

780nm 25mW 60°C Laser Diode in TO-18 ϕ 5.6mm Package

Part No. LD780A25C16

FEATURES

- 785nm 25mW CW AlGaAs Laser Diode
- Package: TO-18 (dia. 5.6mm)
- Built-in photodiode for monitoring laser diode

APPLICATIONS

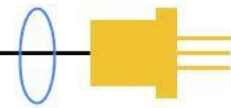
- Industrial optical module
- Sensor
- Laser scanner unit

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Condition	Rating	Unit
Optical output power	P_O	CW	30	mW
Reverse voltage (LD)	V_{RL}	-	2	V
Reverse voltage (PD)	V_{RD}	-	30	V
Operating temperature	T_{opr}	-	-10 to +60	°C
Storage temperature	T_{stg}	-	-40 to +85	°C

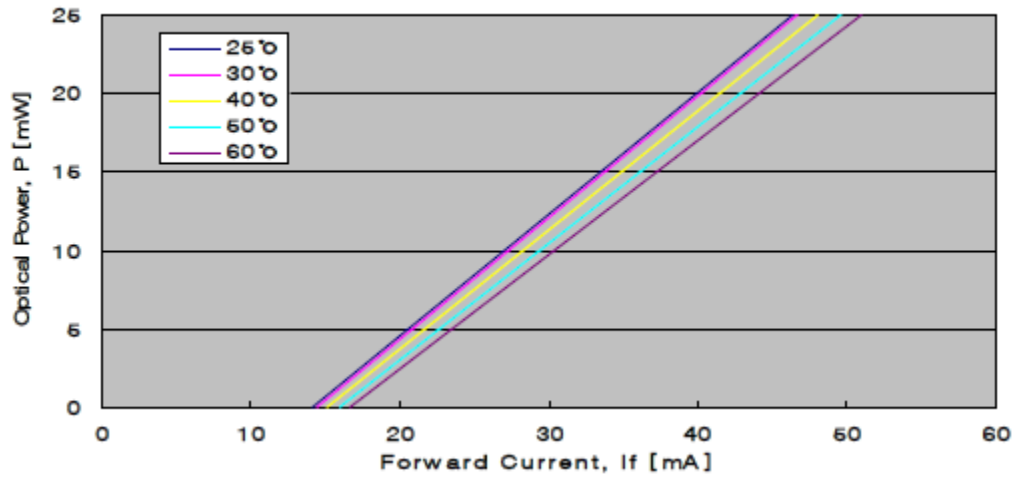
ELECTRICAL AND OPTICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Lasing wavelength	λ_p	770	785	800	nm	$P_O = 25\text{mW}$
Threshold current	I_{th}	-	15	25	mA	-
Operating current	I_{op}	30	45	60	mA	$P_O = 25\text{mW}$
Differential Efficiency	η	0.5	0.9	1.4	mW/mA	$P_O = 25\text{mW}$
Operating voltage	V_{op}	1.6	1.9	2.3	V	$P_O = 25\text{mW}$
Monitor current	I_m	0.5	-	1.5	mA	$P_O = 25\text{mW}$
Parallel divergence angle	$\theta_{//}$	6	8	13	deg	$P_O = 25\text{mW}$
Perpendicular divergence angle	θ_{\perp}	25	30	34	deg	$P_O = 25\text{mW}$
Parallel FFP deviation angle	$\Delta\theta_{//}$	-2	0	+2	deg	$P_O = 25\text{mW}$
Perpendicular FFP deviation angle	$\Delta\theta_{\perp}$	-3	0	+3	deg	$P_O = 25\text{mW}$
Astigmatism	A_S			10	um	$P_O = 25\text{mW}$
Emission point accuracy	$\Delta x \Delta y \Delta z$	-60	0	+60	um	$P_O = 25\text{mW}$

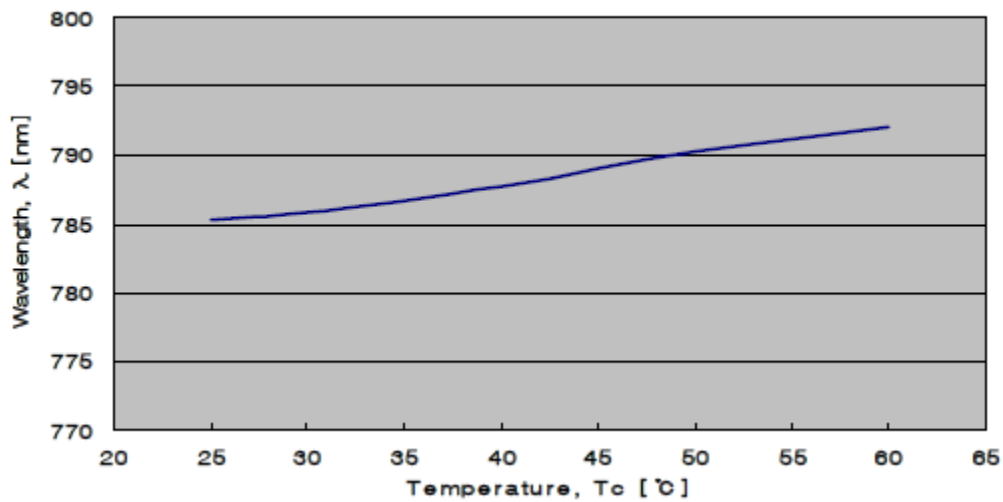


TYPICAL CHARACTERISTICS

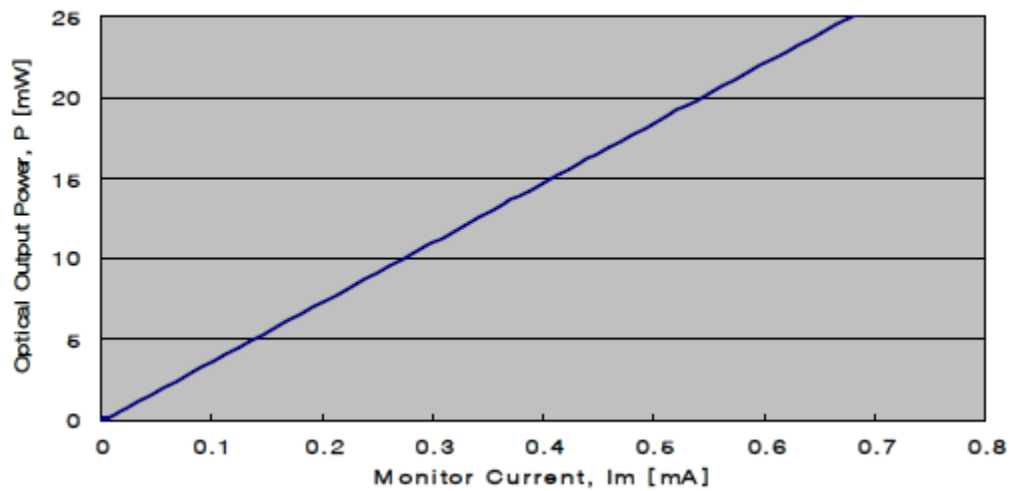
Optical Output Power vs. Forward Current

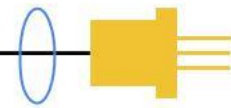


Wavelength vs. Temperature

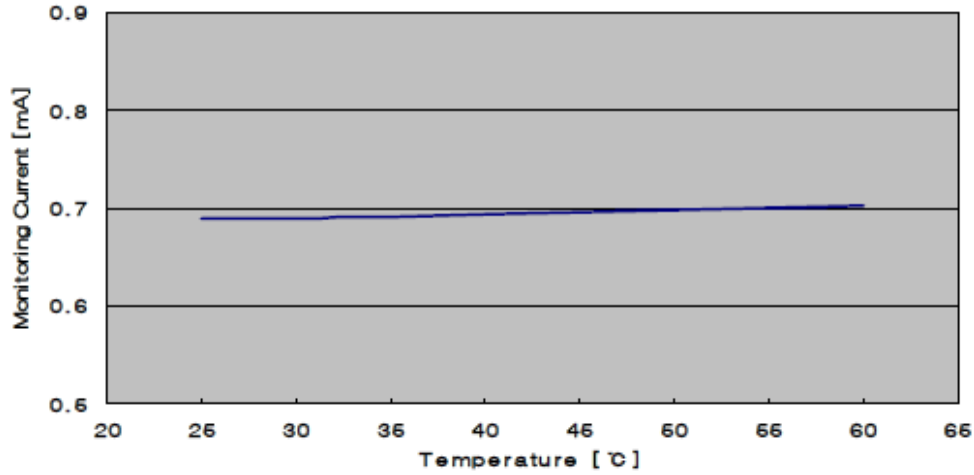


Optical Output Power vs. Monitor Current

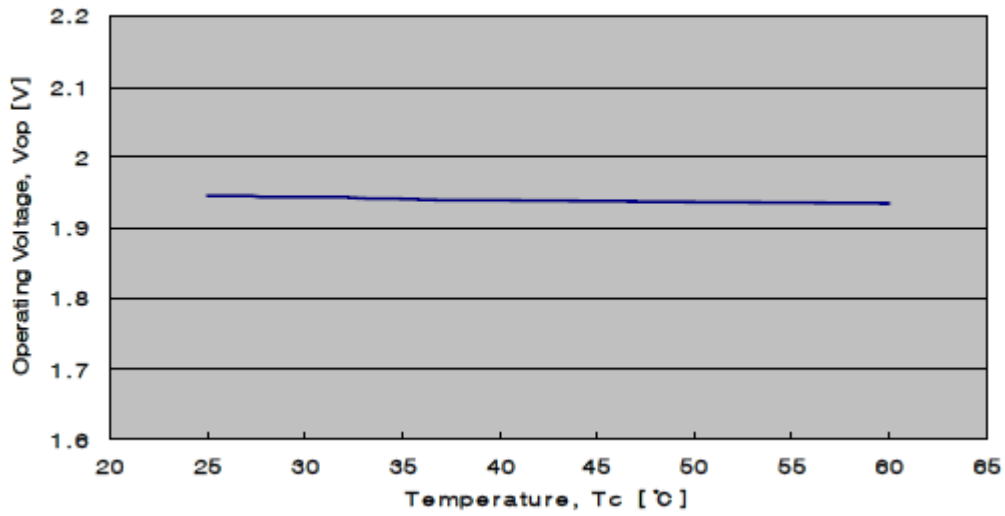




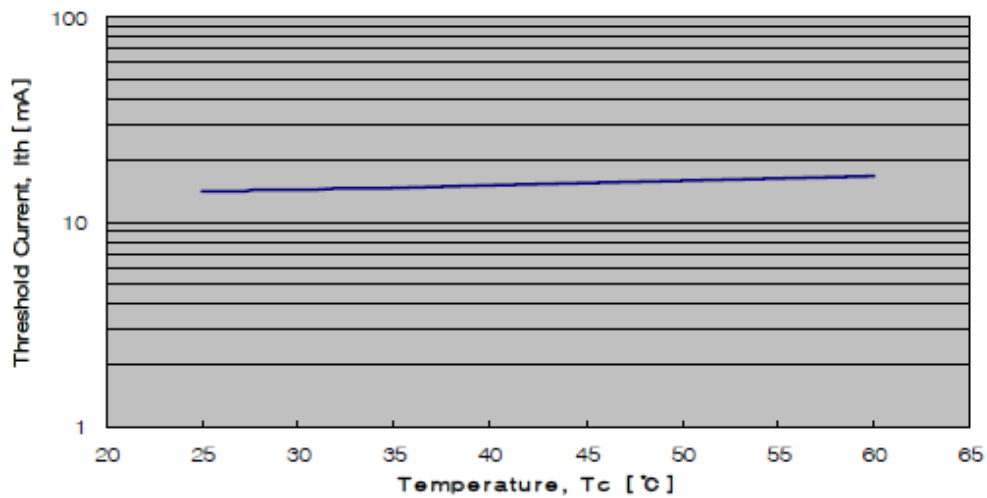
Monitor Current vs. Temperature

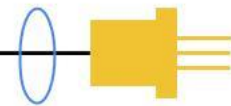


Operating Voltage vs. Temperature

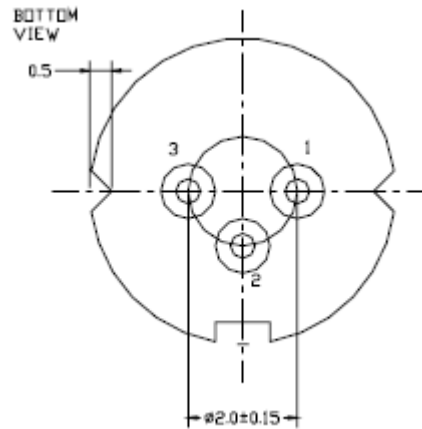
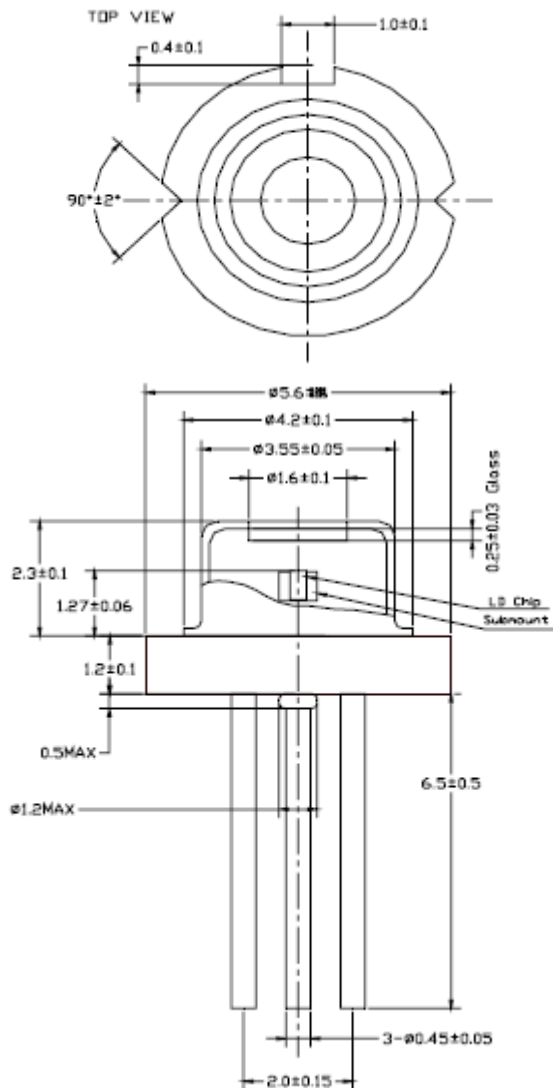


Threshold Current vs. Temperature

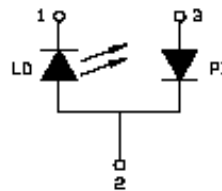




MECHANICAL OUTLINE (unit: mm)



Pin Configuration



*Other pin configurations may be available upon request.

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.