

Cooled TO60 Laser Diodes (Gas Detection)

Features

Industry-standard, TO60 Coaxial package
 High output power($\geq 4\text{mW}$). Built in micro-TEC
 λ_c of $\text{XXXX}\pm 1\text{nm}$
 High-performance

Applications

Telecommunication transceivers
 Datacom transceivers
 Gas Sensor

The Cooled TO60 laser diodes for gas detection are Multiple Quantum Well structured distributed-feedback(DFB) laser devices. The laser diodes are built in an 8-PIN TO60 package with micro-TEC/thermistor closed loop temperature control for gas sensor.

Specifications

| Parameters | Unit | Values | Symbol | Test Conditions |
|------------------------------------|----------------------|-----------------------------|--------------------------|---|
| Center Wavelength | nm | See Center Wavelength Table | λ_c | $T_L=15\sim 35^\circ\text{C}$, CW |
| Peak Optical Output Power | mW | ≥ 4 | P_o | $P=P_o(\text{CW})$ |
| Sidemode Suppression Ratio | dB | ≥ 40 | SMSR | $P=P_o(\text{CW})$ |
| Wavelength Temperature Coefficient | nm/ $^\circ\text{C}$ | 0.09(Typ.) | $\Delta\lambda/\Delta T$ | TEC temperature $15\sim 35^\circ\text{C}$ |
| Wavelength Current Coefficient | nm/mA | 0.01(Typ.) | $\Delta\lambda/\Delta I$ | |
| Threshold Current | mA | ≤ 16 | I_{TH} | |
| Drive Current | mA | ≤ 45 | I_{dc} | $P=P_o(\text{CW})$ |
| Slope Efficiency | mW/mA | ≥ 0.6 | η | $P=P_o(\text{CW})$ |
| TEC Set Temperature | $^\circ\text{C}$ | 15~35 | T_s | |
| Laser Forward Voltage | V | ≤ 2 | V_F | $I=I_{op}(\text{CW})$ |
| Thermistor Resistance | K Ω | 9.5~10.5 | R_{TH} | $T_L=25^\circ\text{C}$ |
| TEC Current | A | -1.0~+1.0 | I_{TEC} | $T_L=25^\circ\text{C}$, $T_c=50^\circ\text{C}$ |
| TEC Voltage | V | -1.8~+1.8 | V_{TEC} | $T_L=25^\circ\text{C}$, $T_c=50^\circ\text{C}$ |
| Laser Forward Current | mA | ≤ 100 | I_F | CW |
| Laser Reverse Voltage | V | ≤ 2.5 | V_R | |
| Operating Temperature | $^\circ\text{C}$ | -20 ~ +50 | T_{op} | |
| Storage Temperature | $^\circ\text{C}$ | -40 ~ +100 | T_s | |

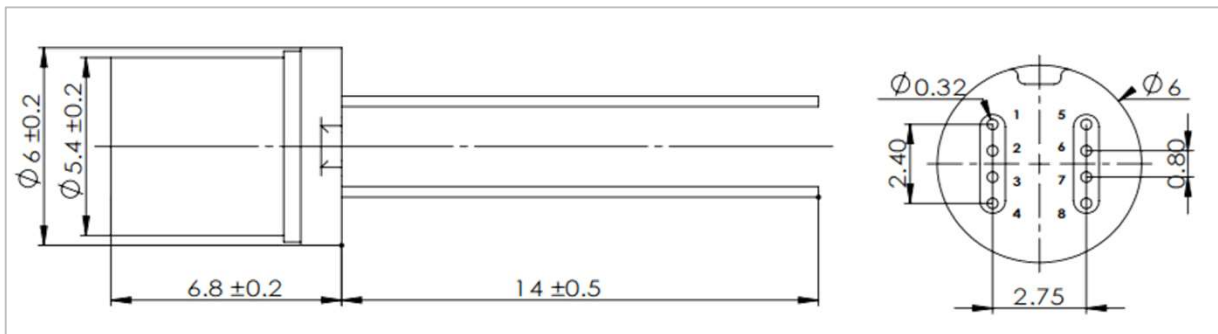
Center Wavelength Table

| Detection of Gas | Center Wavelength(nm) | | |
|-------------------------------|-----------------------|----------------|---------|
| | Min. | Typical | Max. |
| H ₂ O | 1391 | 1392 | 1393 |
| N ₂ O | 1520 | 1521 | 1522 |
| C ₂ H ₂ | 1531.68 | 1532.68 | 1533.68 |
| CO | 1566 | 1567 | 1568 |
| CO ₂ | 1579 | 1580 | 1581 |
| C ₂ H ₄ | 1626 | 1627 | 1628 |
| CH ₄ | 1650 | 1651 | 1652 |
| CH ₄ | 1652.7 | 1653.7 | 1654.7 |

Pin Assignments

| Pin | Function Assignment | Pin | Function Assignment |
|-----|---------------------|-----|---------------------|
| 1 | TEC(+) | 5 | TEC(-) |
| 2 | Thermistor | 6 | Thermistor |
| 3 | LD Cathode(-) | 7 | LD Anode(+) |
| 4 | NC | 8 | NC |

Package Dimensions (mm)



Ordering Information

CTLD- ①①①①

| | | |
|---|------------|-------------------------|
| ① | Wavelength | XXXX=Center Wavelength; |
|---|------------|-------------------------|