

## C-13-DFB10-TK-SXC2I-HT (-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 (T<sub>c</sub>=25°C)

Parameter	Symbol	Value	Unit
Fiber Output Power	P <sub>O</sub>	4(CW)	mW
LD Reverse Voltage	V <sub>RLD</sub>	2	V
LD Forward Current	I <sub>FLD</sub>	150	mA
PD Reverse Voltage	V <sub>RPD</sub>	10	V
PD Forward Current	I <sub>FDP</sub>	2.0	mA
Operating Temperature	T <sub>opr</sub>	0 to +85	°C
Storage Temperature	T <sub>stg</sub>	-40 to +85	°C

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

### Optical and Electrical Characteristics(T=0 to 85°C unless otherwise noted)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Threshold Current	I <sub>th</sub>	-	10	15	mA	T=25°C
Optical Output Power	P <sub>O</sub>	1.5	-	2.5	mW	I <sub>op</sub> =40mA, CW, T=25°
Operating Current	I <sub>op</sub>	-	40	-	mA	T=25°C
Peak Wavelength	λ	1295	1310	1325	nm	CW, T=25°, @ I <sub>op</sub>
Spectral Width (RMS)	Δλ	-	-	1	nm	P <sub>o</sub> =2mW, CW
Side Mode Suppression	S <sub>r</sub>	30	-	-	dB	CW, @ I <sub>op</sub>
Wavelength Temperature Coefficient	δλ/δT	-	0.08	0.1	nm/°C	
Forward Voltage	V <sub>F</sub>	-	1.5	-	V	CW, @ I <sub>op</sub>
Rise/Fall Time, 20 to 80% *	t <sub>r</sub> /t <sub>f</sub>	-	40	-	ps	
Relative Intensity Noise	RIN	-	-	-130	dB/Hz	CW, T=25°C, @ I <sub>op</sub>
Tracking Error	ΔP <sub>f</sub> / P <sub>f</sub>	-1.5	-	1.5	dB	I <sub>m</sub> =constant, CW
PD Monitor Current	I <sub>m</sub>	100	-	-	μA	CW, V <sub>RPD</sub> =5V, T=25°C @ I <sub>op</sub>
PD Dark Current	I <sub>DARK</sub>	-	-	0.1	μA	V <sub>RPD</sub> =5V
PD Capacitance	C <sub>t</sub>	-	6	15	pF	V <sub>RPD</sub> =5V, f=1MHz

\* 10.3125 Gb/s PRBS 2<sup>31</sup>-1, Er=6.0dB, @ I<sub>op</sub> and T=25°C

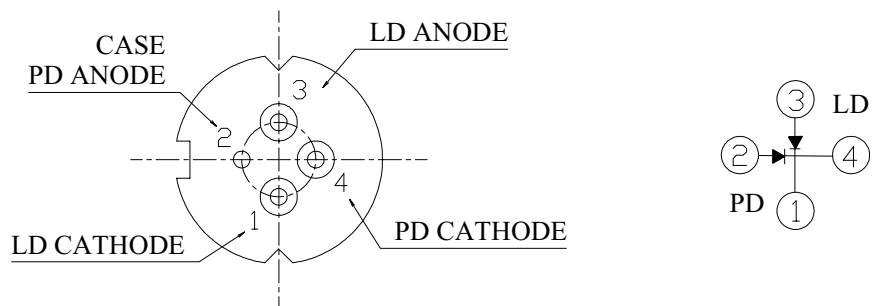
Pin Assignment

Part Number : C-13-DFB10-TK-SSC2I-HT  
 C-13-DFB10-TK-SLC2I-HT  
 C-13-DFB10-TK-SLC2I-HT-01

**LD Pin Assignment**

Units in mm.

**Bottom view**



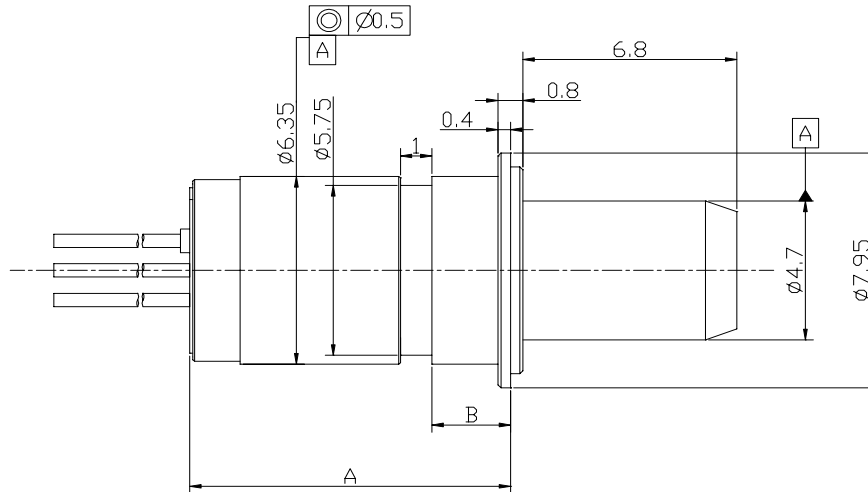
**K Type**

C-13-DFB10-TK-SXC2I-HT (-01)

Packaging Dimensions

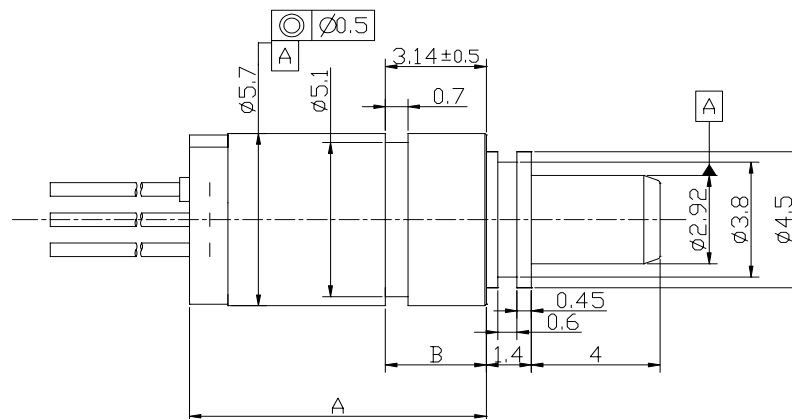
Units in mm

C-13-DFB10-TK-SSC2I-HT



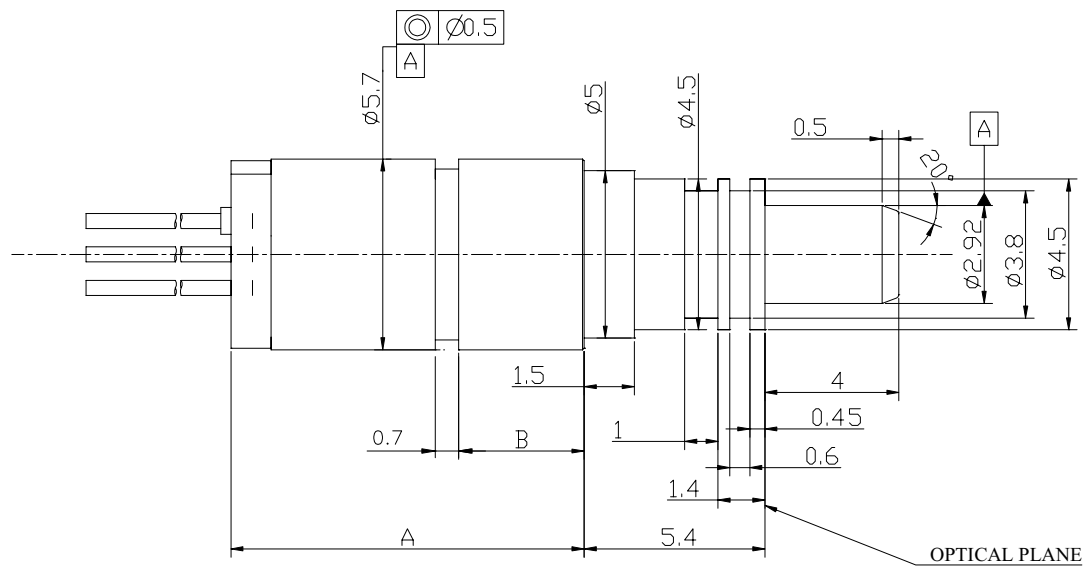
DIMENSION: A=9.7~10.7 mm  
DIMENSION: B=2.0~3.0 mm

C-13-DFB10-TK-SLC2I-HT



DIMENSION: A=8.75~9.75 mm  
DIMENSION: B=2.65~3.65 mm

**LC with APC Fiber Stub Type**  
**C-13-DFB10-TK-SLC2I-HT-01**



DIMENSION: A=10.1~11.3 mm  
 DIMENSION: B=3.3~4.5 mm

C-13-DFB10-TK-SXC2I-HT (-01)

Ordering Information

Available Options:

- C-13-DFB10-TK-SSC2I-HT
- C-13-DFB10-TK-SLC2I-HT
- C-13-DFB10-TK-SLC2I-HT-01

<b>C</b>	<b>- 13</b>	<b>-DFB</b>	<b>10</b>	<b>- T</b>	<b>K - S</b>	<b>XC</b>	<b>2</b>	<b>I</b>	<b>- HT -</b>	<b>01</b>	
Application	wavelength	device	application	type	pinout	fiber type	connector	power	isolator	Temperature	Customer
Communicaton	13=1310nm	DFB=DFB	10=10Gbps	T=TOSA	K	S=Single mode	SC LC	2=1.5~2.5mW	I=isolator	HT=0~85°C	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.

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