Special Notes on Photodigm TOSA Packaged Laser Diodes:

The user must observe special precautions when handling and operating Photodigm Laser Diodes mounted on TOSA packages.

1) As with most laser diodes, Photodigm Laser Diodes are typically very sensitive to electrostatic discharge (ESD), and thus should **only be handled and mounted when the user is wearing ESD protection.** If the TOSA package is to be soldered into the drive circuit, **the soldering iron must also be ESD protected.**

2) It is highly recommended that the **Photodigm Laser Diode always be shorted when being handled, mounted, or connected**. Additionally, it is recommended that the laser diode driver have a relay-protected output where **a short circuit is maintained across the laser diode anode and cathode – especially when the laser diode is being connected or disconnected from the circuit.**

3) It is recommended to **never reverse-bias a laser diode due to potential damage to the light-emitting active region**.

4) **The correct polarity for operating Photodigm Laser Diodes is positive (+) to the diode laser anode, and negative (-) to the cathode of the TOSA package.**

5) **The user must supply adequate heat-sink capability when operating Photodigm Laser Diodes mounted in TOSA packages.** These packages contain a thermoelectric cooler (TEC) and a thermistor that must be used during any operation of the laser diode. The thermistor data sheet here http://www.meas-spec.com/downloads/Leadless_Chip_Gold_10K3CG.pdf (part # is 10K3CG3)

6) Use of Thermal Grease is required for proper heat sink operation. Ensure thorough coverage, but use sparingly.

It is important to select a TEC controller with user-adjustable output current limits. Setting the proper limits prevents over-driving and destroying the miniature embedded TEC. (Imax 1.1A, Umax 3.0V for 1MD03-024-04_1)

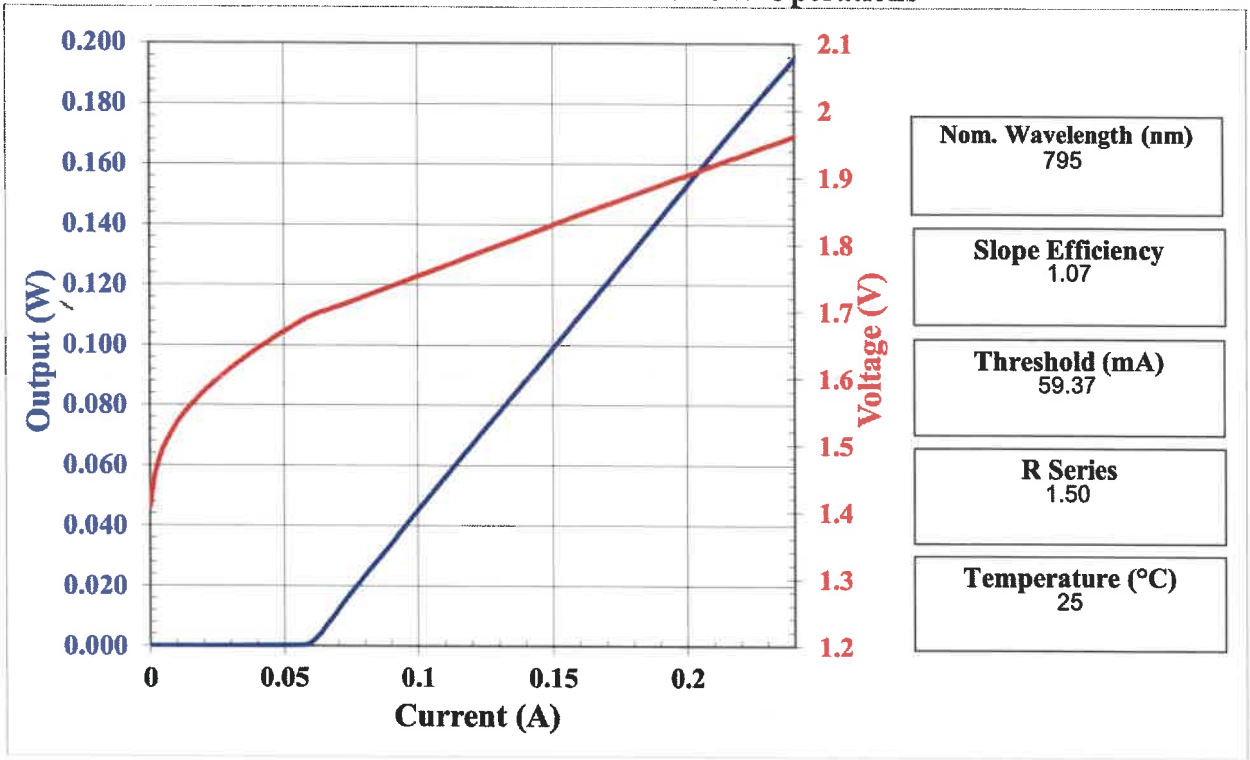
The TEC in the TOSA package is capable of temperature change rates of 50°C/second. Use caution when configuring control circuit. The TEC data sheet here http://www.tec-microsystems.com/EN/Frame_1MD03_TECs_50.html (part # 1MD03-024-04_1)

Please contact Photodigm Inc for further questions.

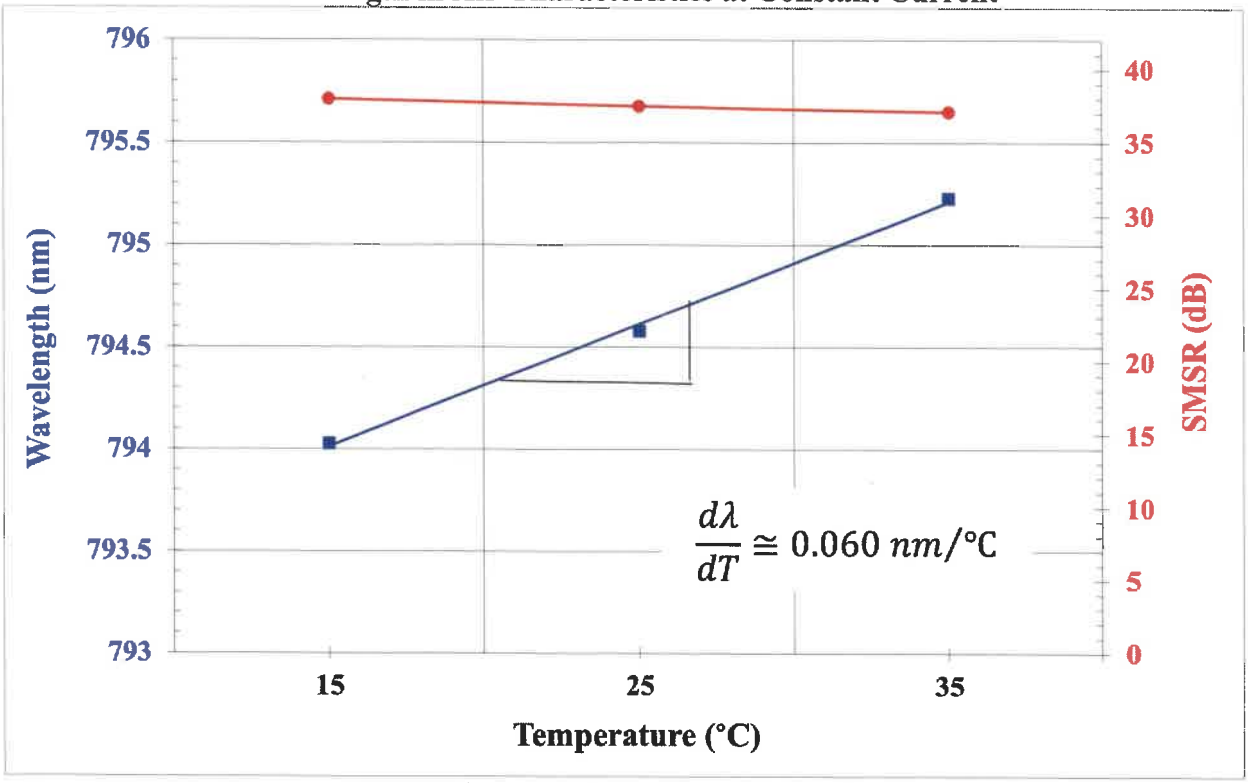
Laser Diode Data Sheet
Laser ID #20-103, SN #12990

CAUTION: Do not exceed drive current/power of the LIV

LIV Characteristics under CW Operations

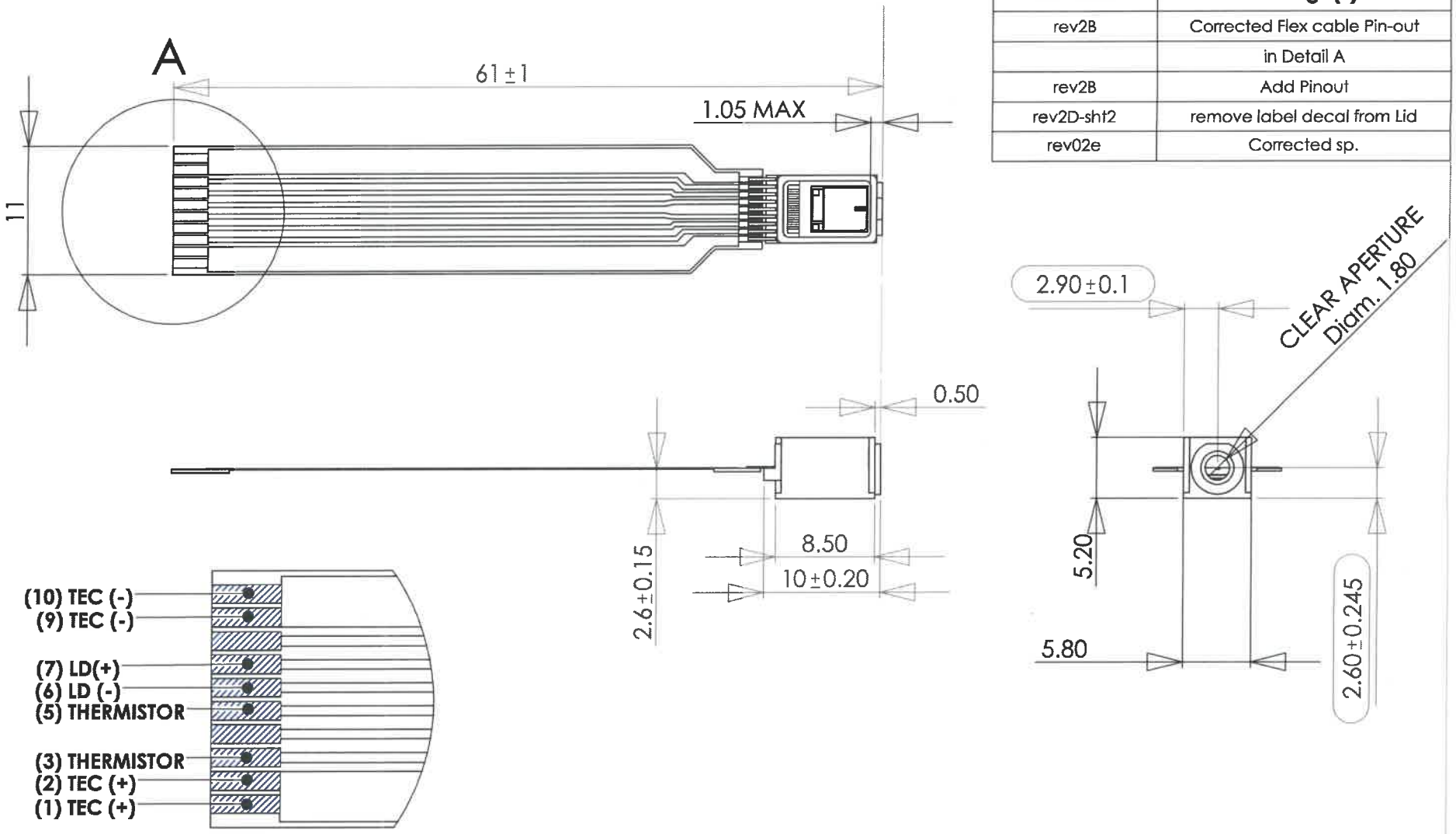


Wavelength in Air Characteristics at Constant Current



Wavelength and SMSR at I=230 mA

Revision	Change(s)
rev2B	Corrected Flex cable Pin-out
	in Detail A
rev2B	Add Pinout
rev2D-sht2	remove label decal from Lid
rev02e	Corrected sp.



DETAIL A
SCALE 4 : 1

DIMENSIONS ARE IN MM
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±

MATERIAL —

FINISH —

NEXT ASSY | USED ON

APPLICATION | DO NOT SCALE DRAWING

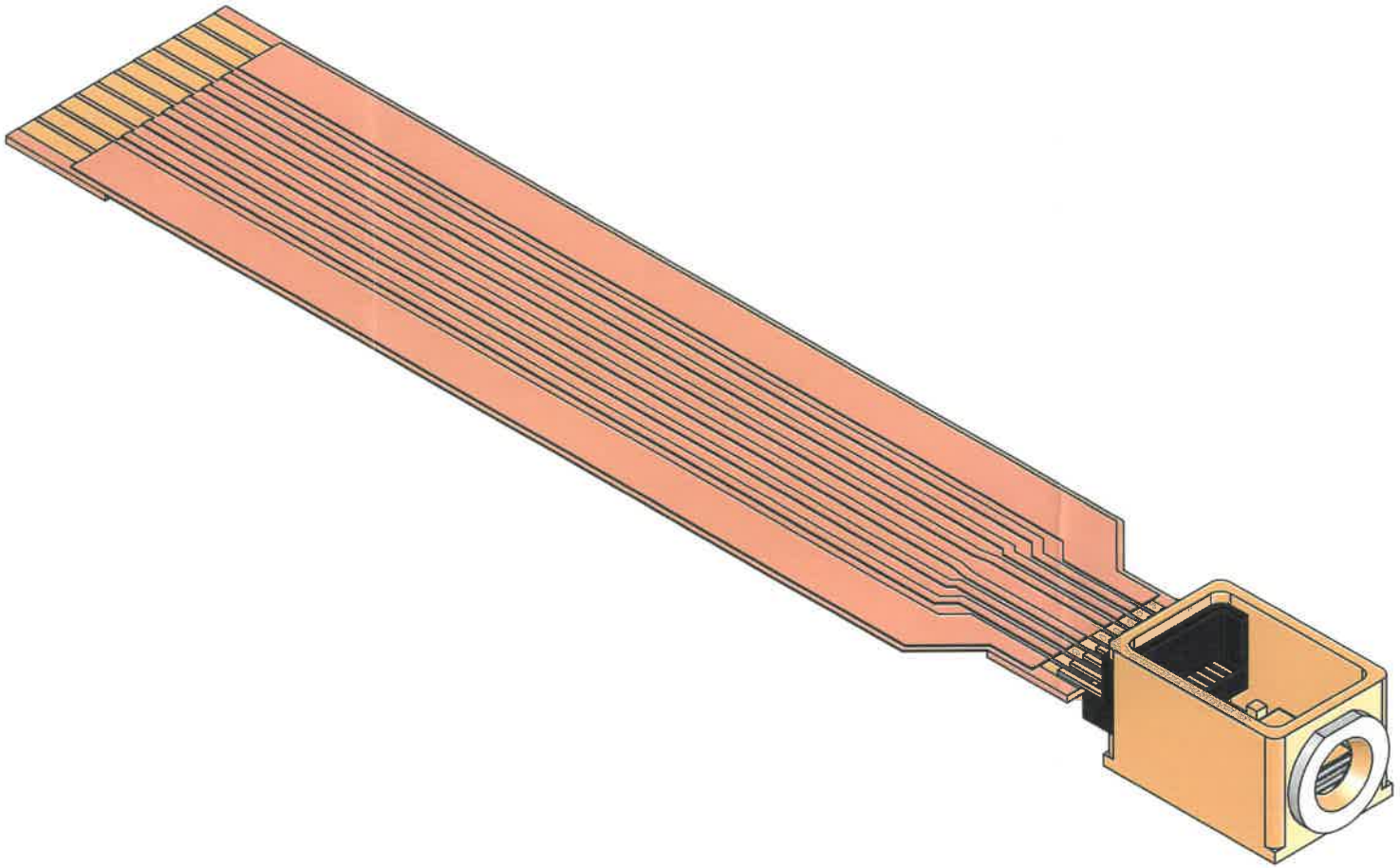
	NAME	DATE
DRAWN	M. Eastin	032116
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

PHOTODIGM, INC.

Photodigm Single TOSA Assembly (MERC)

SIZE A | DWG. NO. FF-KYO-MERC-01 | REV. 02e
SHEET 1 OF 2
SCALE:2:1 | WEIGHT:



		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN	M. Eastin	010516
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

PHOTODIGM, INC.

TITLE:

Photodigm Single TOSA Assembly (MERC)

SIZE	DWG. NO.	REV
A	FF-KYO-MERC-01	02d
SCALE: 4:1	WEIGHT:	SHEET 2 OF 2

DATA SHEET | **TS-2000-A**

Transmitter Optical Sub-Assembly (TOSA) Laser Diode Package Test Fixture

GENERAL PRODUCT INFORMATION

The TS-2000-A Transmitter Optical Sub-Assembly (TOSA) Laser Diode Package Test Fixture is designed to allow the user to easily mount and connect to Photodigm's Transmitter Optical Sub-Assembly (TOSA) Laser Diode package. It provides easy connections to an external laser diode driver controller and an external thermoelectric cooler controller.

FRONT BACK INSIDE

FEATURES

- Heat sink for high-powered laser diodes
- 15-Pin D-SUB Male Connector connects to thermoelectric cooler (TEC) controller
- 9-Pin D-SUB Male Connector connects to laser diode (LD) controller
- (4) ½-20 mounting holes
- (4) 4-40 mounting holes for a 30mm cage system
- Zero insertion force (ZIF) socket for flex cable
- Black anodized
- 72.6mm * 50.8mm * 44.5mm

USER GUIDE

Unpacking, Installation, and Laser Safety

- Remove the two (2) 2mm Allen head screws from the TOP cover
- Remove the TOP cover
- Ensure the mechanical latch on the ZIF socket is UNLOCKED
- Apply thermal grease to the bottom of the slot where the device under test (DUT) will be installed
- Install DUT through the front of the fixture, FLEX Cable end first
    - The silkscreen on the FLEX cable indicates which way is UP
    - Employ caution to prevent thermal grease from meeting the face of the DUT
- Set the DUT in place, the spring-loaded thumbscrew will keep it secure
- Install the FLEX cable in the ZIF socket and LOCK the mechanical latch
- Reinstall the TOP cover using the two (2) 2mm Allen head screws

Removal

- Reverse the installation procedure
- Use caution to not contaminate the LENS of the DUT with thermal grease

NOTE: The fixture is designed for the 50.8mm FLEX cable but may be used with the 152.4mm cable. If using the 152.4mm cable carefully fold back the cable over itself. Employ caution to not crimp the cable (minimum 2mm bend radius). There is room available above the ZIF socket in the TOP cover.

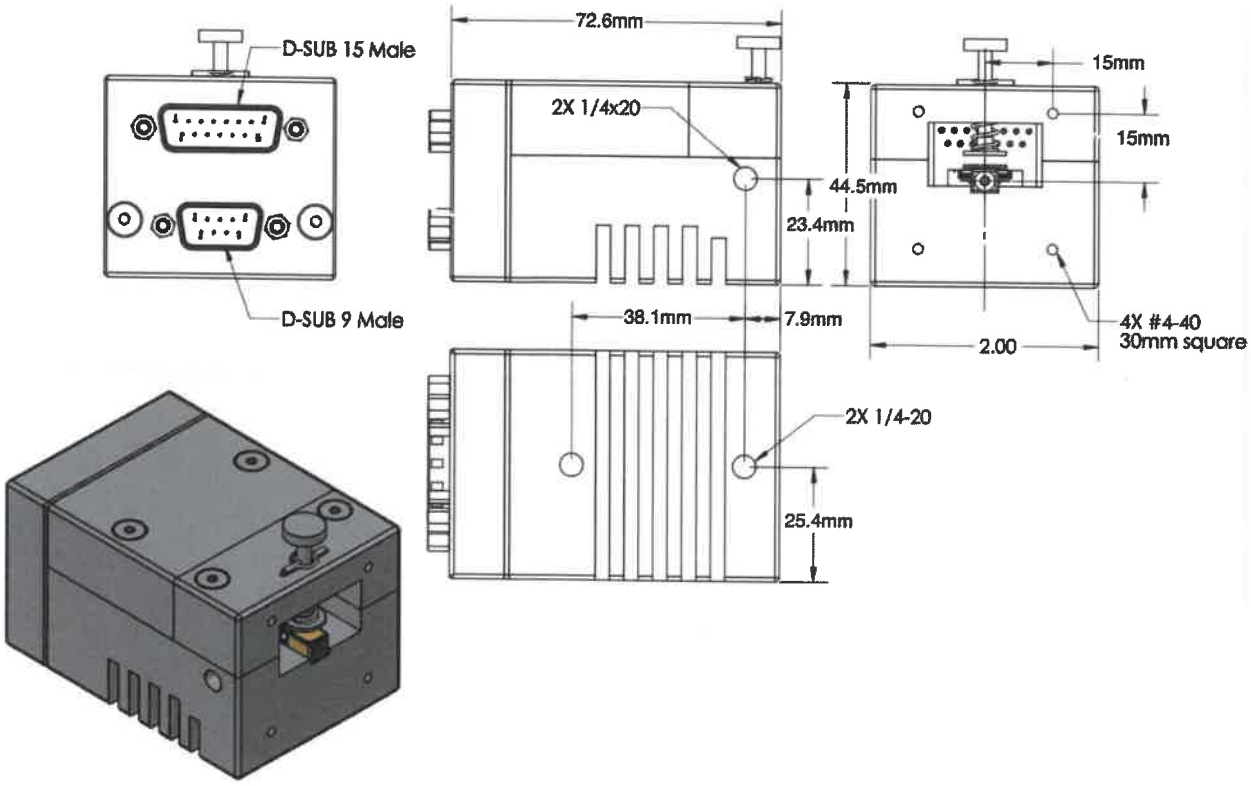
CAUTION

- The TEC in the TOSA laser diode package is capable of temperature change rates of 50C/second
- Employ caution when configuring the control circuit
- The use of thermal grease is required for proper heat sink operation
- Ensure thorough coverage but use sparingly
- Follow proper ESD handling procedures when handling the DUT and FLEX cable
- Do not bend the Feed through Pins on the back of the DUT excessively (more than five (5) degrees) while installing or removing the fixture

15-Pin D-SUB Male Pin Out		
Pin #	**Row**	**Description**
1	Top	Thermoelectric Cooler Positive (TEC+)
2	Top	Thermoelectric Cooler Positive (TEC+)
3	Top	Thermoelectric Cooler Negative (TEC-)
4	Top	Thermoelectric Cooler Negative (TEC-)
5	Top	Not Connected (NC)
6	Top	Not Connected (NC)
7	Top	Thermistor
8	Top	Thermistor
9	Bottom	Not Connected (NC)
10	Bottom	Not Connected (NC)
11	Bottom	Not Connected (NC)
12	Bottom	Not Connected (NC)
13	Bottom	Not Connected (NC)
14	Bottom	Not Connected (NC)
15	Bottom	Not Connected (NC)

9-Pin D-SUB Male Pin Out		
Pin #	**Row**	**Description**
1	Top	Not Connected (NC)
2	Top	Not Connected (NC)
3	Top	Not Connected (NC)
4	Top	Laser Diode Negative (LD-)
5	Top	Laser Diode Negative (LD-)
6	Bottom	Not Connected (NC)
7	Bottom	Not Connected (NC)
8	Bottom	Laser Diode Positive (LD+)
9	Bottom	Laser Diode Positive (LD+)

Transmitter Optical Sub-Assembly (TOSA) Laser Diode Package Test Fixture



Revision 20221028