



VCT-A85A54-10M

10Gbps 850nm VCSEL in TO-46 Package

Data Sheet



Description

The Lasermate VCT-A85A54-10M is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) diode in TO46 package with cap lens designed for use in 10Gbps datacom applications.

Features

- Industry TO-46 package with cap lens for multimode fiber communication
- High coupling efficiency for multi-mode fibers
- Optimized for fiber optic application
- Isolated pinout between LD and monitor PD

Applications

- Supports up to 10.3125Gbps 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		
Peak Continuous Forward Current		10	mA			
Laser Reverse Voltage		10	V			

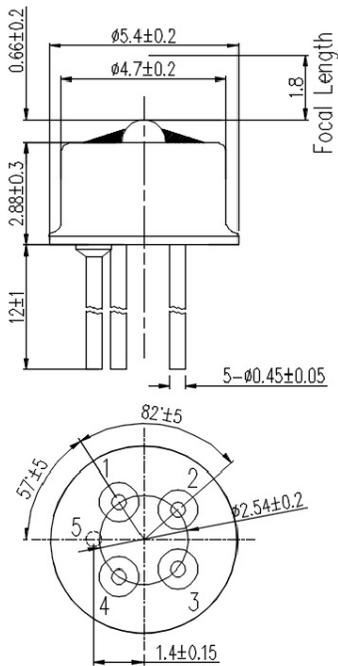
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions ⁽¹⁾
Threshold Current	I_{th}		0.8	1.5	mA	$T_A=25^{\circ}C$
Slope Efficiency	η	0.07	0.13	0.2	mW/mA	$I_F=6\text{ mA}$
Forward Voltage	V_F	1.5		2.6	V	$I_F=6\text{ mA}$
Series Resistance	R_S	65	90	110	Ω	$T_A=25^{\circ}C, I_F=6\text{ mA}$
Wavelength	λ_P	840	850	860	nm	$I_F=6\text{ mA}$ ⁽²⁾
Monitor Current	I_M	100		1000	uA	$V_R=5V, P_{oc}=900\mu W$
PD Dark Current	I_d			20	nA	$V_R=5V, T_A=25^{\circ}C$
PD Capacitance	C_{PD}		12		pF	$V_R=3V, f=1\text{MHz}$
Focal Length	FL		1.8		mm	$I_F=6\text{ mA}$

Notes:

1. All parameters except mentioned are measured at $I_F=6\text{ mA}$, $25^{\circ}C$, CW.
2. 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}			1.5	mA	$T_A= -40\sim 85^{\circ}C$
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.5		%/°C	$T_A= -40\sim 85^{\circ}C, I_F=6\text{ mA}$
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.07		nm/°C	$T_A= -40\sim 85^{\circ}C, I_F=6\text{ mA}$

Outline Dimensions (unit: mm)



Pin Configuration

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

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, take normal ESD precautions when handling this product.
- Specifications are subject to change without notice.