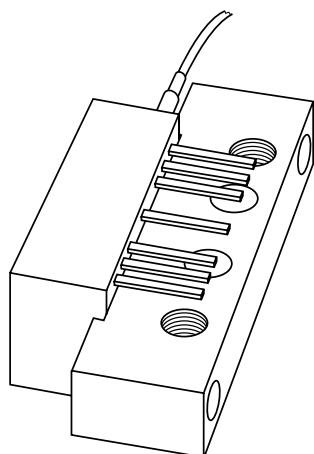


DATA SHEET



BGE887BO Optical receiver module

Product specification
Supersedes data of 2000 Apr 10

2001 Sep 27

Optical receiver module

BGE887BO

FEATURES

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

APPLICATIONS

- CATV systems operating in the 40 to 860 MHz frequency range.

DESCRIPTION

Hybrid high dynamic range optical receiver 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	common
3	common
5	+V _B
7	common
8	common
9	output

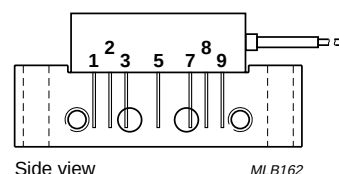


Fig.1 Simplified outline.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
f	frequency range		40	860	MHz
S ₂₂	output return losses	f = 40 to 860 MHz	11	–	dB
	optical input return losses		45	–	dB
d ₂	second order distortion	f = 324.25 MHz	–	–70	dBc
F	equivalent noise input	f = 40 MHz	–	7	pA/ $\sqrt{\text{Hz}}$
I _{tot}	total current consumption (DC)	V _B = 24 V	175	205	mA

HANDLING

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

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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		40	860	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 40 to 860 MHz; V_B = 24 V; T_{mb} = 30 °C; Z_S = 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		–	±0.5	dB
S ₂₂	output return losses	f = 40 to 860 MHz	11	–	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 = 40 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 3	175	205	mA

Notes

- Two laser test; each laser with 40% modulation index;
f_p = 135 MHz; P_p = 0.5 mW;
f_q = 189.25 MHz; P_q = 0.5 mW;
measured at f_p + f_q = 324.25 MHz.
- Three laser test; each laser with 40% modulation index;
f_p = 326.25 MHz; P_p = 0.33 mW;
f_q = 333.25 MHz; P_q = 0.33 mW;
f_r = 335.25 MHz; P_r = 0.33 mW;
measured at f_p + f_q − f_r = 324.25 MHz.
- The module normally operates at V_B = 24 V but is able to withstand supply transients up to 30 V.

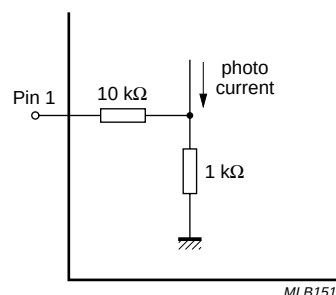


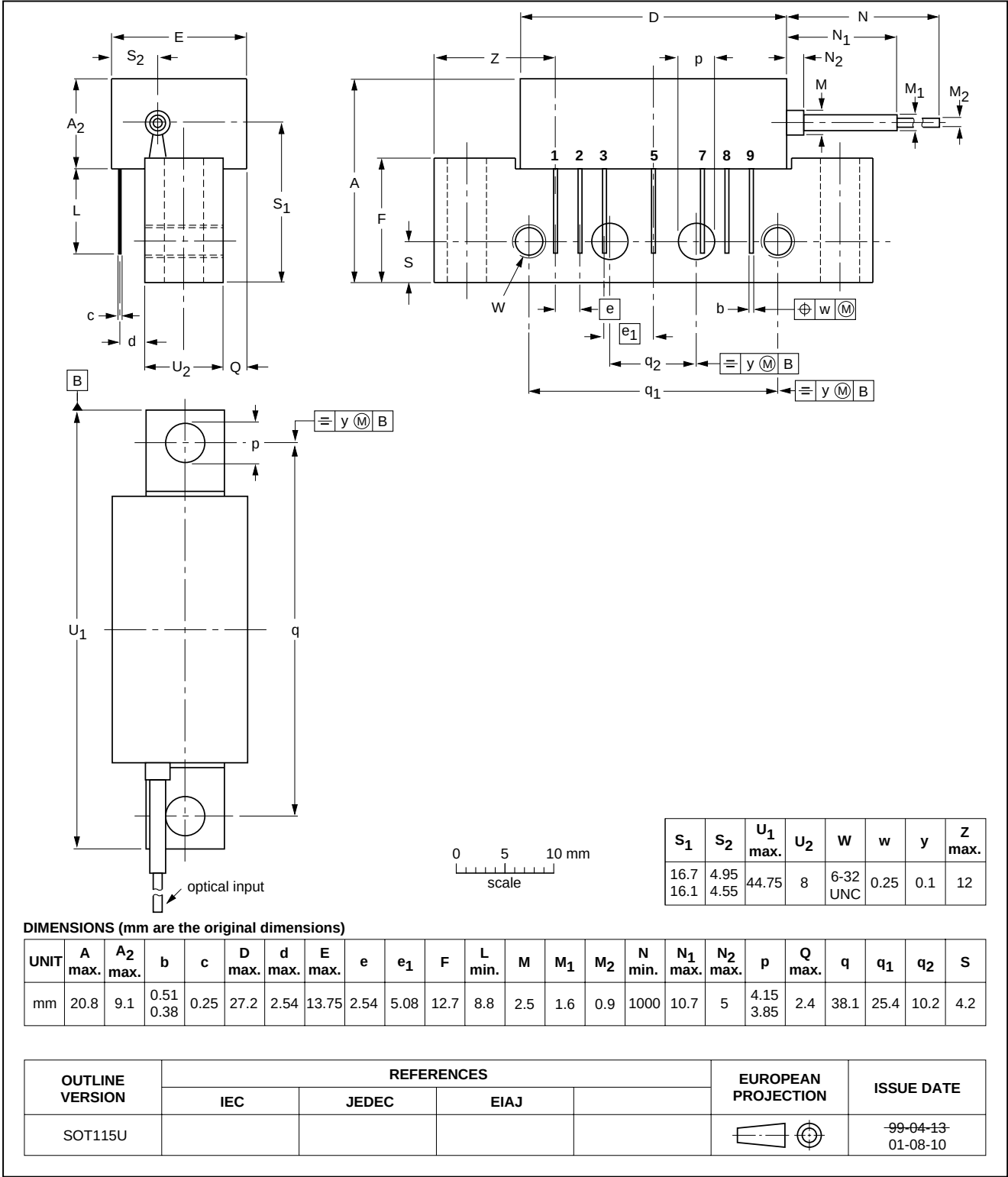
Fig.2 Monitor current pin.

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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



Optical receiver module

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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.
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NOTES

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NOTES

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Contact information

For additional information please visit <http://www.semiconductors.philips.com>. Fax: **+31 40 27 24825**

For sales offices addresses send e-mail to: sales.addresses@www.semiconductors.philips.com.

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