



VCT-F85A4x-4M

4.25Gbps 850nm VCSEL in TO-46 Package



Description

The Lasermate VCT-F85A4x-4M is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) diode in TO46 package with flat window designed for use in 4.25Gbps datacom applications.

Features

- Industry TO-46 package with flat window for multimode fiber communication
- Packaged with monitoring PD
- High coupling efficiency for multi-mode fibers
- Support from DC to 4.25Gbps data rate operation
- Isolated pinout configuration
- Wide operation temperature -40 to 85°C

Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

Product Overview

Part Number	Description
VCT-F85A43-4M	4.25Gbps 850nm VCSEL TO-46, Flat Window, Common Cathode Pin
VCT-F85A44-4M	4.25Gbps 850nm VCSEL TO-46, Flat Window, Common Anode Pin

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		12	mA	
Continuous Reverse Voltage		5	V	10uA

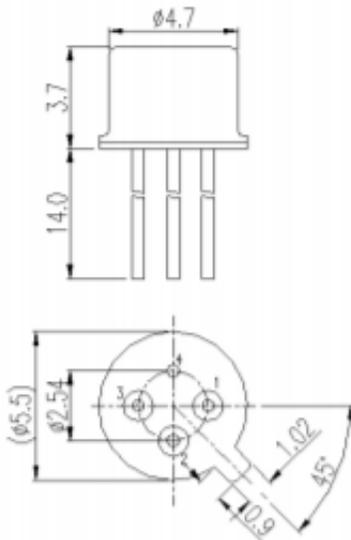
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		1.5	2.75	mA	
Slope Efficiency	η	0.08	0.12	0.16	mW/mA	$I_F=6$ mA
Forward Voltage	V_F	1.6	1.8	2.1	V	$I_F=6$ mA
Series Resistance	R_S		45	60	Ω	$I_F=6$ mA
Wavelength	λ_P	830	850	860	nm	$I_F=6$ mA ⁽²⁾
Monitor Current	I_M	200		800	uA	$P_o=500$ uW
PD Capacitance	C_{PD}		12		pF	$V_R=3$ V, $f=1$ MHz
Spectral Width (RMS)	$\Delta\lambda$			0.85	Nm	$I_F=6$ mA

Notes:

- All parameters except mentioned are measured at $I_F=6$ mA, 25°C, CW.
- 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}			2.0	mA	$T_A=0\sim 70^\circ\text{C}$
			0.6			$T_A=-40\sim 25^\circ\text{C}$
				1.5		$T_A=25\sim 85^\circ\text{C}$
V_F Temperature Coefficient	$\Delta V_F/\Delta T$		-2.5		mV/°C	$T_A=0\sim 70^\circ\text{C}$, $I_F=6$ mA
η Temperature Coefficient	$\Delta\eta/\Delta T$	-0.6			%/°C	$T_A=0\sim 70^\circ\text{C}$, $I_F=6$ mA
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/°C	$T_A=0\sim 70^\circ\text{C}$, $I_F=6$ mA



Outline Dimensions (unit: mm)**Pin Configuration**

VCT-F85A43-4M		VCT-F85A44-4M	
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

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.