

### 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 SOT115U 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

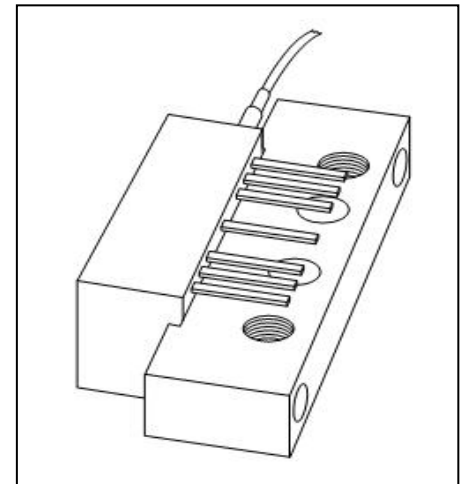
- Large range of optical power input
- Excellent linearity
- Low noise
- Excellent flatness

### 1.3 Applications

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

### 1.4 Handling

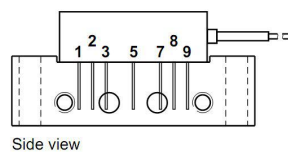
- Fiberglass optical coupling:  
Maximum tensile strength= 5 N;  
Minimum bending radius=35mm.



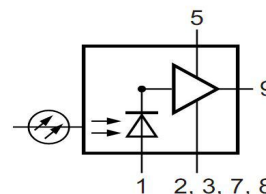
## 2. Pin information

Pin	Description
1	monitor current
2	Common
3	Common
5	+VB
7	Common
8	Common
9	Output

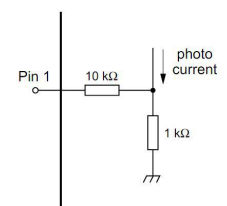
#### Simplified outline



#### 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 <sub>B</sub>	–	25	V
Optical Input Power (continuous)	P <sub>i</sub>	–	5	mW
Operating Case Temperature	T <sub>C</sub>	–20	+90	°C
Storage Temperature	T <sub>stg</sub>	–40	+100	°C
ESD sensitivity [1]	ESD	–	1000	V

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

### 4. Electrical characteristics

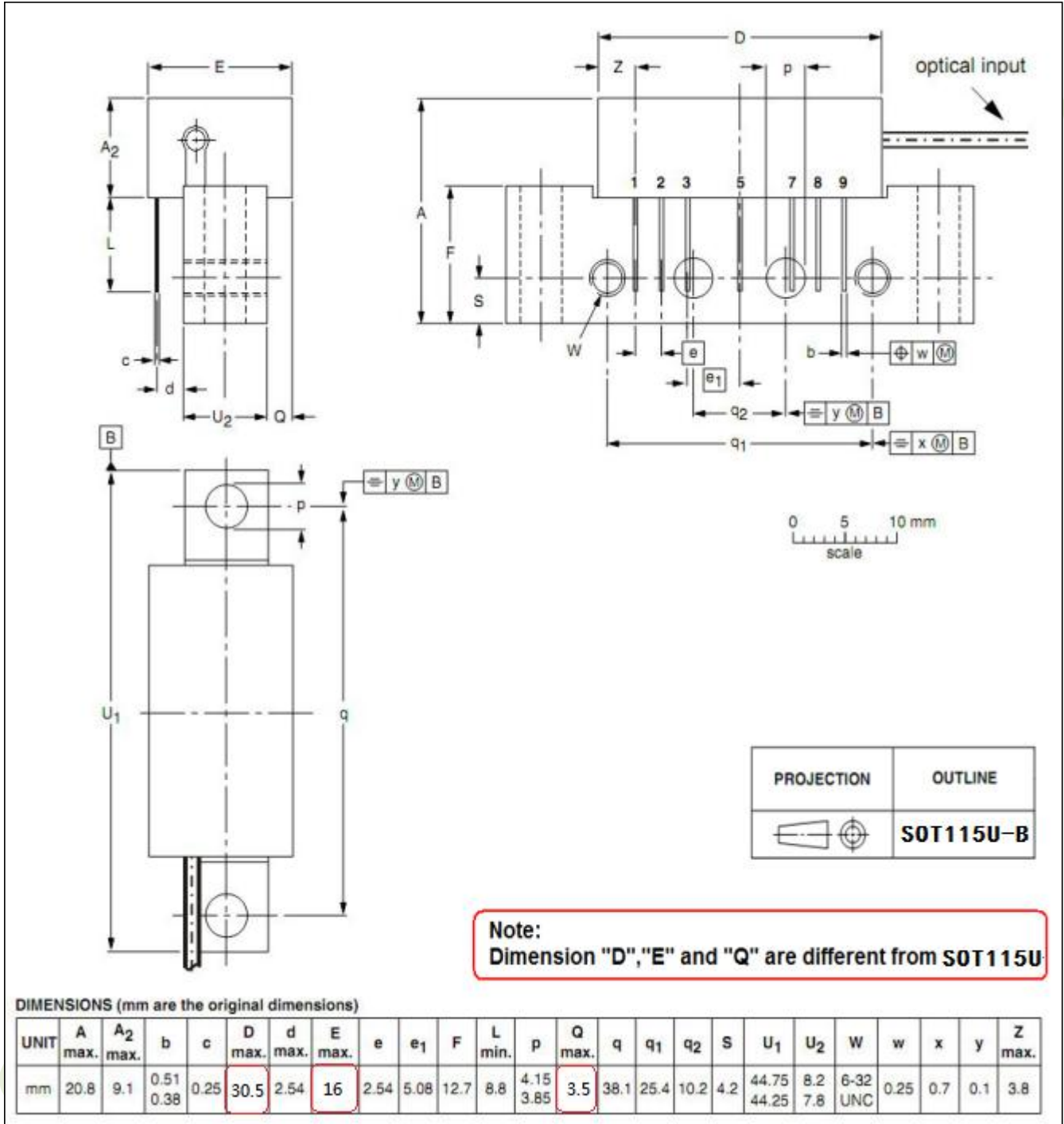
Bandwidth 40MHz to 1000MHz , T C = 30±5°C, V B = 24 V, Z S = Z L = 75 Ω

SYMBOL	PARAMETER	UNIT	MIN.	TYP.	MAX.	CONDITIONS
f	Frequency range	MHz	40		1000	
S <sub>λ</sub>	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	850		1000	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 <sub>o</sub>	Output Level	dBμV	-	87	-	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 <sub>22</sub>	Output Return losses	dB	14	-	-	f=40 to 1000 MHz
	Optical input return losses	dB	45	-	-	
I <sub>tot</sub>	Total Current Consumption	V <sub>B</sub> /mA	260	280	310	V <sub>B</sub> =24V

**5. Package outline**

Rectangular single-ended package; aluminum flange; 2 vertical mounting holes; 2 x 6-32 UNC and 2 extra horizontal mounting holes; 7 gold-plated in-line leads. Optical input with connector.

**SOT115U-B**



**UNIT: mm**

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