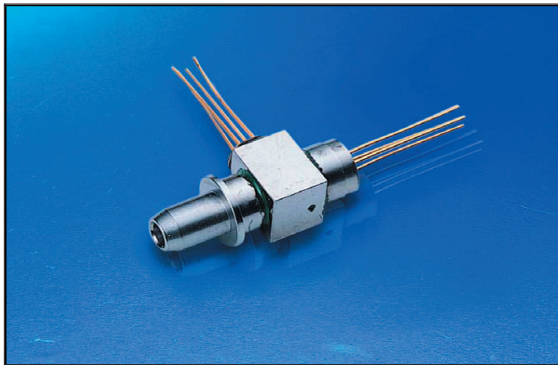


C-14/13-D06-BD-SXXL-XX



**Features**

- Single fiber bi-directional operation
- Laser diode with multi-quantum- well structure
- Low threshold current
- InGaAs/InP PIN Photodiode with trans-impedance amplifier
- High sensitivity with AGC\*
- Differential ended output
- Single Supply Voltage +3.3V
- Integrated WDM coupler
- Un-cooled operation from 0°C to +70°C
- Hermetically sealed active component

**Packaging**

- LC/SC BOSA

**Application**

- Design for fiber optic networks
- RoHS Compliant available

**Absolute Maximum Rating (Tc=25°C)**

Parameter	Symbol	Value	Unit
Fiber Output Power	$P_f$	0.6	mW
LD Reverse Voltage	$V_{RLD}$	2	V
PIN-TIA Voltage	$V_{CC}$	4.5	V
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(Tc=25°C)**

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
<b>Laser Diode</b>						
Optical Output Power	$P_f$	0.3	-	0.8	mW	CW, $I_{th} + 25mA$ , kink free
Peak Wavelength	$\lambda$	1480	1490	1500	nm	CW, $P_f = P_f(\text{Min})$
Side mode Suppression	$S_r$	30	35	-	dB	CW, $P_f = P_f(\text{Min})$ , 0~+70°C
Threshold Current	$I_{th}$	-	-	20	mA	CW
Forward Voltage	$V_f$	-	1.2	1.5	V	CW, $P_f = P_f(\text{Min})$
Rise/Fall Time	$t_r / t_f$	-	-	0.3	ns	$I_{bias} = I_{th}$ , 10%~90%
<b>Monitor Diode</b>						
Monitor Current	$I_m$	100	-	-	µA	CW, $P_f = P_f(\text{Min})$ , $V_{RPD} = 2V$
Dark Current	$I_{DARK}$	-	-	0.1	µA	$V_{RPD} = 5V$
Capacitance	$C_t$	-	6	15	pF	$V_{RPD} = 5V$ , $f = 1MHz$
<b>Module</b>						
Tracking Error	$\Delta P_f / P_f$	-1.5	-	1.5	dB	APC, 0~+70°C
Optical Cross talk	CRT	< -45			dB	

**Note:**

- 1.Pin assignment can be customized.
- 2.Specifications subject to change without notice.

Detector  $\lambda=1100\sim 1430\text{nm}$ DC Electrical Characteristics(  $T_c=25^\circ\text{C}$  )

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Power Supply	$V_{CC}$	3.0	3.3	3.6	V	
Differential Output Voltage	$V_d$	185	250	415	mV	
Supply Current (RL-50 $\Omega$ )	$I_{CC}$	-	26	50	mA	

AC/Optical and Electrical Characteristics(  $T_c=25^\circ\text{C}$  )

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Detection Range		1100	1310	1430	nm	-
Gain @ 10 Mbps Differential	G	1.92	2.5	3.4	V/mW	Measure differentially with 30 $\mu\text{A}$ p-p signal
Bandwidth	BW	700	920	1100	MHz	-
Saturation Power	$P_{sat}$	-3	-	-	dBm	BER<10 <sup>-12</sup> @1.25Gbps PRBS 2 <sup>7</sup> -1,Er=10dB
Sensitivity	Sens.	-	-26	-23	dBm	BER<10 <sup>-12</sup> @1.25Gbps PRBS 2 <sup>7</sup> -1,Er=10dB
Output Resistance	$R_{out}$	48	50	62	ohm	-

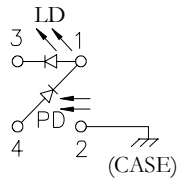
Pin Assignment

## Pin Assignment

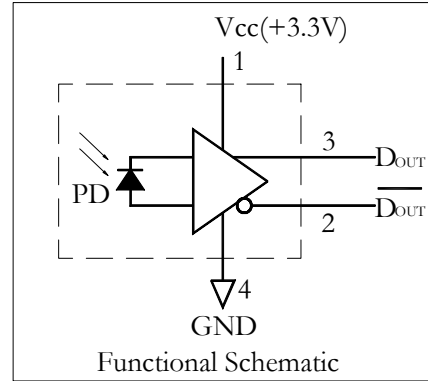
### LD Pin Assignment

D Type

- Pin 1 : Laser Anode and Monitor Diode Cathode
- Pin 2 : Case Gnd
- Pin 3 : Laser Cathode
- Pin 4 : Monitor Diode Anode



### PIN-TIA Pin Assignment

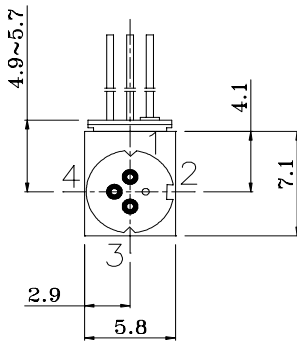
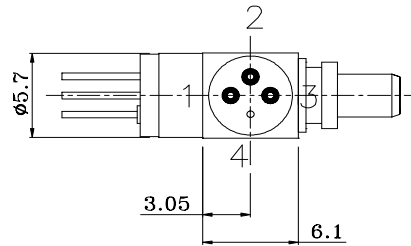


Outline Dimensions

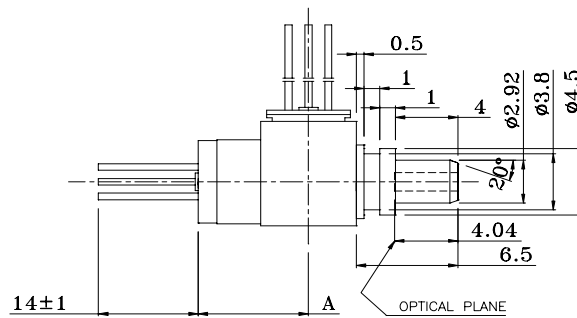
Units in mm.

Part Number: C-14/13-D06-BD-SLCL-XX

### Top view



### Left side view



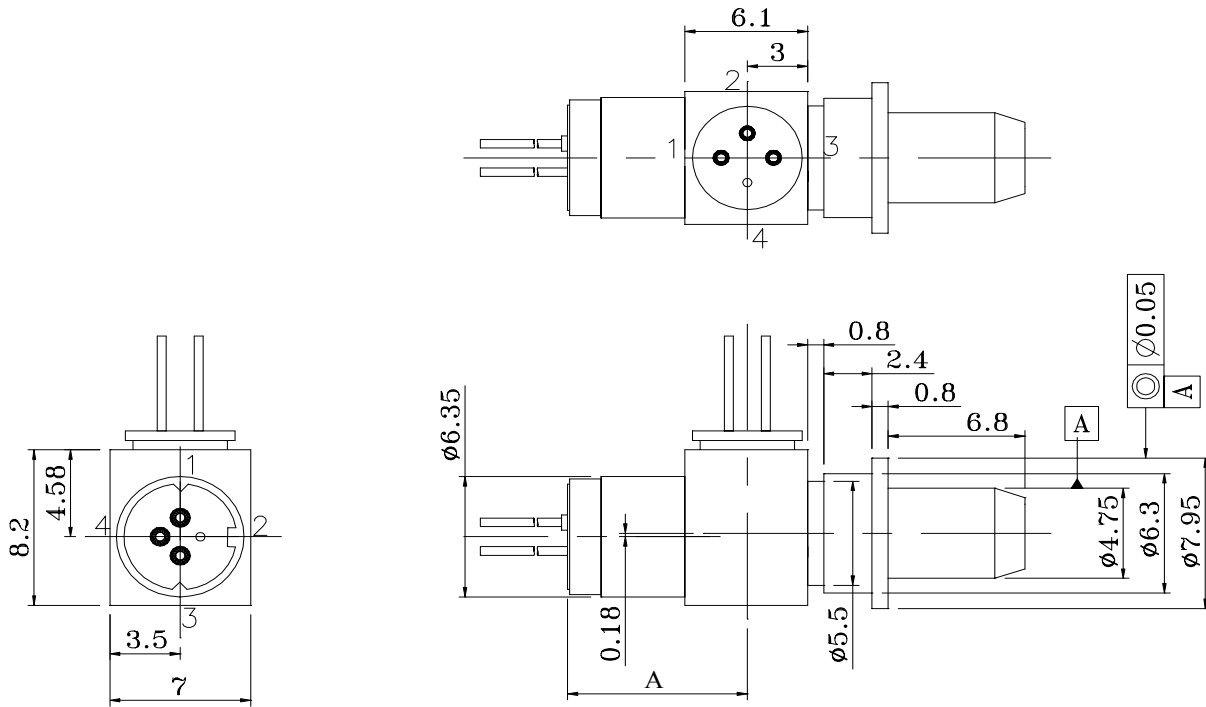
### Front view

DIMENSION : A:TBD

Outline Demensions

Units in mm.

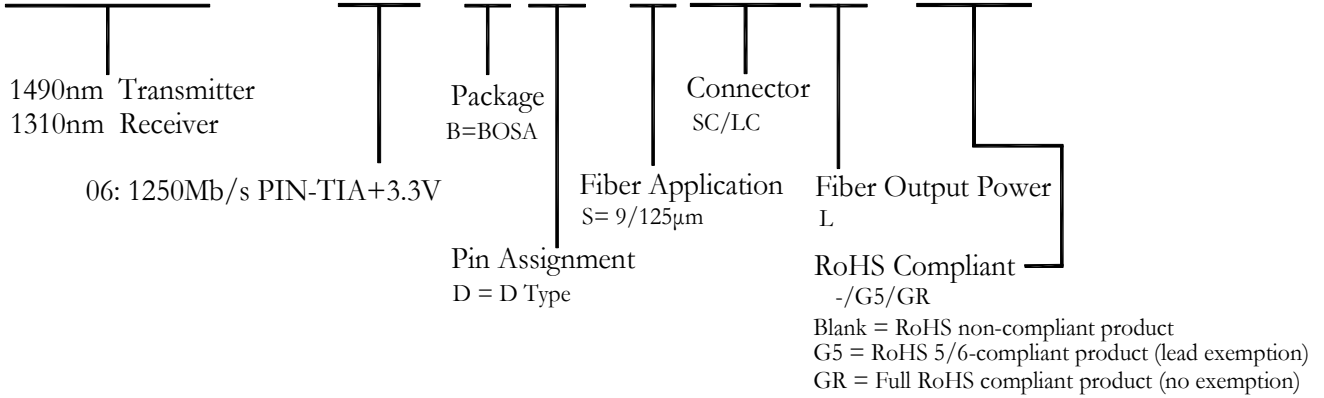
Part Number: C-14/13-D06-BD-SSCL-XX



DIMENSION A: 7.2~7.8mm

Ordering Information

## C-14/13-D06-BD-SXXL-XX



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.

Legal Notice

**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. 2006  
All rights reserved