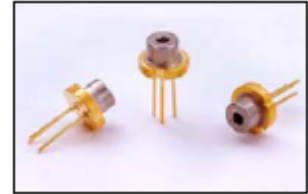




## QL85D6SA



### 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>m-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	
<b>Optical Specifications</b>						
CW Output Power	$P_O$	-	5	-	mW	
Peak Wavelength *	$\lambda_P$	845	850	855	nm	
FWHM Beam Divergence	$\theta_{  }$	7	9	12	deg	
	$\theta_{\perp}$	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	$\mu\text{m}$	
<b>Electrical Specifications</b>						
Threshold Current	$I_{th}$	5	10	20	mA	
Operating Current	$I_{op}$	15	20	30	mA	
Slope Efficiency	$\eta$	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	

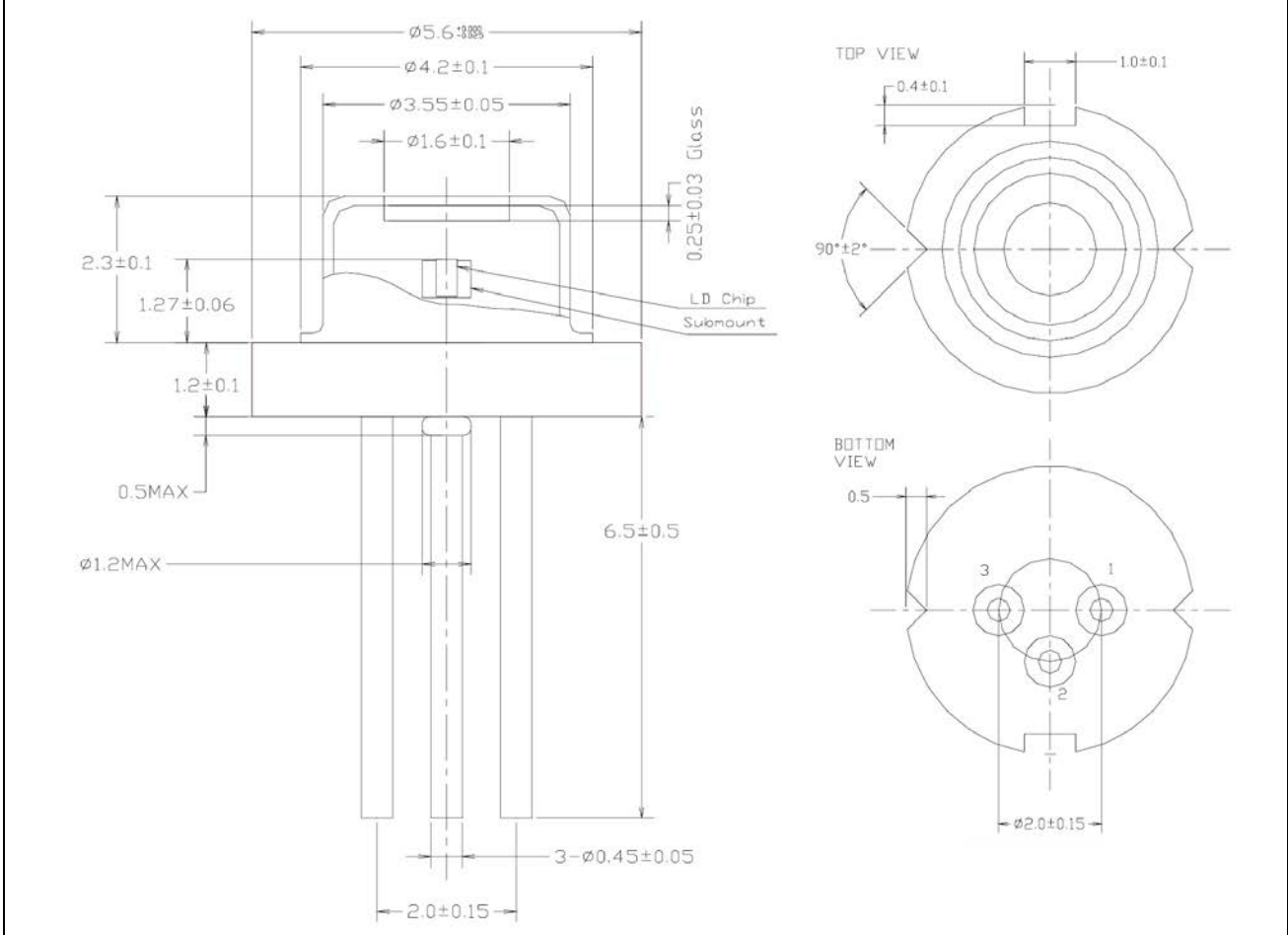
\* Measuring specifications.

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



## Package Dimensions

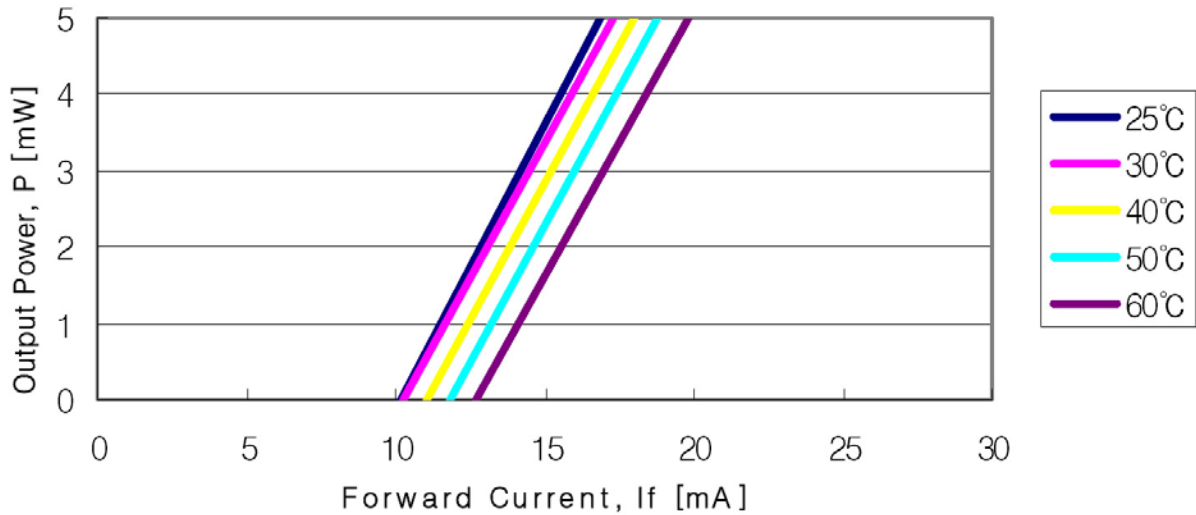
### 5.6 mm Package (Unit:mm)



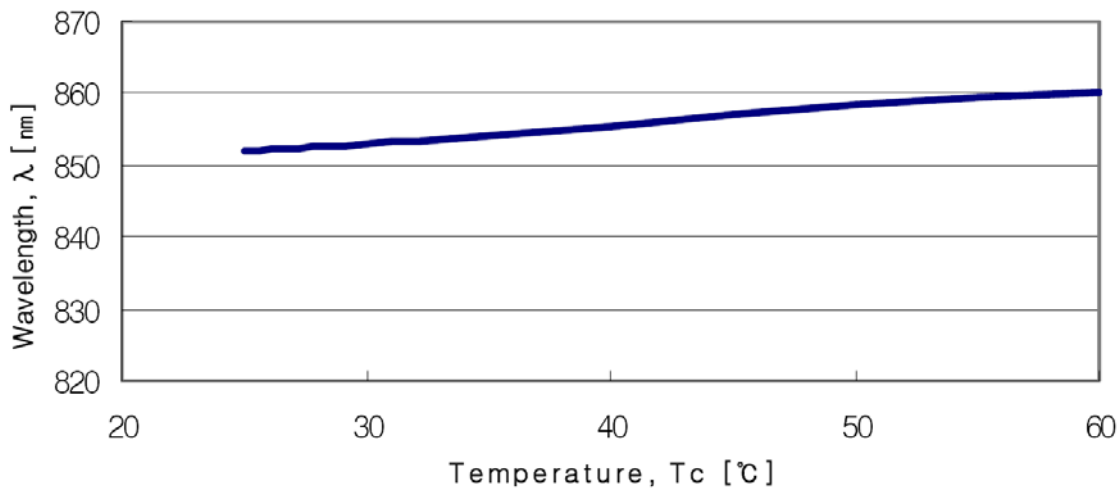


## Typical Characteristics

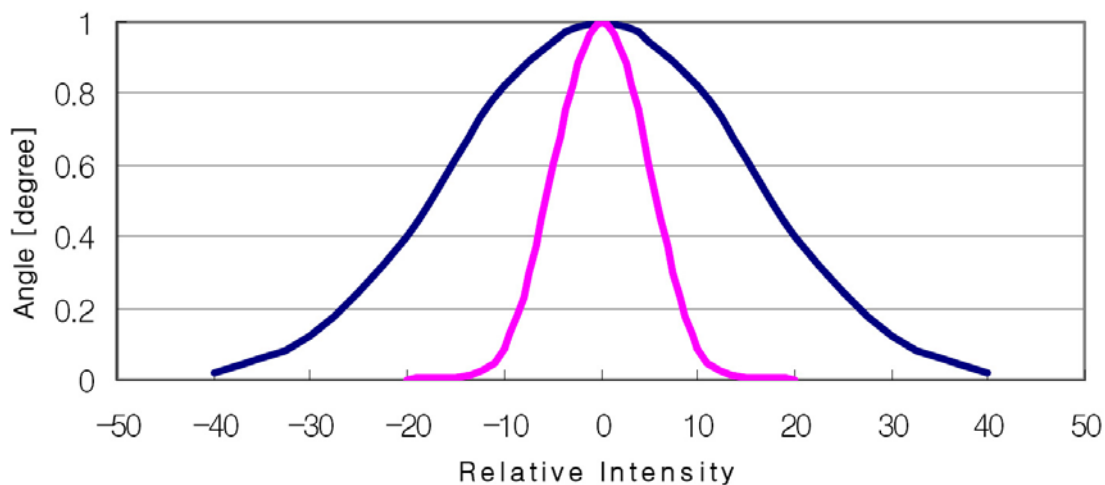
Optical Output Power vs. Forward Current



Wavelength vs Temperature

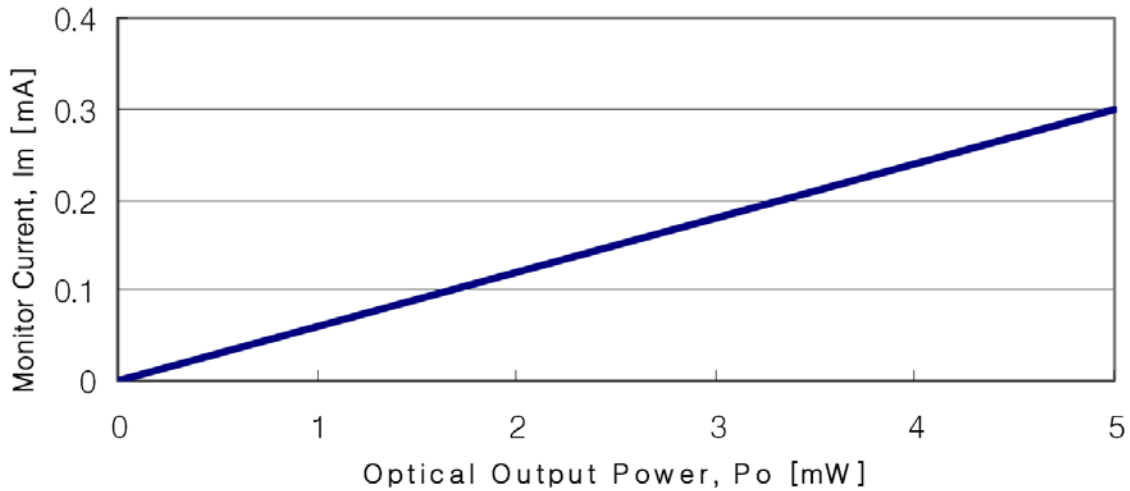


Far Field Pattern ( $P_o=5mW$ ,  $T_c=25^\circ C$ )

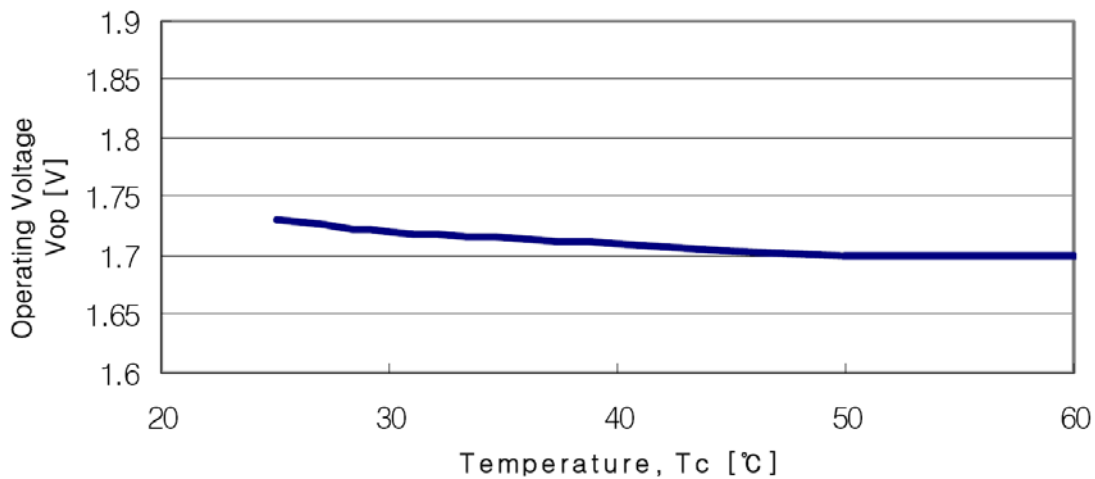




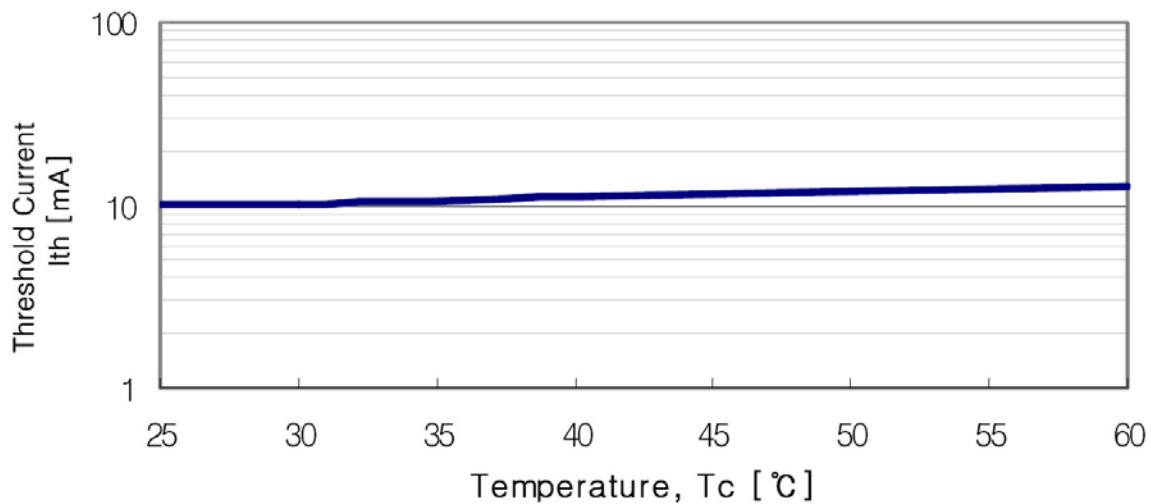
**Monitor Current vs Optical Power**



**Operating Voltage vs Temperature**



**Threshold Current vs Temperature**





## **Cautions**

### **1. Operating methode**

- This LD shall change its forward voltage requirement and optical ouput power according to temperature change. Also, the LD will require more operation current to maintain same ouput 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 appropriat 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 handeling 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 stricly below absolute maximum rating.