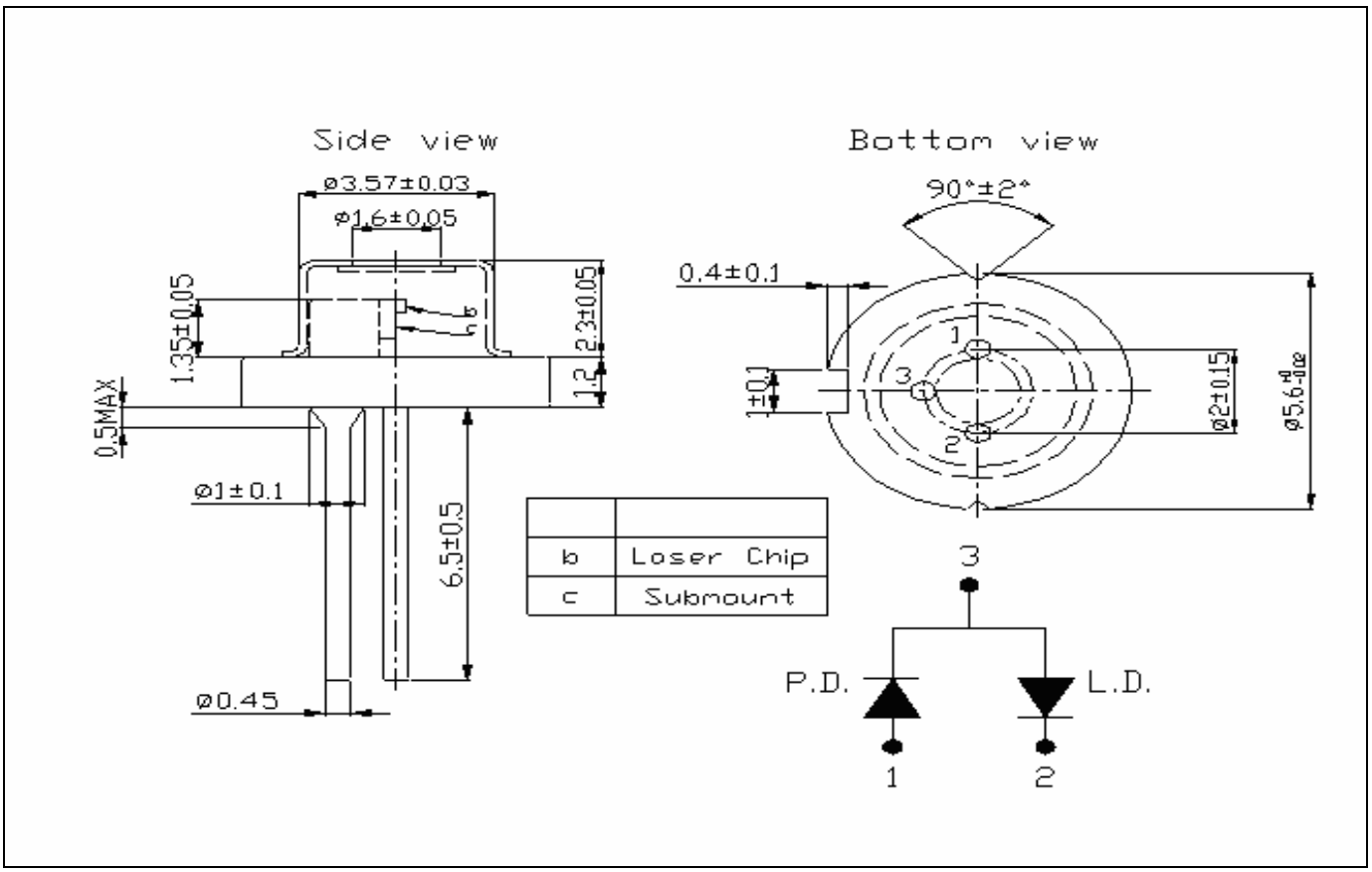
650nm Red Laser Diode
RLD65000502

■Specifications

(1) Device: Laser Diode

(2) Structure: TO-18(ϕ 5.6mm)

■External dimensions(Unit : mm)



■Absolute Maximum Ratings(Tc=25℃)

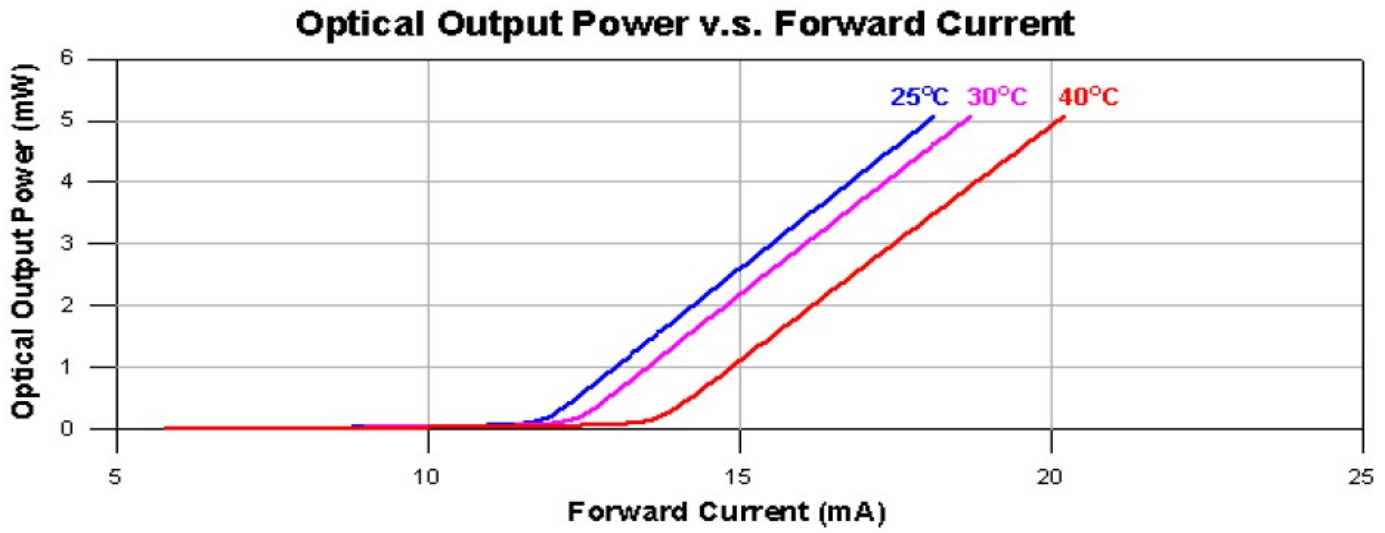
Parameter		Symbol	Value	Unit
Optical Output		Po	**5**	mW
Reverse Voltage	Laser	Vr	**2**	V
	PIN PD	Vr(PIN)	**30**	V
Operating Temperature		Top	-10～+40	℃
Storage Temperature		Tstg	-15～+85	℃

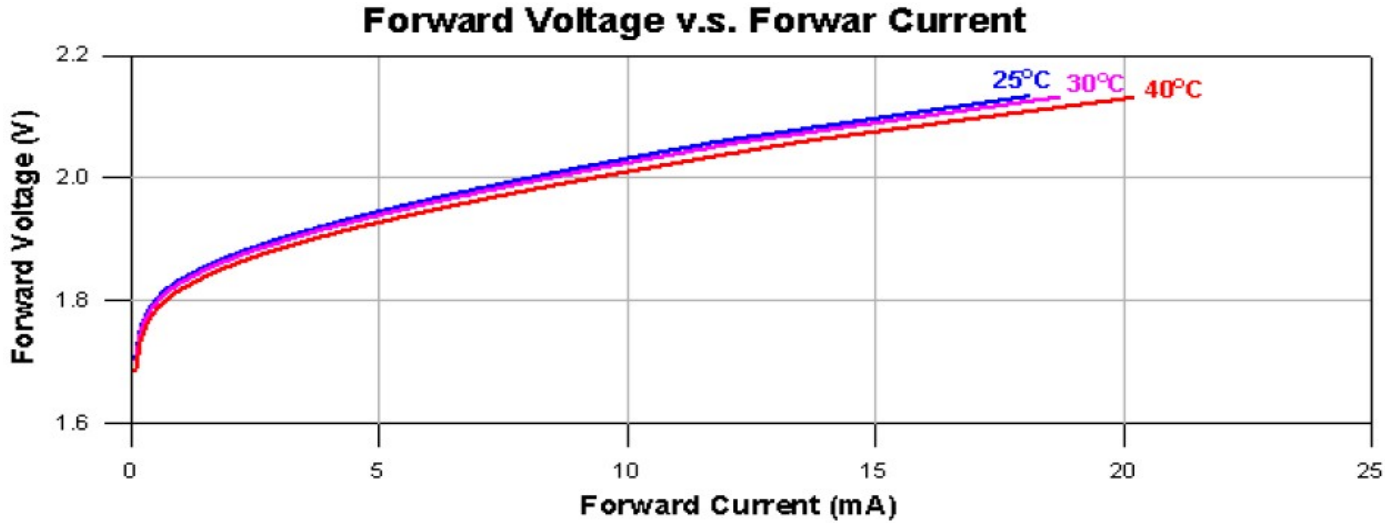
■Electrical and Optical Characteristics(Tc=25℃)

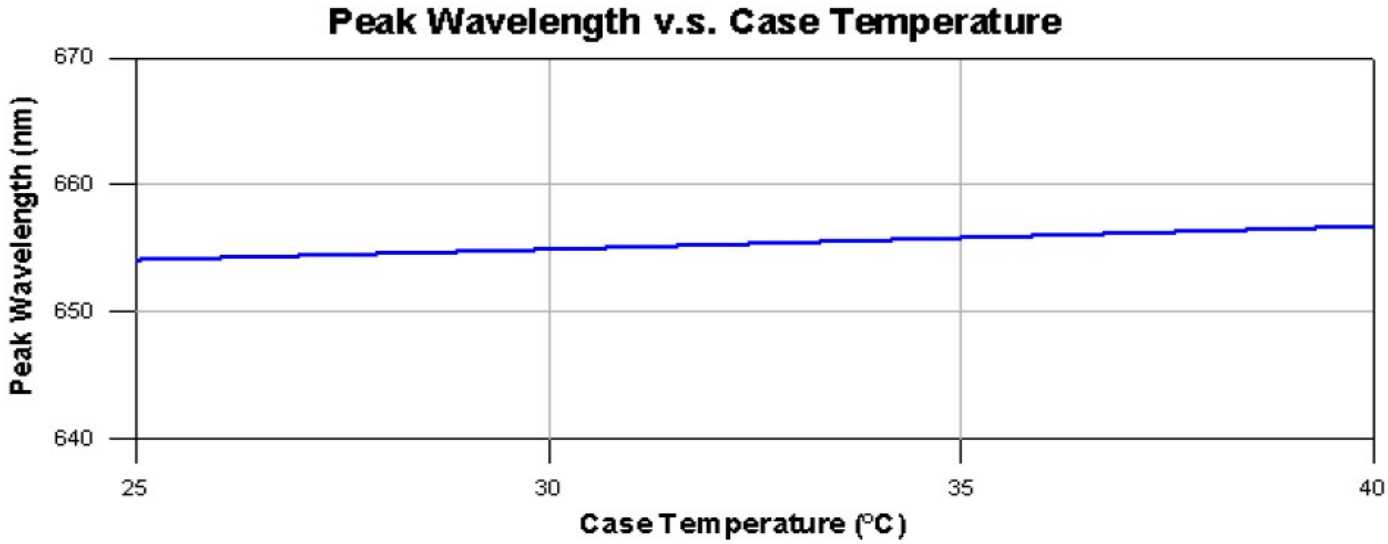
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current		Ith	Po=5mW	-	12	25	mA
Operating Current		Iop	Po=5mW	-	18	25	mA
Operating Voltage		Vop	-	-	2.1	2.5	Volt
Slope Efficiency		η	$\frac{4mW-1mW}{I_{4mW}-I_{1mW}}$	0.4	0.8	-	mW/mA
Monitor Current		Im	Po=5mW	0.05	0.3	0.5	mA
Beam Divergence (FWHM)	Parallel	θ //	Po=5mW	5	9	12	deg.
	Perpendicular	$\theta \perp$	Po=5mW	30	36	42	deg.
Lasing Wavelength		λ	Po=5mW	640	655	660	nm

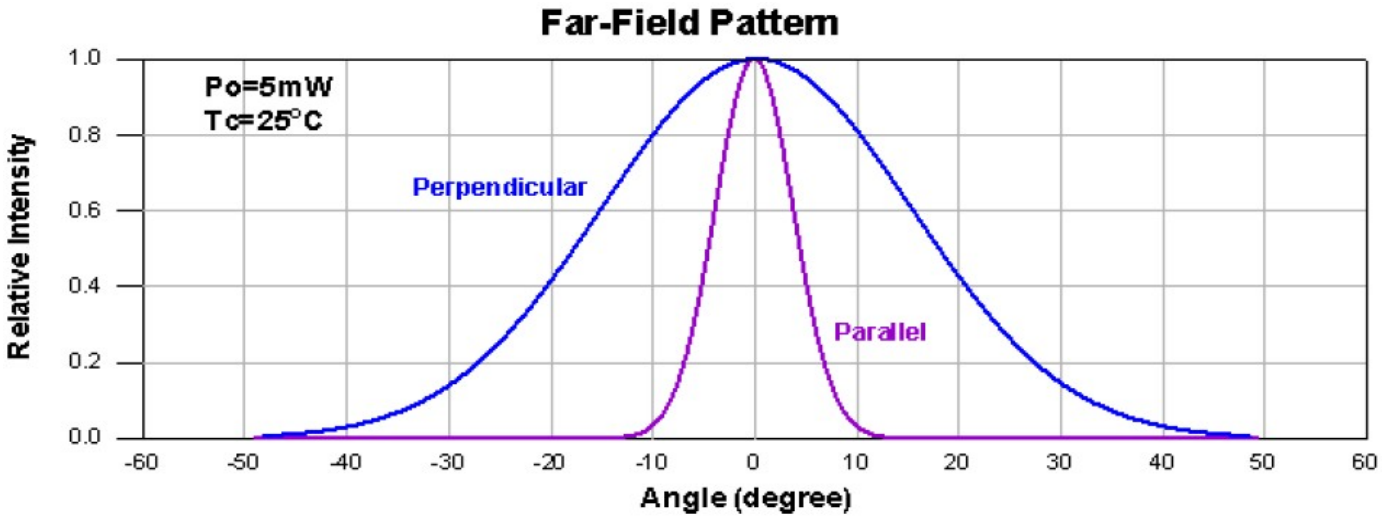
◎θ // and $\theta \perp$ are defined as the angle within which the intensity is 50% of the peak value.

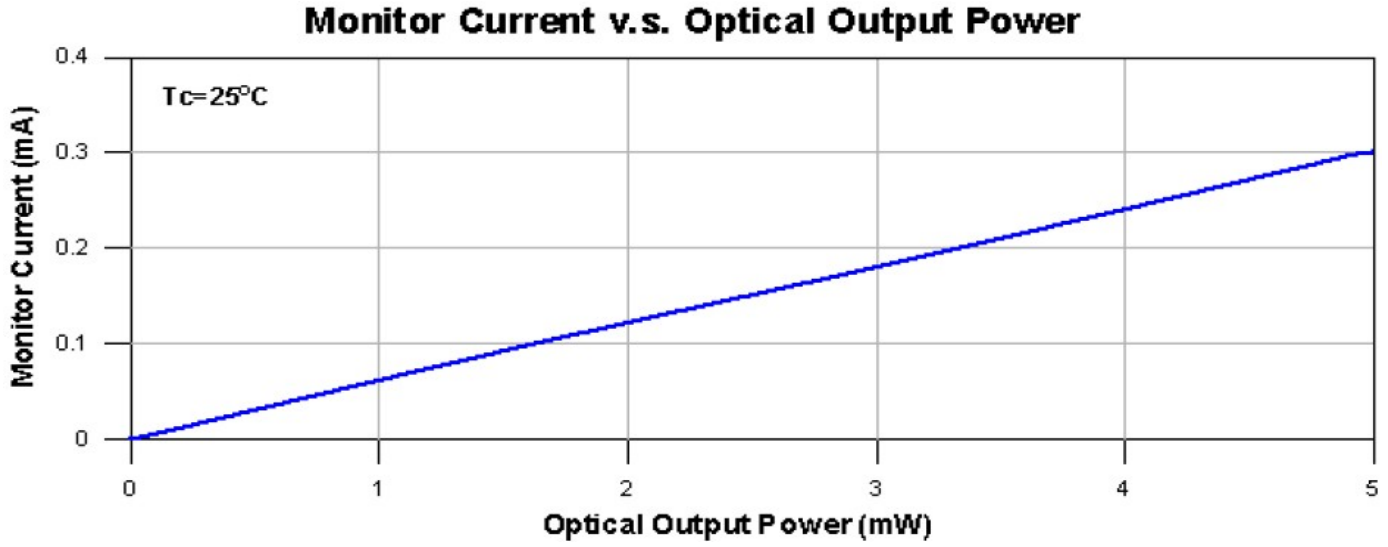
■Typical characteristic curves

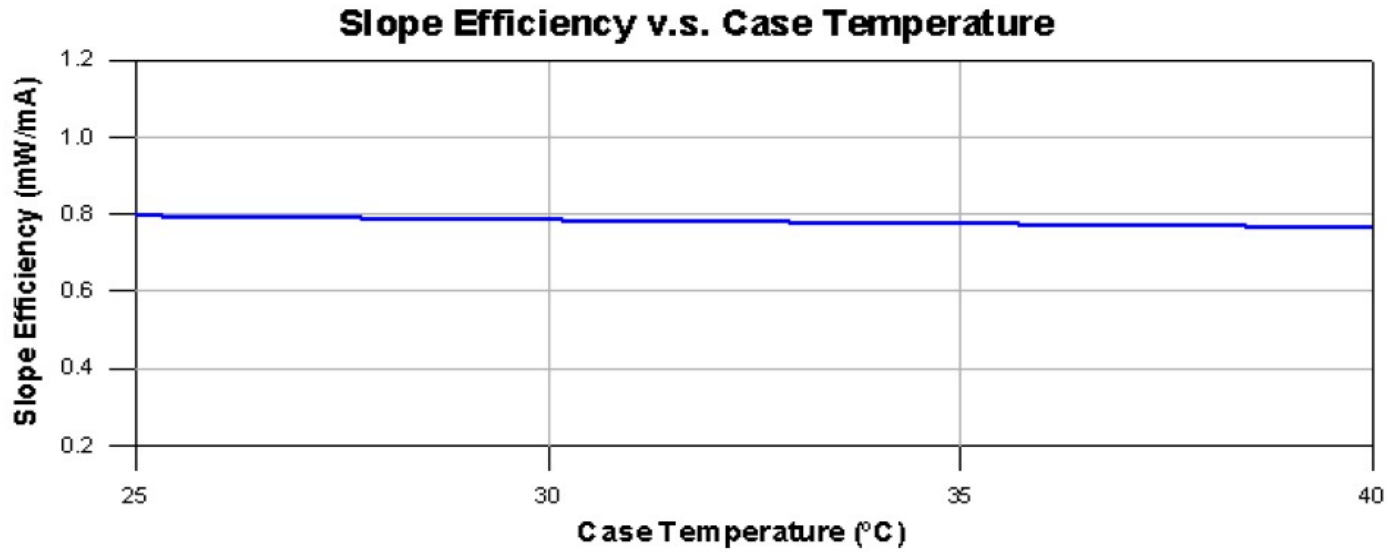


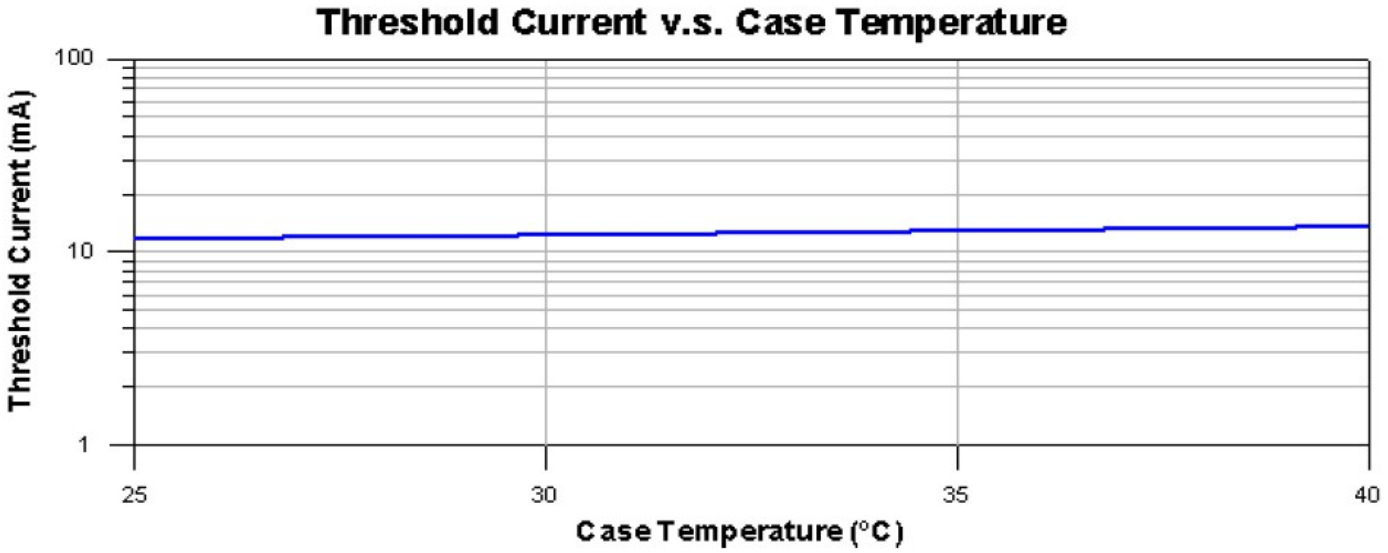



Peak Wavelength v.s. Case Temperature
Peak Wavelength (nm)
670
660
650
640
25
30
35
40
Case Temperature (°C)


Far-Field Pattern
Po=5mW
Tc=25°C
Perpendicular
Parallel
Relative Intensity
1.0
0.8
0.6
0.4
0.2
0.0
-60
-50
-40
-30
-20
-10
0
10
20
30
40
50
60
Angle (degree)


Monitor Current v.s. Optical Output Power
Tc=25°C
Monitor Current (mA)
0.4
0.3
0.2
0.1
0
0
1
2
3
4
5
Optical Output Power (mW)


Slope Efficiency v.s. Case Temperature
Slope Efficiency (mW/mA)
1.2
1.0
0.8
0.6
0.4
0.2
25
30
35
40
Case Temperature (°C)


Threshold Current v.s. Case Temperature
Threshold Current (mA)
100
10
1
25
30
35
40
Case Temperature (°C)