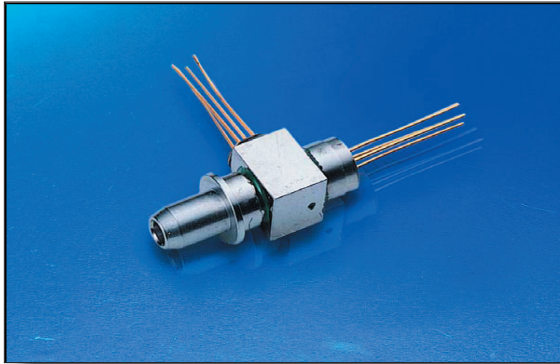


C-13/14-F06-BD-SXXL-XX



### 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 -40°C to +85°C
- Hermetically sealed active component
- LC/SC BOSA
- Design for fiber optic networks
- RoHS Compliant available

### Absolute Maximum Rating (Tc=25°C)

Parameter	Symbol	Value	Unit
Fiber Output Power L	$P_f$	1	mW
LD Reverse Voltage	$V_{RLD}$	2	V
PIN-TIA Voltage	$V_{CC}$	4.5	V
Operating Temperature	$T_{opr}$	-40 to +85	°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 L	$P_f$	0.3	-	0.8	mW	CW, $I_{th} + 20mA$ , kink free
Peak Wavelength	$\lambda$	1290	1310	1330	nm	CW, $P_f = P_f(\text{Min})$
Spectrum Width (RMS)	$\Delta\lambda$	-	-	3	nm	CW, $P_f = P_f(\text{Min})$
Threshold Current	$I_{th}$	-	10	15	mA	CW
Forward Voltage	$V_F$	-	1.2	1.5	V	CW, $P_f = P_f(\text{Min})$
Differential series resistance	$r_s$	-	-	15	$\Omega$	
Rise/Fall Time	$t_r / t_f$	-	-	0.3	ns	$I_{bias} = I_{th}$ , 10% to 90%
<b>Monitor Diode</b>						
Monitor Current	$I_m$	100	-	-	$\mu A$	CW, $P_f = P_f(\text{Min})$ , $V_{RPD} = 2V$
Dark Current	$I_{DARK}$	-	-	0.1	$\mu A$	$V_{RPD} = 5V$
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, -40 to +85°C
Optical Cross talk	CRT	-	-	-40	dB	

### Note:

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

**Detector  $\lambda=1480-1500\text{nm}$**

**DC Electrical Characteristics(  $T_c=25^\circ\text{C}$ )**

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Power Supply	V <sub>cc</sub>	3.0	3.3	3.6	V	
Differential Output Voltage	V <sub>d</sub>	185	250	415	mV	
Supply Current (RL=50Ω)	I <sub>cc</sub>	-	26	50	mA	

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

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Detection Range		1480	-	1500	nm	-
Gain @ 10 Mbps Differential	G	1.92	2.5	3.4	V/mW	Measure differentially with 30uAp-p signal
Bandwidth	BW	700	920	1100	MHz	-
Saturation Power	Psat	-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	Rout	48	50	62	ohm	-

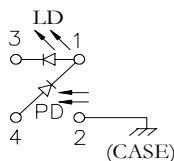
**Pin Assignment**

## Pin Assignment

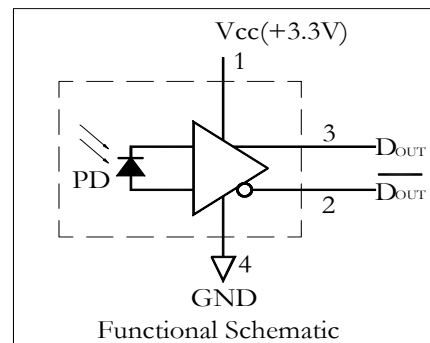
### LD Pin Assignment

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



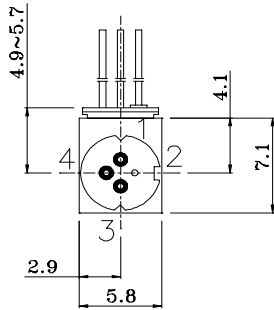
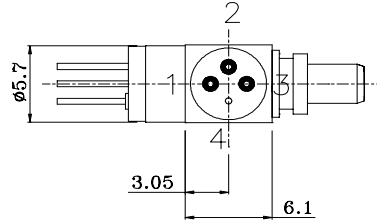
## C-13/14-F06-BD-SXXL-XX

Outline Dimensions

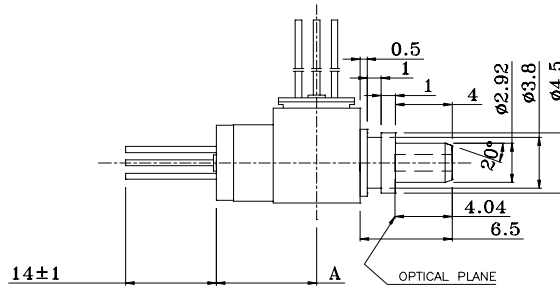
Units in mm.

Part Number: C-13/14-F06-BD-SLCL-XX

Top view



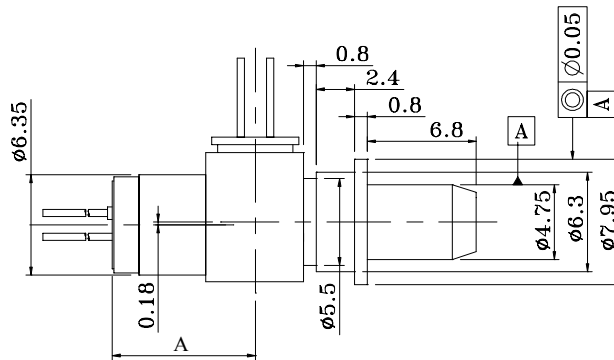
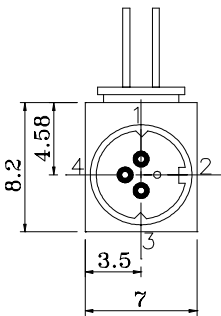
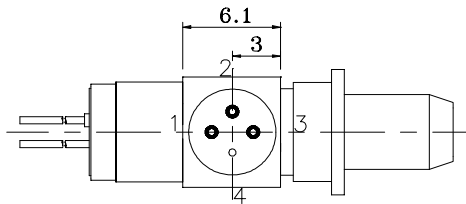
Left side view



Front view

DIMENSION : A:6.9~7.5

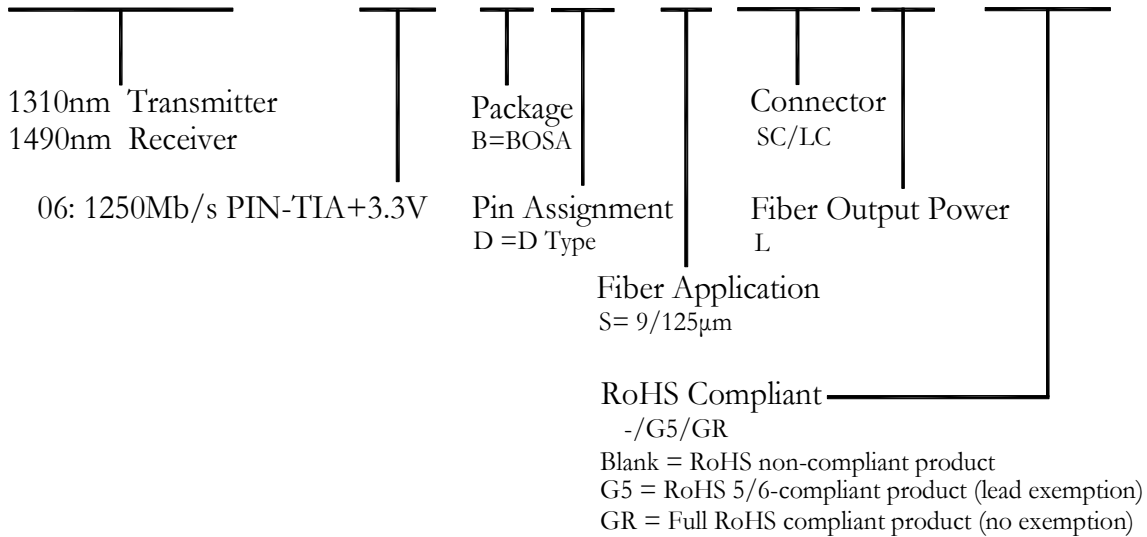
Part Number: C-13/14-F06-BD-SSCL-XX



DIMENSION A: 7.2~7.8mm

Ordering Information

# C-13/14-F06-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.

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