

## 10G 1270nmTX/1330nm RX&1330nmTX/1270nm RX DFB'PT with Isolator LC

### BOSA

#### Features:

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB Laser Diode
- ◆ Low threshold, high slope efficiency and high output power
- ◆ Operating Case Temperature: -40°C to +85°C
- ◆ High channel isolation
- ◆ Low return loss
- ◆ Optional with Isolator

#### Applications:

- ◆ Long distance digital transmission system
- ◆ Cable television system
- ◆ WDM systems

#### Absolute Maximum Ratings:

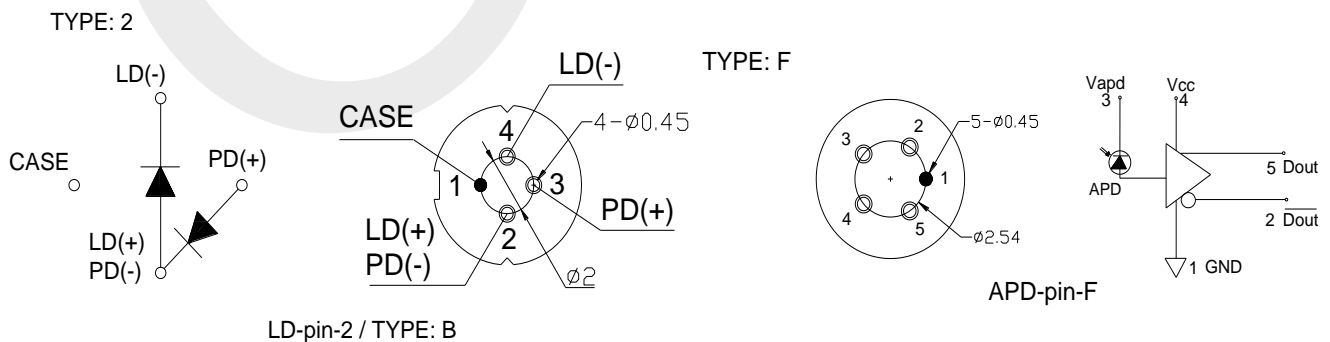
| Parameter                      | Symbol          | Min. | Max. | Unit |
|--------------------------------|-----------------|------|------|------|
| Storage Temperature            | Tstg            | -40  | 85   | °C   |
| Operating Case Temperature     | Topr            | -40  | 85   | °C   |
| Reverse Voltage(LD)            | V <sub>RL</sub> | ---  | 2    | V    |
| Reverse Voltage(PD)            | V <sub>RD</sub> | ---  | 20   | V    |
| Photodiode Forward Current(PD) | I <sub>FD</sub> | ---  | 2    | mA   |
| LD Direct Forward Current      | I <sub>FL</sub> | ---  | 120  | mA   |

**Electrical and Optical Characteristics – Transmitter:**

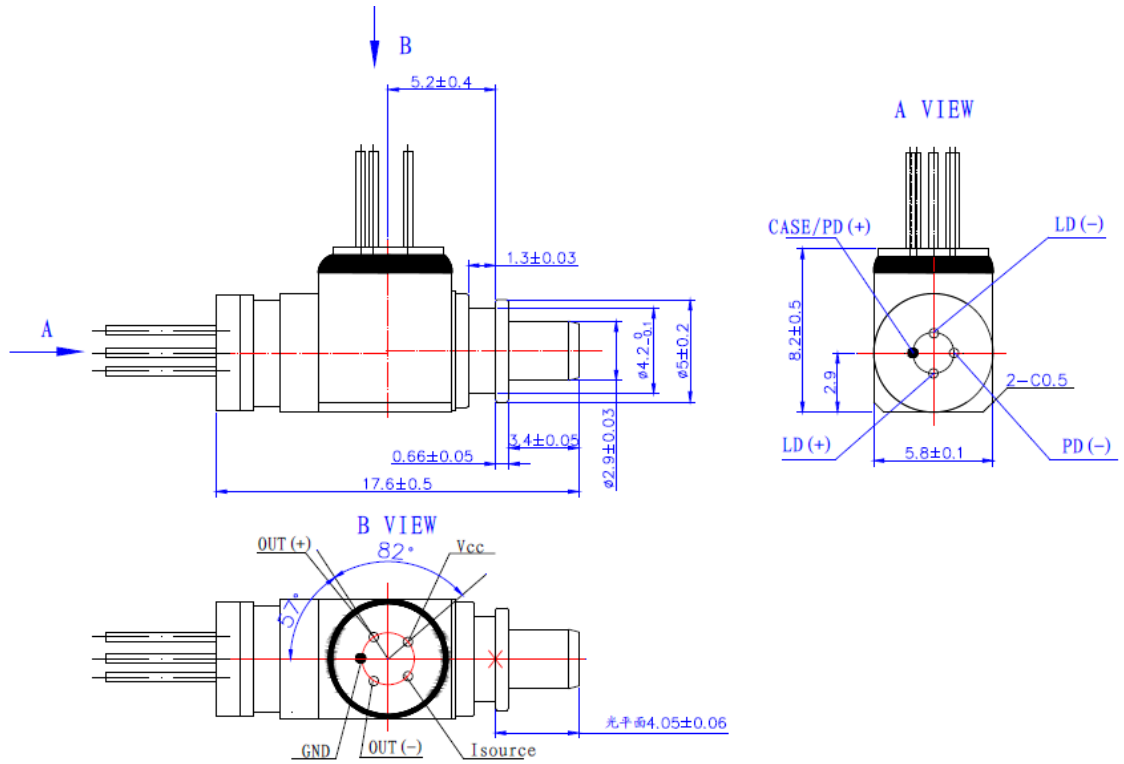
| Parameter                   | Symbol      | Min. | Typ. | Max. | Unit | Note  |
|-----------------------------|-------------|------|------|------|------|---|
| Output Optical Power        | Pf          | 0.5  | ---  | ---  | mW   | CW, Iop=Ith+20mA, Tc=25°C                   |
| Threshold Current           | Ith         | ---  | 5    | ---  | mA   | at Tc=25°C                                  |
| Peak Wavelength             | $\lambda_p$ | 1260 | 1270 | 1280 | nm   | Tc=25°C                                     |
|                             |             | 1320 | 1330 | 1340 |      |   |
| Side Mode Suppression Ratio | SMSR        | 35   | 40   | ---  | dB   | CW, Tc=0~85°C                               |
| Operating Voltage           | Vop         | ---  | ---  | 1.7  | V    | CW, Iop=Ith+20mA,                           |
| Monitor Current             | Im          | 0.05 | ---  | 1.0  | mA   | CW, Iop=Ith+20mA,                           |
| Tracking Error              | TE          | -1.5 | ---  | 1.5  | dB   | Iop=Ith+20mA,<br>, -40°C/+25°C, +25°C/+85°C |
| Optical Isolation           | Iso         | 30   | ---  | ---  | dB   | Single Stage                                |

**Receiver Optical and Electrical Specifications:**

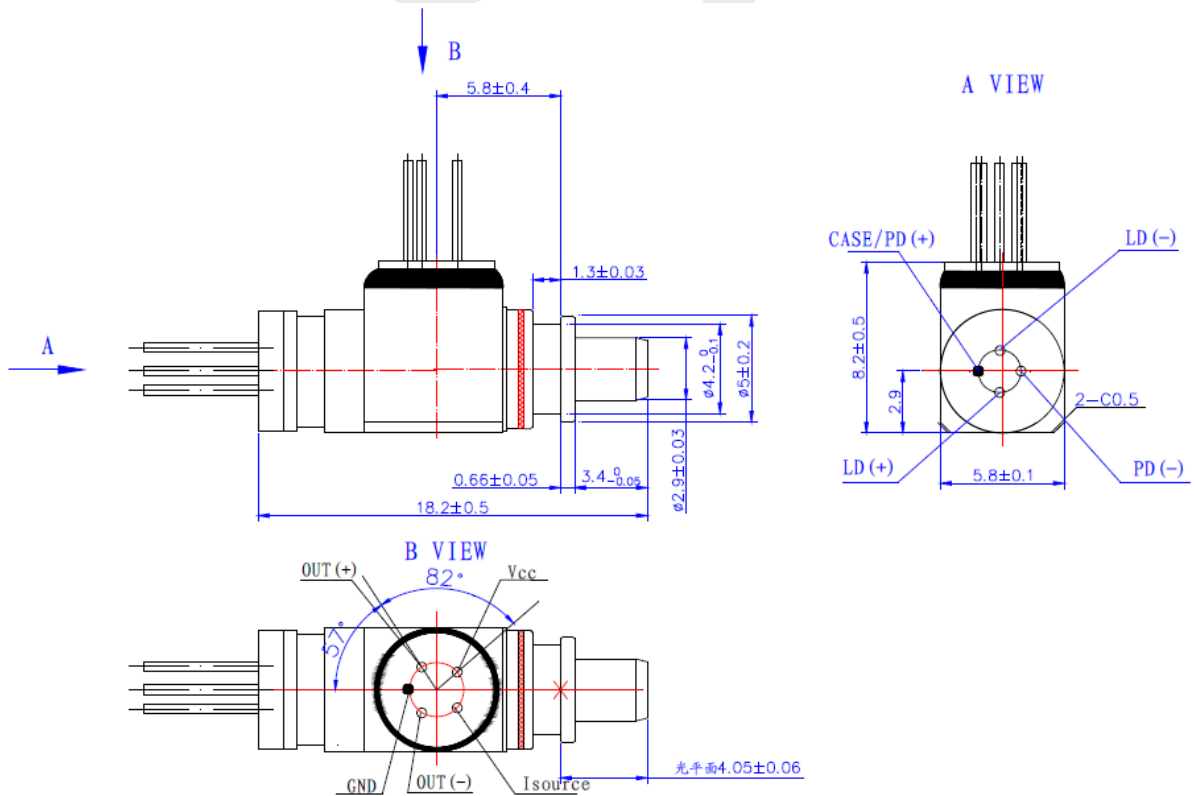
| Description            | Symbol           | Min. | Typ. | Max. | Unit | Note                                  |
|------------------------|------------------|------|------|------|------|---------------------------------------|
| Wavelength             | $\lambda$        | 1320 | 1330 | 1340 | nm   | ---                                   |
|                        |                  | 1260 | 1270 | 1280 |      | ---                                   |
| Power Supply           | Vcc              | 2.97 | 3.3  | 3.46 | V    | ---                                   |
| Supply Current         | Icc              | ---  | 27   | 34   | mA   | ---                                   |
| Small Signal Bandwidth | BW               | 8    | ---  | ---  | GHz  | ---                                   |
| Low-Frequency Cut off  | LF               | ---  | 14   | 30   | KHz  | ---                                   |
| Saturation Power       | P <sub>sat</sub> | 0    | ---  | ---  | dBm  | ---                                   |
| RSSI                   | ---              | 88   | ---  | ---  | mV   | $\lambda=-12\text{dBm}, R=2000\Omega$ |

**Pin Assignment:**


Package Dimension:



LC/PC receptacle (Non-electrical isolation)

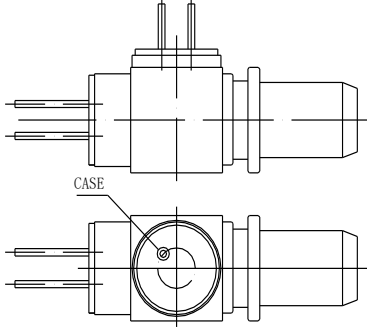
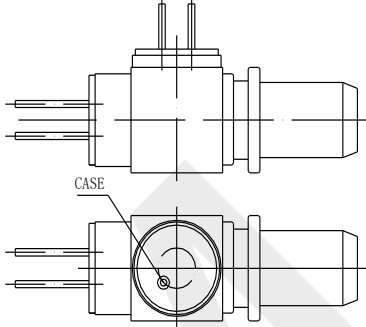
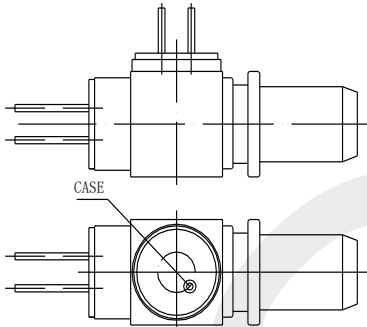
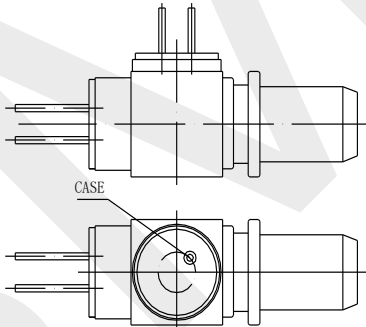
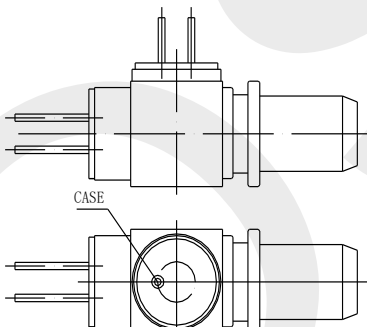
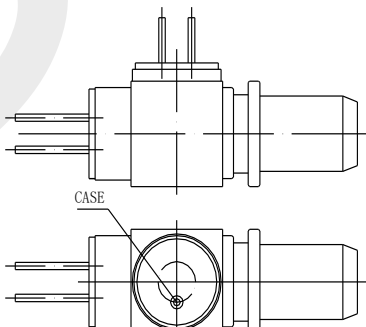
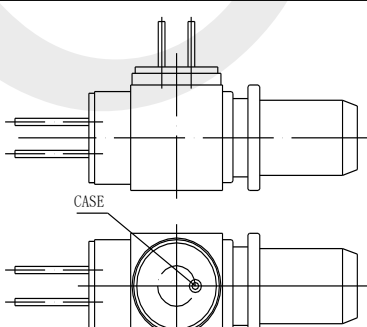
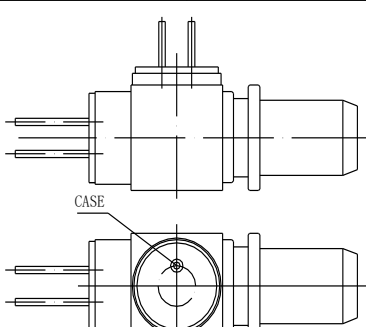


LC/PC receptacle (Electrical isolation)

TX Pin Order Code:

| Launch         |        |                |        |
|----------------|--------|----------------|--------|
|                |        |                |        |
| Case direction | A Type | Case direction | B Type |
|                |        |                |        |
| Case direction | C Type | Case direction | D Type |
|                |        |                |        |
| Case direction | E Type | Case direction | F Type |
|                |        |                |        |
| Case direction | G Type | Case direction | H Type |

**RX Pin Order Code:**

| Receive   |        |  |        |
|---|--------|--|--------|
|    |        |    |        |
| Case direction  | A Type | Case direction   | B Type |
|   |        |   |        |
| Case direction  | C Type | Case direction   | D Type |
|  |        |  |        |
| Case direction  | E Type | Case direction   | F Type |
|  |        |  |        |
| Case direction  | G Type | Case direction   | H Type |

## Nomenclature:

OSMBS -

A B C D E F G H I J

| Code | Parameter                | Detailed Description        |   |   |   |                         |   |   |   |
|------|--------------------------|-----------------------------|---|---|---|-------------------------|---|---|---|
| A    | Laser Type               | D=DFB LD                    |   |   |   |                         |   |   |   |
| B    | Connector Type           | 1= Non-electrical isolation |   |   |   | 2= Electrical isolation |   |   |   |
| C    | Launch Wavelength        | A=1270                      |   |   |   | B=1330                  |   |   |   |
| D    | Launch Data Rate         | 10=10G                      |   |   |   |                         |   |   |   |
| E    | Output Power             | A=0.5~0.99                  |   |   |   | B=1~1.59mW              |   |   |   |
| F    | Receiver Wavelength      | A=1270                      |   |   |   | B=1330                  |   |   |   |
| G    | Receiver Data Rate       | T=10G                       |   |   |   |                         |   |   |   |
| H    | TX Pin Package Direction | A                           | B | C | D | E                       | F | G | H |
| I    | RX Pin Package Direction | A                           | B | C | D | E                       | F | G | H |
| J    | Isolator                 | G=with I                    |   |   |   |                         |   |   |   |

## Precaution:

- (1) The modules should be handled in the same manner as ordinary semiconductor devices to prevent the electro-static damages. For safe keeping and carrying, the modules should be packaged with ESD proof material. To assemble the modules on PCB, the workbench, the soldering iron and the human body should be grounded.
- (2) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.
- (3) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.

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