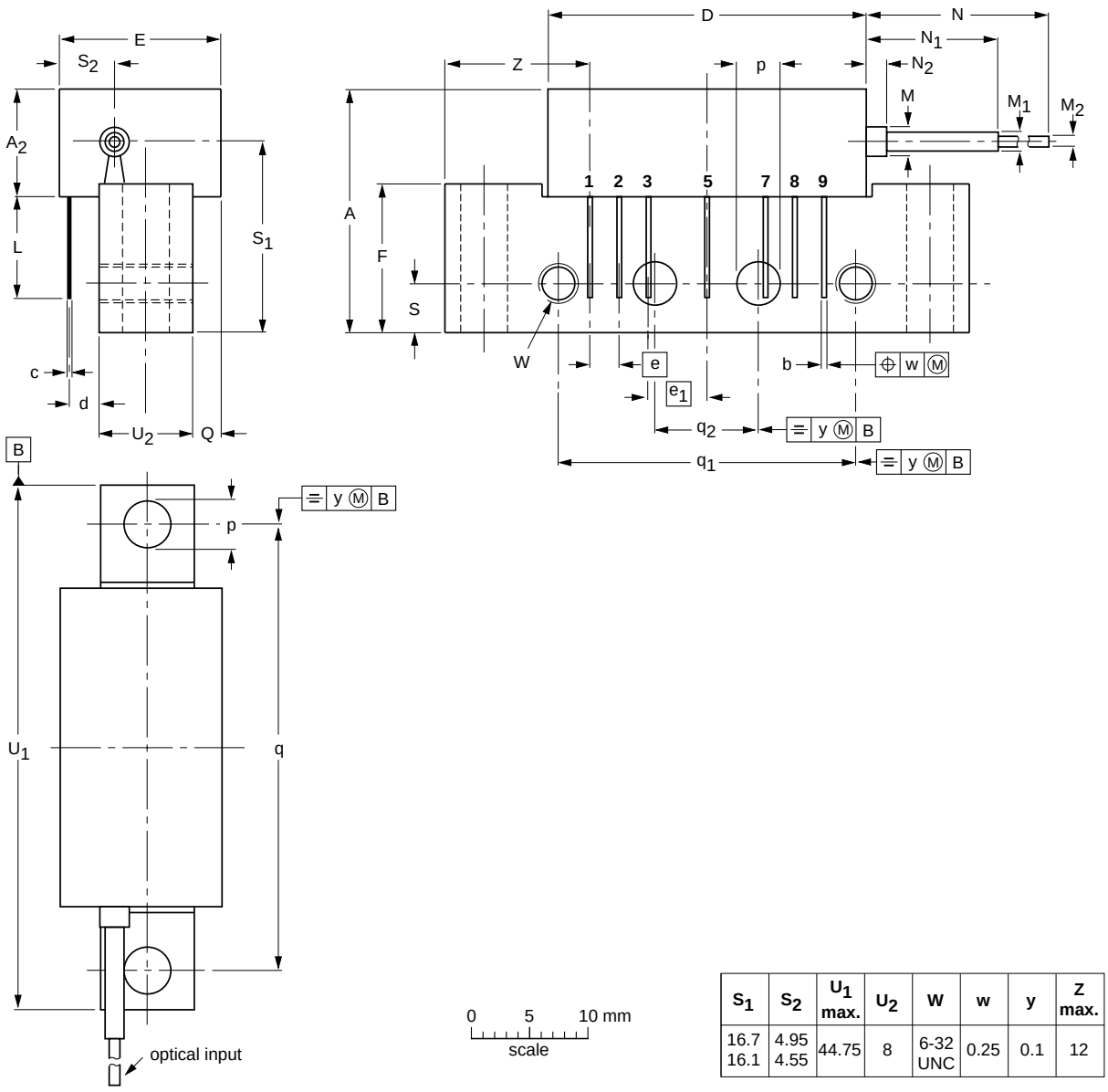


Fig.2 Monitor current pin.

PACKAGE OUTLINE

Rectangular single-ended package; aluminium flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; optical input; 7 gold-plated in-line leads **SOT115U**



S1	S2	U1 max.	U2	W	w	y	Z max.
16.7 16.1	4.95 4.55	44.75	8	6-32 UNC	0.25	0.1	12

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A2 max.	b	c	D max.	d max.	E max.	e	e1	F	L min.	M	M1	M2	N min.	N1 max.	N2 max.	p	Q max.	q	q1	q2	S
mm	20.8	9.1	0.51 0.38	0.25	27.2	2.54	13.75	2.54	5.08	12.7	8.8	2.5	1.6	0.9	1000	10.7	5	4.15 3.85	2.4	38.1	25.4	10.2	4.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT115U						~~99-04-13~~ 01-08-10

DATA SHEET STATUS

DATA SHEET STATUS[1]	PRODUCT STATUS[2]	DEFINITIONS
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.
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.
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