

# 976nm, Fiber-Coupled, Single Emitter Module

## Features

- Compact size
- Detachable SMA-fiber 200 $\mu$ m
- TEC for temperature stabilizing
- Thermistor

## Options

- 650nm pilot laser (aiming laser)
- Monitor photodiode
- Fiber detection sensor



## Device Specification

Optical Parameters <sup>1</sup>	Units	
Center Wavelength Range <sup>3</sup>	nm	976
Center Wavelength Tolerance	nm	$\pm 10$
Output Power <sup>2</sup>	W	10
Spectral Width (FWHM)	nm	<6
Slope Efficiency	W/A	>0.7
Wavelength Temp. Coefficient	nm/ $^{\circ}$ C	$\sim 0.38$

Fiber Parameters	Units	
Fiber Core Diameter	$\mu$ m	200
Numerical Aperture	NA	0.22
Fiber Connector		SMA-905

Pilot Laser (Aiming Laser)	Units	
Output Power	mW	<0.5
Wavelength	Nm	650 $\pm 10$
Voltage	V	3.5
Current	mA	<30

Electrical Parameters <sup>1</sup>		
Power Conversion Efficiency	%	>25
Threshold Current ( $I_{TH}$ )	A	0.5 to 1.8
Operating Current ( $I_{OP}$ )	A	<14
Operating Voltage ( $V_{OP}$ )	V	<2.5
Current Monitoring Photo Diode ( $I_{mo}$ )	mA	0.1 to 0.5
TEC max. Current ( $I_t$ )	A	6.0
TEC max. Voltage ( $U_t$ )	V	9.8
Thermistor Data ( $R_t$ )	k $\Omega/\beta(25^{\circ}$ C)	10 $\pm 5\%$ / 4100

Thermal Parameters		
Operating Temperature Range <sup>3, 4</sup>	$^{\circ}$ C	+20 to +30
Storage Temperature Range <sup>4</sup>	$^{\circ}$ C	0 to +55
Recommended Heatsink Capacity	W	35
Max. Soldering Temperature for Electrical Leads	$^{\circ}$ C	220
Max. Soldering Time per Lead	s	10

<sup>1</sup>Data at 25 $^{\circ}$ C thermistor temperature

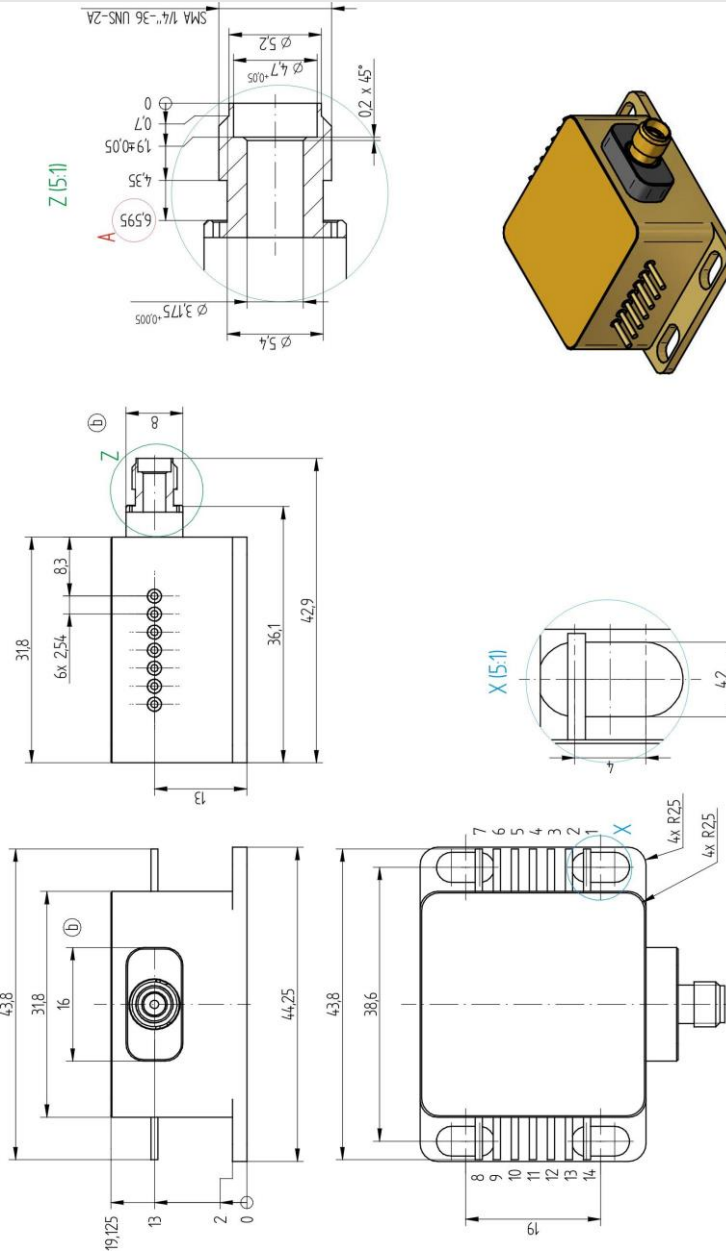
<sup>2</sup>Reduced lifetime if used above nominal operating conditions

<sup>3</sup>Others available upon request

<sup>4</sup>A non-condensing environment is required for storage and operation below the ambient dew point

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## Package Dimension



## Pin Assignment

- 1 = Metal housing, GND
- 2 = Laser diode (+)
- 3 = Temperature sensor (NTC)
- 4 = Temperature sensor (NTC)
- 5 = Laser diode (-)
- 6 = Power PD, photo diode (+)
- 7 = Power PD, photo diode (-)
- 8 = Thermo-electric cooler (TEC -)
- 9 = Fiber detection PD, photo diode (+)
- 10 = Fiber detection LED (-)
- 11 = Fiber detection common LED (+)/PD (-)
- 12 = Aiming laser (+ 3.5 V)
- 13 = Aiming laser (GND)
- 14 = Thermo-electric cooler (TEC +)



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