



TLC-P85A4x6-3M

2.5Gbps 850nm VCSEL LC-TOSA with Monitor PD (Wide Operation Temperature)

Description

The Lasermate TLC-P85A4x6-3M is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) LC-TOSA with wide operation temperature range designed for use in 2.5Gbps data rate operation.



Features

- Pre-aligned LC-type receptacle for 50/125um multi-mode fiber communication
- Design for small form factor transceivers
- Data rate operation from DC to 2.5Gbps
- Operation temperature range -40°C to 85°C
- Common cathode or common anode pinout

Applications

- 2.5Gbps data rate operation

Product Overview

The following table lists the available part numbers, as well as the product description of each of the part numbers.

Part Number	Description
TLC-P85A416-3M	2.5Gbps 850nm VCSEL LC-TOSA, Common Cathode Pin
TLC-P85A426-3M	2.5Gbps 850nm VCSEL LC-TOSA, Common Anode Pin



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		20	mA	
Continuous Reverse Voltage		10	V	

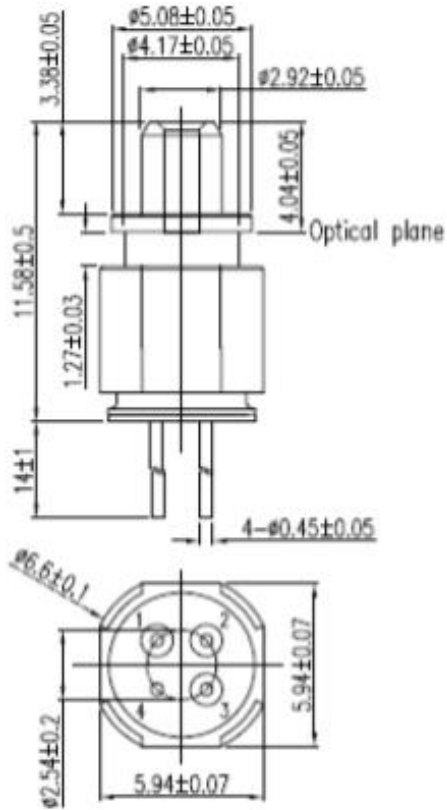
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		1.5	2.75	mA	
Forward Voltage	V_F	1.6	1.8	2.1	V	$I_F=6$ mA
Slope Efficiency	η	0.05	0.08	0.12	mW/mA	$I_F=6$ mA
Series Resistance	R_s	30	45	60	Ω	$I_F=6$ mA
Wavelength	λ_P	830	850	860	nm	$I_F=6$ mA ⁽³⁾
Rise/Fall Time	tr/TF			0.15	ns	$I_F=6$ mA
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	$I_F=6$ mA
Relative Intensity Noise	RIN		-130	-120	dB/Hz	$I_F=6$ mA, f=1GHz
PD Monitor Current	I_M	200		800	uA	$V_R=5V$, $P_{OC}=350\mu W$ ⁽²⁾
PD Dark Current	I_d			20	nA	$V_R=5V$
PD Capacitance	C_M		12		pF	$V_{rm}=0V$

Notes:

1. All parameters except mentioned are measured at $I_F=6$ mA, 25°C, CW.
2. P_{OC} =Coupled Optical Power, measured with a multi-mode 50/125um fiber and ambient temperature 25°C.
3. Minimum and Maximum values are valid over the entire ambient temperature range.

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I_{th} Temperature Variation	ΔI_{th}			2.0	mA	$T_A=0\sim 70^\circ C$
				2.0		$T_A=25\sim 85^\circ C$
			-0.6			$T_A=-40\sim 25^\circ C$
η Temperature Coefficient	$\Delta\eta/\Delta T$	-0.7	-0.5		%/ $^\circ C$	$T_A=25\sim 85^\circ C$
				0.35		$T_A=-40\sim 25^\circ C$
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/ $^\circ C$	$T_A=-40^\circ C$, $I_F=6$ mA
Series Resistance	R_s			65	Ω	$T_A=-40^\circ C$, $I_F=6$ mA
		30				$T_A=85^\circ C$, $I_F=6$ mA
PD Monitor Current Coefficient	ΔI_M			0.15	%/ $^\circ C$	$T_A=25\sim 85^\circ C$
				-0.15		$T_A=-40\sim 25^\circ C$

Outline Dimensions (unit: mm)



Pin Configuration

TLC-P85A416-3M		TLC-P85A426-3M	
Number	Function	Number	Function
1	VCSEL Anode	1	VCSEL Cathode
2	VCSEL Cathode/PD Anode	2	VCSEL Anode/PD Cathode
3	PD Cathode	3	PD Anode
4	Case	4	Case

Note: Specifications are subject to change without notice.