# KLT-231444x

## Description

**KLT-231444x** is long wavelength distributed feedback(DFB) laser diode(LD) sources in TO-56 package with flat window or ball lens or aspherical lens cap.

**KLT-231444x** consists of an InGaAsP strained multi-quantum well(MQW) LD and an InGaAs PIN-PD for output monitoring. It operates at 1310nm wavelength band and with data rates of 1.25 Gbps.

It is suitable for fabricating pigtailed LD source, TOSA(transmitter optical sub assembly), and bi-directional module.

## FEATURES

- High performance strained MQW InGaAsP LD with BH(buried hetero-junction) structure
- Hermetically sealed TO-56 package with flat window or ball lens or aspherical lens cap
- High reliability and environmental endurance
- Operating wavelength of 1.3μm band
- Operating temperature range from -20°C to 85°C
- Data rates of 1.25Gbps

## APPLICATIONS

- SONET OC-24/SDH STM-8
- 1.25Gbps Gigabit Ethernet
- Suitable for fabrication of coaxial LD module, TOSA, and Bi-Di module

## Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | unit |
|---|---|---|---|---|
| Operating temperature | $T_{op}$ | -20 | 85 | °C |
| Storage temperature | $T_{stg}$ | -40 | 100 | °C |
| Peak laser forward current | If | | 150 | mA |
| Peak laser reverse voltage | $V_{rl}$ | | 2 | V |
| Peak forward monitor PD current | $I_{fp}$ | | 2 | mA |
| Peak reverse monitor PD voltage | $V_{rp}$ | | 10 | V |

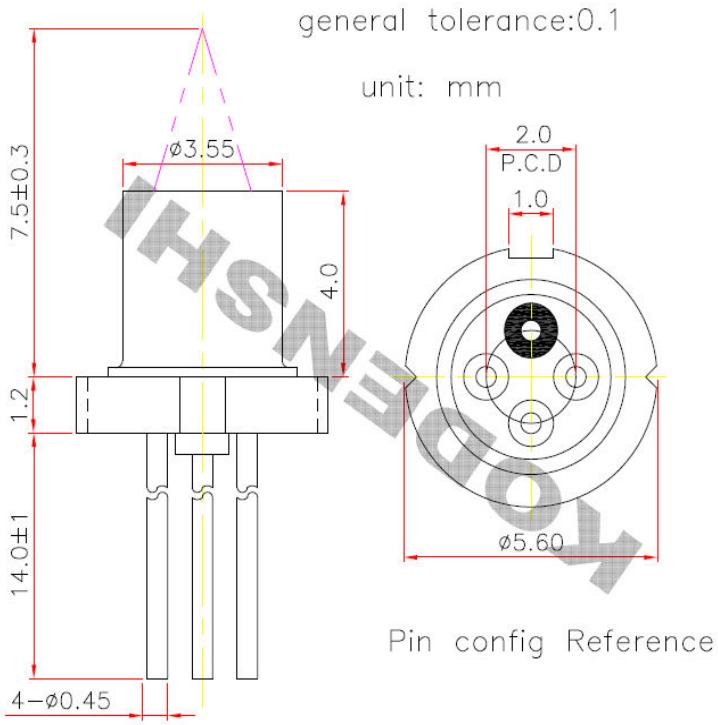
## Optical and Electrical Characteristics (Top = 25°C otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Threshold current | $I_{th}$ | | 7 | 15 | mA | CW |
| | | | 23 | 40 | | CW, Top = 85°C |
| Rated output power | $P_f$ | | 5 | | mW | CW, kink free |
| Operating current | $I_{op}$ | | 23 | 35 | mA | at rated Po=5mw |
| | | | 50 | 70 | | at rated Po=5mw, $T_{op}$=85°C |
| Operating voltage | $V_{op}$ | | 1.1 | 1.5 | V | at rated Po=5mw |
| Slope efficiency | η | 0.25 | 0.35 | | mW/mA | CW,Po=5mw |
| | | 0.15 | 0.2 | | | CW,Po=5mw,Top = 85°C |
| Center wavelength | λc | 1290 | 1310 | 1330 | nm | at rated Po=5mw |
| Side mode suppression ratio | SMSR | 30 | 40 | | dB | at rated Po=5mw |
| Optical rise and fall time | $t_r$ | | 0.1 | 0.2 | ns | 20 to 80%, $I_b = I_{th}$ |
| | $t_f$ | | 0.1 | 0.2 | ns | 80 to 20%, $I_b = I_{th}$ |
| Monitor PD current | $I_m$ | 0.05 | 0.25 | | mA | at rated Po=5mw , $V_{rp}$ = 1V |
| Monitor PD dark current | $I_d$ | | | 0.1 | μA | $V_{rp}$ = 10V |
| Monitor PD capacitance | $C_t$ | | 10 | 20 | pF | $V_{rp}$ = 10V, 1MHz |

Note: The engineering spec can be revised without any previous notice.

# KLT-231444x

## Outline Drawing

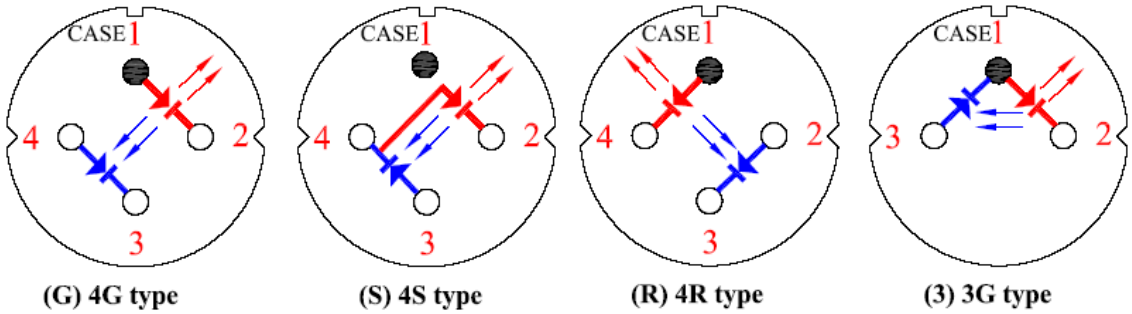



## Pin connections

| Pin config. | 4G | 4S | 4R |
|---|---|---|---|
| pin no. 1 | case ground/LD anode | Case ground | case ground/LD anode |
| pin no. 2 | LD cathode | LD cathode | m-PD anode |
| pin no. 3 | Monitor PD cathode | Monitor PD anode | m-PD cathode |
| pin no. 4 | Monitor PD anode | LD anode/m-PD cathode | LD cathode |

## Ordering information

| KLT | Device Type | Wavelength | Data Rate | Operating Temp. | Package type | Pin Config. |
|---|---|---|---|---|---|---|
| Kodenshi LD TO | 1 : FP(BH) | 31 : 1310 nm | 4 : 1.25 Gbps | 2 : -20~70 | 1 : 1.5 mm ball lens | S : 4S type |
| | 2 : DFB | 55 : 1550 nm | 5 : 2.5 Gbps | 4 : -20~85 | 2 : 2.0mm ball lens | G : 4G type |
| | 3 : CWDM-DFB | 49 : 1490 nm | | 5 : -40~85 | 3 : flat window | R : 4R type |
| | 4 : AR LD | xx:1xx0nm ±3nm(CWDM) | | | 4 : aspheric lens | 3: 3G |
| | | yB(band):O,E,S,C,L,NI,NC | | | | |
| | | | | | | |
| | | | | | | |




**Pin configuration of LD TO Package (Bottom view)**