

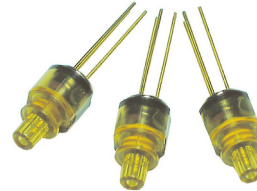
Features

- : Multi-mode 850nm VCSEL
- : 2.5 Gbps data rates
- : Low drive current and voltage
- : Common cathode / anode Type
- : Other configurations available on request

Applications

- : High speed Data Communications
- : Gigabit Ethernet
- : Fiber Channel

Description

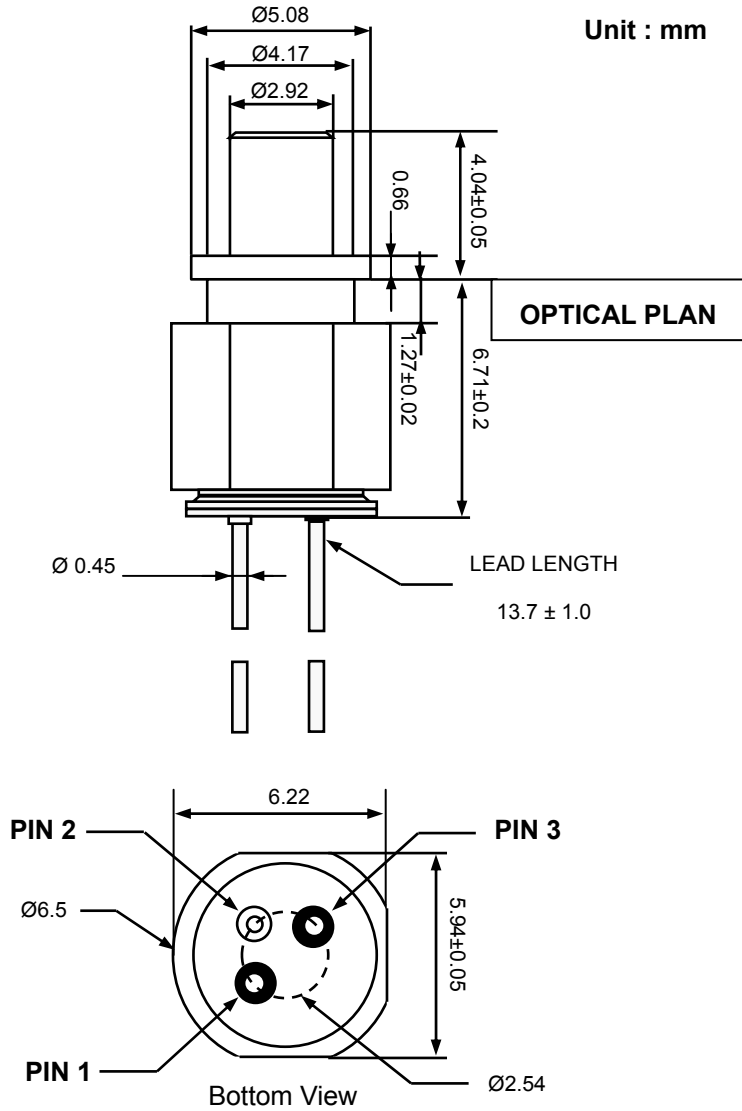


Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 100 °C
Operating Temperature	-20 to 85 °C
Lead Solder Temperature	260 °C, 10 sec
Continuous Forward Current	12mA
Continuous Reverse Voltage	5V (@10µA)

Part Number :	Description :
TP85-LCP1N-KC	850nm 2.5Gbps LC TOSA, Common Cathode Type
TP85-LCP1N-AC	850nm 2.5Gbps LC TOSA, Common Anode Type

Dimensions



PIN OUT

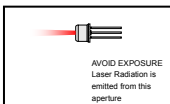
TP85-LCP1N-KC		TP85-LCP1N-AC	
Number	Function	Number	Function
1	A_{VCSEL}	1	K_{VCSEL}
2	K_{VCSEL}, A_{m-PD}	2	A_{VCSEL}, K_{m-PD}
3	K_{m-PD}	3	A_{m-PD}

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

Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Peak Fiber Coupled Optical Output Power(See threshold current And slope efficiency which Control power output)	P _{OC}		500		μW	I _f = 7 mA, 50/125 μm fiber NA=0.20
Threshold Current	I _{th}		1.5	2.5	mA	CW
I _{th} Temperature Variation	ΔI _{th}		1.5	2	mA	T _a =-20 to 85 °C
Slope Efficiency	η	0.04		0.16	W/A	I _f = 7 mA
η Temperature Variation	Δη / ΔT		-5000		PPM/ °C	T _a =-20 to 85 °C at 7 mA
Peak Wavelength	λ _p	840	850	860	nm	I _f = 7mA
λ _p Temperature Coefficient	Δλ / ΔT		0.06		nm/ °C	T _a =-20 to 85 °C at 7mA
Spectral Bandwidth (RMS)	Δλ			0.85	nm	I _f = 7mA
Forward Voltage	V _f		1.7	2.1	V	I _f = 7mA
Breakdown Voltage	V _b		-10		V	
Rise and Fall Times	t _R t _F			130 150	ps	Prebias Above Threshold, 20%~80%
Relative Intensity Noise	RIN		-130	-122	dB/Hz	1 GHz BW, I _f = 7mA
Series Resistance	R _s	20	35	55	Ohm	I _f = 7mA
R _s Temperature Coefficient	dR _s /dT		-3000		PPM/ °C	
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Monitor Current	I _{PD}	0.2		0.7	mA	P _{OC} =0.5mW
Dark current	I _D			10	nA	P ₀ =0mW, V _R =5V
PD Reverse Voltage	BVR _{PD}	40			V	P ₀ =0mW, I _R =100μA
PD Capacitance	C			50 20	pF	V _R =0V, Freq=1MHz V _R =5V, Freq=1MHz

Notes

* These specifications are subject to change without notice



NOTICE

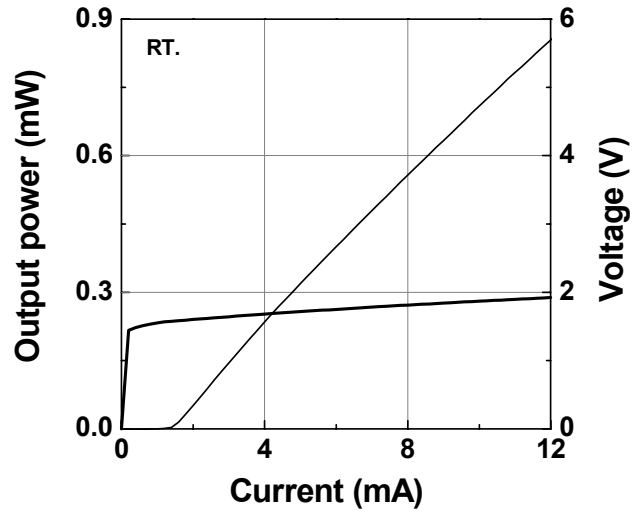
The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product

DANGER

The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

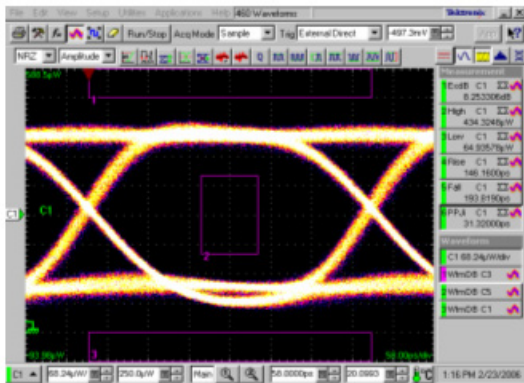
Characteristics Curves

LIV Curve

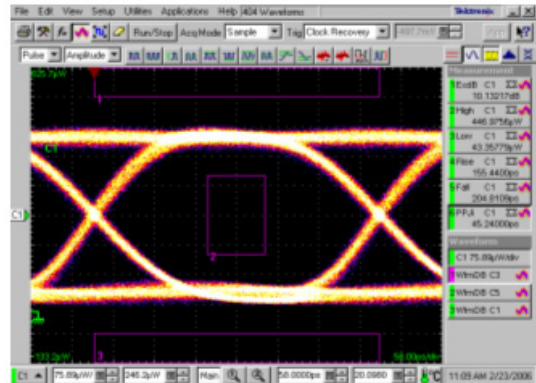


Eye Diagrams

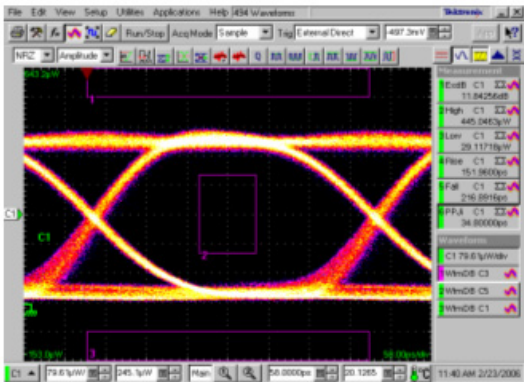
at -20°C



at RT



at 85°C



Test condition :

- Eye diagrams at 7mA
- Data rate : 2.5Gbps
- Extinction ratio : >10dB
- PRBS : 2³¹-1