

40 to 870 MHz Optical Receiver Module +30 dBmV RF Output, +12Vdc SOT115U AGC

## 1. Product profile

### 1.1 General description

The module is in a SOT115U package (see Fig.1), operates from a **+12Vdc** power supply, is equipped with automatic gain control (AGC), a FC/APC or SC/APC Connector, a single mode optical input suitable for 1100 to 1650 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 -7~+1dBm and RF output can achieve +90dBμV/ch (@ 0dBm input) within the 40 to 870 MHz frequency range.

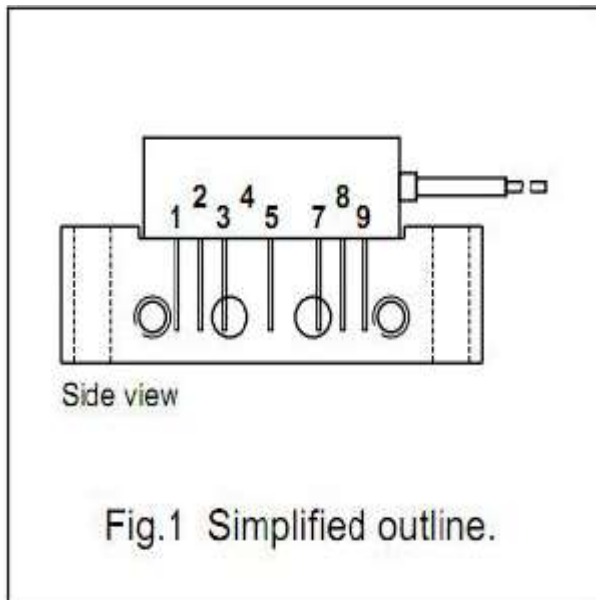
#### CAUTION



**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 <sub>B</sub> of the amplifier
7	common
8	common
9	output

### SOT115U

### 1.3 Applications

- CATV systems operating with a forward path frequency range of 40 to 870 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

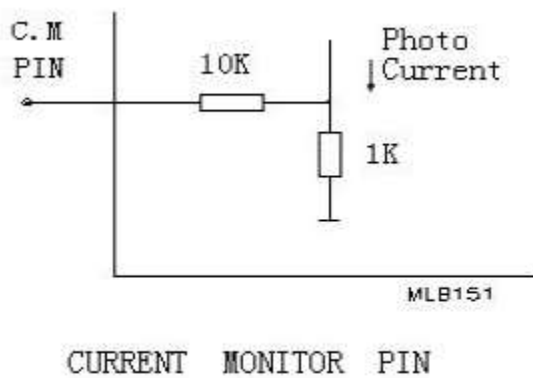
SYMBOL	PARAMETER	CONDITION	MIN	MAX	UNITS
Pin	Input Optical Power			3	mW
Tstg	Storage Temperature		-40	+85	°C
Top	Operating Temperature		-20	+85	°C
ESD	ESD Sensitivity	Human Body Model; R = 1.5kΩ; C = 100pF	500		V

## 3. CHARACTERISTICS

T<sub>mb</sub> = 24°C, V<sub>B</sub>=24VDC, Z<sub>s</sub>=Z<sub>L</sub>=75Ω

SYMBOL	PARAMETER	UNIT	MIN	TYP	MAX	CONDITIONS
F	Frequency Range	MHz	40		870	
S <sub>λ</sub>	Spectral Sensitivity	A/W	0.85			λ = 1310 ±20 nm
		A/W	0.9			λ = 1550 ±20 nm
λ	Optical Wavelength	nm	1100		1650	
V <sub>c.m</sub>	Voltage of C.M. Pin	mV	850			λ = 1310 ±20 nm; 0 dBm Optical Input Power; V <sub>B</sub> =24Vdc
RF <sub>out</sub>	RF Output Level	dBmV	22		30	m = 3.7%; F = 870 MHz;
V <sub>o</sub>	Output Voltage	dBμV	82		90	Optical power received at 0 dBm
FL	Flatness of Frequency Response	dB			±0.75	F = 40 to 870 MHz
CTB	Composite Triple Beat	dBc		-70		60 PAL-D channels flat; m = 3.7%; measured at 543.25 MHz; Optical receiving power at 0 dBm
CSO	Composite Second Order	dBc		-65		
CNR	Carrier-to-Noise Ratio	dB		52		Optical receiving power at 0 dBm
S <sub>11</sub>	Input Return Loss, Optical Domain	dB			-45	
S <sub>22</sub>	Output Return Loss, RF Domain	dB			-12	F = 40 to 870 MHz
I <sub>tot</sub>	Total Current Consumption	mA	185	200	215	V <sub>B</sub> =12Vdc

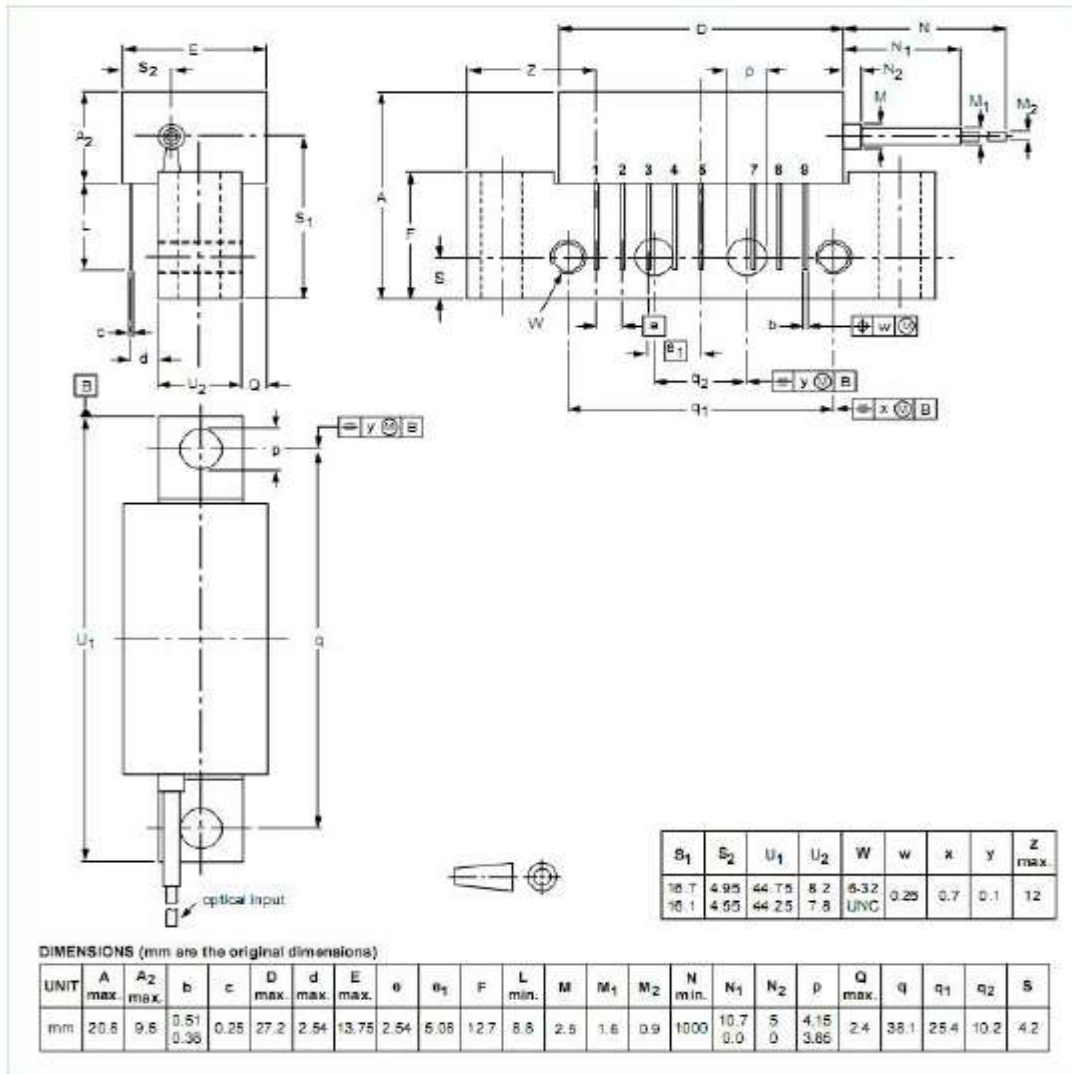
#### 4. PHOTODIODE CURRENT MONITOR PIN



#### 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).

## 6. Appendix

### 6.1 FLATNESS OF FREQUENCY RESPONSE



### 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](mailto:purchctc@chipstech.com)