



S8081WG

- IR Laser Diode
- 808 nm, 1 W
- Multi Mode
- 9 mm TO-Can without PD
- Flat window cap



Description

S8081WG is a infrared laser diode emitting at typically 808 nm with rated output power of 1 W cw, in a standard 9 mm TO package with flat window cap.

Maximum Ratings (T_{CASE} = 25°C)

| Parameter | Symbol | Values | | Unit |
|-----------------------|------------|--------|------|------|
| | | Min. | Max. | |
| Output power | P_o | | 1000 | mW |
| LD Reverse Voltage | V_R | | 2 | V |
| Operating Temperature | T_{CASE} | - 10 | + 40 | °C |
| Storage Temperature | T_{STG} | - 40 | + 85 | °C |

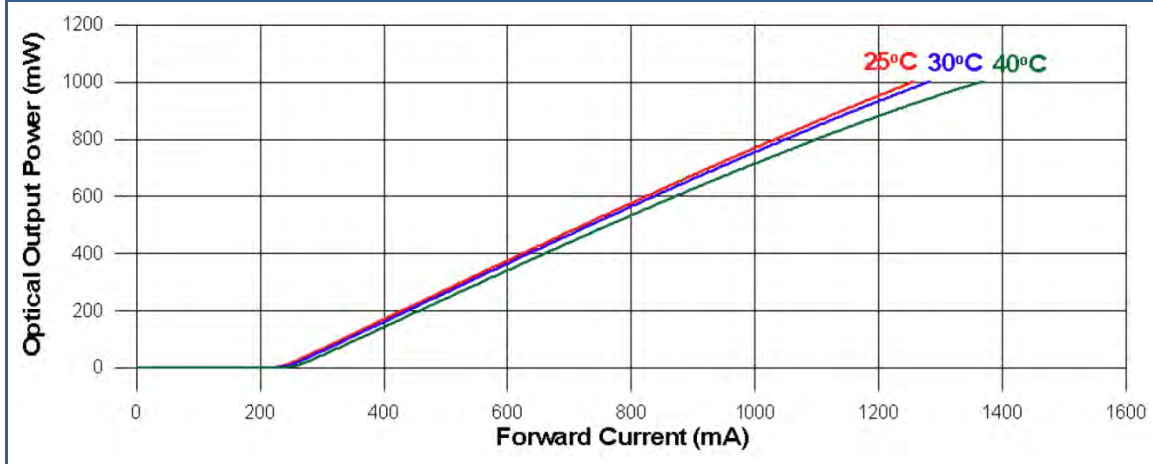
Laser Characteristics (T_{CASE} = 25°C, P_O=1W)

| Parameter | Symbol | Values | | | Unit | |
|--------------------------------|------------------|------------------|------|------|-------|------|
| | | Min. | Typ. | Max. | | |
| Emission Wavelength | λ_{peak} | 798 | 808 | 818 | nm | |
| Threshold Current | I_{th} | | 220 | 300 | mA | |
| Operating Current | I_F | | 1250 | 1500 | mA | |
| Operating Voltage | V_F | 1.8 | 1.9 | 2.0 | V | |
| Beam Divergence (FWHM) | Parallel | $\Theta_{ }$ | 6 | 9 | 12 | deg. |
| | Perpendicular | Θ_{\perp} | 24 | 27 | 31 | deg. |
| Slope Efficiency (750mW-250mW) | η | 0.8 | 1.05 | | mW/mA | |



Performance Characteristics

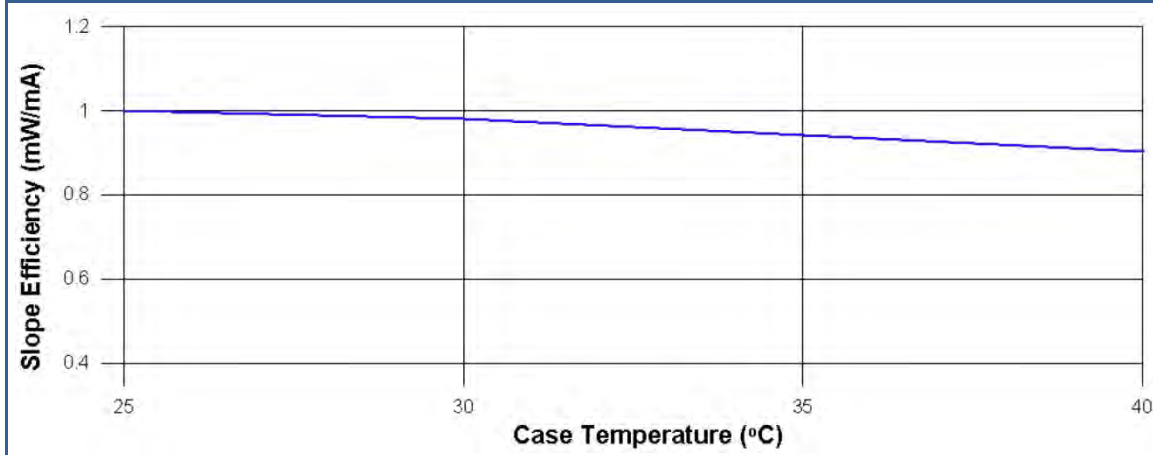
Optical Output Power vs Forward Current

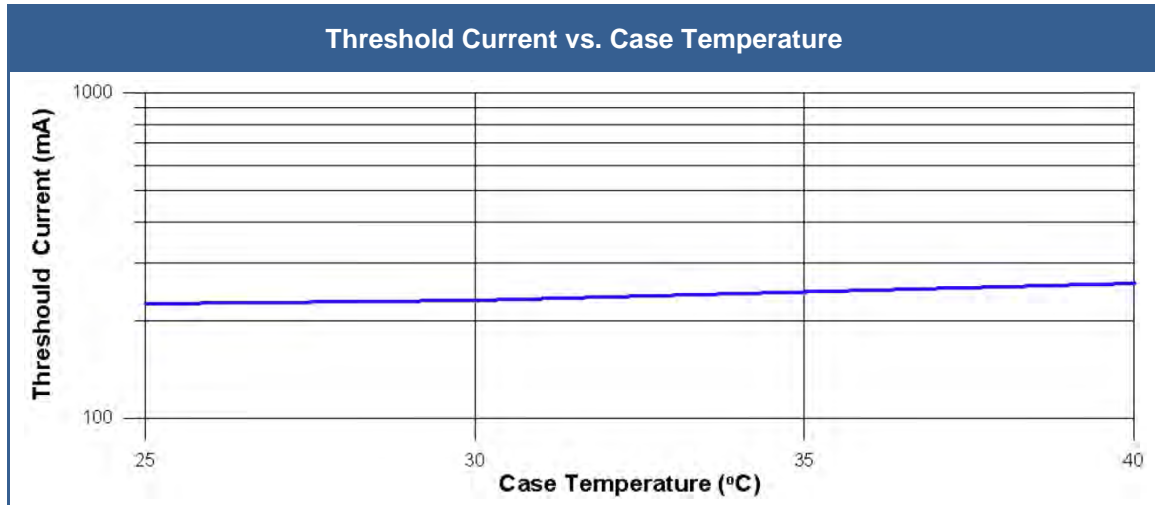


Forward Voltage vs. forward Current

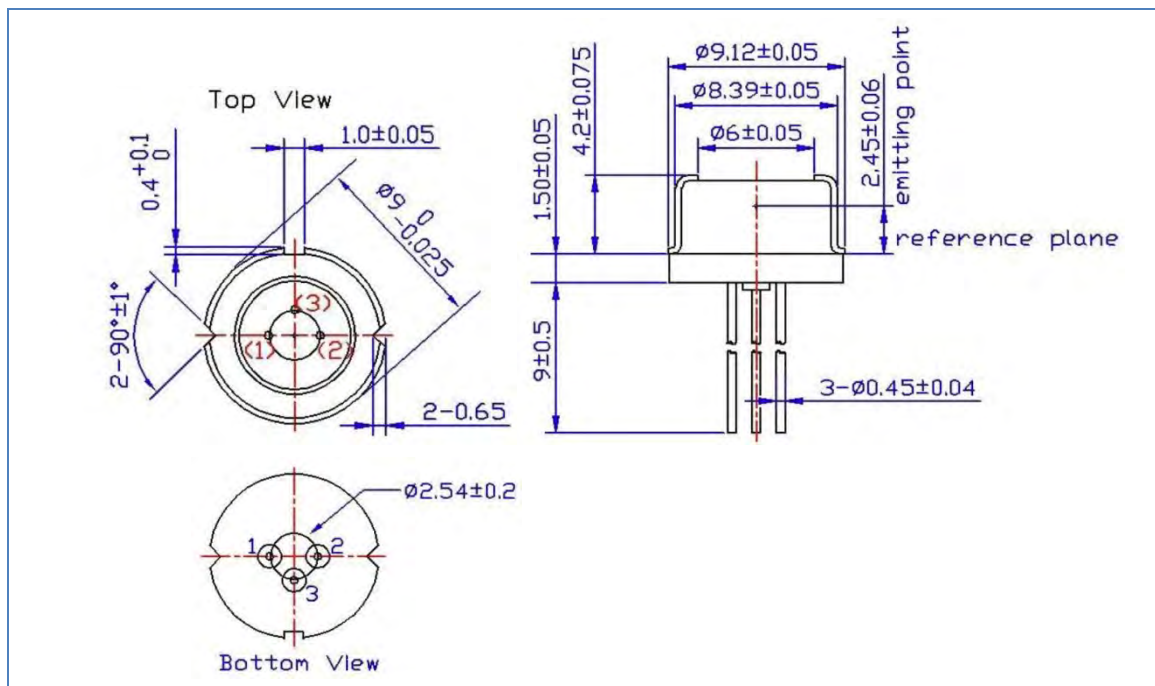


Slope Efficiency vs. Case Temperature





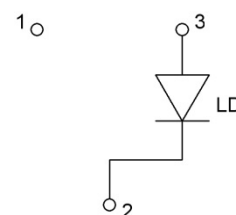
Drawing



All dimensions in mm

Electrical Connection

| Lead | Description |
|-------|----------------|
| Pin 1 | n.c. |
| Pin 2 | LD Cathode |
| Pin 3 | LD Anode, Case |





ESD Caution

Always do handle laser diodes with extreme caution to prevent electrostatic discharge, the primary cause of unexpected diode failure. ESD failures can be prevented by always wearing wrist straps, only using a grounding workplace, and following strict anti-static guidelines when handling the laser diode



Safety Advice

This laser diode emits highly concentrated IR light which can be **hazardous to the human eye and skin**. This diode is classified as **CLASS 4 laser product** according to **IEC 60825-1** and **21 CFR Part 1040.10 Safety Standards**.



This product is comply with 21 CFR Part 1040.10

Operating Considerations

Operating the laser diode outside of its maximum ratings may cause failure or a safety hazard. The diode may be damaged by excessive drive currents or switching transients. If the diode is operated using a power supply, it is strongly recommended to connect the diode with the output voltage set to zero. The voltage should then be increased slowly and with great caution, while at the same time carefully monitoring the laser diodes output power and drive current. The laser diode will show accelerated degradation with increased temperature, and it is advised to keep the case temperature low therefor, by means of heat sinking the device.