# TST-M85A426-2H-V2

## 1.25Gbps 850nm VCSEL in ST Metal Receptacle with Monitor PD

**Data Sheet**

## Description

The Lasermate TST-M85A426-2H-V2 is an 850nm Vertical Cavity Surface Emitting Laser (VCSEL) module housed in an industry-standard ST-type metal receptacle. This version delivers >1mW optical power at 8mA drive current and includes a built-in monitoring photodiode for feedback control. The TOSA is designed for data rates up to 1.25Gbps and is pre-aligned for multi-mode fiber optic communication.

## Features

- ST-type metallic optical subassembly
- 850nm VCSEL with >1mW output at 8mA
- Pre-aligned for 50/125μm and 62.5/125μm multi-mode fiber
- Integrated monitor photodiode (PD)
- Data rate operation from DC to 1.25Gbps

## Applications

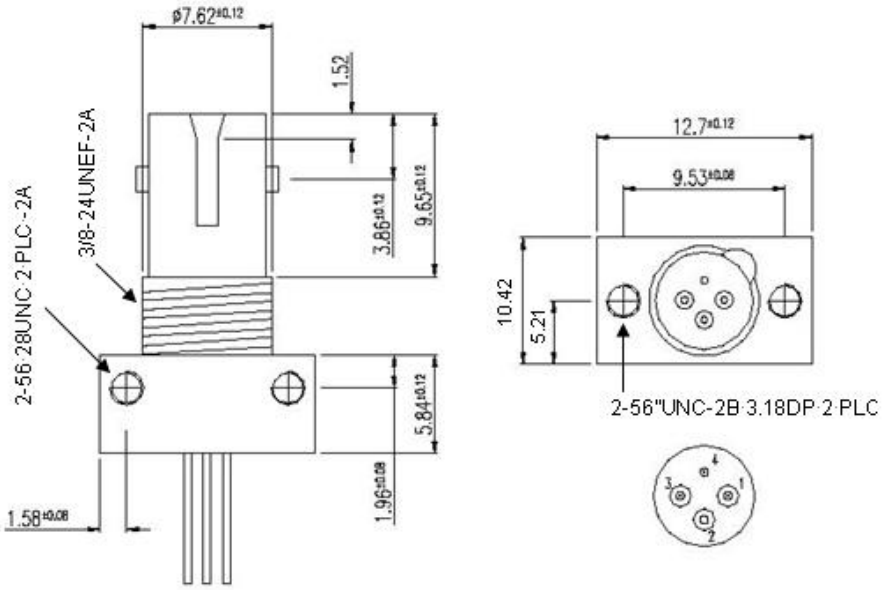
- 1.25Gbps fiber optic communication systems
- High-reliability short-reach data links
- Industrial and telecom-grade transceivers

## Specifications

| **Absolute Maximum Ratings** | | | | |
|---|---|---|---|---|
| Parameters | Min. | Max. | Unit | Conditions |
| Storage Temperature | -40 | 85 | °C | |
| Operating Temperature | 0 | 70 | °C | |
| Lead Solder Temperature | | 260 | °C | 10 seconds |
| Continuous Forward Current | | 20 | mA | |
| Continuous Reverse Voltage | | 5 | V | |

| **Electro-Optical Characteristics** | | | | | | |
|---|---|---|---|---|---|---|
| Parameters | Symbol | Min. | Typ. | Max. | Unit | Conditions |
| Threshold Current | $I_{th}$ | | 2 | 3.5 | mA | |
| Wavelength | $\lambda_P$ | 830 | 850 | 860 | nm | $I_F$=8 mA |
| Slope Efficiency | η | 0.23 | | | mW/mA | $I_F$=8 mA |
| Fiber Coupled Power | $P_O$ | 1 | | | mW | $I_F$=8 mA |
| Forward Voltage | $V_F$ | 1.6 | 1.8 | 2.5 | V | $I_F$=8 mA |
| Breakdown Voltage | $V_{BD}$ | 5 | 14 | | V | $I_R$=10 uA |
| Series Resistance | $R_S$ | 35 | 45 | 65 | Ω | $I_F$ =6 mA |
| Rise Time/Fall Time | Tr | | | 0.15 | ns | $I_b$ = $I_{th}$, 20%~80% |
| Spectral Width (RMS) | Δλ | | | 0.85 | nm | $I_F$ =6 mA |
| Relative Intensity Noise | RIN | | | -122 | dB/Hz | $I_F$ =6 mA, f=1GHz |
| Monitor Current | $I_M$ | | 50 | | uA | |

## Outline Dimensions (unit: mm)




## Pin Configuration

| Pin Number | Function |
|---|---|
| 1 | VCSEL Cathode |
| 2 | VCSEL Anode/PD Cathode |
| 3 | PD Anode |
| 4 | Case |

## Additional Notes

- The VCSEL is a class IIIb laser in the safety standard ANSI Z136.1 and should be treated as a potential eye hazard.
- Specifications are subject to change without notice.