CHF0870190AA-AGC

870 MHz AGC Optical Receiver MCM

40 to 870 MHz Optical Receiver Multi-Chip-Module (MCM)
AGC with +19 dBmV Maximum RF Output

1. Product profile

1.1 General description

The module is in a low profile surface mount multi-chip-module (MCM) package (see Fig.1), operates from either +5 or +12 Volts DC, is equipped with automatic gain control (AGC), a FC/APC or SC/APC Connector, a single mode optical input suitable for 1100 to1650 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 +79 dBμV/ch (@ +1dBm 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
- Surface Mount MCM Package
- AGC

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

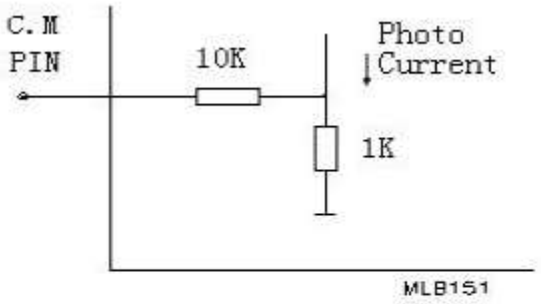
3. CHARACTERISTICS

Tmb = 24°C, VB=24VDC, Zs=ZL=75Ω

SYMBOL	PARAMETER	UNIT	MIN	TYP	MAX	CONDITIONS
F	Frequency Range	MHz	40		870	
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		1650	
Vc.m	Voltage of C.M. Pin	mV	850			λ = 1310 ±20 nm; 0 dBm Optical Input Power; VB=24Vdc
RFout	RF Output Level	dBmV	11		19	m = 3.7%; F = 870 MHz; Optical power received at -7 to +1 dBm; 60 to 98 PAL-D channels flat
Vo	Output Voltage	dBµV	71		79	
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		-64		
CNR	Carrier-to-Noise Ratio	dB		52		Optical receiving power at 0 dBm
S11	Input Return Loss, Optical Domain	dB			-45	

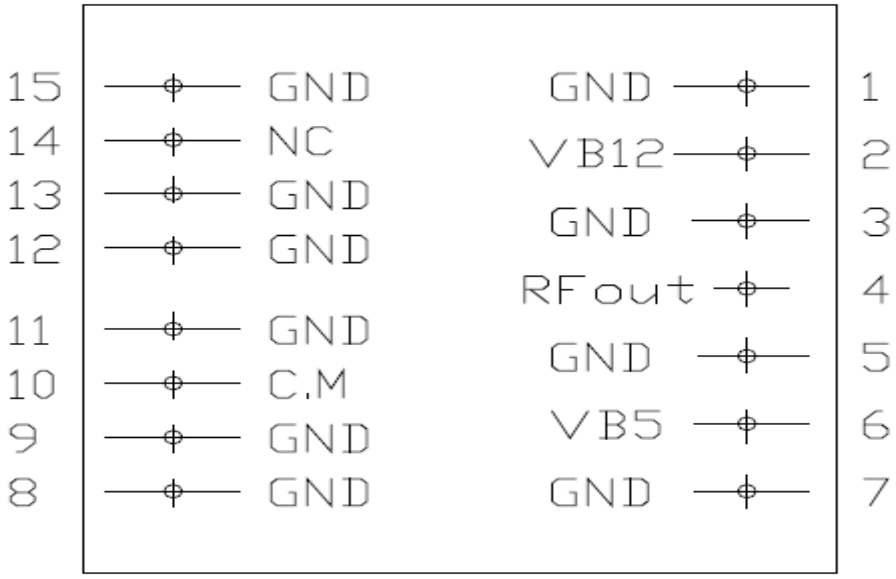
SYMBOL	PARAMETER	UNIT	MIN	TYP	MAX	CONDITIONS
S22	Output Return Loss, RF Domain	dB			-10	F = 40 to 870 MHz
Itot	Total Current Consumption	mA	145		170	VB12=12V; VB5=5V; DC

4. PHOTODIODE CURRENT MONITOR PIN



CURRENT MONITOR PIN

5. ASSEMBLY PCB PIN DESCRIPTION (TOP VIEW)



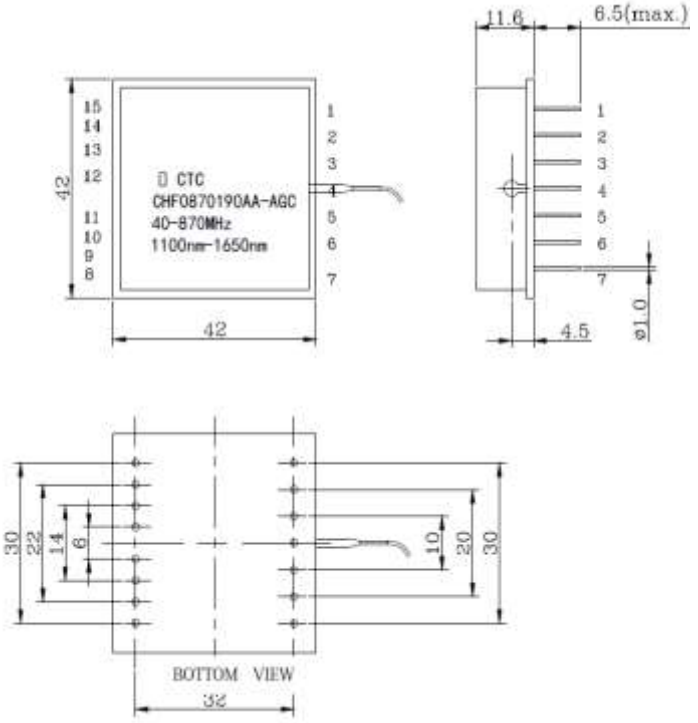
PIN NO.	NAME	DESCRIPTION	PIN NO.	NAME	DESCRIPTION
1	GND	Ground	8	GND	Ground
2	VB12	+ 12V Supply for the module	9	GND	Ground
3	GND	Ground	10	C.M	(Optical Power) Current Monitor
4	RF out	Output for the module	11	GND	Ground
5	GND	Ground	12	GND	Ground
6	VB5	+ 5V Supply for the module	13	GND	Ground
7	GND	Ground	14	NC	NC
			15	GND	Ground

ATTENTION：

PIN 2: SUPPLY +12V

PIN 6: SUPPLY +5V

6. MODULE DIMENSIONS (Units in mm)


11.6
6.5(max.)
15
14
13
12
11
10
9
8
42
CTC
CHF0870190AA-AGC
40-870MHz
1100nm-1650nm
1
2
3
4
5
6
7
42
4.5
ø1.0
30
22
14
6
10
20
30
BOTTOM VIEW
32

6. Appendix

6.1 FLATNESS OF FREQUENCY RESPONSE

Available 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