

EYP-TPA-0765-02000-4006-BTU02-0000

Revision 0.70

TAPERED AMPLIFIER Semiconductor Optical Amplifier

Distributor

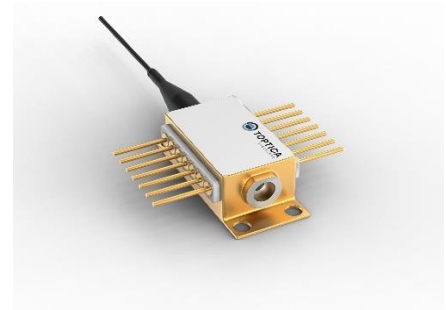
ams TECHNOLOGIES
 where technologies meet solutions

info@amstechnologies.com
 www.amstechnologies-webshop.com

Contact us 

General Product Information

Product	Application
765 nm Tapered Amplifier	Spectroscopy
14 Pin Butterfly Package	
with PM Fiber and FC/APC Connector (Input)	
and collimated Output Beam	



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-40		85
Operational Temperature at Case	T_C	°C	-20		75
Forward Current	I_F	A			5
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	W			2.5
TEC Current	I_{TEC}	A			5
TEC Voltage	V_{TEC}	V			7.0

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at these or any other conditions beyond those indicated under Recommended Operational Conditions is not implied.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_{case}	°C	0		50
Operational Temperature at Chip	T_{chip}	°C	10	25	35
Forward Current	I_F	A			4.0
Input Power	P_{opt}	mW	10		50
Output Power	P_{opt}	W			2

Measurement Conditions / Comments

measured with integrated thermistor
 seeding required above 2 A
 Insertion loss ≤ 0.3 dB
 with proper injection from a seed laser

Characteristics

Parameter	Symbol	Unit	min	typ	max
Wavelength	λ	nm		770	
Gain Width (FWHM)	$\Delta\lambda$	nm		20	
Operational Current	$I_{Op Gain}$	A			4
Output Power	P_{opt}	W	2		
Polarization				TM	
Amplification	G	dB		15	
Temp. Coefficient of Wavelength	$d\lambda / dT$	nm/K		0.25	
Beam Diameter	d	mm		1	
Output Divergence parallel	$\Theta_{out }$	mrad		3	
Output Divergence perpendicular	$\Theta_{out\perp}$	mrad		3	

Measurement Conditions / Comments

$P_{opt} = 2$ W

E field perpendicular to base plate
 at recommended maximum forward current

$1/e^2$
 $1/e^2$ (full angle)
 $1/e^2$ (full angle)

EYP-TPA-0765-02000-4006-BTU02-0000

Revision 0.70

2025-08-11

TAPERED AMPLIFIER Semiconductor Optical Amplifier



Thermoelectric Cooler

Parameter	Symbol	Unit	min	typ	max
Current	I_{TEC}	A		1.2	
Voltage	U_{TEC}	V		2.0	
Power Dissipation (total loss at case)	P_{loss}	W		8	
Temperature Difference	ΔT	K		40	

Measurement Conditions / Comments

Popt = 2 W; ΔT = 20 K

Popt = 2 W; ΔT = 20 K

Popt = 2 W; ΔT = 20 K

Popt = 2 W

Thermistor (Standard NTC Type)

Parameter	Symbol	Unit	min	typ	max
Resistance	R	k Ω		10	
Beta Coefficient	b			3892	
Steinhart & Hart Coefficient A	A			1.1293×10^{-3}	
Steinhart & Hart Coefficient B	B			2.3410×10^{-4}	
Steinhart & Hart Coefficient C	C			8.7755×10^{-8}	

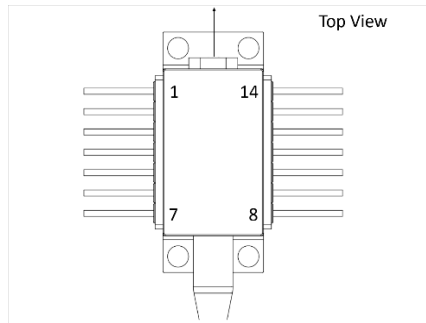
Measurement Conditions / Comments

25° C

0° C ... 50° C

Pin Assignment

1	Thermoelectric Cooler (+)	14	Thermoelectric Cooler (-)
2	Thermistor	13	not connected
3	not connected	12	not connected
4	not connected	11	Amplifier (Cathode)
5	Thermistor	10	Amplifier (Anode)
6	not connected	9	not connected
7	not connected	8	not connected



EYP-TPA-0765-02000-4006-BTU02-0000

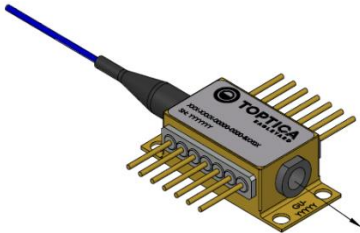
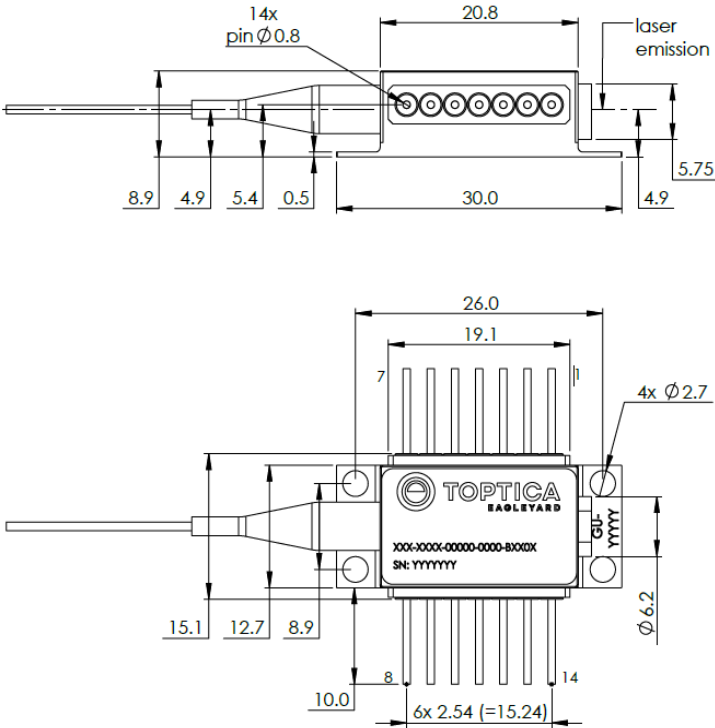
Revision 0.70

2025-08-11

TAPERED AMPLIFIER Semiconductor Optical Amplifier



Package Drawings



SWZ-23-0117-1237

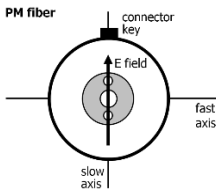
Fiber and Connector Type (Input)

Parameter

PM Fiber 900 / 125 / 5.5 μm , UV/Polyester-elastomer Coating ($l = 1 \pm 0.1 \text{ m}$)

Connector FC/APC (narrow key / 2mm)

Measurement Conditions / Comments



EYP-TPA-0765-02000-4006-BTU02-0000

Revision 0.70

2025-08-11

TAPERED AMPLIFIER Semiconductor Optical Amplifier



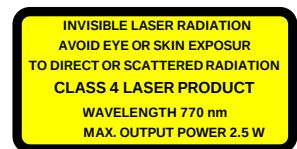
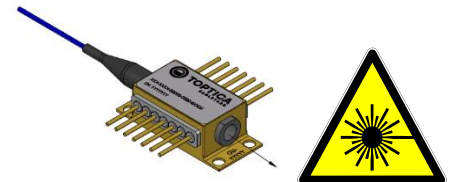
Unpacking, Installation and Laser Safety

Unpacking the tapered amplifier should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode.

This amplifier is designed for the setup of MOPA systems. Appropriate seed lasers are DFB lasers of the type EYP-DFB-xxxx-xxxxx-1500-BFY12-000x with matching wavelengths. An external fiber isolator should be used between seed laser and amplifier in order to suppress backreflections that may disturb the emission spectrum of the seed laser and may cause mode-hops in case of wavelength tuning.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam. Each tapered amplifier will come with an individual test protocol verifying the parameters given in this document.



IEC-60825-1



info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us

EYP-TPA-0765-01500-3006-CMT03-0000

Revision 0.91

2017-11-22

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Characteristics at $T_{LD} = 25\text{ °C}$ at BOL

cont'd

Parameter	Symbol	Unit	min	typ	max
Reflectivity at Front Facet	R_{ff}			3·10 ⁻⁴	1·10 ⁻³
Reflectivity at Rear Facet	R_{rf}			3·10 ⁻⁴	1·10 ⁻³
Input Aperture (at rear side)	d_{in}	μm		3	
Output Aperture (at front side)	d_{out}	μm		190	
Astigmatism	A	μm	500	600	700
Input Divergence parallel ($1/e^2$)	$\Theta_{in }$	°		t.b.d.	
Input Divergence perpendicular ($1/e^2$)	$\Theta_{in\perp}$	°		t.b.d.	
Output Divergence parallel ($1/e^2$)	$\Theta_{out }$	°		14	
Output Divergence perpendicular ($1/e^2$)	$\Theta_{out\perp}$	°		33	
Beam quality factor	M^2				
Polarization				TM	

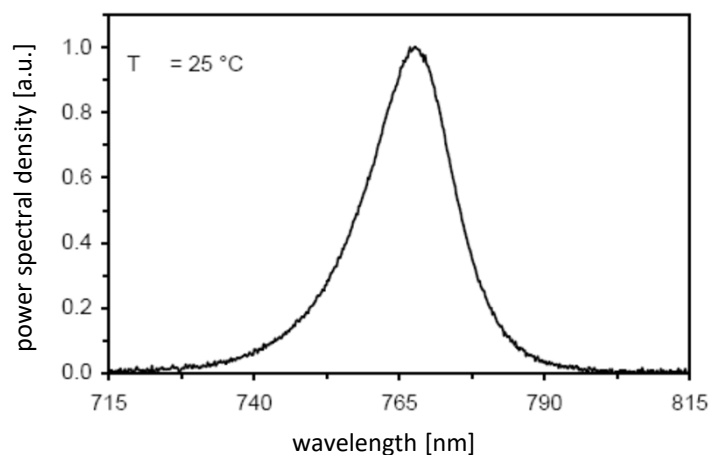
Measurement Conditions / Comments

depending on operating conditions

E field perpendicular to junction plane

Typical Measurement Results

Spectrum measured w/o injection



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

EYP-TPA-0765-01500-3006-CMT03-0000

Revision 0.91

2017-11-22

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

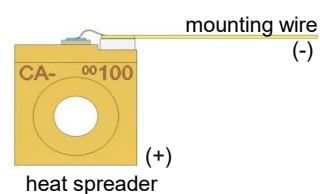
Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h	mm	7.10	7.15	7.20
C-Mount Thickness	t	mm		2.80	

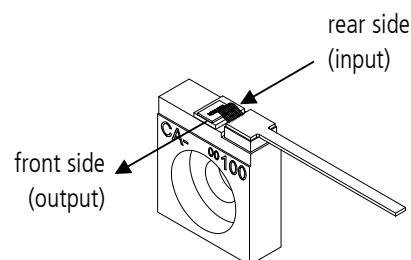
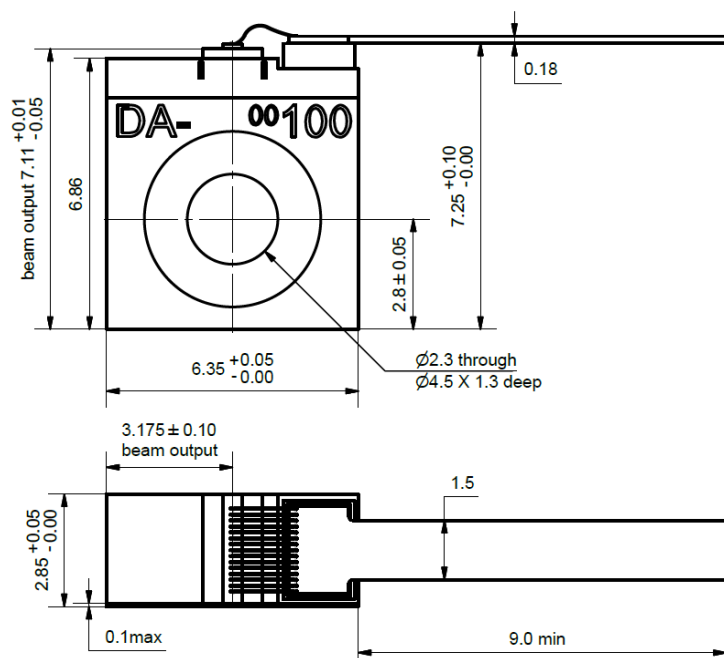
Measurement Conditions / Comments

Package Pinout

Mounting Wire	Cathode (-)
Housing	Anode (+)



Package Drawings



AIZ-16-0418-1010

EYP-TPA-0765-01500-3006-CMT03-0000

Revision 0.91

2017-11-22

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

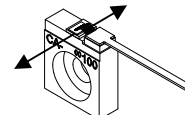
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.



Laser Emission



IEC-60825-0



Complies with 21 CFR 1040.10 and 1040.40

Distributor



amSTECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us



EYP-TPA-0780-01000-3006-CMT03-0000

Revision 0.91

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Distributor



ams TECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 

General Product Information

Product	Application
780 nm Tapered Amplifier	Spectroscopy
C-Mount Package	Metrology



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature (non condensing)	T_S	°C	-40		85
Operational Temperature at Case (non cond.)	T_C	°C	0		50
Forward Current	I_F	A			3.3
Reverse Voltage	V_R	V			0
Output Power	P_{opt}	W			1.2

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at these or any other conditions beyond those indicated under Recommended Operational Conditions is not implied.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	5		40
Forward Current	I_F	A			3.0
Input Power	P_{input}	mW	10		50
Output Power	P_{opt}	W			1.0

Measurement Conditions / Comments

non condensing

with proper injection from a seed laser

Characteristics at $T_{LD} = 25\text{ °C}$ at BOL

Parameter	Symbol	Unit	min	typ	max
Design Wavelength	λ_c	nm		780	
Gain Width (FWHM)	$\Delta\lambda$	nm		20	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Operational Current @ $P_{opt} = 1.0\text{ W}$	$I_{op\ Gain}$	A			3.0
Output Power	P_{opt}	W	1.0		
Amplification	G	dB		20	
Cavity Length	L_c	μm		2750	

Measurement Conditions / Comments

with proper injection from a seed laser

at recommended maximum forward current

EYP-TPA-0780-01000-3006-CMT03-0000

Revision 0.91

2017-11-22

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Characteristics at $T_{LD} = 25\text{ °C}$ at BOL

cont'd

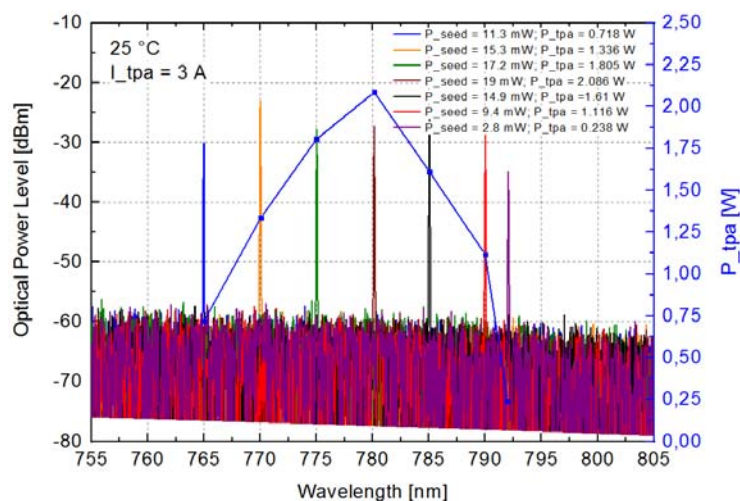
Parameter	Symbol	Unit	min	typ	max
Reflectivity at Front Facet	R_{ff}			3·10 ⁻⁴	1·10 ⁻³
Reflectivity at Rear Facet	R_{rf}			3·10 ⁻⁴	1·10 ⁻³
Input Aperture (at rear side)	d_{in}	μm		3	
Output Aperture (at front side)	d_{out}	μm		190	
Astigmatism	A	μm		600	
Input Divergence parallel ($1/e^2$)	$\Theta_{in }$	°		23	
Input Divergence perpendicular ($1/e^2$)	$\Theta_{in\perp}$	°		41	
Output Divergence parallel ($1/e^2$)	$\Theta_{out }$	°		20	
Output Divergence perpendicular ($1/e^2$)	$\Theta_{out\perp}$	°		41	
Beam quality factor	M^2				
Polarization				TM	

Measurement Conditions / Comments

estimated at recommended maximum forward current

E field perpendicular to junction plane

Typical Measurement Results



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

EYP-TPA-0780-01000-3006-CMT03-0000

Revision 0.91

2017-11-22

TAPERED AMPLIFIERS Semiconductor Optical Amplifier



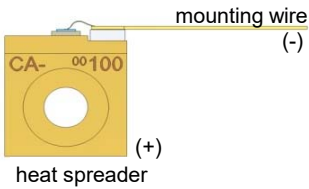
Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h	mm	7.05	7.10	7.20
C-Mount Thickness	t	mm		2.80	

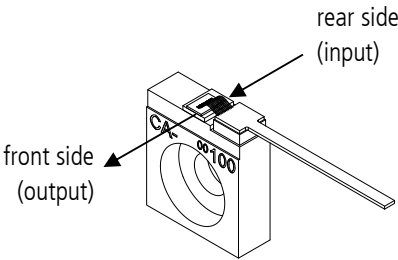
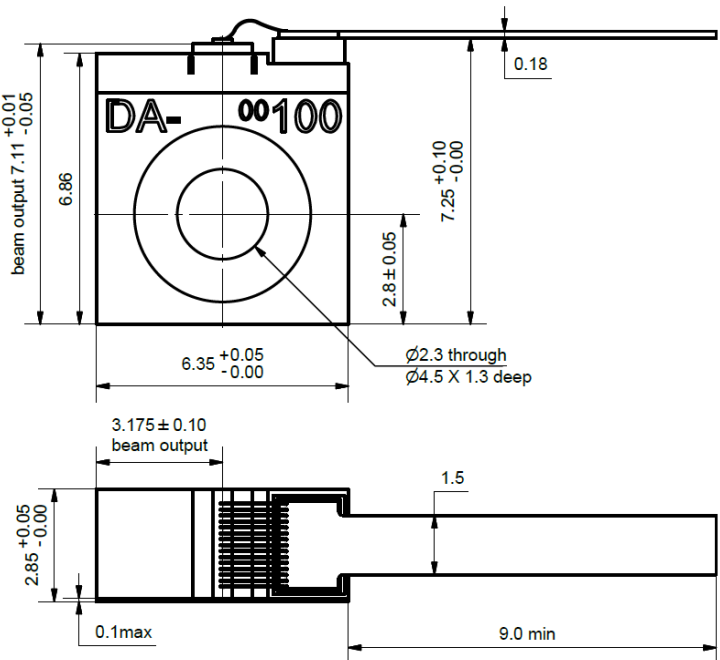
Measurement Conditions / Comments

Package Pinout

Mounting Wire	Cathode (-)
Housing	Anode (+)



Package Drawings



AIZ-16-0418-1010

EYP-TPA-0780-01000-3006-CMT03-0000

Revision 0.91

2017-11-22

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

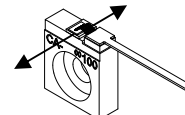
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.



Laser Emission



IEC-60825-0



Complies with 21 CFR 1040.10 and 1040.40

Distributor



amSTECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 

EYP-TPA-0780-03000-4006-BFU09-0000

Revision 0.70

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Distributor



amSTECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 

General Product Information

Product	Application
780 nm Tapered Amplifier	Spectroscopy
14 Pin Butterfly Package (non hermetic)	
with PM Fiber and FC/APC Connector (Input)	
and collimated Output Beam	



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-40		85
Operational Temperature at Case	T_C	°C	15		35
Operational Temperature at Chip	T_{chip}	°C	15		35
Forward Current	I_F	A			5
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	W			3.2

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at these or any other conditions beyond those indicated under Recommended Operational Conditions is not implied.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	15		50
Operational Temperature at Chip	T_{chip}	°C	15	25	35
Forward Current	I_F	A			4.5
Input Power	P_{input}	mW	10		80
Output Power	P_{opt}	W			3

Measurement Conditions / Comments

non condensing

with proper injection from a seed laser

Characteristics at T_{chip}

Parameter	Symbol	Unit	min	typ	max
Wavelength	λ_C	nm		780	
Gain Width (FWHM)	$\Delta\lambda$	nm		20	
Temp. Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Operational Current	$I_{op \text{ Gain}}$	A			4.5
Output Power	P_{opt}	W	3.0		
Amplification	G	dB		23	

Measurement Conditions / Comments

P_{opt} = with proper injection from a seed laser

at recommended maximum forward current

EYP-TPA-0780-03000-4006-BFU09-0000

Revision 0.70

2022-01-10

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier



Characteristics at T_{chip} cont'd

Parameter	Symbol	Unit	min	typ	max
Beam Diameter horizontal	$d_{\text{out} }$	mm		1	
Beam Diameter vertical	$d_{\text{out}\perp}$	mm		1	
Output Divergence parallel	$\Theta_{\text{out} }$	mrad		3	
Output Divergence perpendicular	$\Theta_{\text{out}\perp}$	mrad		3	
Polarization				TM	

Measurement Conditions / Comments

E field perpendicular to base plate

Thermoelectric Cooler

Parameter	Symbol	Unit	min	typ	max
Current	I_{TEC}	A			2.5
Voltage	U_{TEC}	V			5
Power Dissipation (total loss at case)	P_{loss}	W		10	
Temperature Difference	ΔT	K			20

Measurement Conditions / Comments

 $P_{\text{opt}} = 3 \text{ W}$ $P_{\text{opt}} = 3 \text{ W}$ $P_{\text{opt}} = 3 \text{ W}$ $P_{\text{opt}} = 3 \text{ W}$

Thermistor (Standard NTC Type)

Parameter	Symbol	Unit	min	typ	max
Resistance	R	k Ω		10	
Beta Coefficient	β			3892	
Steinhart & Hart Coefficient A	A			1.1293×10^{-3}	
Steinhart & Hart Coefficient B	B			2.3410×10^{-4}	
Steinhart & Hart Coefficient C	C			8.7755×10^{-8}	

Measurement Conditions / Comments

 $T_{\text{chip}} = 25^\circ \text{C}$ $R_1 / R_2 = e^{\beta(1/T_1 - 1/T_2)}$ at $T_{\text{LD}} = 0^\circ \dots 50^\circ \text{C}$ $1/T = A + B(\ln R) + C(\ln R)^3$

T: temperature in Kelvin

R: resistance at T in Ohm

EYP-TPA-0780-03000-4006-BFU09-0000

Revision 0.70

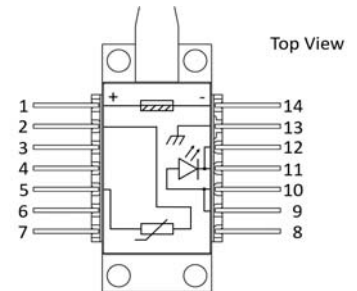
2022-01-10

TAPERED AMPLIFIERS

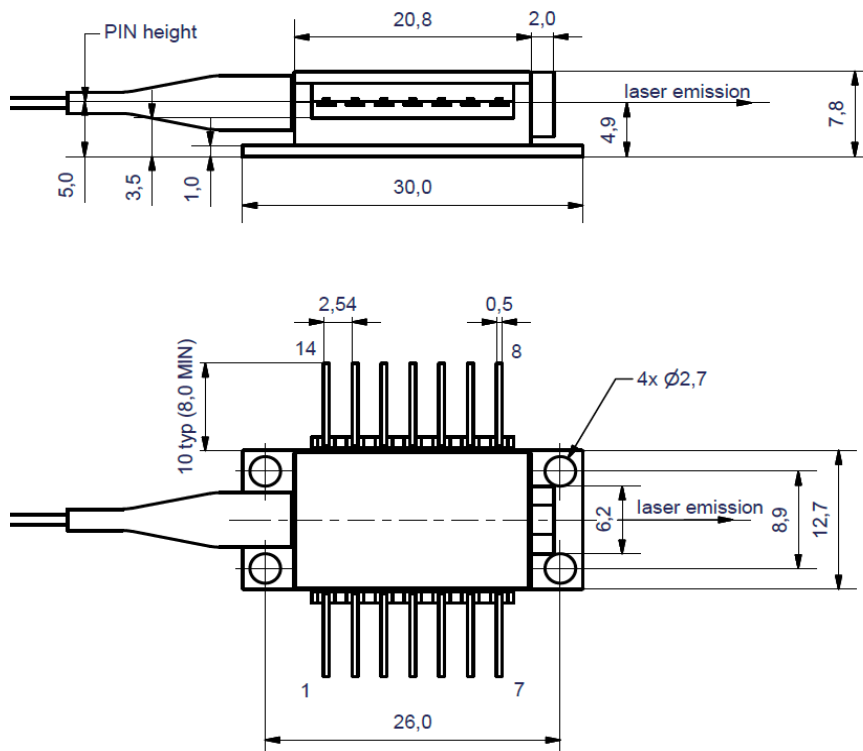
Semiconductor Optical Amplifier

Pin Assignment

1	Thermoelectric Cooler (+)	14	Thermoelectric Cooler (-)
2	Thermistor	13	Case
3	not connected	12	Amplifier (Cathode)
4	not connected	11	Amplifier (Cathode)
5	Thermistor	10	Amplifier (Anode)
6	not connected	9	Amplifier (Anode)
7	not connected	8	not connected



Package Drawings



Caution. Excessive mechanical stress on the package can lead to a damage of the device.

See [instruction manual](#)
on www.toptica-eagleyard.com

EYP-TPA-0780-03000-4006-BFU09-0000

Revision 0.70

2022-01-10

TAPERED AMPLIFIERS Semiconductor Optical Amplifier

Unpacking, Installation and Laser Safety

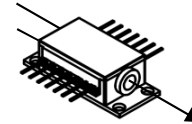
Unpacking the tapered amplifier should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

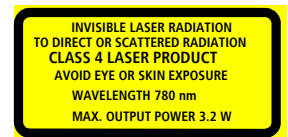
This amplifier is designed for the setup of MOPA systems. Appropriate seed lasers are DFB lasers of the type EYP-DFB-xxxx-xxxx-1500-BFY12-000x with matching wavelengths. An external fiber isolator should be used between seed laser and amplifier in order to suppress backreflections that may disturb the emission spectrum of the seed laser and may cause mode-hops in case of wavelength tuning.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

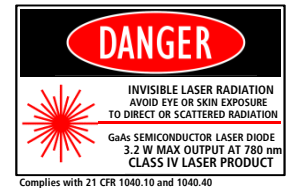
Each tapered amplifier will come with an individual test protocol verifying the parameters given in this document.



Laser Emission



IEC-60825-0



Complies with 21 CFR 1040.10 and 1040.40

Distributor

amsTECHNOLOGIES
 where technologies meet solutions

info@amstechnologies.com
 www.amstechnologies-webshop.com

Contact us 

This data sheet is subject to change without notice.
 © eagleyard Photonics

EYP-TPA-0780-03000-4006-CMT04-0000

Revision 1.01

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Distributor



ams TECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 

General Product Information

Product	Application
780 nm Tapered Amplifier	Spectroscopy
C-Mount Package	



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature (non condensing)	T_S	°C	-40		85
Operational Temperature at Case (non cond.)	T_C	°C	0		50
Forward Current	I_F	A			5
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	W			3.2

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at these or any other conditions beyond those indicated under Recommended Operational Conditions is not implied.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	5		40
Forward Current	I_F	A			4.5
Input Power	P_{input}	mW	10		50
Output Power	P_{opt}	W			3.0

Measurement Conditions / Comments

non condensing

with proper injection from a seed laser

Characteristics at $T_{LD} = 25\text{ °C}$ at BOL

Parameter	Symbol	Unit	min	typ	max
Design Wavelength	λ_C	nm		780	
Gain Width (FWHM)	$\Delta\lambda$	nm		20	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Operational Current @ $P_{opt} = 3.0\text{ W}$	$I_{op\ Gain}$	A			4.5
Output Power	P_{opt}	W	3.0		
Amplification	G	dB		23	
Cavity length	L_C	μm		4000	

Measurement Conditions / Comments

with proper injection from a seed laser

at recommended maximum forward current

EYP-TPA-0780-03000-4006-CMT04-0000

Revision 1.01

2017-11-22

TAPERED AMPLIFIERS
Semiconductor Optical Amplifier



Characteristics at $T_{LD} = 25\text{ }^{\circ}\text{C}$ at BOL cont'd

Parameter	Symbol	Unit	min	typ	max
Reflectivity at Front Facet	R_{ff}			3·10 ⁻⁴	1·10 ⁻³
Reflectivity at Rear Facet	R_{rf}			3·10 ⁻⁴	1·10 ⁻³
Input Aperture (at rear side)	d_{in}	μm		3	
Output Aperture (at front side)	d_{out}	μm		210	
Astigmatism	A	μm		720	
Input Divergence parallel (1/e ²)	$\Theta_{in }$	°		23	
Input Divergence perpendicular (1/e ²)	$\Theta_{in\perp}$	°		40	
Output Divergence parallel (1/e ²)	$\Theta_{out }$	°		18	
Output Divergence perpendicular (1/e ²)	$\Theta_{out\perp}$	°		40	
Polarization				TM	

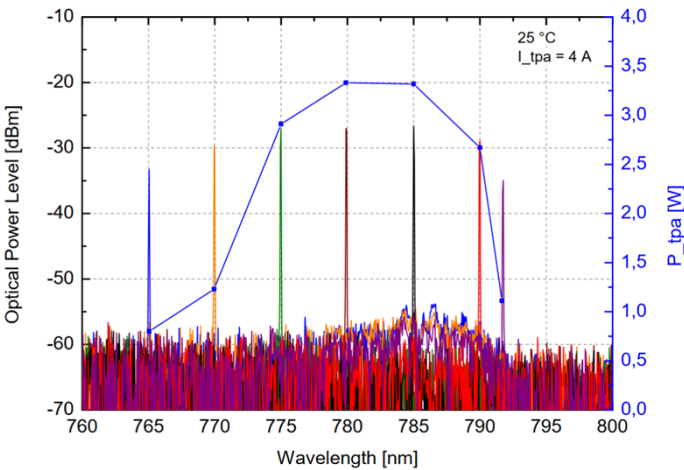
Measurement Conditions / Comments

estimated at recommended maximum forward current

E field perpendicular to junction plane

Typical Measurement Results

Output power at various wavelengths



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

EYP-TPA-0780-03000-4006-CMT04-0000

Revision 1.01

2017-11-22

TAPERED AMPLIFIERS Semiconductor Optical Amplifier



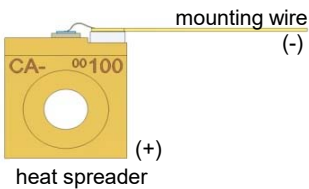
Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h	mm	7.05	7.10	7.20
C-Mount Thickness	t	mm		4.05	

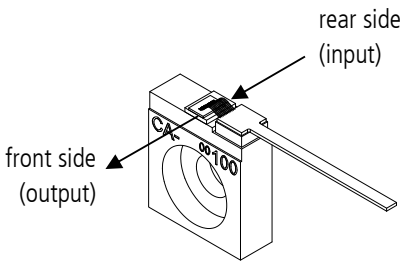
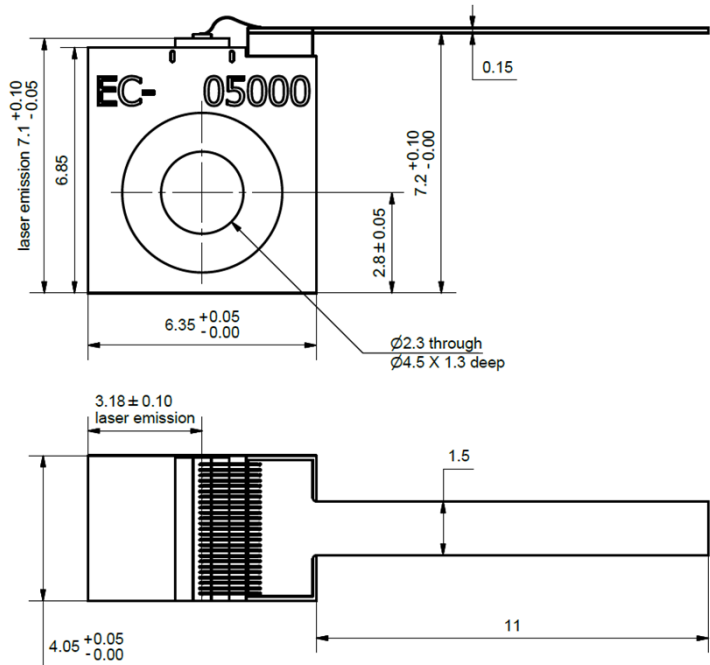
Measurement Conditions / Comments

Package Pinout

Mounting Wire	Cathode (-)
Housing	Anode (+)



Package Drawings



AIZ-18-0413-1535

EYP-TPA-0780-03000-4006-CMT04-0000

Revision 1.01

2017-11-22

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

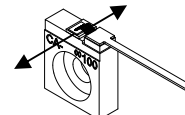
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

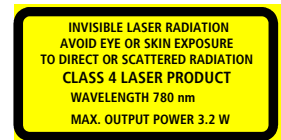
The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.



Laser Emission



IEC-60825-0



Complies with 21 CFR 1040.10 and 1040.40

Distributor



amSTECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 

EYP-TPA-0795-02000-4006-CMT04-0000

Revision 0.92

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Distributor



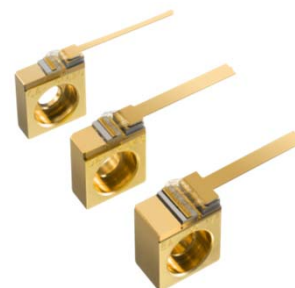
amstechnologies
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 

General Product Information

Product	Application
795 nm Tapered Amplifier	Spectroscopy
C-Mount Package	



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature (non condensing)	T_S	°C	-40		85
Operational Temperature at Case (non cond.)	T_C	°C	0		50
Forward Current	I_F	A			4.2
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	W			2.2

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at these or any other conditions beyond those indicated under Recommended Operational Conditions is not implied.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	5		40
Forward Current	I_F	A			4.0
Input Power	P_{input}	mW	10		50
Output Power	P_{opt}	W			2.0

Measurement Conditions / Comments

non condensing

with proper injection from a seed laser

Characteristics at $T_{LD} = 25\text{ °C}$ at BOL

Parameter	Symbol	Unit	min	typ	max
Design Wavelength	λ_C	nm		795	
Gain Width (FWHM)	$\Delta\lambda$	nm		20	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Operational Current @ $P_{opt} = 2.0\text{ W}$	$I_{op\ Gain}$	A			4.0
Output Power	P_{opt}	W	2.0		
Amplification	G	dB		20	
Cavity length	L_C	μm		4000	

Measurement Conditions / Comments

see images on page 4

with proper injection from a seed laser

at recommended maximum forward current

EYP-TPA-0795-02000-4006-CMT04-0000

Revision 0.92

2019-08-01

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

Characteristics at $T_{LD} = 25\text{ }^{\circ}\text{C}$ at BOL

cont'd

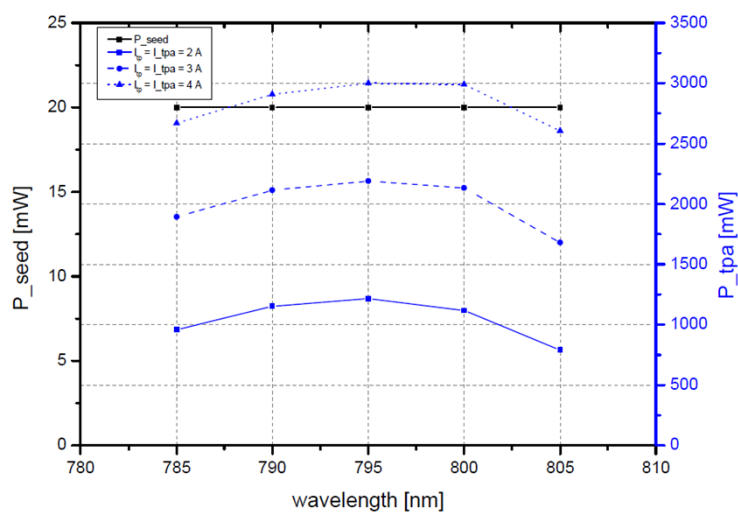
Parameter	Symbol	Unit	min	typ	max
Reflectivity at Front Facet	R_{ff}			3·10 ⁻⁴	1·10 ⁻³
Reflectivity at Rear Facet	R_{rf}			3·10 ⁻⁴	1·10 ⁻³
Input Aperture (at rear side)	d_{in}	μm		3	
Output Aperture (at front side)	d_{out}	μm		210	
Astigmatism	A	μm		700	
Input Divergence parallel ($1/e^2$)	$\Theta_{in }$	°		23	
Input Divergence perpendicular ($1/e^2$)	$\Theta_{in\perp}$	°		42	
Output Divergence parallel ($1/e^2$)	$\Theta_{out }$	°		17	
Output Divergence perpendicular ($1/e^2$)	$\Theta_{out\perp}$	°		42	
Polarization				TM	

Measurement Conditions / Comments

estimated at recommended maximum forward current

E field perpendicular to junction plane

Typical Measurement Results



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

EYP-TPA-0795-02000-4006-CMT04-0000

Revision 0.92

2019-08-01

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

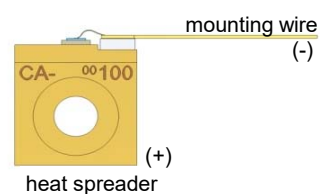
Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h	mm	7.05	7.10	7.20
C-Mount Thickness	t	mm		4.05	

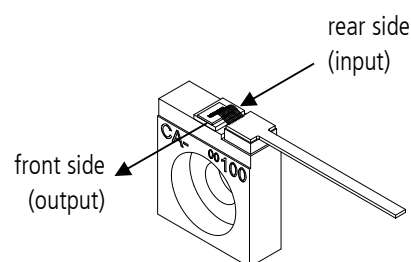
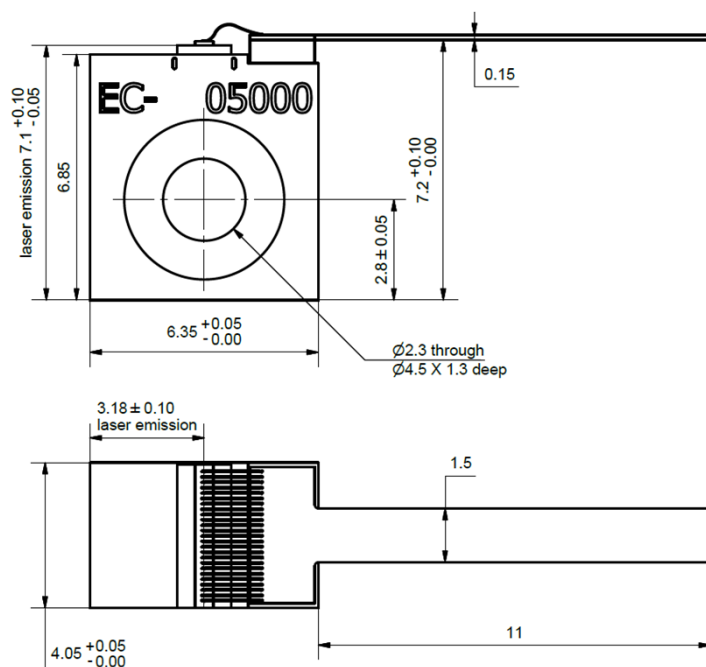
Measurement Conditions / Comments

Package Pinout

Mounting Wire	Cathode (-)
Housing	Anode (+)



Package Drawings



AIZ-18-0413-1535

EYP-TPA-0795-02000-4006-CMT04-0000

Revision 0.92

2019-08-01

TAPERED AMPLIFIERS

Semiconductor Optical Amplifier

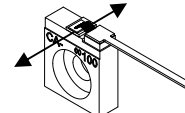
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

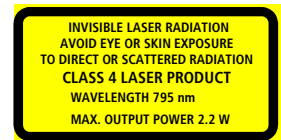
The TPA diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

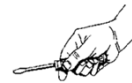
Each laser diode will come with an individual test protocol verifying the parameters given in this document.



Laser Emission



IEC-60825-0



Complies with 21 CFR 1040.10 and 1040.40

Distributor



amSTECHNOLOGIES
where technologies meet solutions

info@amstechnologies.com
www.amstechnologies-webshop.com

Contact us 