



TLC-P85A546-10M

10Gb/s 850nm VCSEL LC-TOSA with Wide Operation Temperature

Description

The Lasermate TLC-P85A546-10M is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) LC-TOSA designed for use in 10Gbps data rate operation.



Features

- LC-type optical sub-module
- 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	

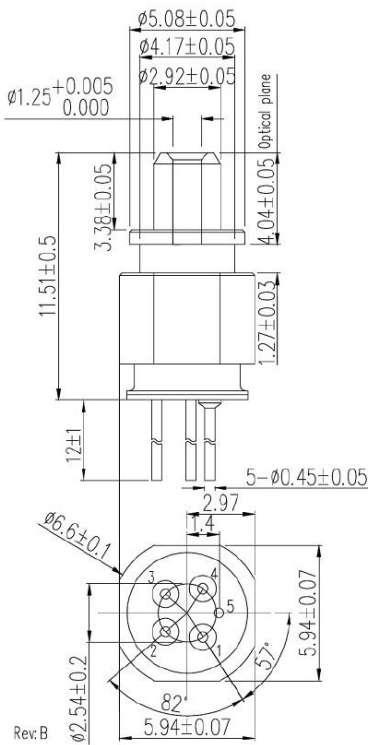
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions ⁽¹⁾
Threshold Current	I_{th}		0.8	1.5	mA	$T_A=25\text{ }^\circ\text{C}$
			1.3	1.85		$T_A=85\text{ }^\circ\text{C}$
Slope Efficiency	η	0.09		0.17	mW/mA	$I_F=6\text{ mA}$
Wavelength	λ_P	840	850	860	nm	$I_F=6\text{ mA}$ ⁽²⁾
Fiber Output Power	P_f	0.4		0.95	mW	$I_F=6\text{ mA}$
Forward Voltage	V_F	1.5		2.6	V	$I_F=6\text{ mA}$
Series Resistance	R_s		100		Ω	$I_F=6\text{ mA}, T_A=25\text{ }^\circ\text{C}$
Rise Time / Fall Time	T_r / T_f			50	ps	$I_F=6\text{ mA}, ER=4.5\text{ dB}$
Spectral width (RMS)	$\Delta\lambda$			0.45	nm	$I_F=6\text{ mA}, T_A=25\text{ }^\circ\text{C}$
Monitor Current	I_M	100		900	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	$V_R=3\text{ V}$

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	Δη/ΔT		-0.5		%/°C	T _a =-40~85°C, I _F =6mA
λ _P Temperature Coefficient	ΔP/ΔT		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⁾

Notes:

1. All parameters except mentioned are measured at I_F=6mA, 25°C, 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 multi-mode 50/125μm fiber and ambient temperature 25°C.
4. CW, I_M = Constant (@P_o= I_{th}+4mA, 25°C), TE=10log[(P_o@T_A)/(P_o@25°C)]

Outline Dimensions (unit: mm)



Pin Configuration

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

Note: Specifications are subject to change without notice.