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## 850 nm 1.25/2.125/2.5/4 Gbps VCSEL TO (Preliminary)

### WG4C-8031-x Series

**TYPE NAME: WG4C-8031-1, WG4C-8031-2**

#### **Product Description:**

The LuxNet WG4C-8031-x TO header assembly is designed for high speed, high performance data communication applications. This device is integrated with an 850nm 1.25/2.125/2.5/4Gbps VCSEL, a TO-46 header substrate, a monitoring photodiode, and a cap. The product is designed for 1.25/2.125/2.5/4Gbps Fiber 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	-40	85	
Storage Temperature	$T_{stg}$	°C	-40	85	
Solder Reflow Temperature				260	10 seconds max.
LD Forward Current (continuous)	$I_{max}$	mA		12	
LD Reverse Voltage	$V_r$	V		8	
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	0.7	1.0	1.5	@25°C
$I_{th}$ Temperature Variation	$\Delta I_{th}$	mA			1.0	-15°C to 85°C
Forward Voltage	$V_f$	V	1.5	1.7	1.9	$I_{op}=5mA$
Differential Resistance	$R_s$	$\Omega$	30	50	65	$I_{op}=5mA$
Slope Efficiency	$\eta$	W/A	0.08	0.17	-	$I_{op}=5mA, 62.5\mu m$
Peak Wavelength	$\lambda_p$	nm	840	850	860	$I_{op}=5mA$
Spectral Wavelength (RMS)	$\Delta\lambda$	nm		0.3	0.5	$I_{op}=5mA @ 1\sigma$
$\lambda_p$ Temp-Coeff.	$\Delta\lambda_p$	nm/K		0.07		$I_{op}=5mA$
Rise Time	$\tau_r$	ps		100	-	20-80% $I_{op}=5mA @ 4.25Gbps$
Fall Time	$\tau_f$	ps		125	-	20-80% $I_{op}=5mA @ 4.25Gbps$

2\* Specifications are subject to change without notice.

\* Screening per customer-specified reject limits is available.

Version 1.1

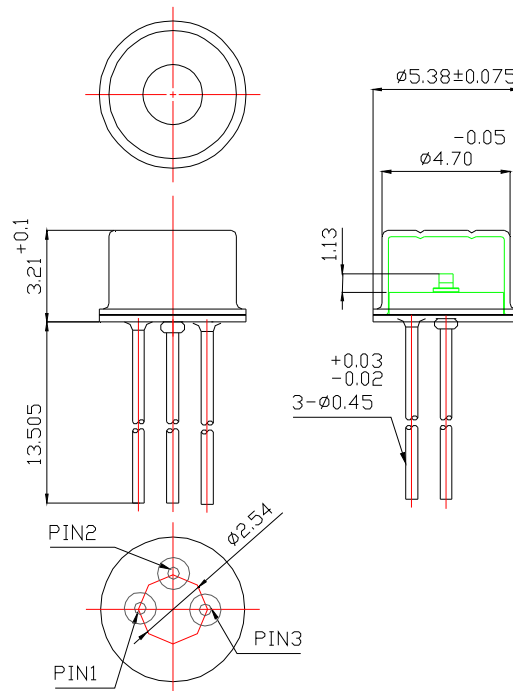
Photodiode Characteristics (T = 25°C, unless noted otherwise):

Parameter	Symbol	Unit	Min	Typ	Max	Test Condition
Monitor Current	$I_{pd}$	mA	0.1	0.3	0.6	$I_{op}=5mA$
Dark Current	$I_d$	nA			30	$P_{oc}=0, V_r=20V @ 25^\circ C$
PD Reverse Voltage	$BVR_{pd}$	V	35	170		$P_o=0, I_r=40\mu A$
PD Capacitance	C	pF		6	10	$V_r=3V @ 1MHz, P_{oc}=0$

### WG4C-8031-x (TO-46 Header)

**Dimensions:** (mm)

*All dimensions are nominal*



### PINOUT

WG4C-8031 -1		WG4C-8031 -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

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