

## C-13-DFB10-TK-SXCMI (-01)



## Features

- Uncooled DFB Laser diode with MQW structure
- Hermetically sealed active component
- Built-in InGaAs monitor photodiode
- Single frequency operation with high SMSR
- Integrated 4-pin TO-18 TOSA package, with built-in isolator, for SC/LC connector
- Designed for 10Gbps Ethernet application.

## Absolute Maximum Rating (Tc=25°C)

Parameter	Symbol	Value	Unit
Fiber Output Power	$P_O$	2(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 +85	°C

(All optical data refer to a coupled 9/125μm SM fiber)

## Optical and Electrical Characteristics (T=0 to 70°C unless otherwise noted)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Threshold Current	$I_{th}$	-	10	15	mA	T=25°C
Optical Output Power	$P_O$	0.3	-	1	mW	$I_{th}=40mA, CW, T=25^\circ$
Operating Current	$I_{op}$	-	40	-	mA	T=25°C
Peak Wavelength	$\lambda$	1295	1310	1325	nm	CW, T=25°, @ $I_{op}$
Spectral Width (RMS)	$\Delta\lambda$	-	-	1	nm	$P_O=2mW, CW$
Side Mode Suppression	$S_r$	30	-	-	dB	CW, @ $I_{op}$
Wavelength Temperature Coefficient	$\delta\lambda/\delta T$	-	0.08	0.1	nm/°C	
Forward Voltage	$V_F$	-	1.5	-	V	CW, @ $I_{op}$
Rise/Fall Time, 20 to 80%*	$t_r/t_f$	-	40	-	ps	
Relative Intensity Noise	RIN	-	-	-130	dB/Hz	CW, T=25°C, @ $I_{op}$
Tracking Error	$\Delta P_f / P_f$	-1.5	-	1.5	dB	$I_m=constant, CW$
PD Monitor Current	$I_m$	100	-	-	μA	CW, $V_{RPD}=5V, T=25^\circ C$ @ $I_{op}$
PD Dark Current	$I_{DARK}$	-	-	0.1	μA	$V_{RPD}=5V$
PD Capacitance	$C_t$	-	6	15	pF	$V_{RPD}=5V, f=1MHz$

Note 1. 10.3125 Gb/s PRBS 2<sup>31</sup>-1, Er=6.0dB, @  $I_{op}$  and T=25°C

Note 2. For 10G Ethernet application

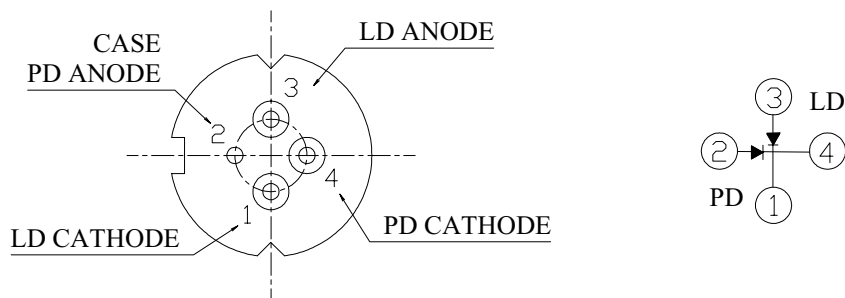
Pin Assignment

Part Number : C-13-DFB10-TK-SSCMI  
 C-13-DFB10-TK-SLCMI  
 C-13-DFB10-TK-SLCMI-01  
 C-13-DFB10-TK-SSCMI-01

**LD Pin Assignment**

Units in mm.

**Bottom view**



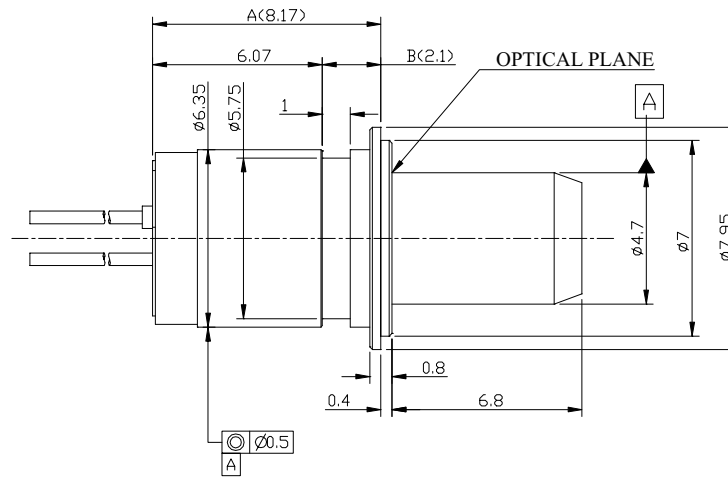
**K Type**

C-13-DFB10-TK-SXCMI (-01)

Packaging Dimensions

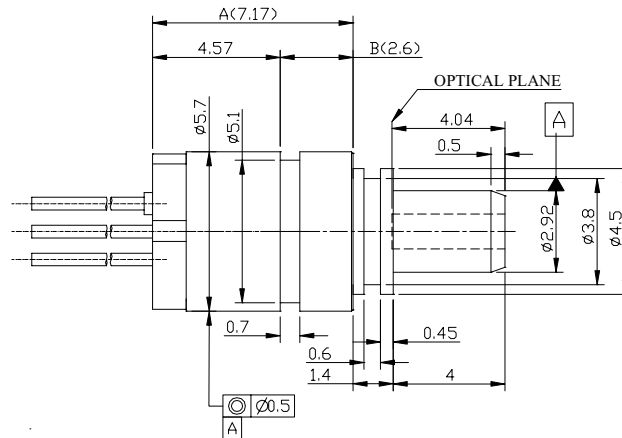
Units in mm

C-13-DFB10-TK-SSCMI



DIMENSION A=8.17±0.4  
B=2.1±0.4

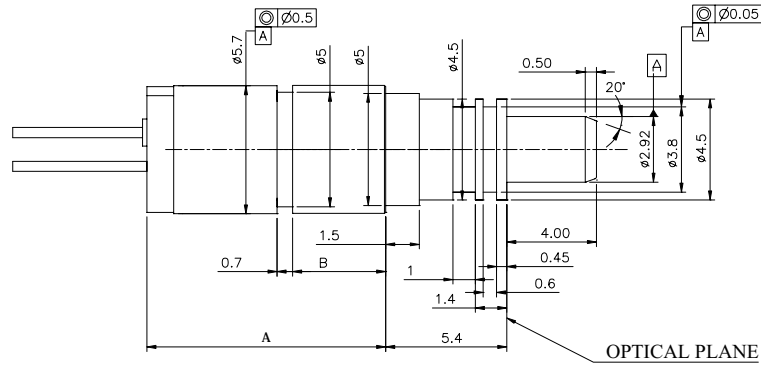
C-13-DFB10-TK-SLCMI



DIMENSION A=7.17±0.4  
B=2.6±0.4

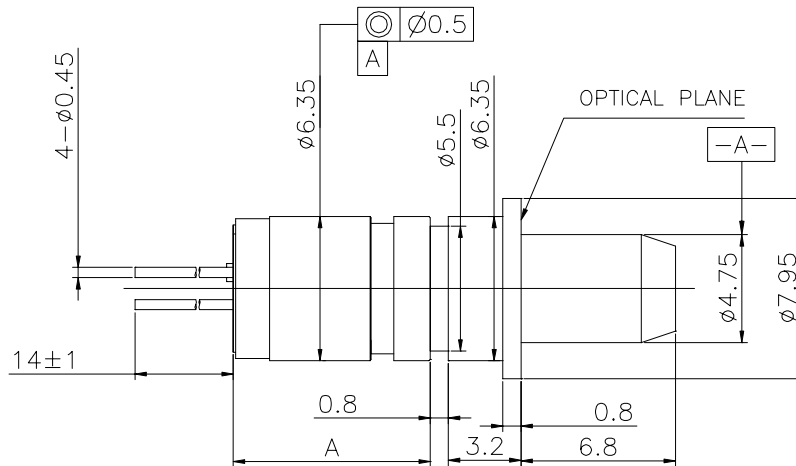
C-13-DFB10-TK-SXCMI (-01)

**LC with APC Fiber Stub Type**  
**C-13-DFB10-TK-SLCMI-01**



DIMENSION A : 10.2~11.3mm  
 B : 3.7~4.5 mm

**SC with APC Fiber Stub Type**  
**C-13-DFB10-TK-SSCMI-01**



DIMENSION A: 8.07~8.97mm

C-13-DFB10-TK-SXCMI (-01)

Ordering Information

Available Options:

- C-13-DFB10-TK-SSCMI
- C-13-DFB10-TK-SLCMI
- C-13-DFB10-TK-SLCMI-01
- C-13-DFB10-TK-SSCMI-01

<b>C</b>	<b>- 13</b>	<b>- DFB</b>	<b>10</b>	<b>- T</b>	<b>K</b>	<b>- S</b>	<b>XC</b>	<b>M</b>	<b>I</b>	<b>- 01</b>
<b>Application</b>	<b>wavelength</b>	<b>device</b>	<b>application</b>	<b>type</b>	<b>pinout</b>	<b>fiber type</b>	<b>connector</b>	<b>power</b>	<b>isolator</b>	<b>Customer</b>
Communicaton	13=1310nm	DFB=DFB	10=10Gbps	T=TOSA	K	S=Single mode	SC LC	M=0.3~1mW	I=isolator	Customer specifics 01 : with APC fiber stub

**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.

**IMPORTANT NOTICE!**

All information contained in this document is subject to change without notice, at LuminentOIC's sole and absolute discretion. LuminentOIC warrants performance of its products to current specifications only in accordance with the company's standard one-year warranty; however, specifications designated as "preliminary" are given to describe components only, and LuminentOIC expressly disclaims any and all warranties for said products, including express, implied, and statutory warranties, warranties of merchantability, fitness for a particular purpose, and non-infringement of proprietary rights. Please refer to the company's Terms and Conditions of Sale for further warranty information.

LuminentOIC assumes no liability for applications assistance, customer product design, software performance, or infringement of patents, services, or intellectual property described herein. No license, either express or implied, is granted under any patent right, copyright, or intellectual property right, and LuminentOIC makes no representations or warranties that the product(s) described herein are free from patent, copyright, or intellectual property rights. Products described in this document are NOT intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. LuminentOIC customers using or selling products for use in such applications do so at their own risk and agree to fully defend and indemnify LuminentOIC for any damages resulting from such use or sale.

THE INFORMATION CONTAINED IN THIS DOCUMENT IS PROVIDED ON AN "AS IS" BASIS. Customer agrees that LuminentOIC is not liable for any actual, consequential, exemplary, or other damages arising directly or indirectly from any use of the information contained in this document. Customer must contact LuminentOIC to obtain the latest version of this publication to verify, before placing any order, that the information contained herein is current.

© LuminentOIC, Inc. 2003  
All rights reserved