



# VCT-F85A54-10M

## 10Gbps 850nm VCSEL in TO-46 Package

### Features

- Industry TO-46 package with flat window cap for multimode fiber communication
- Packaged with monitoring PD
- Supports up to 10.3125 Gbps data rate operation
- Isolated pinout between LD and monitor PD
- -40 to 85°C operating temperature



### Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	-40	85	°C	
Peak Continuous Forward Current		10	mA	
Laser Reverse Voltage		10	V	

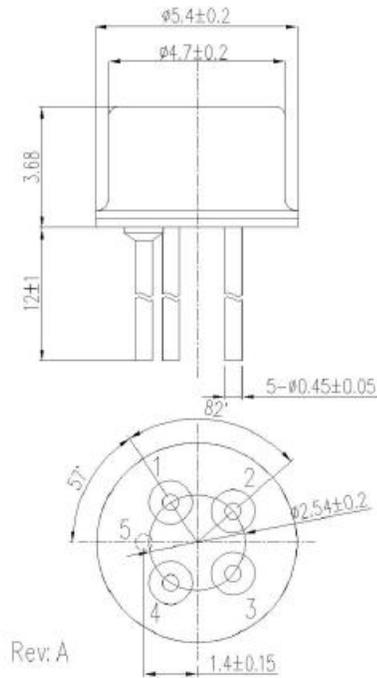
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions <sup>(1)</sup>
Threshold Current	$I_{th}$		0.8 1.3	1.5 1.85	mA	$T_A=25^{\circ}C$ $T_A=85^{\circ}C$
Slope Efficiency	$\eta$	0.14		0.27	mW/mA	$I_F=6\text{ mA}$
Forward Voltage	$V_F$	1.5		2.6	V	$I_F=6\text{ mA}$
Series Resistance	$R_S$	65		110	$\Omega$	$T_A=25^{\circ}C$ , $I_F=6\text{ mA}$
Wavelength	$\lambda_P$	840	850	860	nm	$I_F=6\text{ mA}$ <sup>(2)</sup>
Monitor Current	$I_M$	100		930	$\mu A$	$V_R=5V$ , $P_{oc}=900\mu W$
PD Dark Current	$I_d$			20	nA	$V_R=5V$ , $T_A=25^{\circ}C$
PD Capacitance	$C_{PD}$		12		pF	$V_R=3V$

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	$\Delta I_{th}$			1.5	mA	$T_A= -40\sim 85^{\circ}C$
$\eta$ Temperature Coefficient	$\Delta\eta/\Delta T$		-0.5		%/°C	$T_A= -40\sim 85^{\circ}C$ , $I_F=6\text{ mA}$
$\lambda_P$ 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.