

Model No. LD780A50C16
780nm 50mW 60°C Laser Diode in TO-18 Ø5.6mm Package

FEATURES

- 780nm 50mW CW AlGaAs Laser Diode
- Package: TO-18 (dia. 5.6mm)
- Built-in photodiode for monitoring laser diode

APPLICATIONS

- Industrial optical module
- Sensor

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	CONDITION	RATING	UNIT
OPTICAL OUTPUT POWER	P_O	CW	50	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	775	785	795	nm	$P_O = 50\text{mW}$
THRESHOLD CURRENT	I_{th}	-	25	40	mA	-
OPERATING CURRENT	I_{op}	-	75	100	mA	$P_O = 50\text{mW}$
DIFFERENTIAL EFFICIENCY	η	0.6	1.0	1.4	mW/mA	$40\text{mW}/I(45\text{mW}) - I(5\text{mW})$
OPERATING VOLTAGE	V_{op}	-	2	2.8	V	$P_O = 50\text{mW}$
MONITOR CURRENT	I_m	0.1	0.25	0.6	mA	$P_O = 50\text{mW}$
PARALLEL DIVERGENCE ANGLE	$\Theta_{//}$	7	9	12	deg	$P_O = 50\text{mW}$
PERPENDICULAR DIVERGENCE ANGLE	$\Theta_{\perp}$	17	22	27	deg	$P_O = 50\text{mW}$
PARALLEL FFP DEVIATION ANGLE	$\Delta \Theta_{//}$	-2	0	+2	deg	
PERPENDICULAR FFP DEVIATION ANGLE	$\Delta \Theta_{\perp}$	-3	0	+3	deg	
ASTIGMATISM	A_s	-	5	-	um	$P_O = 50\text{mW}$
EMISSION POINT ACCURACY	$\Delta x \Delta y \Delta z$	-60	0	+60	um	

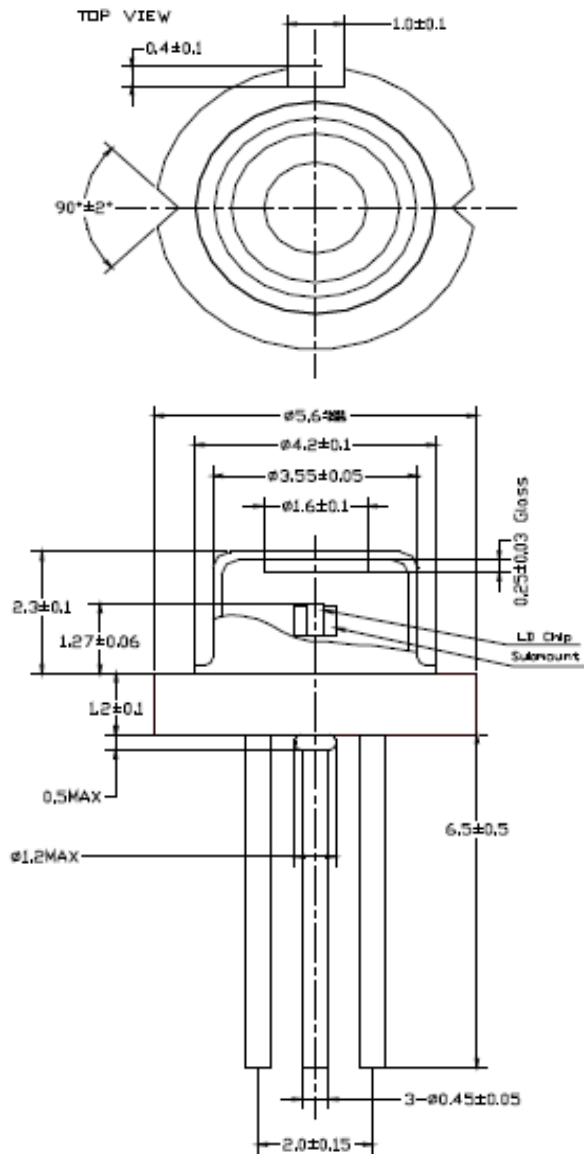
Note: The above specifications are subject to change without notice.



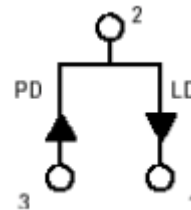
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MECHANICAL OUTLINE (unit: mm)



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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