



QL85D6SA

TECHNICAL DATA



Infrared Laser Diode

Features

- AlGaAs laser diode
- Peak Wavelength: 850 nm
- Optical Output Power: 5 mW
- Package: 5.6 mm, with photo diode



Electrical Connection

Pin Configuration	Bottom View								
<p>n-type</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LD Cathode</td> </tr> <tr> <td>2</td> <td>LD Anode, PD Cathode</td> </tr> <tr> <td>3</td> <td>PD Anode</td> </tr> </tbody> </table>	PIN	Function	1	LD Cathode	2	LD Anode, PD Cathode	3	PD Anode	
PIN	Function								
1	LD Cathode								
2	LD Anode, PD Cathode								
3	PD Anode								

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

Item	Symbol	Value	Unit
CW Output Power	P_O	7	mW
LD Reverse Voltage	V_R (LD)	2	V
PD Reverse Voltage	V_R (PD)	30	V
Operating Case Temperature	T_C	-10 ... +60	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ... +85	$^\circ\text{C}$

Specifications ($T_C=25^\circ\text{C}$)

Item	Symbol	Min.	Typ.	Max.	Unit	
Optical Specifications						
CW Output Power	P_O	-	5	-	mW	
Peak Wavelength *	λ_P	845	850	855	nm	
FWHM Beam Divergence	$\theta_{ }$	7	9	12	deg	
	θ_{\perp}	25	32	40	deg	
Emission Point Accuracy	Angle	$\Delta\theta_{ }$	-2.0	-	2.0	deg
		$\Delta\theta_{\perp}$	-3.0	-	3.0	deg
Astigmatism	A_s			15	μm	
Electrical Specifications						
Threshold Current	I_{th}	5	10	20	mA	
Operating Current	I_{op}	15	20	30	mA	
Slope Efficiency	η	0.4	0.7	0.9	W/A	
Operating Voltage	U_{op}	-	1.9	2.5	V	
Monitor Current	I_m	0.2	0.4	0.6	mA	

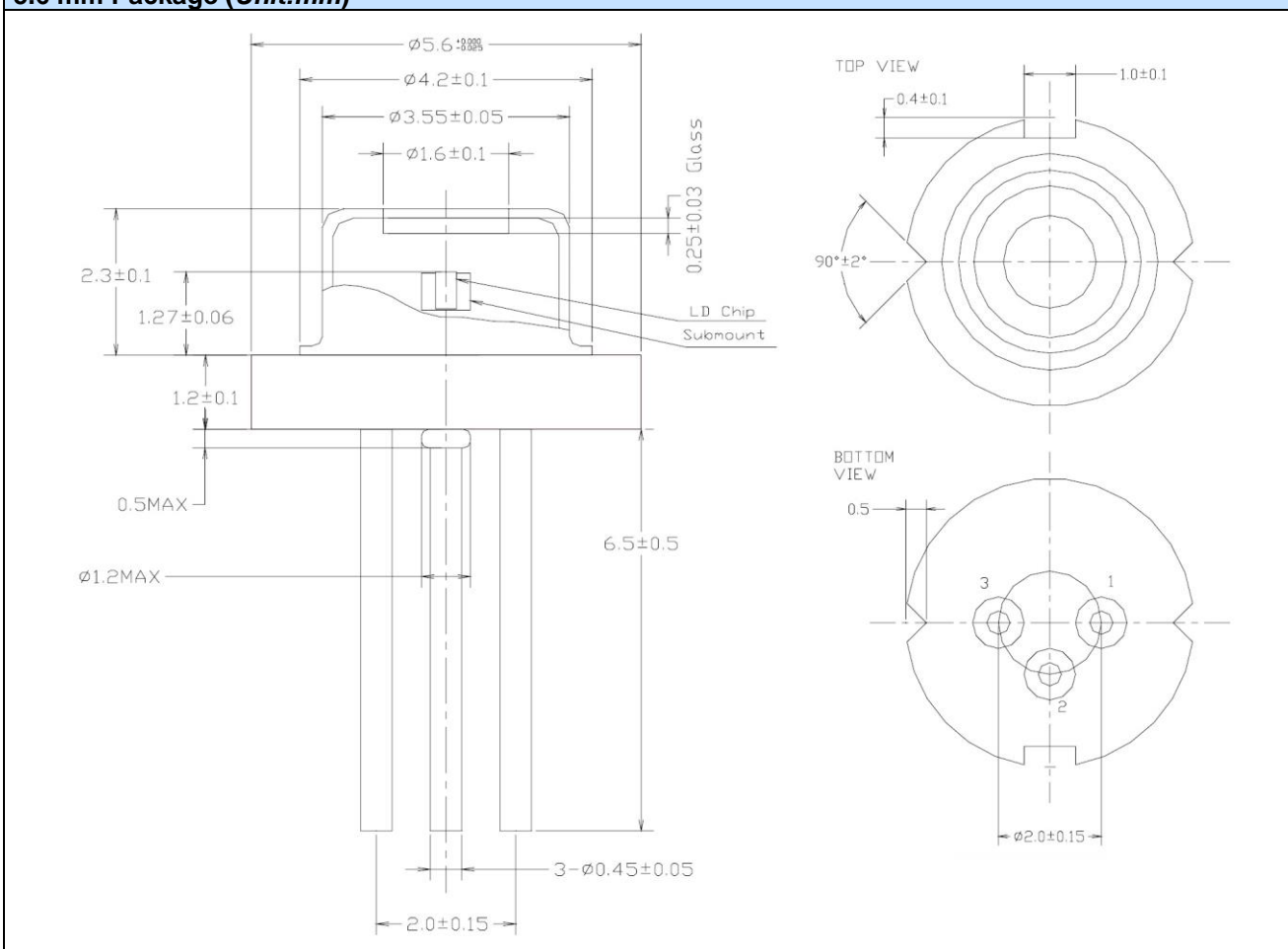
* Measuring specifications.

The above specifications are for reference purpose only and subjected to change without prior notice.



Package Dimensions

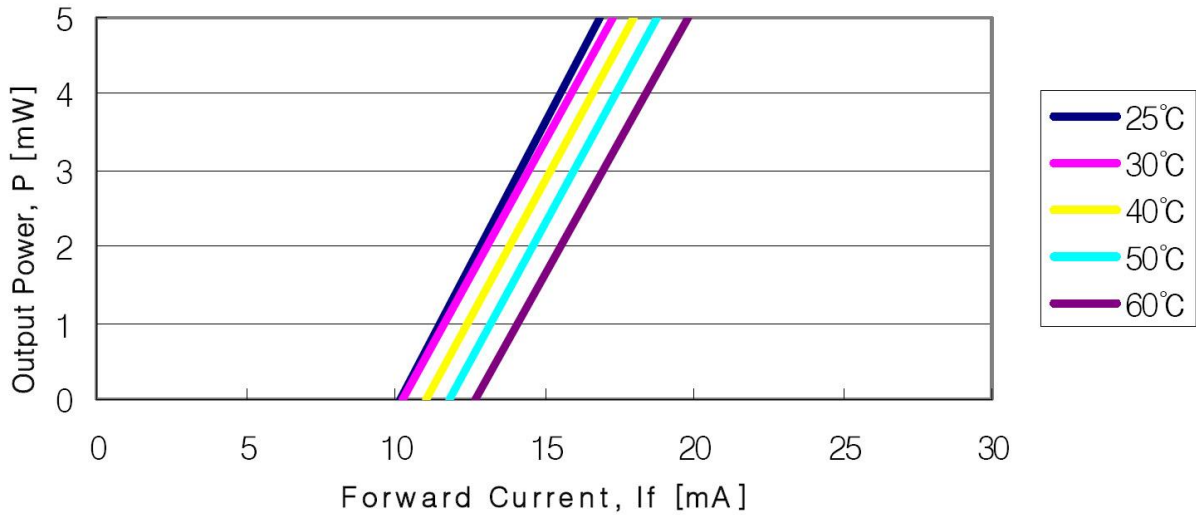
5.6 mm Package (Unit:mm)



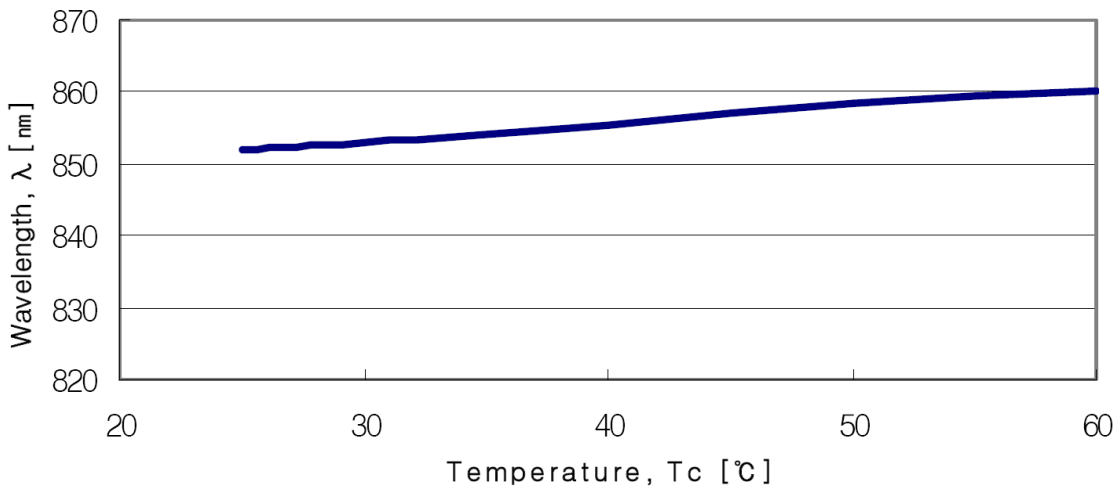


Typical Characteristics

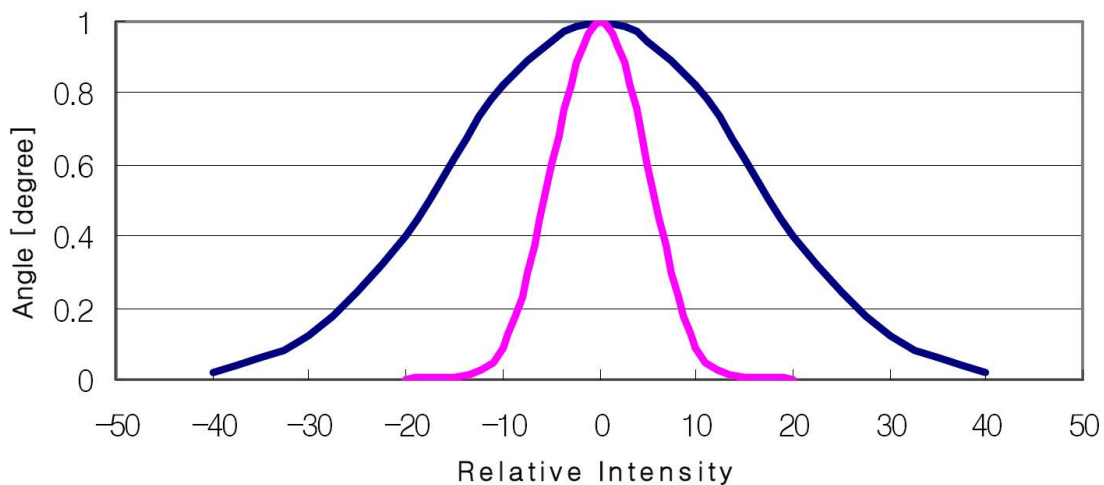
Optical Output Power vs. Forward Current



Wavelength vs Temperature

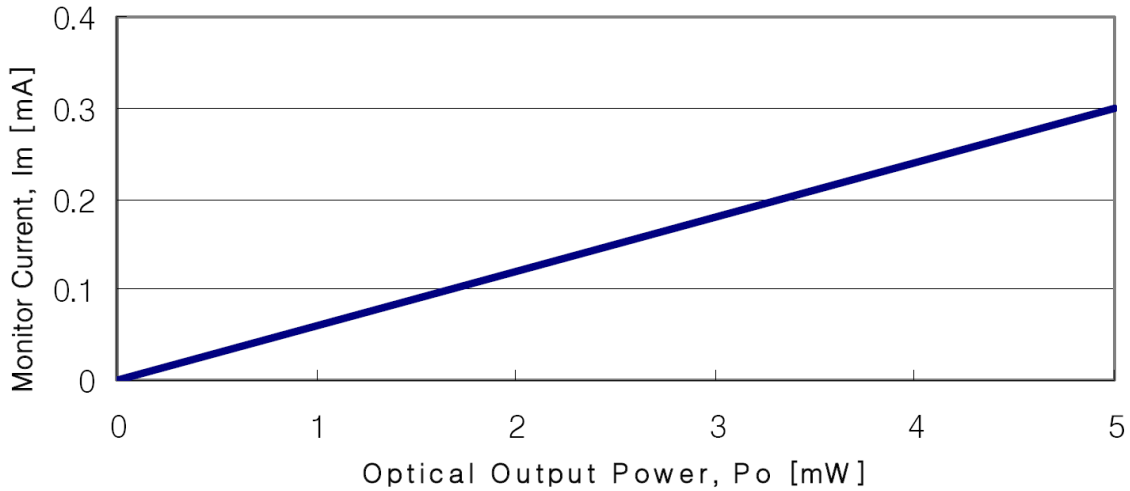


Far Field Pattern ($P_o=5mW$, $T_c=25^\circ C$)

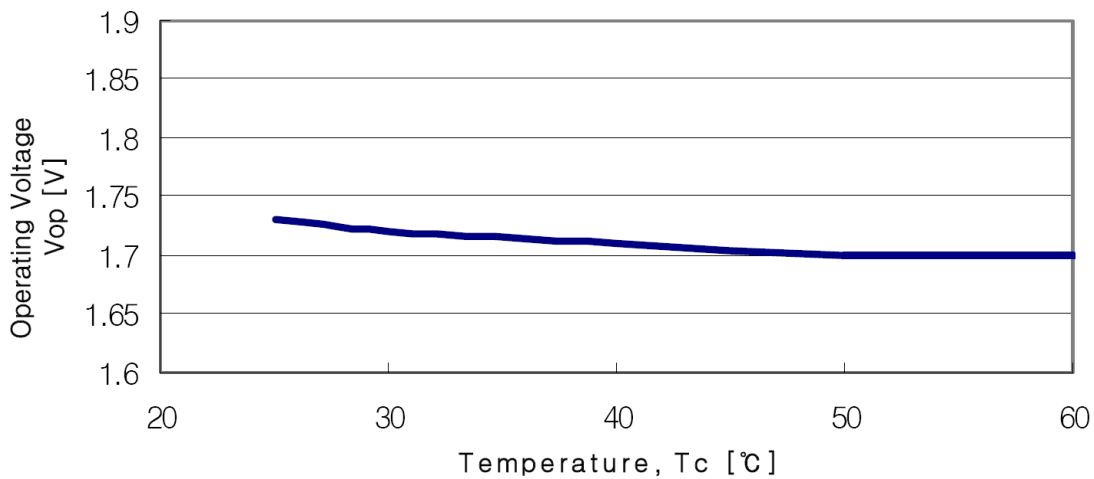




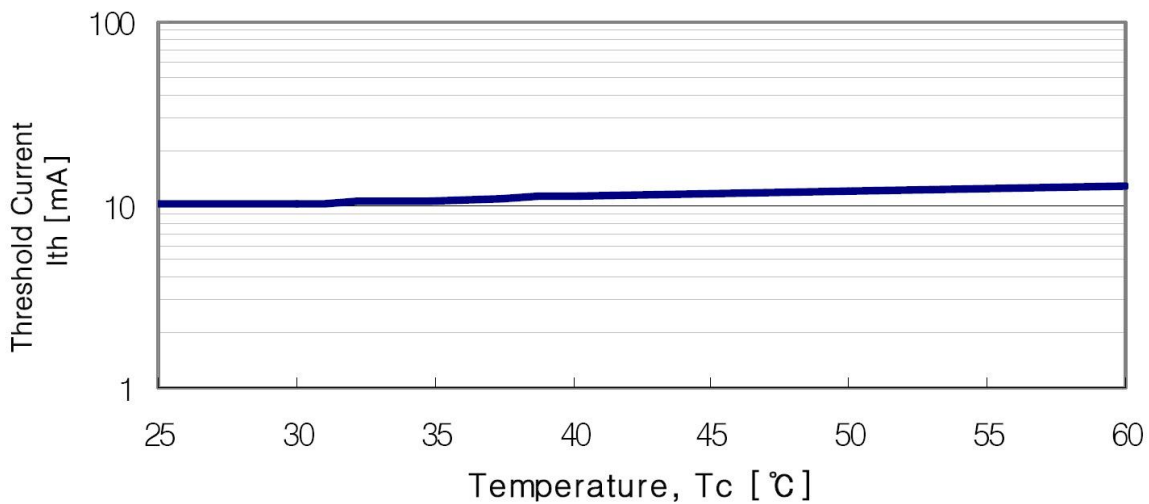
Monitor Current vs Optical Power



Operating Voltage vs Temperature



Threshold Current vs Temperature





Cautions

1. Operating method

- This LD shall change its forward voltage requirement and optical output power according to temperature change. Also, the LD will require more operation current to maintain same output power as it degrades. In order to maintain output power, use of APC (Automatic Power Control) is recommended. Which use monitor feedback to adjust the operation current.
- Confirm that electrical spike current generated by switching on and off does not exceed the maximum operating current level specified herein above as absolute maximum rating. Also, employ appropriate countermeasures to reduce chattering and/or overshooting in the circuit.

2. Static Electricity

- Static electricity or electrical surges will reduce and degrade the reliability of the LDs. It is recommended to use a wrist trap or anti-electrostatic glove when handling the Product.

3. Absolute Maximum Rating

- Active layer of LDs shall have high current density and generate high electric field during its operation. In order to prevent excessive damage, the LD must be operated strictly below absolute maximum rating.