

1650 nm DFB LASER DIODE MODULES
UNCOOLED MQW DFB LD WITH RECEPTACLE

DL-5500-1650 Series

FEATURES

- ✧ 1650 nm Uncooled Laser Diode with MQW Structure
- ✧ High Reliability, Long Operation Life
- ✧ Single Frequency Operation with High SMSR
- ✧ 0 to 70°C operation without active cooling
- ✧ Build-in InGaAs monitor
- ✧ Build-in single stage isolator

APPLICATION

Trunk Line, FitL

DESCRIPTION

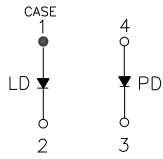
DL-5500-1650 series are designed for coupling a single mode optical fiber with 1650 nm MQW DFB uncooled laser diode. DL-5500-1650 series are the best kits as light sources for telecom and datacom applications.

| ELECTRICAL AND OPTICAL CHARACTERISTICS (T_C=25 °C) | | | | | | |
|---|---|---|------------|------|------------|------|
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
| I _{th} | Threshold Current | CW | | 10 | 15 | mA |
| V _{OP} | Operating Voltage | CW, I _F =I _{th} +25mA | | 1.2 | 1.5 | V |
| P _f | Optical Output Power Part No:DL-552XX-1650 DL-553XX -1650 | CW, I _F =I _{th} +25mA | 1.0 2.0 | | 2.0 3.0 | mW |
| λ _c | Center Wavelength | CW, I _{th} +25mA | 1640 | 1650 | 1660 | nm |
| SMSR | Side Mode Suppression Ratio | CW, I _{th} +25mA | 30 | 35 | | dB |
| t _r , t _f | Rise And Fall Times Part No:DL-55XX-1650 DL-55XXS-1650 | I _F =I _{th} , I _{th} +25mA, 20~80% | | | 226 150 | ps |
| ΔP _f /P _f | Tracking Error | APC, 0~+70 °C | -1.5 | | 1.5 | dB |
| I _m | PD Monitor Current | CW, I _{th} +25mA, V _{RD} =1V | 100 | | | μA |
| I _D | PD Dark Current | V _{RD} =5V | | | 0.1 | μA |
| C _t | PD Capacitance | V _{RD} =5V, f=1MHz | | 10 | 15 | pF |

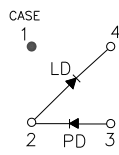
| ABSOLUTE MAXIMUM RATINGS (T_C=25 °C) | | | |
|---|---------------------------------------|---------|------|
| Symbol | Parameter | Ratings | Unit |
| P _o | Optical Output Power (552XX/553XX) | 1.5/3 | mW |
| V _{RL} | LD Reverse Voltage | 2 | V |
| V _{RD} | PD Reverse Voltage | 10 | V |
| I _{FD} | PD Forward Current | 1.0 | mA |
| T _{opr} | Operating Temperature | 0 to 70 | °C |
| T _{stg} | Storage Temperature | -40~+85 | °C |

MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT

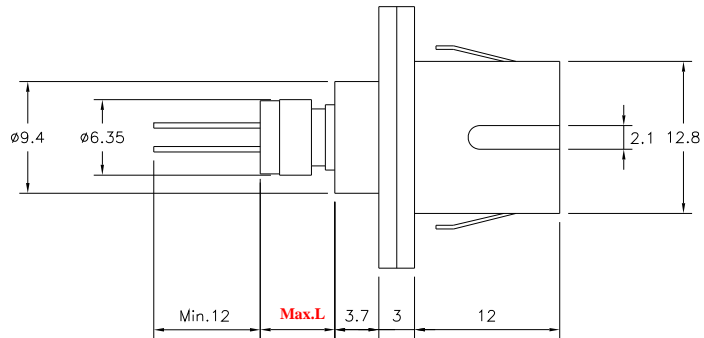
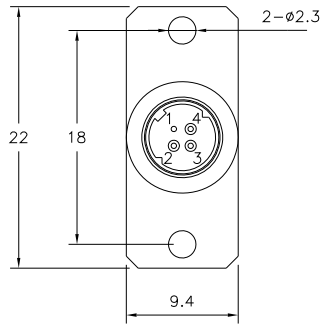
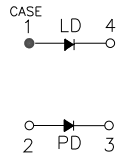
Type A



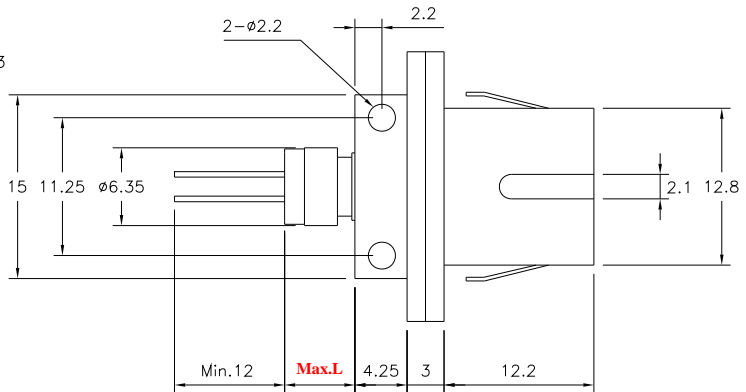
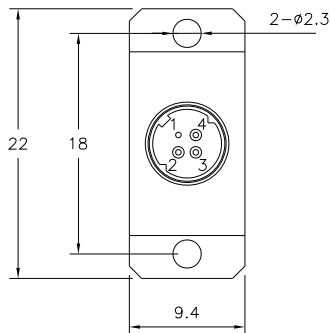
Type B



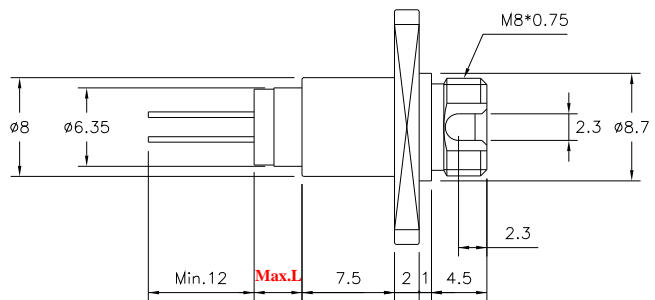
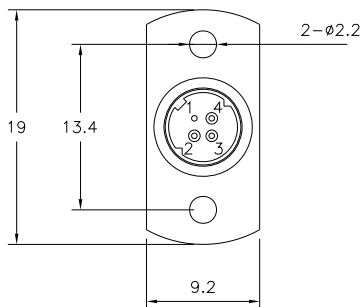
Type C



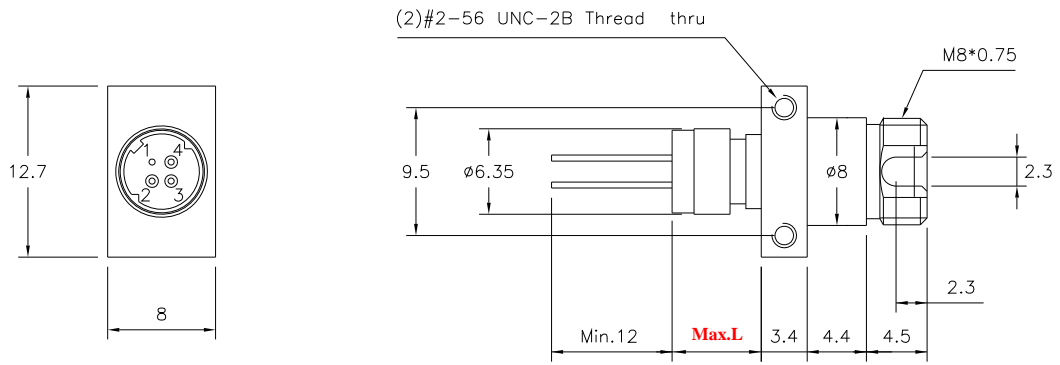
SC RECEPTACLE
(DL-55XXX-1650-SS)



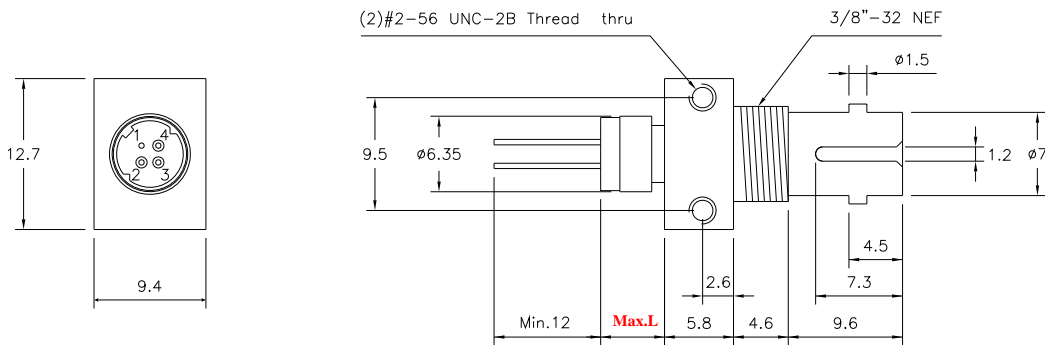
SC RECEPTACLE (BOARD MOUNT)
(DL-55XXX-1650-SBS)



FC RECEPTACLE
(DL-55XXX-1650-FS)



FC RECEPTACLE (BOARD MOUNT)
(DL-55XXX-1650-FBS)



ST RECEPTACLE
(DL-55XXX-1650-TS)

| P/N | Max. L Dimension | | | | |
|---------------|------------------|------|-----|------|-----|
| | S | SB | F | FB | T |
| 552XX-1650-XS | 8.6 | 8.0 | 6.2 | 8.9 | 7.7 |
| 553XX-1650-XS | 10.6 | 10.0 | 8.2 | 10.9 | 9.7 |

Note: Specifications subject to change without notice.

ORDER INFORMATION

Part No.: D L - 5 5 - 1 6 5 0 - S

| Code | Pout (mW) |
|------|-----------|
| 2 | 1 |
| 3 | 2 |

| Code | Pin Assignment |
|------|----------------|
| 0 | Type A |
| 5 | Type B |
| 8 | Type C |

| Code | Connector Type |
|------|---------------------|
| F | FC/PC |
| FB | FC/PC (Board Mount) |
| T | ST/PC |
| S | SC/PC |
| SB | SC/PC (Board Mount) |

| Code | Isolator |
|------|--------------|
| S | Single-Stage |

| Code | Speed |
|-------|-----------|
| Blank | 1.25 Gbps |
| S | 2.5 Gbps |

Revision History

| Version | Subject | Release Date |
|---------|---|--------------|
| 1.0 | Initial datasheet | 2004/8/1 |
| 2.0 | 1. Combine 1.25G and 2.5G characteristics in one data sheet 2. Revise FC RECEPTACLE (BOARD MOUNT) thread thru dim.: M2 => UNC-2B 3. Revise drawing | 2007/12/1 |
| 3.0 | Revise mechanical dimension and order information | 2009/4/10 |
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