RAMAN Optical Amplifier

This document specifies the requirements of a C-band distributed RAMAN amplifier. The amplifier modules can be operated at constant pump power (AWC). Different wavelength pump power can be adjusted to achieve smooth gain spectrum for the DWDM network application. It can amplify the single channel signal, in order to achieve the best OSNR; the module integrated a narrow band filter to suppress the ASE power.

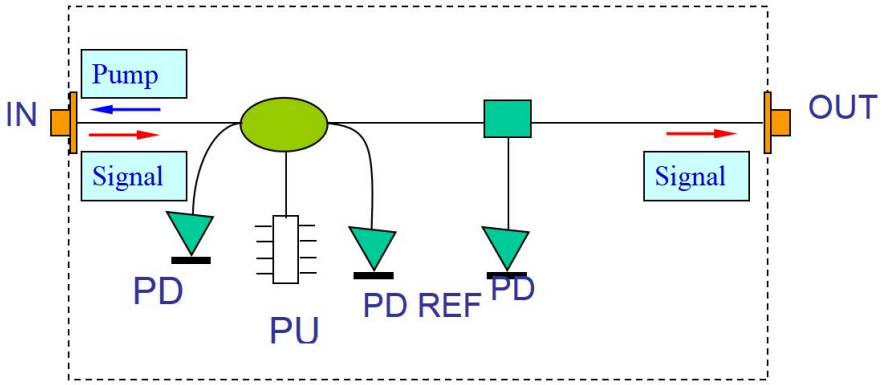
Function

- C-band optical signal overall amplification
- Covering the wavelength range of 1529 ~ 1565nm
- Support systems to achieve different cross-section radio repeater transmission

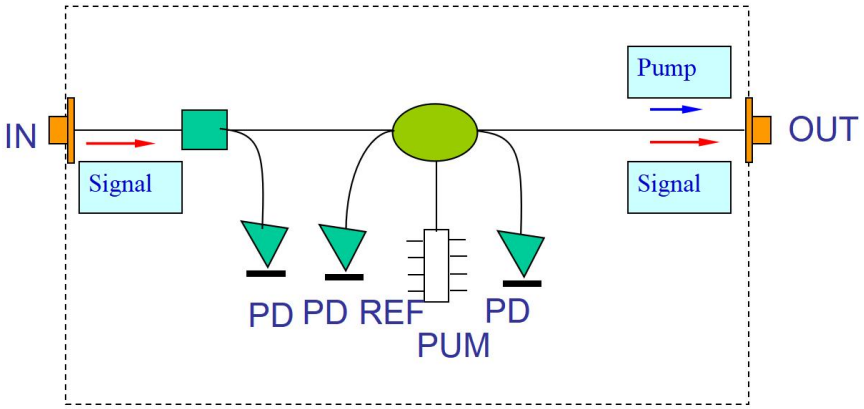
Highlight

- Wide operating wavelength range:1529nm~1565nm
- Three Optical Amplifier C-Band applications:
  - Booster RAMAN
  - Pre-RAMAN
- Low noise figure: typical: -2dB
- Excellent gain flatness
- Multiple operating modes:
  - AGC adjustable Gain
  - AWC pump power is adjustable

Counter-propagating pumping configuration, Pre-RAMAN:



Co-propagating pumping configuration, Boost-RAMAN:



Performance Parameter

Parameter		Min.	Typical	Max.	Unit
Operating Wavelength		1528		1565	nm
Output Power					dBm
Pump Wavelength		1423		1465	nm
Pump power	Boost-RAMAN	700			mw
	Pre-RAMAN	1300			mw
Gain	Boost-RAMAN		10		dB
	Pre-RAMAN		26	28	dB
Input Power	Boost-RAMAN	0		14	dBm
	Pre-RAMAN	-40		-20	
Noise Figure			-2		dB
Gain Flatness			2.2	2.5	dB
Input Threshold	Boost-RAMAN		0	Can be adjusted	dBm
	Pre-RAMAN		-40	Can be adjusted	dBm
Polarization Dependence Loss					dB
Polarization Dependence Gain				0.5	dB
Polarization Mode Dispersion				0.5	ps
Return Loss		45			dB
Size		191 (W) x 253 (D) x 40 (H)			mm
Environment	Operating Temperature	-5℃ ~ 55℃			℃
	Storage Temperature	-40℃ ~ 75℃			℃
	Relative Humidity	5% ~ 95% Non-condensing			
Power Consumption		≤45			W