



High Power 850nm 10mW VCSEL with Ball Lens, TO-46 Package

Part No. VCT-A85A31-OH

Features

- 10mW High power VCSEL
- 1Gbps data rate operation
- 850nm wavelength range
- Built-in monitor PD with cathode common type
- Ball lens type TO-46 can package



Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel
- Sensing

Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	0	70	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		30	mA	
Continuous Reverse Voltage		5	V	10uA

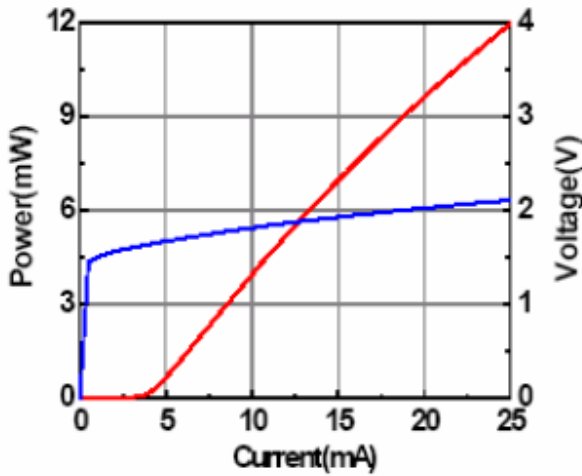
Electro-Optical Characteristics (T _a =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}		5		mA	CW
Slope Efficiency	η	0.2	0.4		W/A	I _f =20mA
Optical Output Power	P _o		10		mW	I _f =20mA
Peak Wavelength	λ _P	840	850	860	nm	I _f =20mA
Spectral Bandwidth (RMS)	Δλ			0.85	nm	I _f =20mA
Forward Voltage	V _f		2.0	2.3	V	I _f =20mA
Breakdown Voltage	V _b		-10		V	
Dynamic Resistance	R _d		20	30	Ohm	I _f =20mA
Monitor Current	I _m		0.1		mA	P ₀ =10mW
Dark Current	I _d			20	nA	P ₀ =0mW, V _R =3V
PD Reverse Voltage	BVR _{PD}	30	115		V	P ₀ =0mW, I _R =10uA
PD Capacitance	C			100	pF	V _R =0V, f=1MHz
				55		V _R =3V, f=1MHz

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I _{th} Temperature Variation	ΔI _{th}		2.5		mA	T _a =0 to 70°C
I _m Temperature Variation	ΔI _{PD} /ΔT		0.2		%/°C	P ₀ =10mW
η Temperature Coefficient	Δη/ΔT		-0.5		%/°C	T _a =0 to 70°C, I _f =20mA
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T _a =0 to 70°C, I _f =20mA

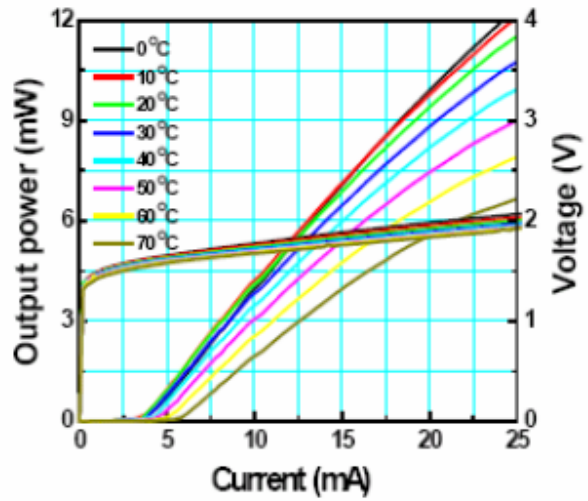


Typical Characteristics

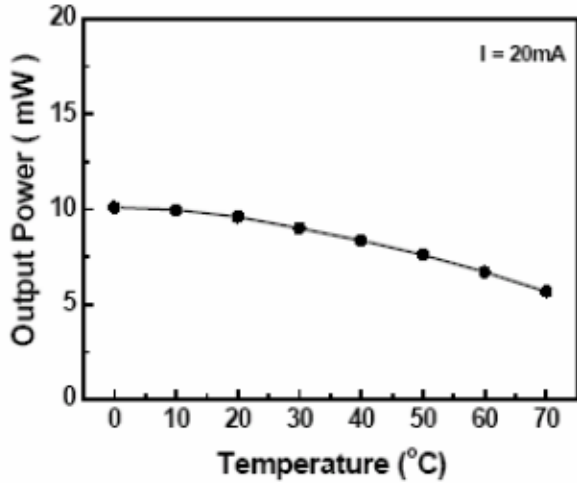
LIV Curve



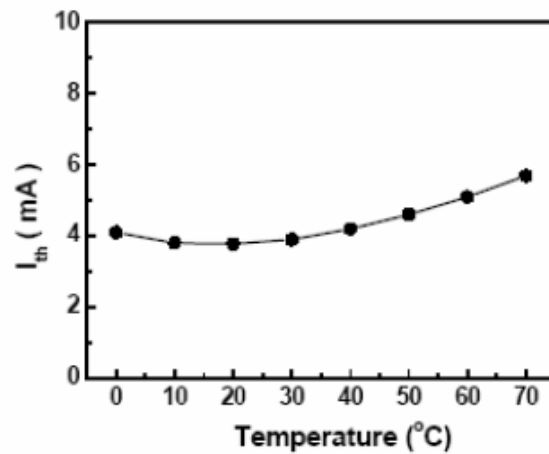
LIV vs. Temperature

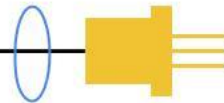


P_o vs. Temperature

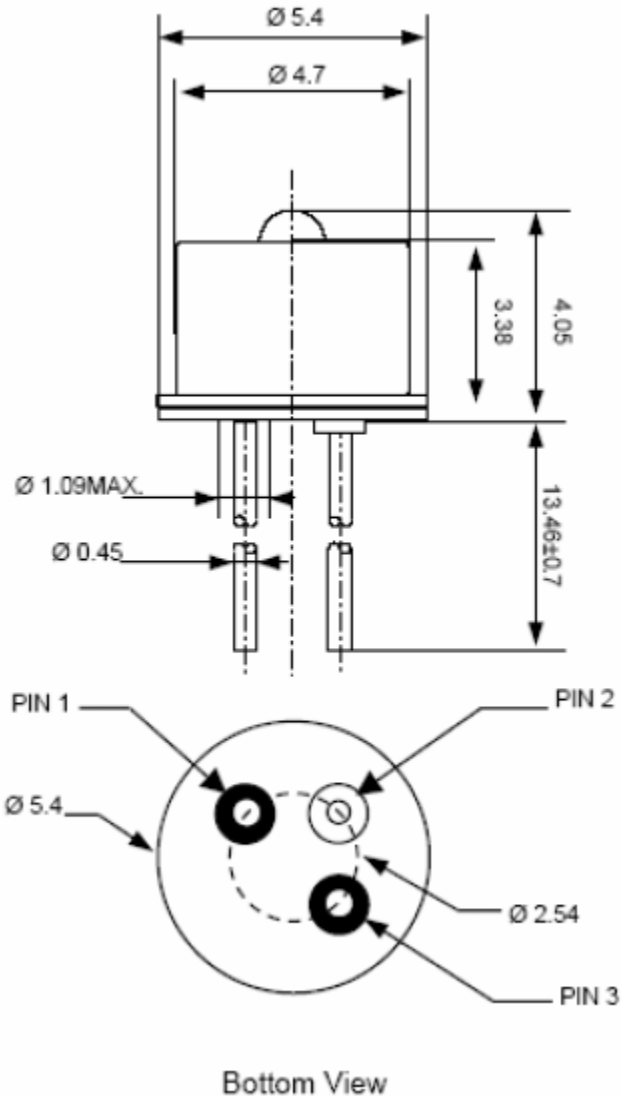


I_{th} vs. Temperature





Outline Dimensions (unit: mm)



Pin Configuration

Pin Number	Function
1	LD Anode
2	LD Cathode/PD Anode, Case
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.