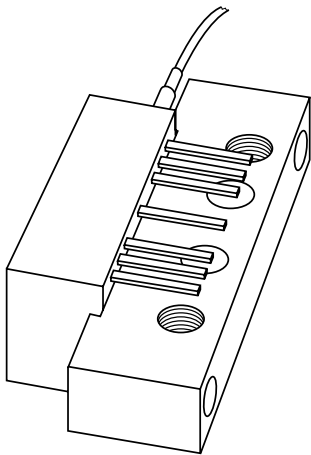


DATA SHEET



BGO387 300 MHz Optical receiver

Product specification
Supersedes data of 2002 Jun 27

2002 Dec 03

300 MHz Optical receiver

BGO387

FEATURES

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

APPLICATIONS

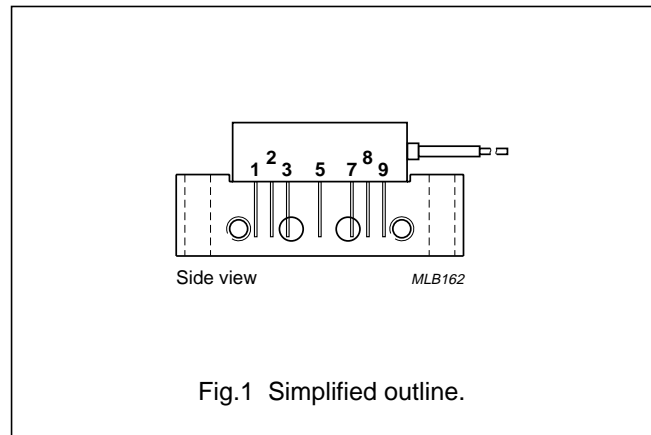
- Reverse receiver amplifiers in two-way CATV systems operating in the 5 to 300 MHz frequency range.

DESCRIPTION

High dynamic range optical receiver amplifier module in a standard 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 a characteristic impedance of 75 Ω.

PINNING - SOT115U

PIN	DESCRIPTION
1	monitor current
2, 3	common
5	+V _B
7, 8	common
9	output



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
f	frequency range		5	300	MHz
S ₂₂	output return losses	f = 5 to 300 MHz	16	–	dB
	optical input return losses		45	–	dB
d ₂	second order distortion		–	–70	dB
F	equivalent noise input	f = 10 to 300 MHz	–	7.5	pA/√Hz
I _{tot}	total current consumption (DC)	V _B = 24 V	160	190	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.

300 MHz Optical receiver

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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
f	frequency range		5	300	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

CHARACTERISTICSBandwidth 5 to 300 MHz; V_B = 24 V; T_{mb} = 30 °C; Z_L = 75 Ω

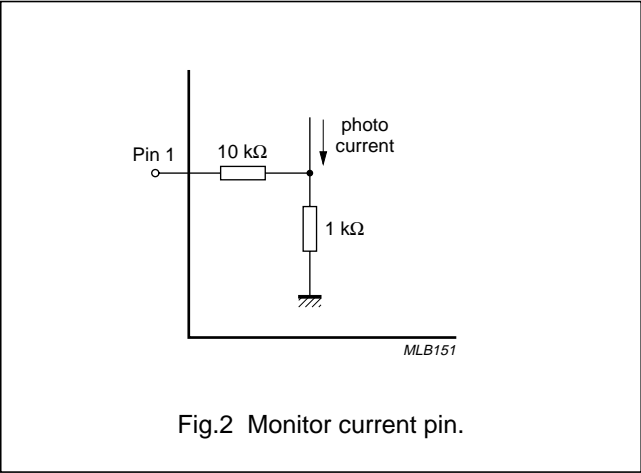
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
S	responsivity	λ = 1300 nm	800	-	V/W
V _{pin 1}	pin 1 monitor voltage	λ = 1300 nm	0.75	1	V/mW
FL	flatness of frequency response		-	±0.3	dB
SL	slope cable equivalent	f = 5 to 300 MHz	0	2	dB
s ₂₂	output return losses	f = 5 to 300 MHz	16	-	dB
	optical input return losses		45	-	dB
d ₂	second order distortion	note 1	-	-70	dB
d ₃	third order distortion	note 2	-	-80	dB
F	equivalent noise input	f = 10 to 300 MHz	-	7.5	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 3	160	190	mA

Notes

- Two laser test; each laser with 25% modulation index; f_p = 20.25 MHz; P_p = 0.5 mW; f_q = 34 MHz; P_q = 0.5 mW; measured at f_p + f_q = 54.25 MHz.
- Three laser test; each laser with 40% modulation index; f_p = 125.25 MHz; P_p = 0.33 mW; f_q = 109.25 MHz; P_q = 0.33 mW; f_r = 134.25 MHz; P_r = 0.33 mW; measured at f_p + f_q - f_r = 100.25 MHz.
- The module normally operates at V_B = 24 V, but is able to withstand supply transients up to 30 V.

300 MHz Optical receiver

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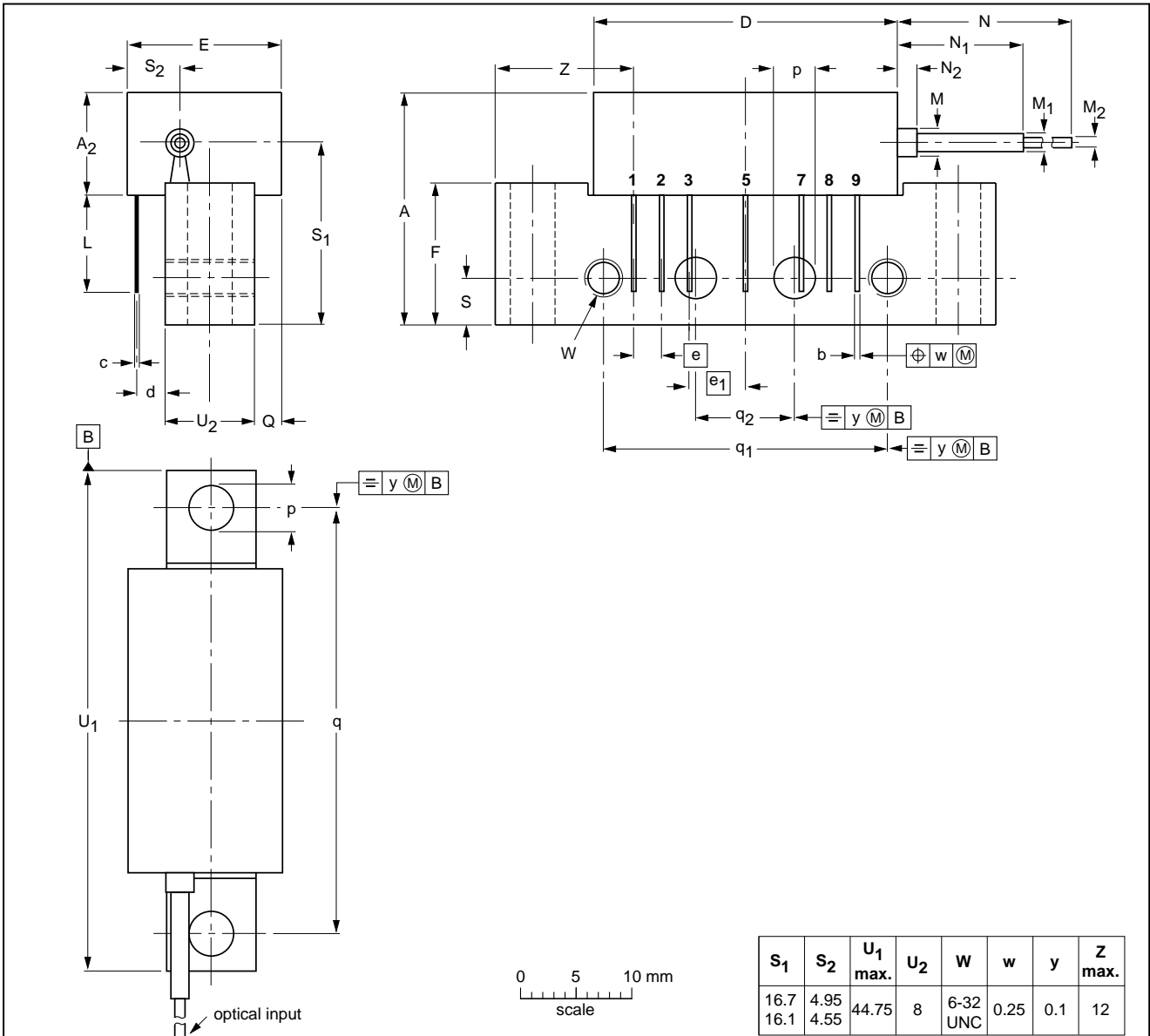
300 MHz Optical receiver

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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



S ₁	S ₂	U ₁ max.	U ₂	W	w	y	Z max.
16.7	4.95	44.75	8	6-32 UNC	0.25	0.1	12
16.1	4.55						

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A ₂ max.	b	c	D max.	d max.	E max.	e	e ₁	F	L min.	M	M ₁	M ₂	N min.	N ₁ max.	N ₂ max.	p	Q max.	q	q ₁	q ₂	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

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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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Notes

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

DEFINITIONS

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300 MHz Optical receiver

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