LD405E300C05

405nm 300mW Violet Laser Diode, TO-18 (5.6 mm) Package

Data Sheet

Features

- Multimode 405nm 300mW Blue Violet Laser Diode
- Optical output power: 300mW CW
- High temperature operation: 50ºC
- Without monitoring PD
- TE oscillating transverse mode
- Package: ⌀5.6mm, TO-18 can

Absolute Maximum Ratings (T_C = 25 ºC)

Parameter	Symbol	Rating	Unit	Condition
Optical output power	P_o	350	mW	CW
	P_p			Pulse (1)
Reverse voltage (LD)	V_{RL}	2	V	-
Operating temperature (Case temperature)	$T_{opc(c)}$	0 to +50	ºC	CW
	$T_{opp(c)}$			Pulse (1)
Storage temperature	T_{stg}	-40 to +85	ºC	-
Soldering temperature (2)	T_{sld}	350	ºC	-

Notes:
1. Pulse: Pulse Operation (Pulse Width 0.2us, Duty: 50%)
2. Soldering temperature means soldering iron tip temperature while soldering. Soldering position is 1.6mm apart from bottom edge of the case (Immersion time: ≤3s).

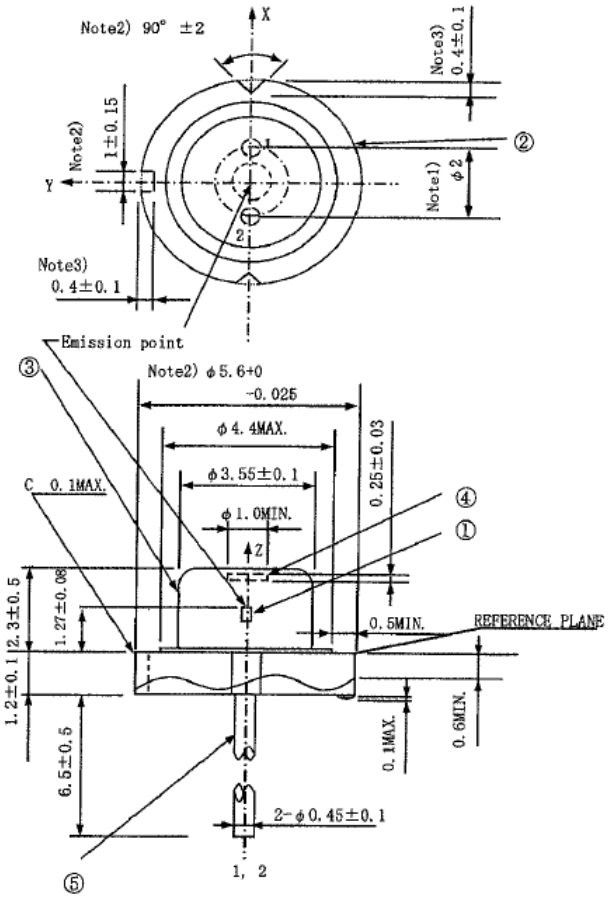
Electrical and Optical Characteristics (T_C = 25 ºC, CW unless otherwise stated)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Threshold current	I_{th}	-	140	200	mA	
Operating current	I_{op}	250	325	400	mA	P_o = 300mW
Operating voltage	V_{op}	-	4.5	5.5	V	P_o = 300mW
Wavelength	λ_p	400	406	414	nm	P_o = 300mW
$1/e^2$ Intensity Angle (Parallel) (1)	$\Theta_{//}$	8	14	20	deg	P_o = 300mW
$1/e^2$ Intensity Angle (Perpendicular) (1)	$\Theta_{\perp}$	36	41	48	deg	P_o = 300mW
Parallel FFP deviation angle (2)	$\Delta\ \Theta_{//}$	-3	-	+3	deg	P_o = 300mW
Perpendicular FFP deviation angle (2)	$\Delta\ \Theta_{\perp}$	-4	-	+4	deg	P_o = 300mW
Slope Efficiency	ηd	1.4	1.8	2.2	mW/mA	$\frac{120\text{mW}}{\text{I}(300\text{mW}) - \text{I}(180\text{mW})}$
Polarization angle		-5	-	5	deg	P_o = 50mW, NA=0.13
Polarization ratio	P_l	100	-	-	-	P_o = 50mW, NA=0.13
Pulse operating current (3)	P_{lop}	-	-	700	mA	P_p = 700mW
Difference rate of ηp	Δ ηp	-	-	700	mA	P_p = 50~700mW

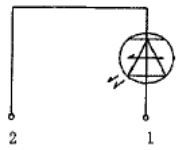
Notes:
1. Full angle of 13.5% (=$1/e^2$) peak intensity
2. Misalignment angle of 13.5% (=$1/e^2$) peak intensity
3. Pulse: Pulse Operation (Pulse Width 0.2us, Duty: 50%)

Mechanical Outline (unit: mm)

General Tolerances ±0.2mm



PIN CONFIGURATION



Additional Notes

- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- Observing visible or invisible laser beams with human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- No laser device should be used in any application or situation where life or property is at risk in the event of device failure.
- Specifications are subject to change without notice. Ensure that you have the latest specification by contacting us prior to purchase or use of the product.