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## **SPECIFICATIONS**

### **1310/1550nm FP Laser Diode Coaxial Pigtail Package**

**DL-UFL021D-SXXXX-Y**

DenseLight Semiconductors reserves the right to make product design or specifications changes without notice.

## **A. PRODUCT DESCRIPTION**

Denselight DL-UFL021D-SXXXX-Y is an uncooled FP laser diode in SM fiber pigtailed engineered for transmissions up to 1.25Gbps. It can operate over a wide temperature range from 0°C to +70°C without any need for a Peltier cooler and temperature controller.

## **B. FEATURES**

- Peak wavelength range: 1310 and 1550nm
- InGaAsP/InP MQW FP laser
- Wide temperature operation range from 0 to +70°C without any active cooling
- High output power to 2mW at 25°C
- Built-in InGaAs monitor photodiode
- Fiber pigtailed TOSA package with optional FC connector
- Designed for 1.25Gbps high speed transmission
- RoHS Compliance

## **C. PACKAGING**

- SMF-28 pigtail TOSA package

## **D. APPLICATIONS**

- Video Transmission
- Digital Communication

## E. ABSOLUTE MAXIMUM RATINGS

Operating beyond the absolute maximum ratings may cause permanent damages to the device. Exposure to absolute maximum rating condition for extended periods may affect device reliability.

Parameter	Symbol	Condition	Ratings	Unit
Output power	$P_O$	CW	2	V
Laser Forward current	$I_F$		120	mA
Laser Forward voltage	$V_F$		2	V
PD forward current	$I_{fPD}$		2	mA
PD reverse voltage	$V_{rPD}$		10	V
Case temperature	$T_c$		0 ~ +85	°C
Storage temperature	$T_{stg}$		-40 ~ +85	°C

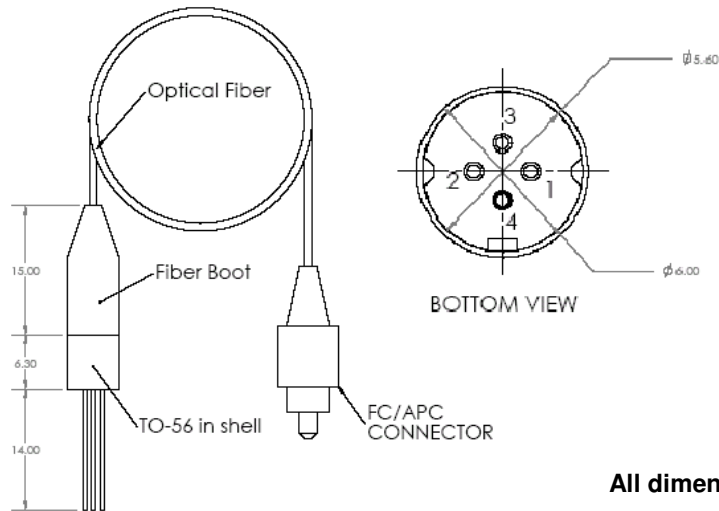
## F. OPTICAL/ELECTRICAL SPECIFICATION

( $T_c = 25\text{ °C}$  unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Threshold current	$I_{th}$	CW	-	10	20	mA
Operating current	$I_{op}$	CW	-	30	60	mA
Operating current	$I_{op}$	CW, $I_{th}+20\text{mA}$	2	-	-	mW
Operation voltage	$V_{op}$	CW, $P_o=2\text{mW}$	-	-	1.5	V
Slope efficiency	$\eta$	CW, $P_o=2\text{mW}$	0.05	-	-	mW/mA
Peak wavelength	$\lambda_p$	CW, $P_o=2\text{mW}$ , S1310	1290	1310	1330	nm
		CW, $P_o=2\text{mW}$ , S1550	1530	1550	1570	
Rise and fall time (20-80)%	$t_r, t_f$	2.48832Gbps, $I_{bias}=I_{th}$ , $I_{modulation}=40\text{mA}$	-	0.3	0.7	ns
PD monitor current	$I_m$	CW, $P_o = 2\text{mW}$ , $V_{rPD} = 1\text{V}$	0.1	-	-	mA
PD dark current	$I_d$	$V_{rPD} = 5\text{V}$	-	-	0.1	$\mu\text{A}$

## G. PACKAGE

Part	Description
Package type	TO-56
Fiber:	SMF-28
MFD	9 $\mu$ m
Cladding diameter	125 $\mu$ m
Coating diameter	245 $\mu$ m
Jacket	900 $\mu$ m loose tube
Fiber pigtail length	>0.8m
Fiber bending radius	>40mm
Connector	FC/APC



Pin Assignment 1	Description
1	LD Cathode
2	LD Anode/PD Cathode
3	Case
4	PD Anode

Pin Assignment 2	Description
1	LD Cathode
2	PD Anode
3	LD Anode (Case)
4	PD Cathode

## F. ORDERING INFORMATION

Please use the following part code system to order products.

### DL-UFL021D-SXXXX-Y

Part code:

- 1) SXXXX denotes peak wavelength, eg S1550 refer to 1550nm
- 2) Y denotes pin type: 1 refer to pin assignment 1 and 2 refer to pin assignment 2