



## LD-450-80MG

- Violet Laser Diode
- 450 nm, 80 mW
- Transverse single mode
- TO56 package, Flat Window



### Description

**LD-450-80MG** is a direct emitting, **GaN based**, 450nm blue laser diode in 5.6 mm TO-Can **without photodiode**. It offers single transverse mode emission and >100 Mhz modulation bandwidth. It is an efficient radiation source for many applications like **laser projection**, holography, metrology, biomedical application...

### Maximum Rating (T<sub>CASE</sub> = 25°C)

| Parameter                       | Symbol    | Values |       | Unit |
|---------------------------------|-----------|--------|-------|------|
|                                 |           | Min.   | Max.  |      |
| Optical Output                  | $P_O$     |        | 80    | mW   |
| Reverse Voltage                 | $V_R$     |        | 2     | V    |
| Operating Temperature           | $T_{OPR}$ | - 40   | + 70  | °C   |
| Storage Temperature             | $T_{STG}$ | - 40   | + 85  | °C   |
| Soldering Temperature (max. 3s) | $T_{SOL}$ |        | + 260 | °C   |
| Junction Temperature            | $T_J$     |        | + 150 | °C   |



### Electro-Optical Characteristics (T<sub>CASE</sub> = 25°C, P<sub>O</sub> = 80mW)

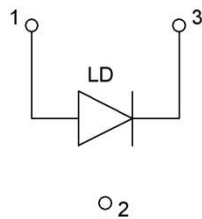
| Parameter                             | Symbol          | Values           |            |            | Unit      |      |
|---------------------------------------|-----------------|------------------|------------|------------|-----------|------|
|                                       |                 | Min.             | Typ.       | Max.       |           |      |
| <b>Peak Wavelength</b>                | $\lambda_P$     | <b>440</b>       | <b>450</b> | <b>460</b> | <b>nm</b> |      |
| Spectral Width (FWHM)                 | $\Delta\lambda$ |                  | 2          |            | nm        |      |
| Operating Voltage                     | $V_F$           |                  | 5.8        | 7.0        | V         |      |
| Threshold Current                     | $I_{th}$        |                  | 30         | 60         | mA        |      |
| Operating Current                     | $I_F$           |                  | 100        | 145        | mA        |      |
| Modulation Frequency                  | $f$             | 100              |            |            | MHz       |      |
| Polarization                          | $P_{GR}$        |                  | 100:1      |            |           |      |
| Beam Divergence (FWHM)                | parallel        | $\Theta_{  }$    | 4          | 7          | 11        | deg. |
|                                       | perpendicular   | $\Theta_{\perp}$ | 18         | 22         | 25        | deg. |
| Thermal Resistance (junction to case) | $R_{th}$        |                  | 34         |            | K/W       |      |



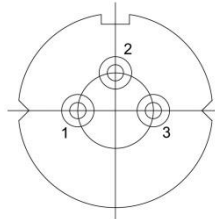
## Electrical Connection

### Pin Configuration

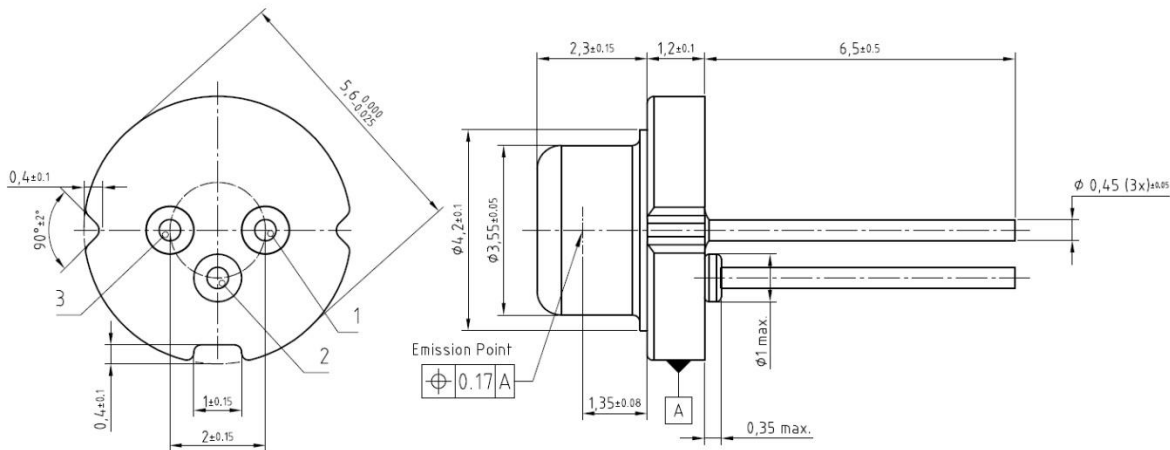
| Pin # | Function |
|-------|----------|
| Pin 1 | Anode    |
| Pin 2 | Case     |
| Pin 3 | Cathode  |



### Bottom View



## Outline Dimensions



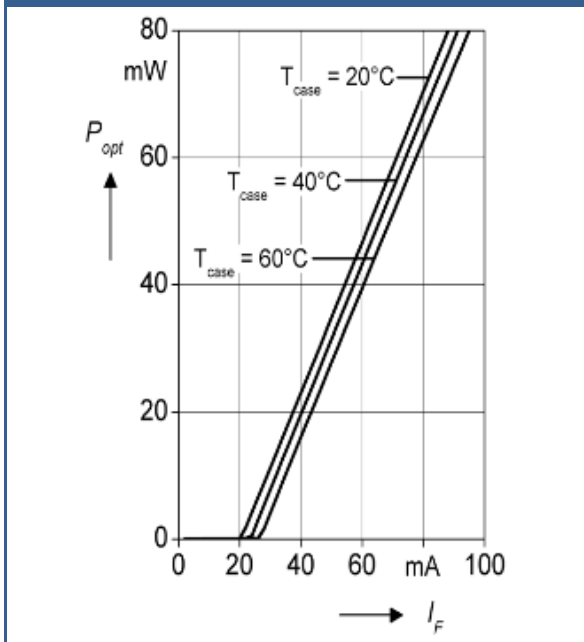
- 1: Cathode LD
- 2: Anode LD, Cathode PD
- 3: Anode PD

All dimensions in mm

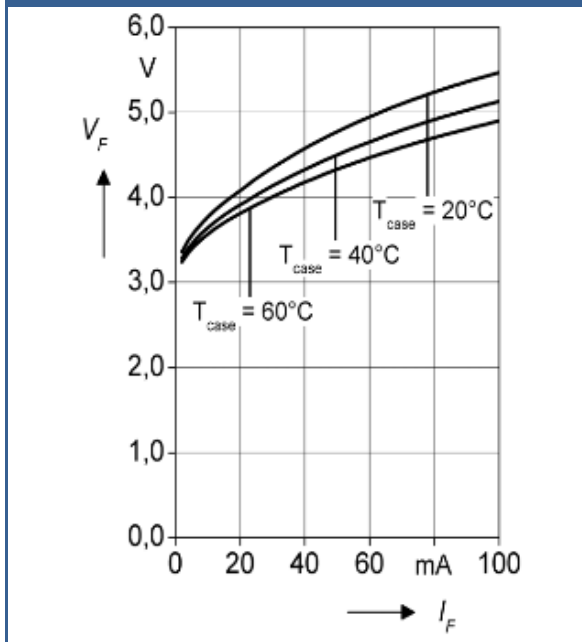


## Performance Characteristics

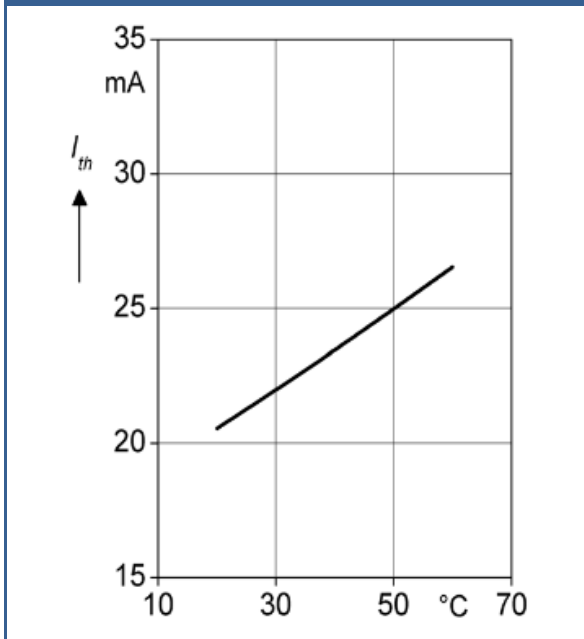
### Optical Output Power vs. Operating Current



### Operating Voltage vs. Operating Current



### Threshold Current vs. Temperature



### Relative Output Power vs. Wavelength

