



SHD4580MG

- Blue Laser Diode
- 450 nm, 80 mW
- Single mode
- TO56 package, Flat Window



Description

SHD4580MG is a direct emitting, **GaN based**, 450nm blue laser diode in 5.6 mm TO-Can **without photodiode**, featuring single transverse mode emission. **SHD4580MG** is an efficient radiation source for many applications like **laser projection**, holography, metrology, biomedical application...

Maximum Rating* (T_{CASE} = 25°C)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Optical Output Power* ¹	P _O (CW)		85	mW
LD Reverse Voltage	V _{RLD}		2	V
Operating Temperature* ¹	T _{OPR}	- 10	+ 70	°C
Storage Temperature	T _{STG}	- 40	+ 85	°C
Soldering Temperature (max. 3s)	T _{SOL}		+ 260	°C

* operating outside these conditions may damage the device

*¹ operating at maximum ratings may influence the life time



Electro-Optical Characteristics (T_{CASE} = 25°C, P_O=80 mW)

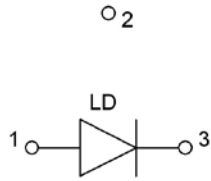
Parameter	Symbol	Values			Unit	
		Min.	Typ.	Max.		
Peak Wavelength	λ _P	440	450	460	nm	
Optical Output Power	P _O		80		mW	
Operating Voltage	V _F		5.1	6.0	V	
Threshold Current	I _{th}		22	40	mA	
Operating Current	I _F		84	120	mA	
Monitor Current (V _{RD} = 5 V)	I _M		/		μA	
Slope Efficiency	CW	0.8	1.3		W/A	
Beam Divergence (FWHM)	parallel	∅	6	10	14	deg.
	perpendicular	∅ _⊥	19	24	29	deg.



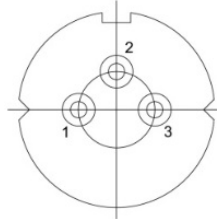
Electrical Connection

Pin Configuration

Pin #	Function
Pin 1	LD anode
Pin 2	not connected
Pin 3	LD cathode

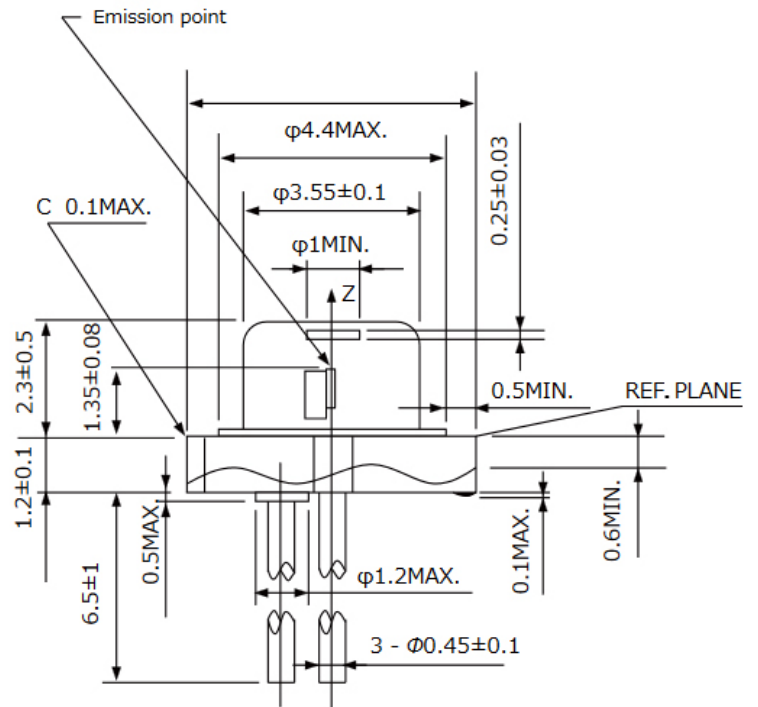
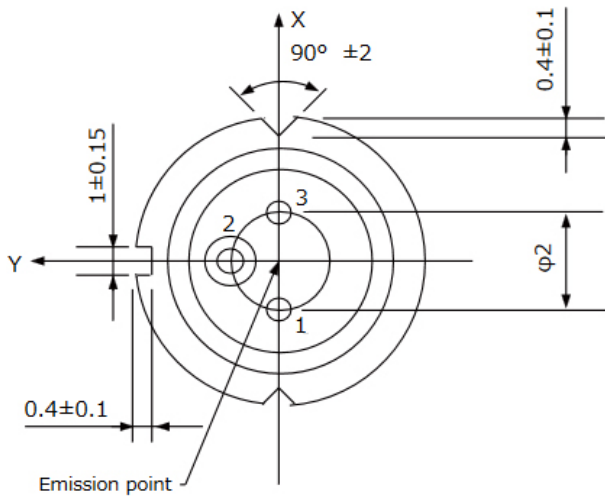


Bottom View



Outline Dimensions

Bottom View:



All dimensions in mm



Precautions

Safety

Caution: Laser light emitted from any laser diode may be **harmful to the human eye**. Avoid looking directly into the laser diode's aperture when the diode is in operation.

Note: The use of optical lenses with this laser diode will increase eye hazard

ESD caution

Always do handle laser diodes with extreme care to **prevent electrostatic discharge**, the primary cause of unexpected diode failure. To prevent ESD related failures, it is strongly advised to always **wearing wrist straps**, and **grounding all applicable work surfaces**, when handling laser diodes

Operating Considerations

It is strongly advised to only operate this laser diode with a current source. The current of a laser diode is an exponential function of the voltage across it. **Usage of current regulated drive circuits is mandatory.** Laser diodes may be damaged by excessive drive currents or switching transients

It is advised, to operate the laser diode at the lowest temperature possible, and to never exceed maximum specifications as outlined in the datasheet. Device degradation will accelerate with increased temperature.

Proper heat sinking will greatly enhance stability and life time of the laser diode

© All Rights Reserved

The above specifications are for reference purpose only and subjected to change without prior notice.