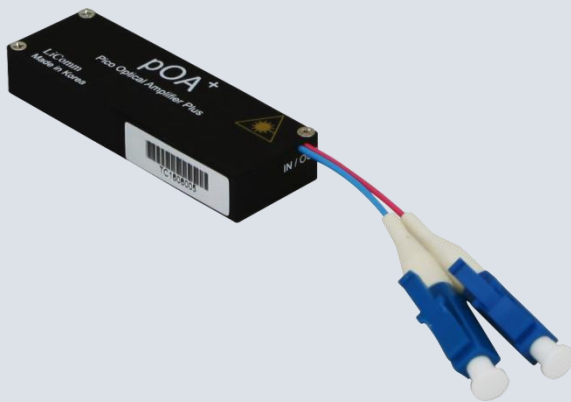


Optical Fiber Amplifier

Ultra compact size PICO EDFA PLUS

OFA-TCQ Series

The world smallest EDFA, pOA⁺ 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⁺, OFA-TCQ series provides very stable output power up to in C-band over the wide operating temperature range. Ultra compact size (45 x 15.5 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 (45 x 15.5 x 7.5 mm)
- EDFA module including micro process control circuit
- VOA and/or TOF includable (Optional 59 x 15.5 x 7.5mm)
- Extremely low power consumption over wide operating temperature range
- High output power up to 17 dBm
- 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	OFA-TCQ	Unit
Signal wavelength range	λ	1527.99 ~ 1568.36	nm
Input power	P_{IN}	-30~0	dBm
Saturation Output power ⁽¹⁾	P_{OUT}	Typ. 17	dBm
Small signal gain ⁽²⁾	G	>30	dB
In-band OSNR ⁽³⁾	OSNR _i	> 41	dB
Out-band OSNR ⁽³⁾	OSNR _o	>36	dB
Noise figure	NF	Typ. 6.0	dB
Filter Wavelength Tuning Range ⁽⁴⁾	FTR	40	nm
Attenuation Setting Range ⁽⁴⁾	VOA	0~ 20	dB
Optical isolation	ISO	>30	dB
Return loss	RL	>40	dB
Polarization mode dispersion	PMD	<0.5	ps
Polarization dependent gain	PDG	<0.5	dB

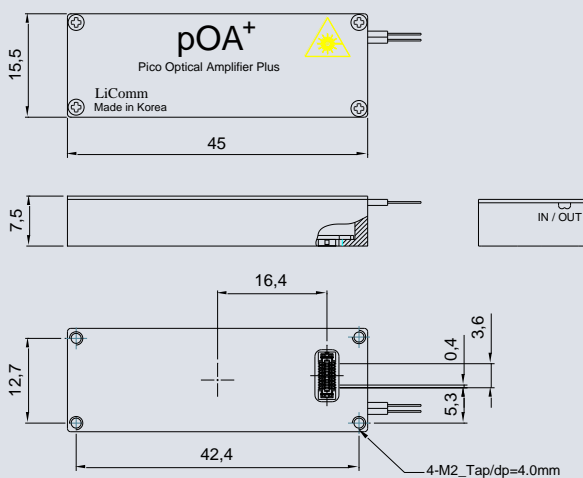
(1) Input Power = 0dBm

(2) Input Power = -30dBm at 1545 nm

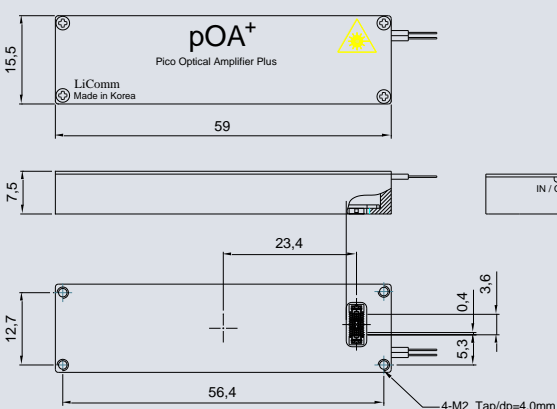
(3) Input Power = -10dBm over operating wavelength range (w/o TOF)

(4) Optional function for TOF/VOA

Mechanical Dimension (45 x 15.5 x 7.5[mm])



Mechanical Dimension (59 x 15.5 x 7.5[mm] with TOF/VOA)



Electric & Environmental Characteristics

Parameter	Typical Value
Power supply voltage ⁽¹⁾	+3.3 V
Interface	I2C
Alarm	LVTTL
Operating case temperature	0 ~ 70 °C
Storage temperature	- 40 ~ 85 °C
Storage humidity	5 ~ 85 % R.H
Power consumption ⁽²⁾	2.5 W

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

(2) In normal input power and full temperature range

Max. P_{Tot} is 1.6W at P_{out} =15dBm, Max. P_{Tot} is 1.0W at P_{out} =12dBm.

Control and Monitoring Functions

Parameter	Typical Value
Control Scheme	APC with FLS*
Monitor	OPM / LD-Bias / Case-Temp
Alarm	LOP / LD-Bias / Case-Temp

* FLS: Forced Laser Shutdown

Ordering Information

OFA - TCQ - xx₁AP

XX₁ : Max. Output Power (dBm)

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