



4.25Gbps 850nm VCSEL LC-TOSA with Monitor PD, -40~85°C

Part No.TLC-P85A436-4M (Common cathode) | TLC-P85A446-4M (Common anode)

Features

- Pre-aligned LC-type receptacle for multi-mode fiber communication
- Packaged with attenuating coating and monitoring PD
- Support from DC to 4.25Gbps data rate operation
- Design for small form factor transceivers
- Wide operation temperature range -40°C to 85°C
- Isolation pin-out configuration (**436-4** or **446-4**)



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	$I_F=6\text{ mA}$
Slope Efficiency	η	0.05	0.08	0.12	mW/mA	$I_F=6\text{ mA}$
Wavelength	λ_P	830	850	860	nm	$I_F=6\text{ mA}$ ⁽³⁾
Rise/Fall Time	tr/tf			90	ps	$I_F=6\text{ mA}$, ER=10dB
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	$I_F=6\text{ mA}$
PD Monitor Current	I_M	200		800	uA	$V_R=5V$, $P_{OC}=350\text{uW}$ ⁽²⁾

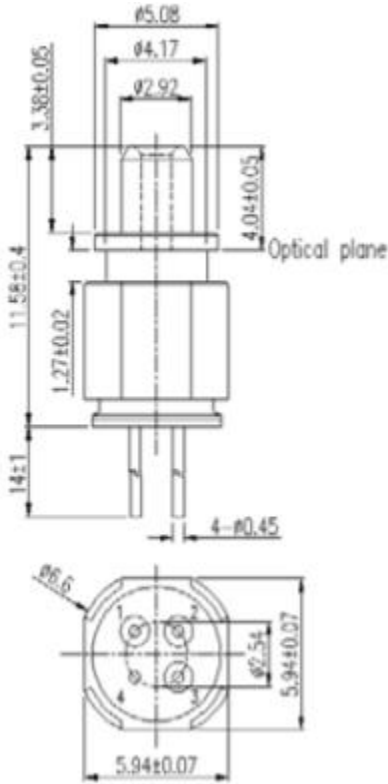
Notes:

1. All parameters except mentioned are measured at $I_F=6\text{ mA}$, 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	mA	$T_A=0\sim 70^\circ\text{C}$
				2.5		$T_A=25\sim 85^\circ\text{C}$
				1		$T_A=-40\sim 25^\circ\text{C}$
η Temperature Coefficient	η			0.15	mW/mA	$T_A=-40^\circ\text{C}$, $I_F=6\text{ mA}$
	η	0.02			mW/mA	$T_A=85^\circ\text{C}$, $I_F=6\text{ mA}$
	$\Delta\eta/\Delta T$		-0.35		%/°C	$T_A=-40\sim 85^\circ\text{C}$, $I_F=6\text{ mA}$
Series Resistance	R_s	30	45	60	Ω	$T_A=25^\circ\text{C}$, $I_F=6\text{ mA}$
				65		$T_A=-40^\circ\text{C}$, $I_F=6\text{ mA}$
		20				$T_A=85^\circ\text{C}$, $I_F=6\text{ mA}$



Outline Dimensions (unit: mm)



Pin Configuration

TLC-P85A436-4M		TLC-P85A446-4M	
Number	Function	Number	Function
1	VCSEL Anode	1	VCSEL Cathode
2	VCSEL Cathode	2	VCSEL Anode
3	PD Cathode	3	PD Cathode
4	PD Anode/Case	4	PD Anode/Case



The VCSEL is a class 1M laser in the safety standard ANSI Z136.1 and should be treated as a potential eye hazard.

Note: Specifications are subject to change without notice.