

5 to 300 MHz Return Path Optical Receiver Module

1. Product profile

1.1 General description

The module is in a SOT115U package (see Fig.1), is equipped with a FC/APC or SC/APC Connector, a single mode optical input suitable for 1100 to1660 nm wavelengths, a terminal to monitor the photo diode current, and an electrical output having a characteristic impedance of 75Ω. The module accepts optical receive power in the range -8~+2dBm and RF output can achieve +89dBμV/ch (@ 0dBm input) within the 5 to 300 MHz frequency range.

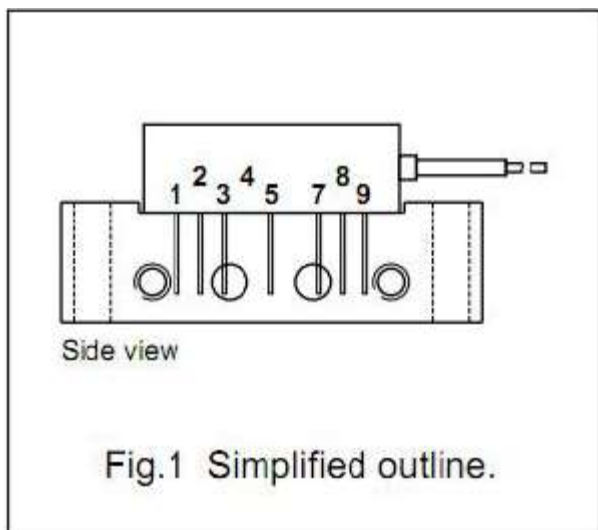
CAUTION



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

1.2 Features and benefits

- Excellent linearity
- Excellent distortion performance
- Low input referred noise
- Standard CATV Package



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

SOT115U

1.3 Applications

- CATV systems operating with a return path frequency range of 5 to 300 MHz.

1.4 Handling

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

2. LIMITING VALUES

In accordance With the Absolute Maximum Rating System

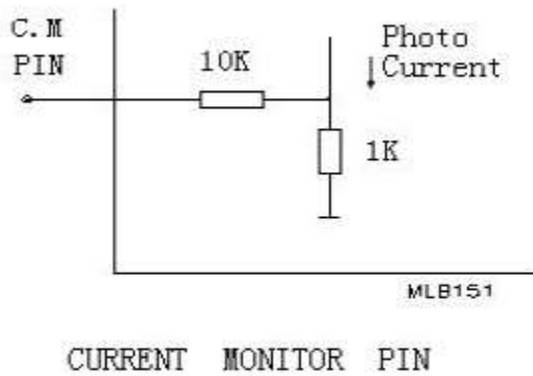
SYMBOL	PARAMETER	CONDITION	MIN	MAX	UNITS
Pin	Input Optical Power			3	mW
Tstg	Storage Temperature		-40	+85	°C
Top	Operating Temperature		-20	+85	°C
ESD	ESD Sensitivity	Human Body Model; R = 1.5kΩ; C = 100pF	500		V

3. CHARACTERISTICS

Tmb = 24°C, VB=24VDC, Zs=ZL=75Ω

SYMBOL	PARAMETER	UNIT	MIN	TYP	MAX	CONDITIONS
F	Frequency Range	MHz	5		300	
S _λ	Spectral Sensitivity	A/W	0.85			λ = 1310 ±20 nm
		A/W	0.9			λ = 1550 ±20 nm
λ	Optical Wavelength	nm	1100		1660	
Vc.m	Voltage of C.M. Pin	mV	850			λ = 1310 ±20 nm; 0 dBm Optical Input Power; VB=24Vdc
Vo	Output Voltage	dBμV		89		m = 3.7%; F = 300 MHz; Optical power received at 0 dBm
FL	Flatness of Frequency Response	dB			±0.75	F = 5 to 300 MHz
CTB	Composite Triple Beat	dBc		-70		17 PAL-D channels flat;
CSO	Composite Second Order	dBc		-65		m = 3.7%; measured at 200.25 MHz; Optical receiving power at 0 dBm
CNR	Carrier-to-Noise Ratio	dB		52		Optical receiving power at 0 dBm
S11	Input Return Loss, Optical Domain	dB			-45	
S22	Output Return Loss, RF Domain	dB			-12	F = 5 to 300 MHz
Itot	Total Current Consumption	mA	110	120	135	VB=24Vdc

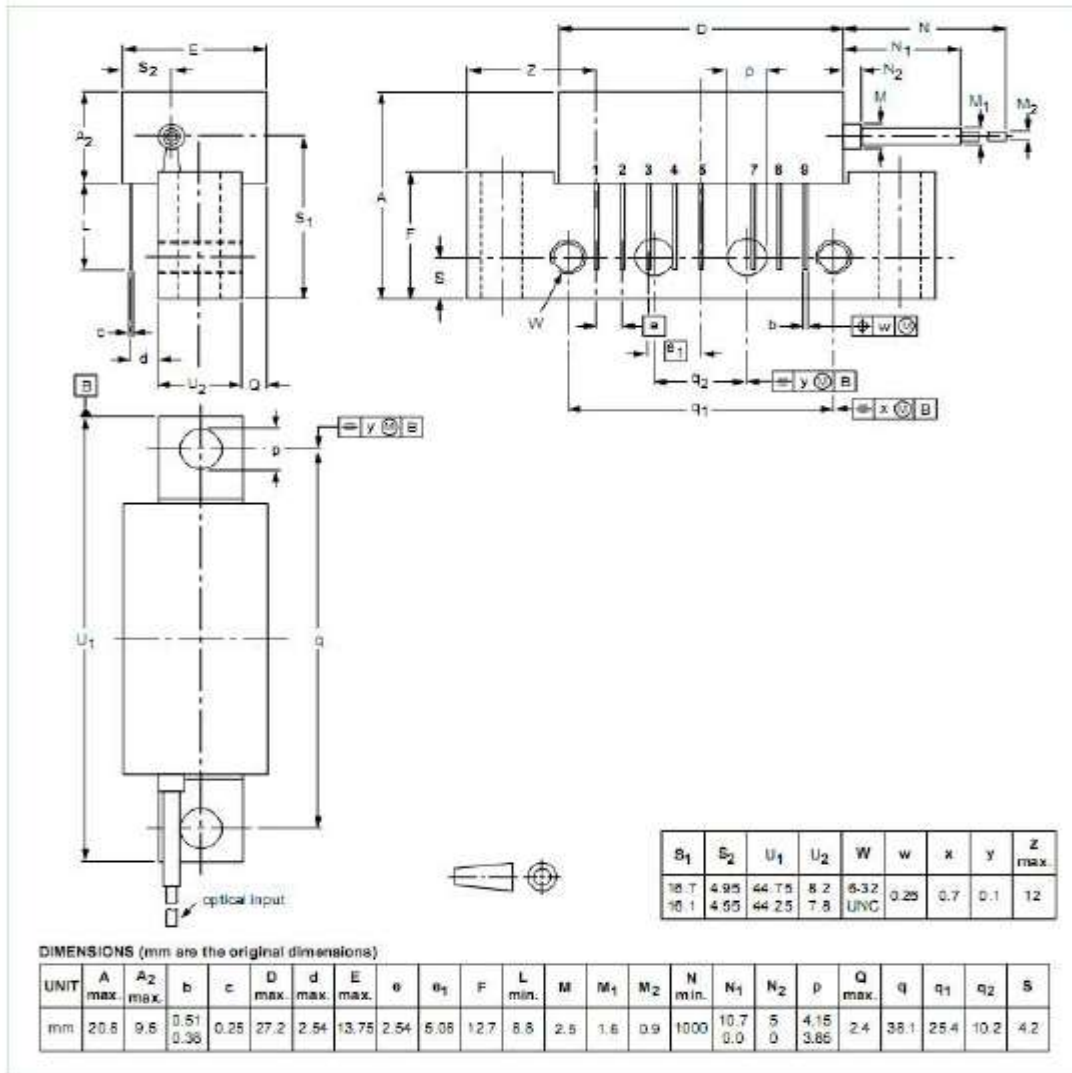
4. PHOTODIODE CURRENT MONITOR PIN



5. PACKAGE OUTLINE

Rectangular single-ended package; aluminum 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



Units in millimeters (mm).



CHF0300270AA

6. Appendix

6.1 Gain and Return Loss (S11, S22)

Provided upon request.

6.2 Ordering Instructions

To Order, Contact: Chips Technology Circuits, 48 Farrand Street, Bloomfield, NJ 07003

Phone: +1 973-748-6172

FAX: +1 973-748-9306 Email: purchctc@chipstech.com