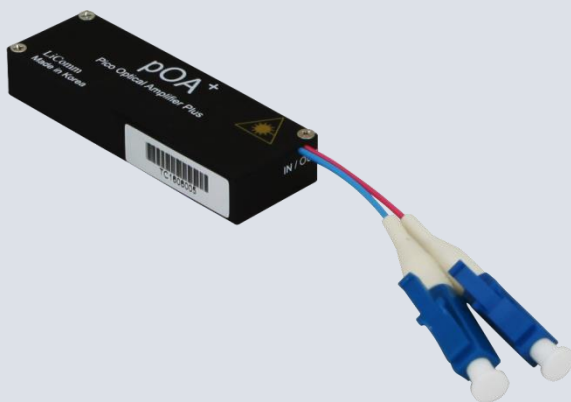


## Optical Fiber Amplifier **pOA<sup>+</sup>** PICO EDFA *PLUS*

The world smallest EDFA, pOA<sup>+</sup> is a full-functioning EDFA module with the control circuit packaged inside. It is designed for a single wavelength applications in full extended c-band fiber optic communications system in core networks, access networks, or CATV networks. The pOA<sup>+</sup>, OFA-TCQ series provides very stable output power up to in C-band over the wide operating temperature range. Ultra compact size (59 x 16 x 7.5 mm), combined with the extremely low power consumption, allows the OFA-TCQ series to be highly suitable for applications of power equalization or pre-emphasis in densely packaged telecom systems, especially for densely integrated high speed transmitter or receiver cards and loss compensation for compact active optical module.



### Features

- Ultra compact size (59 x 16 x 7.5 mm )
- Full functional EDFA module including micro process control circuit
  - Including VOA, TOF, VOA+TOF, GFF (Optional)
  - Automatic wavelength searching and locking function (Optional)
  - Including Input Monitor and Input Isolator (Optional)
  - Extremely low power consumption over wide operating temperature range
  - Wide operating wavelength range
  - Wide settable output power range
  - APC (Automatic Power Control) with FLS (Forced Laser Shutdown)
  - Control & monitoring by I2C
  - LVTTTL Alarm
  - Single + 3.3 V power supply

### Applications

- Optimized for integration into 100 Gbps coherent CFP & CPF2 modules
- Loss Compensation for active optical modules
  - Signal loss compensation in switch matrix
  - Power equalization and Pre-emphasis Amplifier for DWDM Metro System
  - 2.5G/10G/40G/100G Channel Amplifier
  - SONET/SDH system
  - OADM access networks
  - CATV System

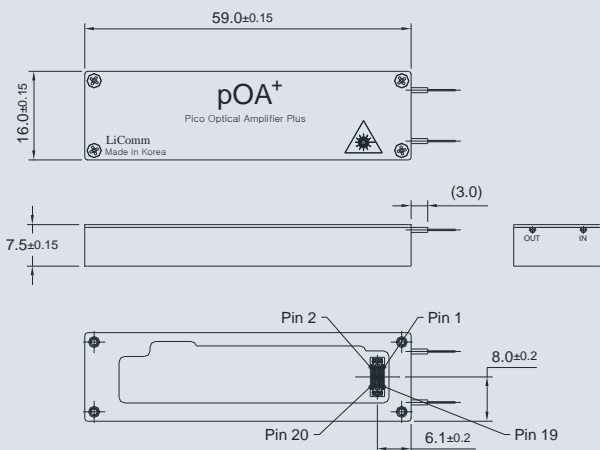
## Optical Fiber Amplifier

# PICO Optical Amplifier Plus

### Optical Characteristics

Parameter	Symbol	Specification			Unit
		w/ TOF+VOA	w/o TOF+VOA	w/ GFF	
Signal wavelength range	$\lambda$	1527.99~1568.36			nm
Operating input power	$P_{IN}$	-20 ~ 5	-30 ~ 5	-30 ~ 5	dB
Saturation output power <sup>(1)</sup>	$P_{OUT}$	Max.12	Max.17	Max.12	dBm
Small signal gain <sup>(2)</sup>	G	-	Typ. 30	Typ. 30	dBm
In-band OSNR <sup>(3)</sup>	OSNR <sub>i</sub>	Min. 41	Min. 41	Min. 41	dB
Out-band OSNR <sup>(3)</sup>	OSNR <sub>o</sub>	Min. 41	Min. 35	Min. 38	dB
Noise figure	NF	Typ. 6.0			dB
Filter tuning range	FTR	1528~1568	-	-	dB
Attenuation range	VOA	Min. 20	-	-	nm
Optical isolation	ISO	Min. 20			dB
Return loss	RL	Min. 40			dB
Polarization mode dispersion	PMD	Max. 0.5			dB
Polarization dependent gain	PDG	Max. 0.5			ps

### Mechanical Dimension (59 x 16 x 7.5[mm] with IPM)



\* The location of optical input port depends on the option of including IPM

(1) Input Power = 0dBm

(2) w/ TOFA+VOA : Input Power = -30dBm, P<sub>out</sub>≥0dBm at 1545 nm

w/o TOFA+VOA : Input Power = -30dBm, P<sub>out</sub>≥+7dBm at 1545 nm

(3) Input Power = -10dBm at optimized output power, P<sub>out</sub>≥0dBm, with operating wavelength range

### Electric & Environmental Characteristics

Parameter	Typical Value
Power supply voltage <sup>(1)</sup>	+3.3 V
Interface	I2C
Alarm	LVTTL
Operating case temperature	-5 ~ 75 °C
Storage temperature	-40 ~ 85 °C
Storage humidity	5 ~ 85 % R.H
Power consumption <sup>(2)</sup>	≤ 1.8 W

(1) Additional power supply voltage required for TOF/VOA option.

(2) at Max. output power in normal input power = 0dBm and full temperature range

Max. P<sub>Tot</sub> is less than 1.0W at P<sub>out</sub>=+10dBm or less.

### Control and Monitoring Functions

Parameter	Typical Value
Control Scheme	APC with FLS* (AGC optional)
Monitor	IPM(Optional) / OPM / LD-Bias / Case-Temp
Alarm	LOS(Optional) / LOP / LD-Bias / Case-Temp

\* FLS: Forced Laser Shutdown

### Ordering Information

Ordering Code	Description
OFA - TCQ - xx <sub>1</sub> AP - yy <sub>1</sub> yy <sub>2</sub> - zz <sub>1</sub>	
xx <sub>1</sub>	: Max. Output Power (dBm)
yy <sub>1</sub>	: NA(Not available), VA(VOA), TF(TOF), AF(VOA+TOF), GF(GFF)
yy <sub>2</sub>	: I(IPM), Not available without IPM
zz <sub>1</sub>	: LU(LC/UPC), LA(LC/APC)

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