



TLC-P85A646-10M

High Speed 10Gb/s 850nm VCSEL LC-TOSA with FPC (Wide Operating Temperature)

Description

The Lasermate TLC-P85A646-10M is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) LC-TOSA with wide operation temperature designed for use in 10Gbps data rate operation.



Features

- LC-type optical sub-module with flexible circuit attached.
- Optimized for fiber optic application.
- Support up to 10.3125Gbps data rate operation.
- Isolated pinout between LD and monitor PD.
- Operating temperature -40 to 85 °C

Applications

- 10Gbps data rate operation

Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	-40	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		10	mA	
Continuous Reverse Voltage		10	V	

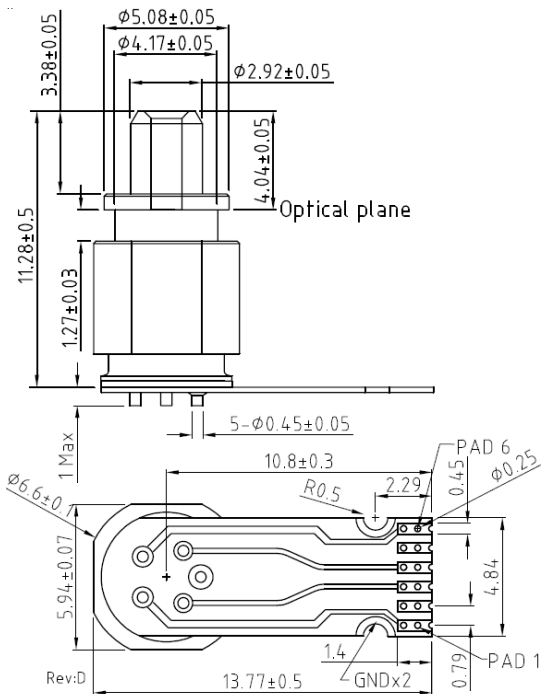
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		1.0	1.5	mA	$T_A=25\text{ }^\circ\text{C}$
			2.0	2.5		$T_A=85\text{ }^\circ\text{C}$
Slope Efficiency	η	0.09		0.17	mW/mA	$I_F=6\text{ mA}$
Wavelength	λ_P	840	850	860	nm	$I_F=6\text{ mA}^{(2)}$
Forward Voltage	V_F	1.7		2.4	V	$I_F=6\text{ mA}$
Rise Time / Fall Time	T_r / T_f		50		ps	$I_F=6\text{ mA}$, ER= 5 dB
Relative Intensity Noise	RIN			-128	dB/Hz	$I_F=6\text{ mA}$, f= 1GHz
Spectral width (RMS)	$\Delta\lambda$			0.45	nm	$I_F=6\text{ mA}$, $T_A= -10\sim 85\text{ }^\circ\text{C}$
Monitor Current	I_M	30		500	μA	$V_R=5\text{ V}$, $P_{OC}=600\mu\text{W}^{(3)}$
PD Dark Current	I_d			20	nA	$V_R=5\text{ V}$, $T_A=25\text{ }^\circ\text{C}$
PD Capacitance	C_M		12		pF	$V_R=3\text{ V}$, f= 1MHz

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I _{th} Temperature Variation	ΔI_{th}			1.5	mA	T _a =-40~85°C
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.4		%/°C	T _a =-40~85°C, I _F =6mA
λ_P Temperature Coefficient	$\Delta P/\Delta T$		0.07		nm/°C	T _a =-40~85°C, I _F =6mA
Tracking Error	TE	-1.5		1.5	dB	T _a =-40~85°C ⁽⁴⁾
Series Resistance	R _s		70	85	Ohm	T _a =25°C, I _F =6mA
			60			T _a =85°C, I _F =6mA

Notes:

- All parameters except mentioned are measured at I_F=6mA, 25°C, unless otherwise stated.
- Minimum and Maximum values are valid over the entire ambient temperature range.
- Poc=Coupled Optical Power, be measured with a multi-mode 50/125μm fiber and ambient temperature 25°C.
- CW, I_M = Constant (@Po= I_{th}+4mA, 25°C), TE=10log[(Po@T_A)/(Po@25°C)]

Outline Dimensions (unit: mm)



Pin Configuration

Number	Function
1	PD Cathode
2	Case / Gnd
3	VCSEL Anode
4	VCSEL Cathode
5	Case / Gnd
6	PD Anode

Note: Specifications are subject to change without notice.