

Model No. LD780B25C16
785nm 25mW 60°C Laser Diode in TO-18 Ø5.6mm Package

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

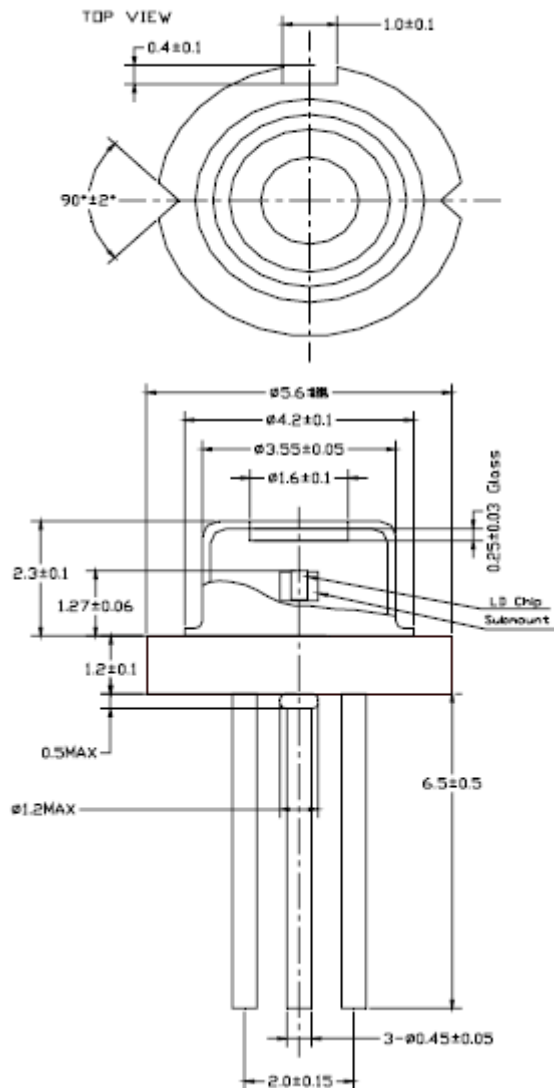
ELECTRICAL AND OPTICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)

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	$\Theta_{\perp}$	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	$P_O = 25\text{mW}$

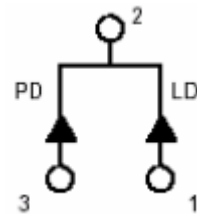
Note: The above specifications are subject to change without notice.



MECHANICAL OUTLINE (unit: mm)



Pin Configuration



PRECAUTIONS

- 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.

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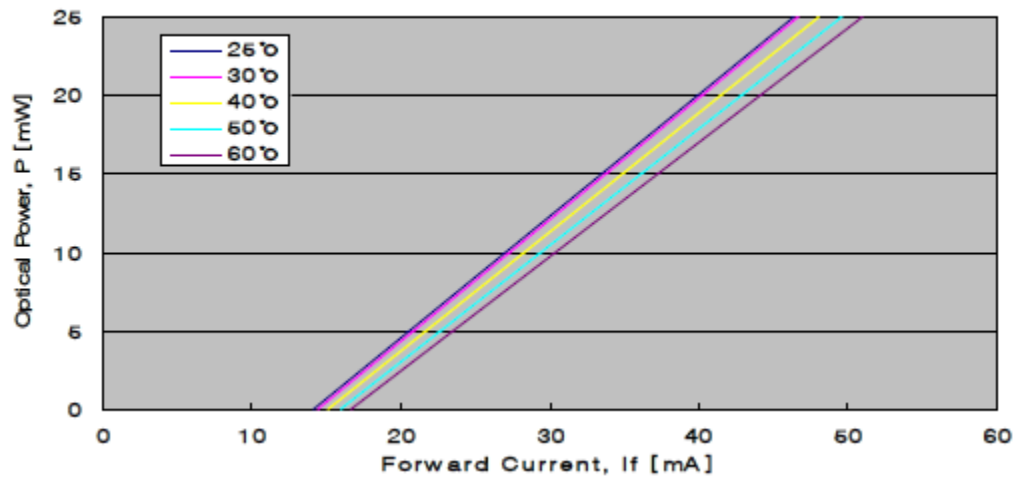


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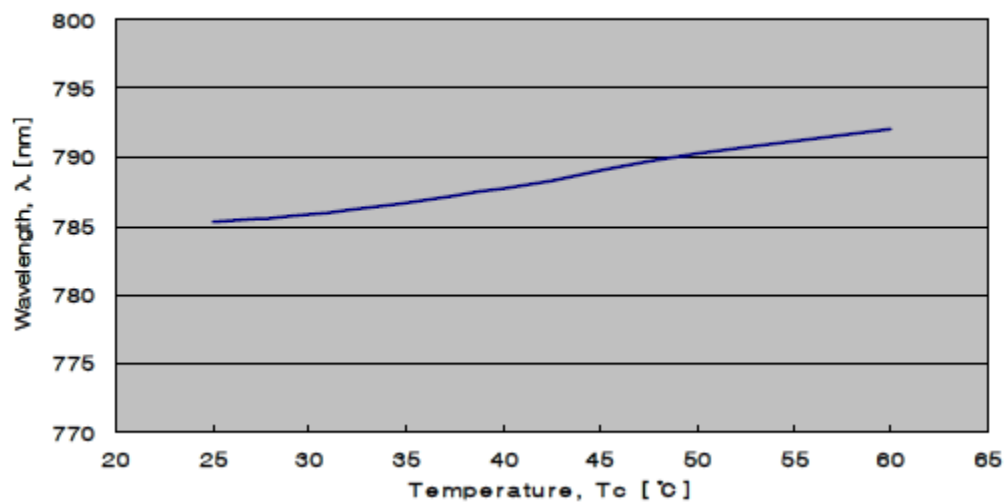
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TYPICAL CHARACTERISTICS

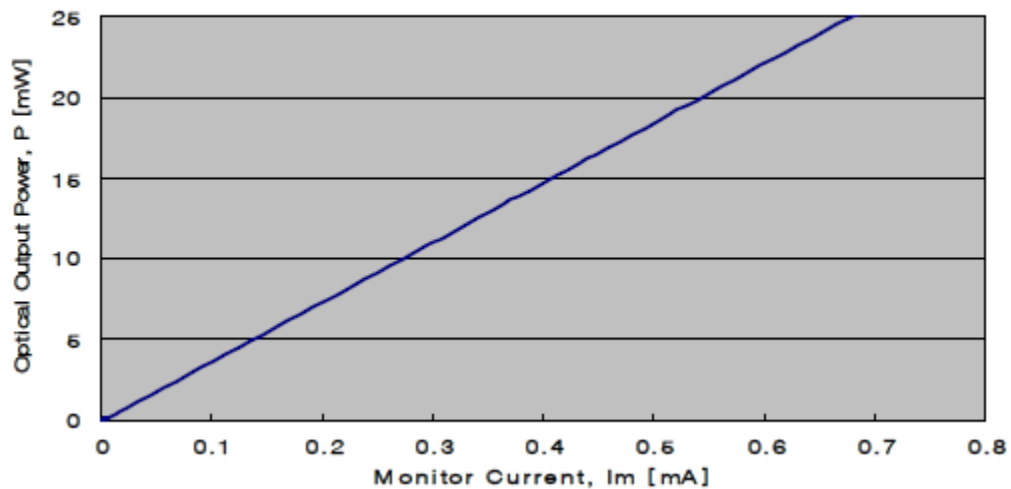
Optical Output Power vs. Forward Current



Wavelength vs. Temperature



Optical Output Power vs. Monitor Current



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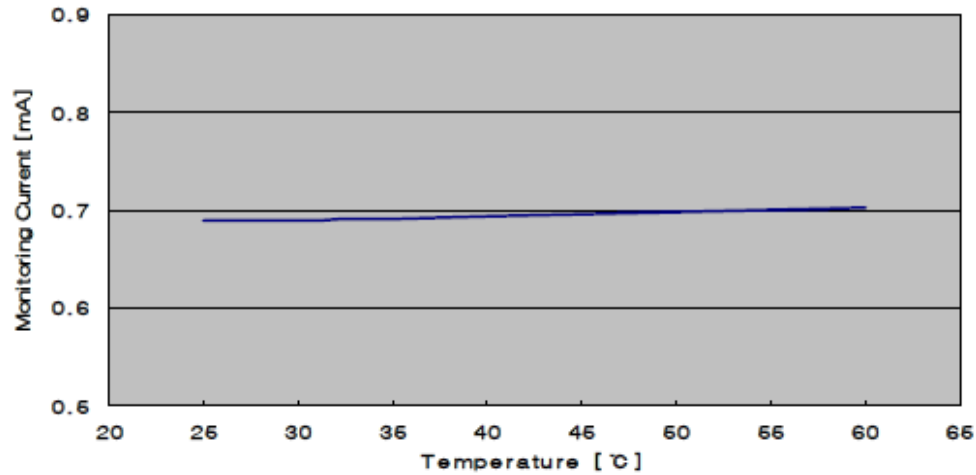
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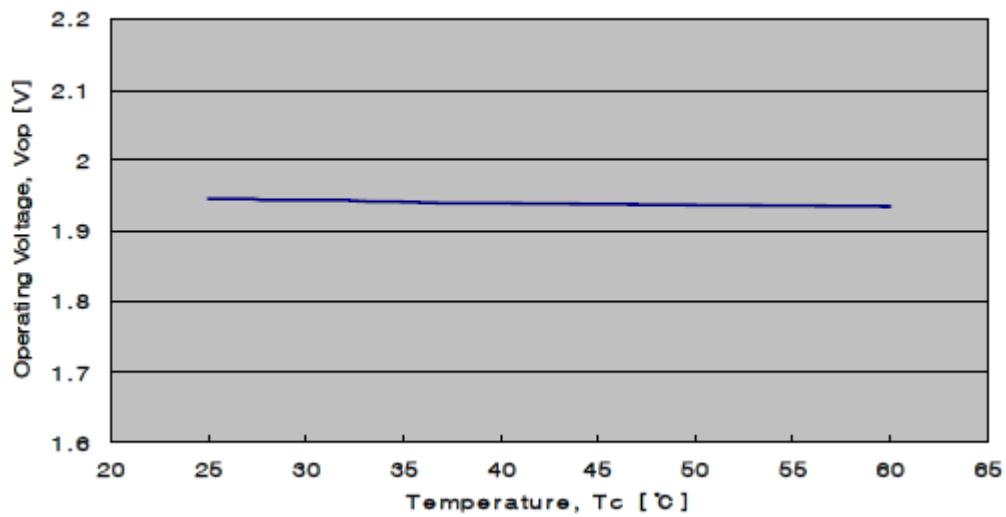
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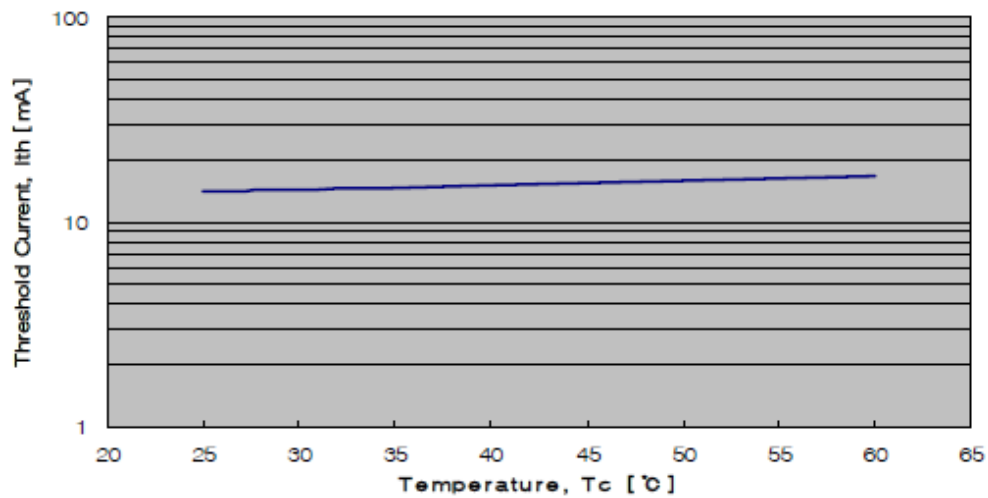
Monitor Current vs. Temperature



Operating Voltage vs. Temperature



Threshold Current vs. Temperature



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