



**Model No. LD850B5A16**  
**850nm 5mW 60°C Laser Diode in TO-33 Ø3.3mm Package**

**FEATURES**

- 850nm 5mW CW AlGaAs Laser Diode
- Package: TO-33 (dia. 3.3mm)
- Built-in photodiode for monitoring laser diode
- Attractive light source

**APPLICATIONS**

- Motion recognition sensor
- Industrial optical module

**ABSOLUTE MAXIMUM RATINGS**

PARAMETER	SYMBOL	CONDITION	RATING	UNIT
OPTICAL OUTPUT POWER	$P_O$	CW	7	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 ( $T_c = 25^\circ\text{C}$ )**

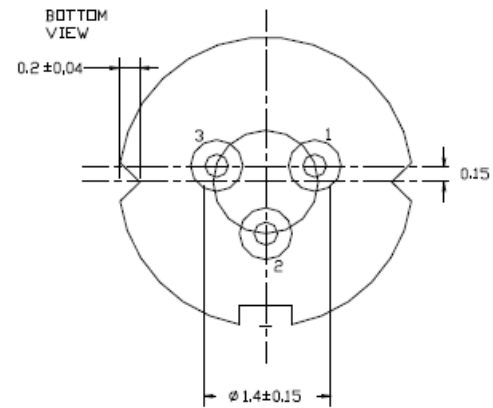
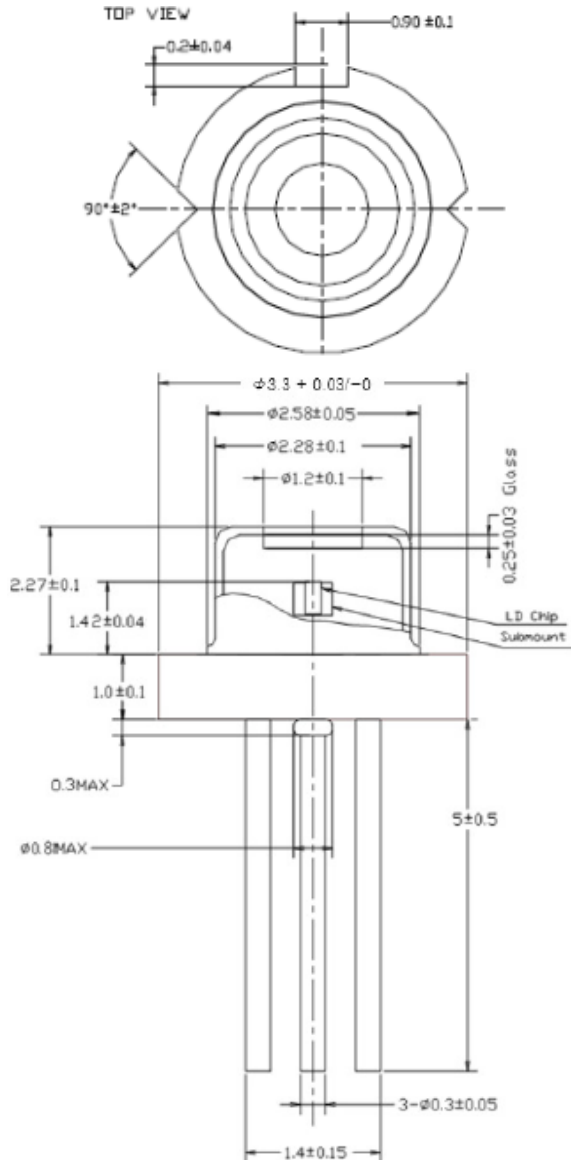
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
LASING WAVELENGTH	$\lambda_p$	845	852	855	nm	$P_O = 5\text{mW}$
THRESHOLD CURRENT	$I_{th}$	5	11	20	mA	
OPERATING CURRENT	$I_{op}$	12	17	30	mA	$P_O = 5\text{mW}$
DIFFERENTIAL EFFICIENCY	$\eta$	0.4	0.7	0.9	mW/mA	$P_O = 2\text{-}5\text{mW}$
OPERATING VOLTAGE	$V_{op}$	-	1.8	2.5	V	$P_O = 5\text{mW}$
MONITOR CURRENT	$I_m$	0.05	0.15	0.4	mA	$P_O = 5\text{mW}$
PARALLEL DIVERGENCE ANGLE	$\Theta_{//}$	7	9	12	deg	$P_O = 5\text{mW}$
PERPENDICULAR DIVERGENCE ANGLE	$\Theta_{\perp}$	25	32	40	deg	$P_O = 5\text{mW}$
PARALLEL FFP DEVIATION ANGLE	$\Delta \Theta_{//}$	-3	0	+3	deg	$P_O = 5\text{mW}$
PERPENDICULAR FFP DEVIATION ANGLE	$\Delta \Theta_{\perp}$	-3	0	+3	deg	$P_O = 5\text{mW}$
ASTIGMATISM	$A_s$			15	um	
EMISSION POINT ACCURACY	$\Delta x \Delta y \Delta z$	-60	0	+60	um	

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

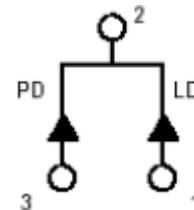




## MECHANICAL OUTLINE (unit: mm)



## 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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