



## TLC-P85A4x6-3

### High Speed 2.5Gbps 850nm VCSEL LC-TOSA with Monitor PD

#### Description

The Lasermate TLC-P85A4x6-3 is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) LC-TOSA 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 -10°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-P85A416-3	2.5Gbps 850nm VCSEL LC-TOSA, Common Cathode Pin
TLC-P85A426-3	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	-10	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		20	mA	
Continuous Reverse Voltage		10	V	

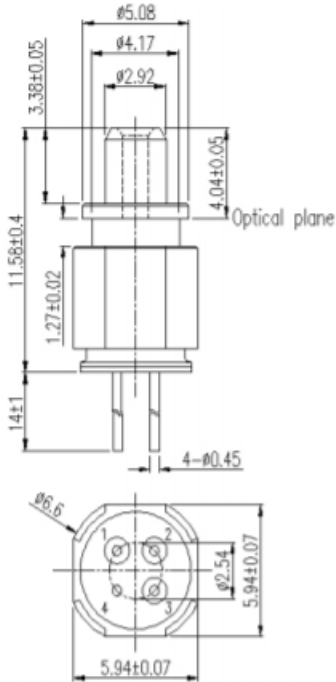
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	$I_{th}$		1.5	2.5	mA	
Forward Voltage	$V_F$	1.6	1.8	2.1	V	$I_F=6$ mA
Slope Efficiency	$\eta$	0.05	0.08	0.12	mW/mA	$I_F=6$ mA
Series Resistance	$R_s$	30	45	60	$\Omega$	$I_F=6$ mA
Wavelength	$\lambda_p$	830	850	860	nm	$I_F=6$ mA <sup>(3)</sup>
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	$V_R=5V$ , $P_{OC}=350\mu W$ <sup>(2)</sup>
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	$\Delta I_{th}$	-1.5		2	mA	$T_A=0\sim 70^\circ C$
$\eta$ Temperature Coefficient	$\Delta\eta/\Delta T$	-0.6	-0.25		%/°C	$T_A=0\sim 70^\circ C$ , $I_F=6$ mA
$\lambda_p$ Temperature Coefficient	$\Delta\lambda_p/\Delta T$		0.06		nm/°C	$T_A=0\sim 70^\circ C$ , $I_F=6$ mA

### Outline Dimensions (unit: mm)



### Pin Configuration

TLC-P85A416-3		TLC-P85A426-3	
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.