TLC-P85AxA10M
10Gbps 850nm VCSEL LC-TOSA

Data Sheet

Features

- 850nm multimode VCSEL
- Data rate up to 10Gbps
- High reliability VCSEL
- Optional flex or lead type
- No attenuation coating
- Plastic LC-type housing

Applications

- High speed data communications
- Fiber Channel
- 10G Gigabit Ethernet

Ordering Information

Part Number	Description
TLC-P85A8A10M	10Gbps 850nm VCSEL LC-TOSA with Flex
TLC-P85A5A10M	10Gbps 850nm VCSEL LC-TOSA without Flex

Absolute Maximum Ratings

Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	-40	85	°C	
Lead Soldering Temperature		260	°C	10 seconds
Flex Attach Temperature		370	°C	10 seconds
Continuous Reverse Voltage		5	V	10uA
Continuous Forward Current		10	mA	

Electrical-Optical Characteristics

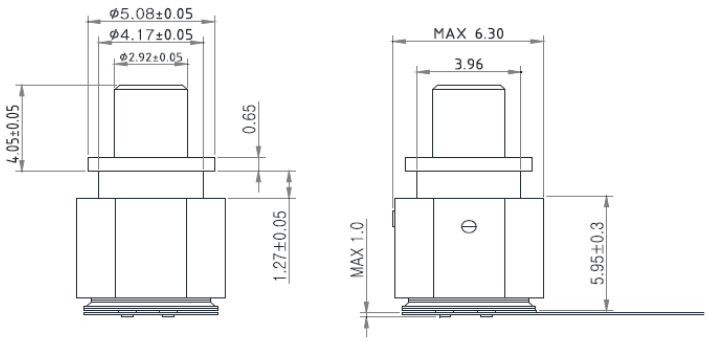
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Peak Fiber Coupled Optical Output Power	P_{oc}		500		uW	I_f=6 mA, 50/125um fiber NA=0.20
Threshold Current	I_{th}		1.0	2.0	mA	CW
Slope Efficiency	η	0.04		0.16	W/A	I_f=6 mA
Coupling Efficiency	E_{FCE}		75		%	I_f=6 mA
Peak Wavelength	λ_P	840	850	860	nm	I_f=6 mA
Spectral Bandwidth (RMS)	$\Delta\lambda$			0.45	nm	I_f=6 mA
Forward Voltage	V_f		2.2	2.5	V	I_f=6 mA
Breakdown Voltage	V_b		-10		V	I_r=10uA
Small Signal Bandwidth		8			GHz	I_f=6 mA
Fall Time	tf		50		ps	Prebias Above Threshold, (20-80%)
Rise Time	tr		40		ps	Prebias Above Threshold, (20-80%)
Relative Intensity Noise	RIN			-130	dB/Hz	10GHz BW, I_f=6 mA
Monitor Current	I_{PD}	0.2		0.7	mA	P_{oc}=0.5mW
Dark Current	I_D			10	nA	P_o=0mW, V_r=3V
PD Reverse Voltage	BVR_{PD}	40			V	P_o=0mW, I_r=100uA
PD Capacitance	C			50	pF	V_r=0V, f=1MHz
				20		V_r=3V, f=1MHz

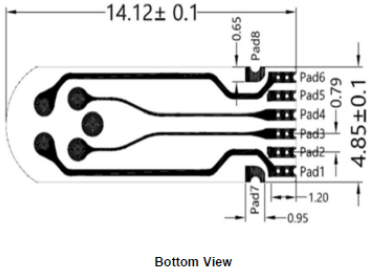
Thermal Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I_{th} Temperature Variation	ΔI_{th}		1.0		mA	T_A=-40~85°C
η Temperature Coefficient	$\Delta\eta/\Delta T$		-4000		PPM/°C	T_A=-40~85°C, I_F=6 mA
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/°C	T_A=-40~85°C, I_F=6 mA
Series Resistance	R_s		80		Ω	I_F=6 mA
R_s Temperature Coefficient	dR_s/dT		-2000		PPM/°C	

Outline Dimensions (unit: mm)

LC-TOSA with Flex

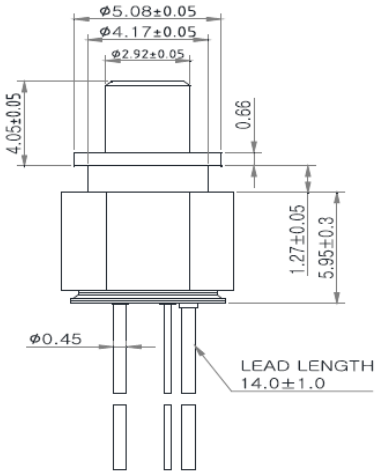


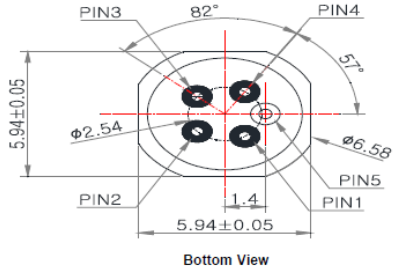


Bottom View

Pin Number	Function
1	$K_{m\text{-}PD}$
2	Case
3	A_{VCSEL}
4	K_{VCSEL}
5	Case
6	$A_{m\text{-}PD}$
7	Case
8	Case

LC-TOSA without Flex





Bottom View

Pin Number	Function
1	A_{VCSEL}
2	$K_{m\text{-}PD}$
3	$A_{m\text{-}PD}$
4	K_{VCSEL}
5	GND

Additional Notes

- The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, please take normal ESD precautions when handling this product.
- Specifications are subject to change without notice.