

CATV 1000 MHz Optical Receiver Amplifier Module

1. Product profile

1.1 General description

High dynamic range optical receiver amplifier module is in a standard SOT115T package where the 0.9mm buffered fiber has an FC/APC or SC/APC connector. The amplifier supply voltage is 24 V (DC). The modules have a single mode optical input suitable for 1290 nm to 1600 nm wavelengths, using a front push-pull amplifier and a cascaded power doubler MMIC with GaAs Technology from USA .adding ESD and surge protective devices.a terminal to monitor the photo diode current and an electrical output having a characteristic impedance of 75Ω.

CAUTION



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

1.2 Features and benefits

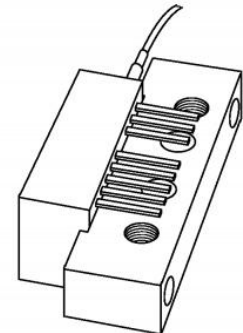
- Large range of optical power input
- Excellent linearity
- Low noise
- Excellent flatness
- Standard CATV outline

1.3 Applications

- CATV optical node systems operating in. the 40 MHz to 1000 MHz frequency range.

1.4 Handling

- Fiberglass optical coupling:
Maximum tensile strength= 5 N;
Minimum bending radius=35mm.

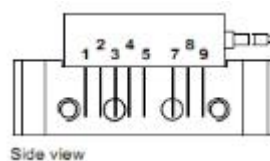


Product Outline

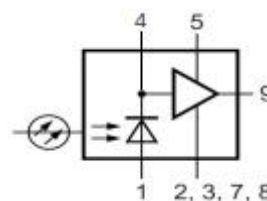
2. Pin information

Pin	Description
1	monitor current
2	Common
3	Common
4	+VB1 of the PIN diode
5	+VB2 of the amplifier
7	Common
8	Common
9	Output

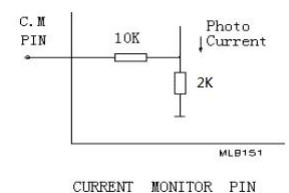
Simplified outline



Graphic symbol



Monitor current pin.



3. Operating conditions

Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134) (TA = +25°C)

Parameter	Symbol	Min	Max	Unit
Supply Voltage	V _B	-	25	V
Optical Input Power (continuous)	P _i	-	5	mW
Operating Case Temperature	T _c	-20	+90	°C
Storage Temperature	T _{stg}	-40	+100	°C
ESD sensitivity [1]	ESD	500	-	V

[1] Human body model, R=1.5k, C = 100 pF

4. Electrical characteristics

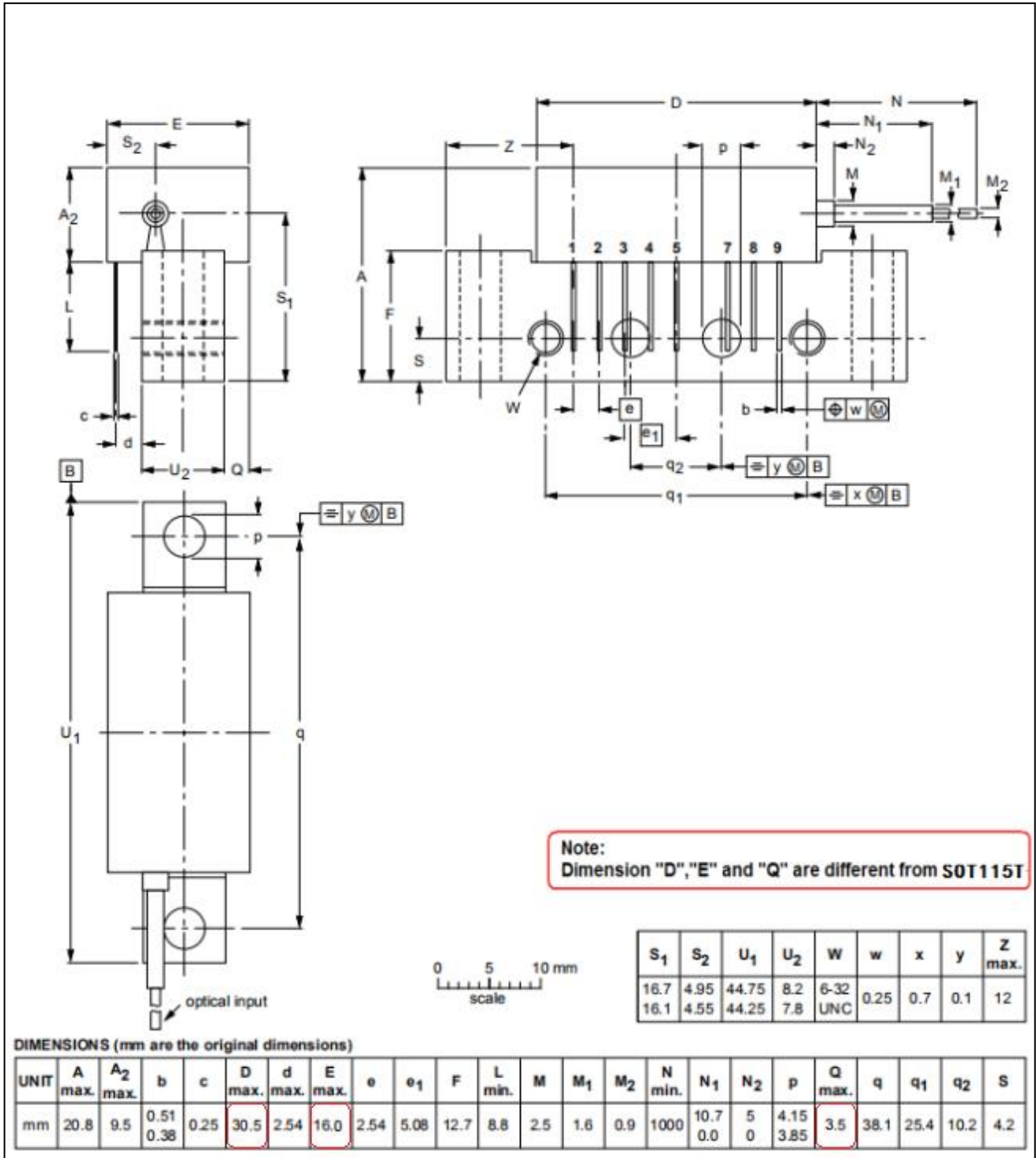
Bandwidth 40 to 1000 MHz, T_C = 30±5°C, Z_S = Z_L = 75 Ω

SYMBOL	PARAMETER	UNIT	MIN.	TYP.	MAX.	CONDITIONS
f	Frequency range	MHz	40		1000	
S _λ	Spectral sensitivity	A/W	0.85	-	-	λ=1310±20nm
		A/W	0.9	-	-	λ=1550±20nm
λ	Optical wavelength	nm	1290		1600	
	Responsivity	V/W	1700	1900	2100	f=1000 MHz, λ=1310nm
SL	Slope Straight Line	dB	1		3	f=40 to 1000 MHz
FL	Flatness Straight Line	dB	-	1.0	1.5	f=40 to 1000 MHz
V _o	Output Level	dBμV	-	90	-	60 channels flat, m=3.7%; measured at 543.25MHz; Optical power receiving at 0dBm
CTB	Composite Triple Beat	dB	-	-70	-	
CSO	Composite Second Order distortion	dB	-	-69	-	
S ₂₂	Output Return losses	dB	14	-	-	f=40 to 1000 MHz
	Optical input return losses	dB	45	-	-	
I _{tot}	Total Current Consumption	V _{B2} /mA	260	280	300	V _{B1} /V _{B2} =24V
I _{pin4}	Pin diode bias current (DC)	V _{B1} /mA	-	-	10	

5. Package outline

Rectangular single-ended package; aluminum flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 8 gold-plated in-line leads.
Optical input

SOT115T-B



UNIT: mm