

1.06/1.25 Gbps 850 nm VCSEL TO-56 Header (*Preliminary*)

Product Description:

The LuxNet VG1A-8101 TO-56 (Header Assembly) is designed for high speed, high performance data communication applications. This device is integrated with an 850nm 1.25Gbps VCSEL, a TO-56 header substrate, a monitoring photodiode, and a flat window cap. The product is designed for 1.06/1.25Gbps Fibre Channel, Gigabit Ethernet, and ATM/SONET transceiver modules and systems. This TO header assembly can be integrated with different types of ports that are engaged with a fiber connector to provide good coupling efficiency as light generated by the VCSEL is transmitted into multimode fiber.

Product Specifications:

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min.	Max.	Note
Operating Temperature	T _{op}	°C	0	85	
Storage Temperature	T _{stg}	°C	- 40	85	
Solder Reflow Temperature				260	10 seconds max.
Forward Current (continuous)	I _{max}	mA		15	
Reverse Voltage	V _r	V		5	
Photodiode Forward Current	I _{pd}	mA		10	

Electro-Optical Characteristics (T = 25°C, unless noted otherwise):

Parameter	Symbol	Unit	Min.	Typ	Max.	Test Condition
Threshold Current	I _{th}	mA		3.0	5.0	
I _{th} Temperature Variation	ΔI _{th}	mA	-1.5		1.5	0°C to 85°C
Forward Voltage	V _f	V		2.0	2.2	10 mA
Reverse Voltage	V _r	V	5			-10 μA
Differential Resistance	R _s	Ω		35	50	10 mA
Slope Efficiency	η	mW/mA	0.05		0.2	10 mA,
Slope Efficiency Temp-Coeff.	η _t	%/°K	-0.6			0°C to 85°C, 10 mA
Peak Wavelength	λ _p	nm	830	845	860	10 mA
Spectral Wavelength (RMS)	Δλ	nm		0.45	0.85	10 mA
λ _p Temp-Coeff.	Δλ _p	nm/°C		0.06		10 mA
Rise Time	τ _r	ps		150	250	20-80% I _{bias} = 10mA
Fall Time	τ _f	ps		150	250	20-80% I _{bias} = 10mA
Relative Intensity Noise	RIN	dB/Hz			-122	1 GHz BW, 10mA
Beam Divergence (full width, 1/e ²)	θ	deg		15	30	

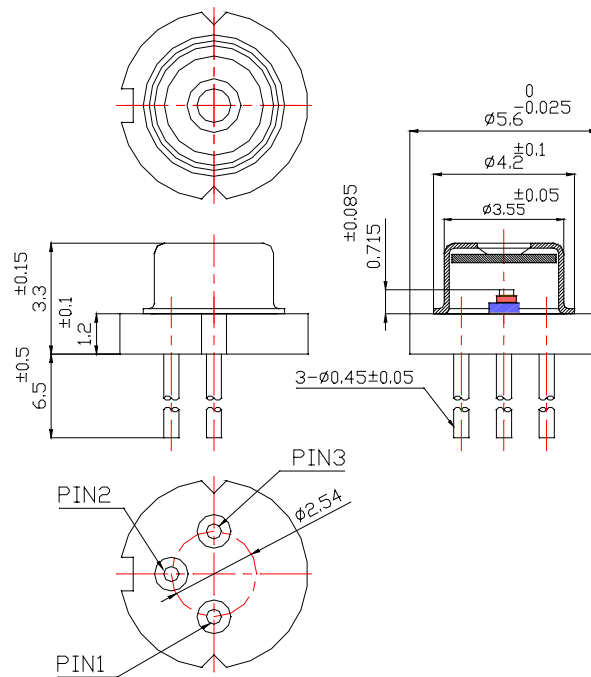
* Specifications are subject to change without notice.
 * Screening per customer-specified reject limits is available.

Photodiode Characteristics (T = 25°C, unless noted otherwise):

Parameter	Symbol	Unit	Min.	Typ	Max	Test Condition
Monitor Current	I_{pd}	mA	0.1		0.58	$P_{oc} = 0.5 \text{ mW}$
Dark Current	I_d	nA			20	$P_{oc} = 0, V_r = 3V @ 25^\circ C$
PD Reverse Volt	BVR_{pd}	V	30	115		$P_o = 0, I_r = 10\mu A$
PD Capacitance	C	pF			100	$V_r = 0 @ 1MHz$
		pF			55	$V_r = 3V @ 1MHz$

Dimensions: (mm)

All dimensions are nominal



PINOUT

VG1A-8101 -1		VG1A-8101 -2	
Number	Function	Number	Function
1	VCSEL Anode	1	VCSEL Cathode
2	VCSEL Cathode & Photodiode Anode	2	VCSEL Anode & Photodiode Cathode
3	Photodiode Cathode	3	Photodiode Anode