TLC-P85A845-25C
25Gbps 850nm VCSEL LC-TOSA with Flexible Circuit

Data Sheet

Description

The Lasermate TLC-P85A845-25C is an 850nm Vertical Cavity Surface Emitting Laser (VCSEL) LC-type Transmitter Optical Sub-Assembly (LC-TOSA) featuring an integrated flexible printed circuit (FPC). Designed for high-speed data communication at up to 25.78125Gbps, this module offers an isolated pinout between the laser diode (LD) and monitor photodiode (PD) to ensure improved signal integrity. It supports operation in commercial temperature range (0°C to 70°C), making it ideal for data center and enterprise networking applications.

Features

- 850nm VCSEL LC-TOSA with flexible circuit attached
- Supports data rates up to 25.78125Gbps
- Isolated pinout between LD and monitor PD
- Commercial operating temperature range: 0°C to 70°C
- Optimized for next-generation high-speed fiber optic communication

Applications

- 25Gbps data transmission
- High-speed data center networks
- High-performance computing interconnects

Specifications

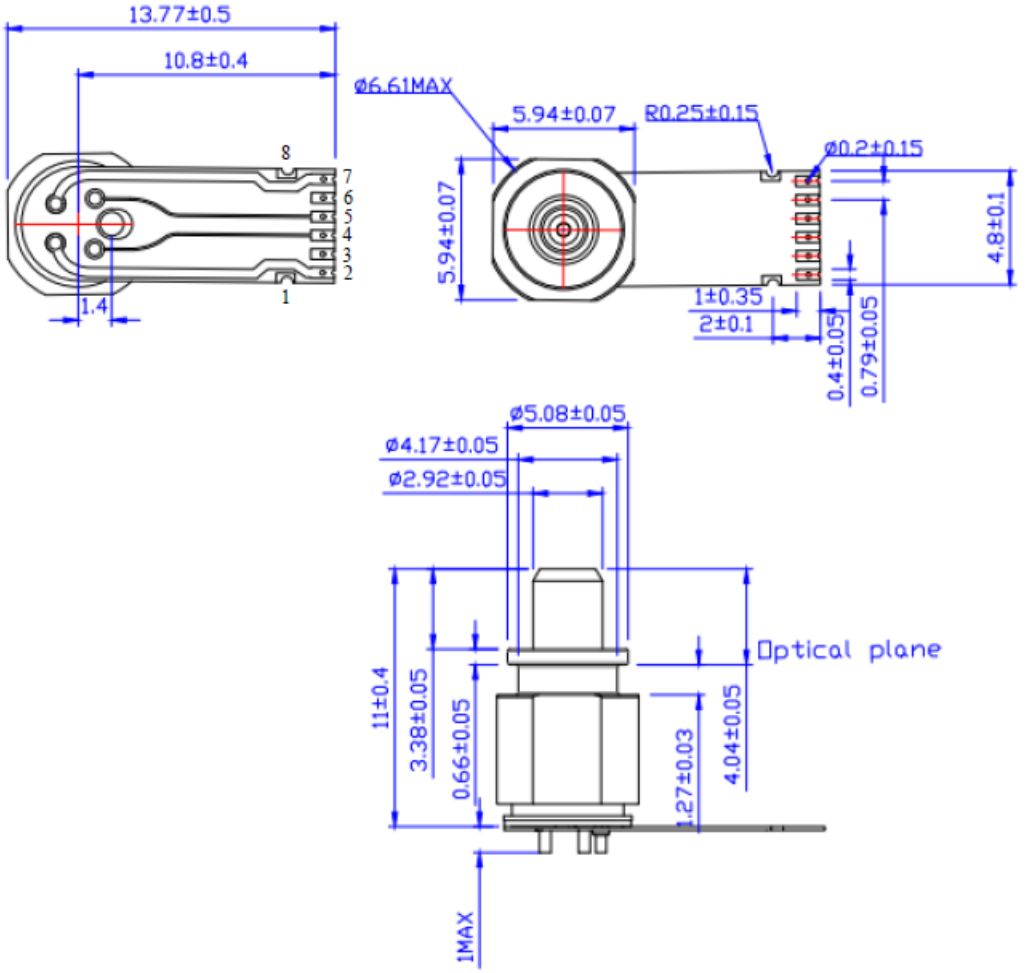
Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	
Operating Temperature	0	70	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		12	mA	
Continuous Reverse Voltage		5	V	

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		0.8	1.2	mA	T_A=25 ºC
Slope Efficiency	η		0.14		mW/mA	I_F=6.5 mA
Wavelength	λ_P	840	850	860	nm	I_F=6.5 mA
Forward Voltage	V_F		2.2		V	I_F=6.5 mA
Series Resistance	R_S		100		Ohm	I_F =6.5 mA, T_A= 25 ºC
Relative Intensity Noise	RIN			-128	dB/Hz	I_F =6.5 mA, f= 1GHz
Spectral width (RMS)	$\Delta\lambda$			0.6	nm	I_F =6.5 mA, T_A= 0~70 ºC
Monitor Current	I_M	100		1500	uA	V_R=5 V, I_F =6.5 mA
PD Dark Current	I_d			20	nA	V_R=5 V, T_A=25 ºC
PD Capacitance	C_M		12		pF	V_R=3 V, f= 1MHz

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
η Temperature Coefficient	$\triangle\eta/\triangle T$		-0.6		%/ºC	T_A=0~70ºC, I_F=6.5mA
λ_P Temperature Coefficient	$\triangle\lambda_P/\triangle T$		0.07		nm/ºC	T_A=0~70ºC, I_F=6.5mA

Notes:
1. All parameters are measured at I_F=6.5mA, 25ºC unless otherwise stated.
2. Minimum and Maximum values are valid over the entire ambient temperature range.
3. P_{oc}=Coupled Optical Power, be measured with a multimode 50/125um fiber and ambient temperature 25ºC.

Outline Dimensions (unit: mm)



Pin Configuration

Number	Function
1	GND
2	MPD Cathode
3	Case/GND
4	VCSEL Cathode
5	VCSEL Anode
6	Case/GND
7	MPD Anode
8	GND

Note: Specifications are subject to change without notice.