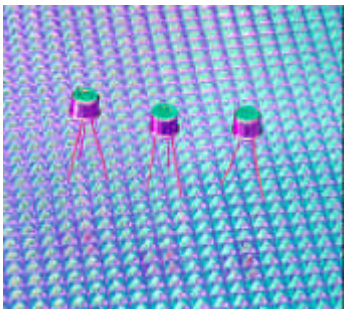
TO-46, 2.5Gbps VCSEL

Product Description

The TO-46, 2.5Gbps VCSEL is a high-performance, near-infrared, 850nm VCSEL (Vertical Cavity Surface-Emitting Laser) tailored to meet the needs of high-speed data communications and telecommunications applications. The product is designed for easy integration into a wide variety of Gigabit Ethernet, Fibre Channel, and ATM transceiver modules and systems.



Product Specifications

Absolute Maximum Ratings

Parameter	Rating	Important Notice
Operating Case Temperature	0°C to 85°C	Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated for extended periods of time may effect device reliability.
Storage Temperature	-40°C to 100°C	
Lead Solder Temperature	260°C for 10 seconds	
Laser Reverse Voltage	5V	
Laser Forward Current (continuous)	10mA	
Laser Forward Current (instantaneous)	15mA	
Photodiode Forward Current	2mA	
Photodiode Reverse Voltage	10V	

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

Characteristic	Symbol	Min.	Typ.	Max.	Units
Peak Emission Wavelength	λ_p	830	850	860	nm
RMS Spectral Width	$\Delta\lambda$			0.85	nm
λ Temp Coefficient	$\Delta\lambda_p$		0.06		nm/°C
Optical Rise and Fall Time (20% - 80%)	t_R, t_F		90	110	ps
Threshold Current	I_{TH}		1.5	2.5	mA
Laser Forward Voltage (I_{Id}=8mA)	V_F		1.8	2.2	V
Relative Intensity Noise (I_{Id}=10mA, f_0 = 1GHz)	RIN		-128	-122	dB/Hz
Differential Resistance (I_{Id}=8mA)	δR		35	60	Ω
Slope Efficiency (I_{th} to 10mA)	η	.2	.3	.4	mW/mA
Beam Divergence (Full width, $1/e^2$)	θ		27	32	deg

Photodiode Characteristics (T=25°C unless otherwise stated)

Characteristic	Symbol	Min.	Typ.	Max.	Units
Monitor Current (Id=8mA, Vrpd= -3V)	I_{PD}	100	250	580	µA
Dark Current @ -3V bias	I_D			20	nA
Capacitance @ 0V bias, 1 MHz	C_{PD}			100	pF

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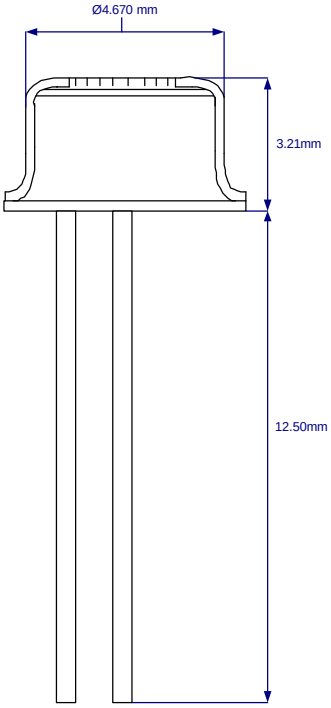
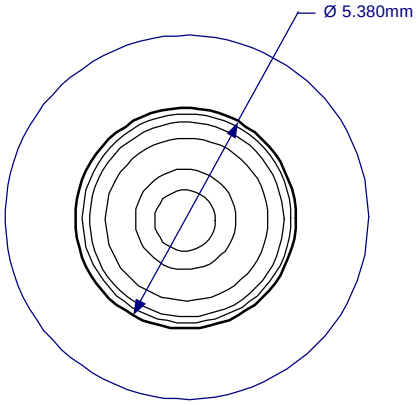
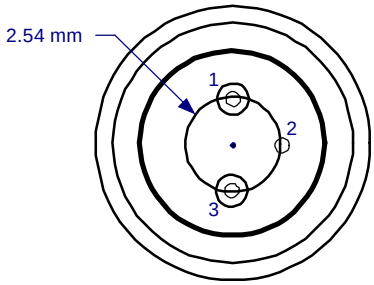
Diagram

Dimensions are nominal



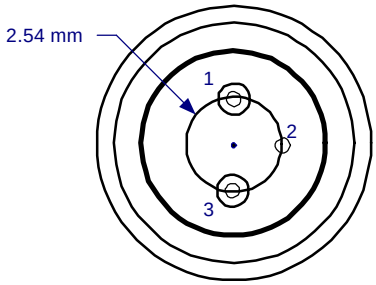


8585-8317: COMMON ANODE, ISOLATED



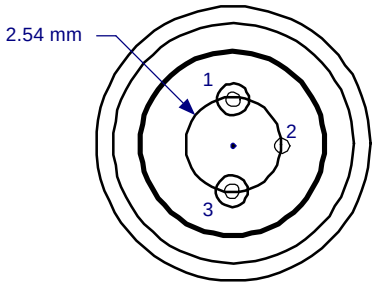
1-VCSEL CATHODE
2-PHOTODIODE ANODE
3-VCSEL ANODE/PHOTODIODE CATHODE

8585-8313: COMMON ANODE



1-VCSEL CATHODE
2-VCSEL ANODE/PHOTODIODE CATHODE
3-PHOTODIODE ANODE

8585-8312: COMMON CATHODE



1-VCSEL ANODE
2-VCSEL CATHODE/PHOTODIODE ANODE/CASE
3-PHOTODIODE CATHODE

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