Luminent
Bringing Communications to Light™

1510nm 2.5Gbps DFB Laser Diode

C-151-DFB2.5-E-XD-NT

Features

- Uncooled laser diode with MQW structure
- 5mW CW operation at 0 to +70°
- High temperature operation without active cooling
- Hermetically sealed active component
- Built-in InGaAs monitor photodiode
- Complies with Bellcore TA-NWT-000983
- Designed for 2.5G high speed, long reach optical network
- Single frequency operation with high SMSR
- TO-18 with a flat window cap or a ball lens cap

Absolute Maximum Rating (Tc=25°C)

Parameter	Symbol	Value	Unit
Optical Output Power	Po	6 (CW)	mW
LD Reverse Voltage	V_{RLD}	2	V
LD Forward Current	I_{FLD}	150	mA
PD Reverse Voltage	V_{RPD}	10	V
PD Forward Current	I_{FPD}	2.0	mA
Operating Temperature	T_{opr}	0 to +70	°C
Storage Temperature	T_{stg}	-40 to +100	°C

Optical and Electrical Characteristics(Tc=70°C)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Threshold Current	I_{th}	-	-	50	mA	CW
Optical Ouput Power	P_o	6	-	-	mW	CW, I=I_{th}+60mA flat window cap

Optical and Electrical Characteristics(Tc=25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Slope Efficiency C-151-DFB2.5-E-AD-NT C-151-DFB2.5-E-BD-NT	SE	 0.15 0.12	 0.25 0.18	-	mW/mA	CW,P_o=5mW
Threshold Current	I_{th}	-	10	15	mA	CW
Optical Output Power	P_o	5	-	-	mW	CW, kink free
Peak Wavelength	λ	1495	1510	1525	nm	CW,P_o=5mW
Side Mode Suppression Ratio	Sr	30	35	-	dB	CW,P_o=5mW (0 to 70°C)
Forward Voltage	V_F	-	1.2	1.5	V	CW,P_o=5mW
Temperature Dependence of Peak Wavelength	$\Delta\lambda_p/\Delta T$	0.08	0.1	0.12	nm/°C	CW,P_o=5mW (0 to 70°C)
Beam Divergence	$\theta_{//}$ $\theta_{\perp}$	- -	25 35	- -	deg.	CW,P_o=5mW,FWHM
Rise/Fall Time	t_r / t_f	-	-	150	ps	I_{bias}=I_{th}, 10-90%
Spectral Width (-20dB)	Δλ	-	-	1	nm	Modulate at 2.5Gbps ER=8.2dB
PD Monitor Current	I_m	100	200	800	μA	CW,P_o=5mW, V_{RPD}=2V
PD Dark Current	I_{DARK}	-	-	10	nA	V_{RPD}=5V
PD Capacitance	C_t	-	6	15	pF	V_{RPD}=5V, f=1MHz

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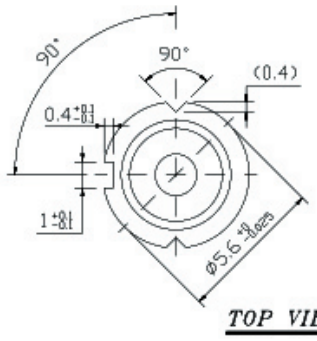
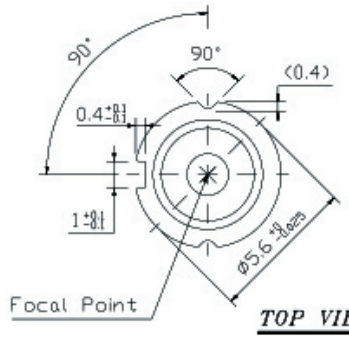
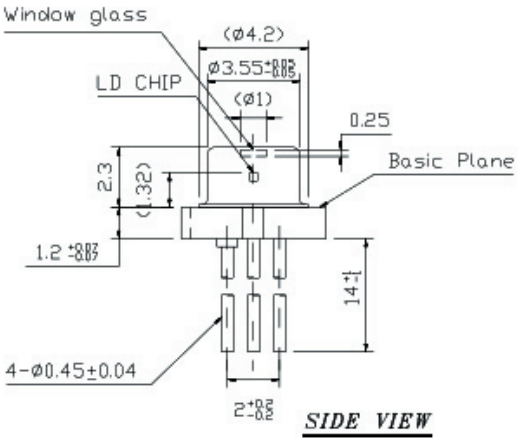
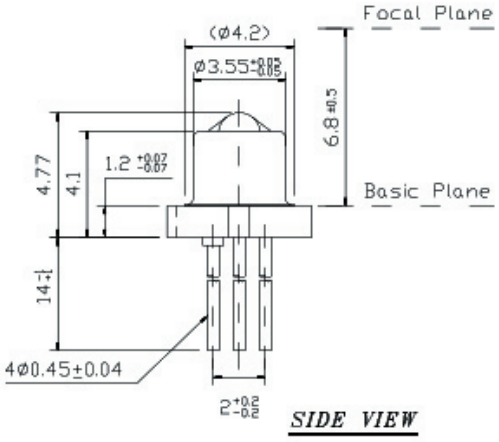
Mechanical Drawing





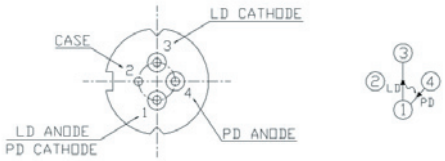


C-151-DFB2.5-E-AD-NT



C-151-DFB2.5-E-BD-NT

LD Pin Assignment

Model	PIN Assignment (Bottom View)
C-151-DBF2.5-E-AD-NT C-151-DBF2.5-E-BD-NT	

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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