



VCT-F85A31-200

850nm 180mW VCSEL Diode in TO-46 Package

Data Sheet

Features

- 850nm VCSEL diode
- Typical output power: 180mW (CW)
- Built-in back monitor photodiode
- Flat window TO-46 can package
- High reliability

Applications

- Consumer electronics
- Safety sensor
- Illumination light source
- Gesture sensor light source

Absolute Maximum Ratings

Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	
Operating Temperature	-10	60	°C	
Continuous Forward Current		300	mA	

Electro-Optical Characteristics (T_a=25°C unless otherwise stated)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}		40.0		mA	CW
Slope Efficiency	η		0.9		W/A	I _f =250mA
Optical Output Power	P _o		180		mW	I _f =250mA
Peak Wavelength	λ _P	840	850	860	nm	I _f =250mA
Operating Voltage	V _f		2	2.3	V	I _f =250mA
Breakdown Voltage	V _b	-10			V	
Dynamic Resistance	R _d		2		Ohm	I _f =250mA

Thermal Characteristics

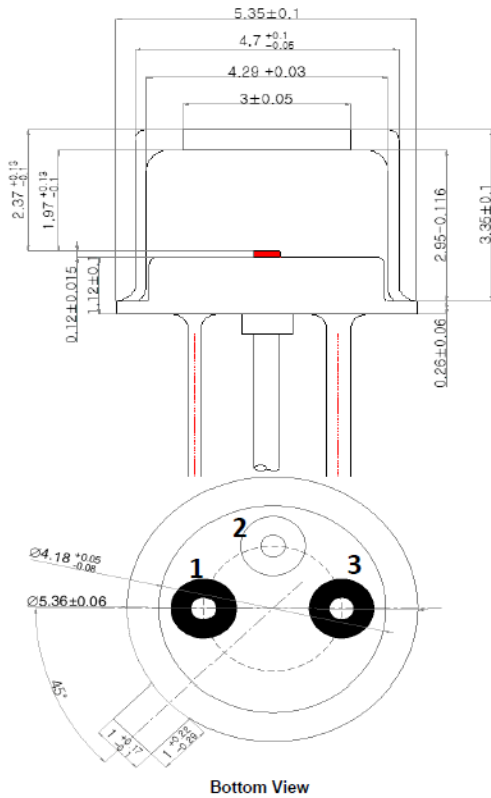
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I _{th} Temperature Variation	ΔI _{th}		15.0		mA	T _a =-10 to 60°C
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T _a =-10 to 60°C, I _f =40mA

Photodiode Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Monitor Current	I _{PD}		0.3		mA	I _f =250mA
Open Circuit Voltage	V _{OP}	0.3	0.3		V	Note (1)
Short Circuit Voltage	I _{SC}	5.5			uA	Note (1)
Forward Voltage	V _f			1.3	V	I _f =5mA
Dark Current	I _d			10	nA	V _R =10V
Reverse Breakdown Voltage	B _{VR}	30		10	V	I _R =10uA

Note (1): Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k.

Outline Dimensions (unit: mm)



Pin Configuration

Pin Number	Function
1	LD Anode
2	LD Cathode/PD Anode
3	PD Cathode

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.