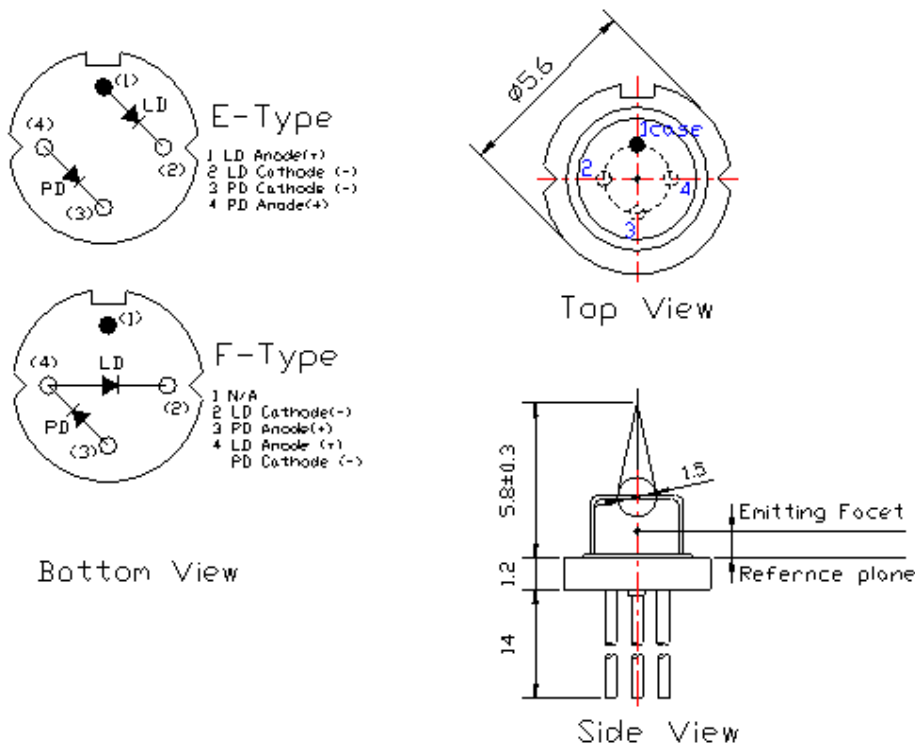


## S1300-5MG-FW S1300-5MG-BL

- Features
  - Un-cooled Laser diode with MQW structure
  - Wide operation temperature range
  - Dew point below -40°C
  - Both ball lens and flat window cap available

### ■ External dimensions (Unit : mm)



### ■ Absolute Maximum Ratings( $T_c=25^\circ\text{C}$ )

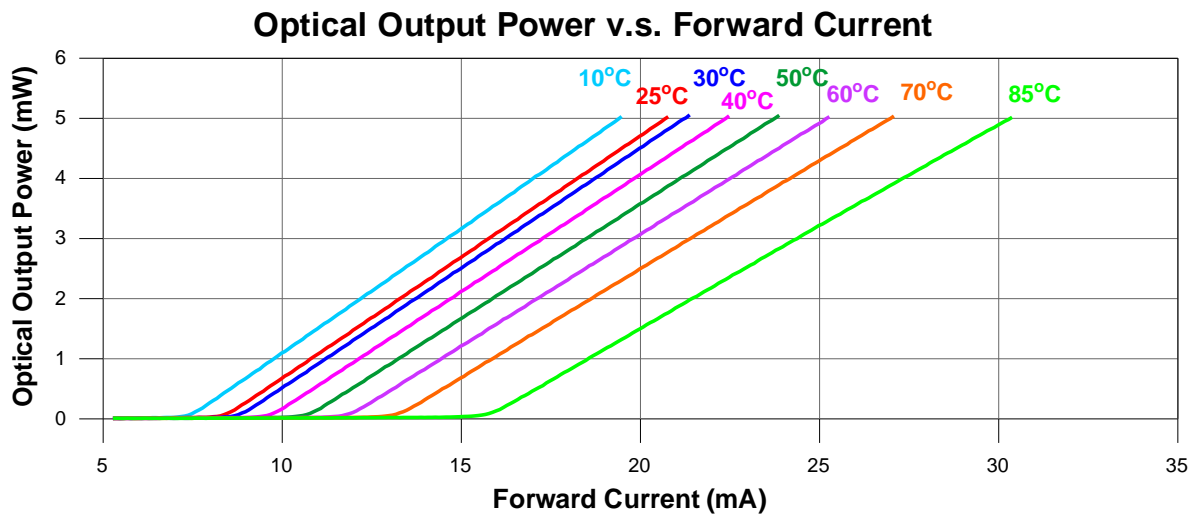
Characteristic	Symbol	Rating	Unit
Optical Output Power	$P_o$	5	mW
LD Reverse Voltage	$V_r$ (LD)	2	V
PD Reverse Voltage	$V_r$ (PD)	10	V
Operation Case Temperature	Top	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +125	$^\circ\text{C}$

■ Electrical and Optical Characteristics(Tc=25°C)

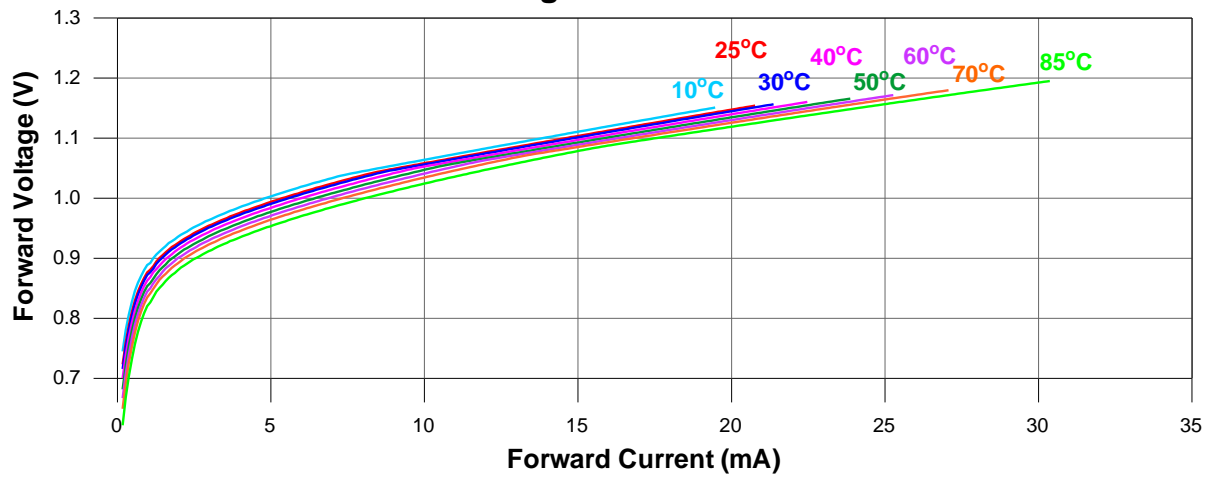
Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Threshold Current	Ith	Tc = 25°C	-	8	15	mA	
Threshold Current	Ith	Tc = -40 ~ +85°C	-	16	45	mA	
Operating Current	Iop	Po=5mW	-	<b>21</b>	<b>28</b>	mA	
Operating Current	Iop	Tc = -40 ~ +85°C	-	<b>31</b>	<b>60</b>	mA	
Operation Voltage	Vop	Po = 5mW	-	1.2	1.5	V	
Slope Efficiency	SE	Po = 1 to 4mW	0.25	0.4	-	mW/mA	
Monitor Current (PD)	Im	Po = 5mW, V <sub>RPD</sub> =2V	0.05	0.15	-	mA	
Dark Current (PD)	Id	V <sub>RPD</sub> =5V	-	-	0.1	μA	
Capacitance (PD)	Ct	V <sub>RPD</sub> =5V, f=1MHz	-	10	20	pF	
Lasing Wavelength	λ	Po = 5mW	1290	1310	1330	nm	
Spectral Width	Δλ	Po = 5mW	-	3	5	nm	
Optical Output Power	Po	CW, Kink free	5	-	-	nm	
P-I Kink	Ki	Po < 5mW	-	-	20	%	
Rise and fall time	tr, tf	Po = 5mW, 10%~90%	-	-	0.7	ns	
Tracking Error	TE	Po = 5mW, V <sub>RPD</sub> =1V	-0.7	-	0.7	dB	
Beam Divergence (FWHM)	Parallel	θ //	Po = 5mW	-	8	-	deg.
	Perpendicular	θ ⊥	Po = 5mW	-	10	-	deg.

◎θ // and θ ⊥ are defined as the angle within which the intensity is 50% of the peak value.

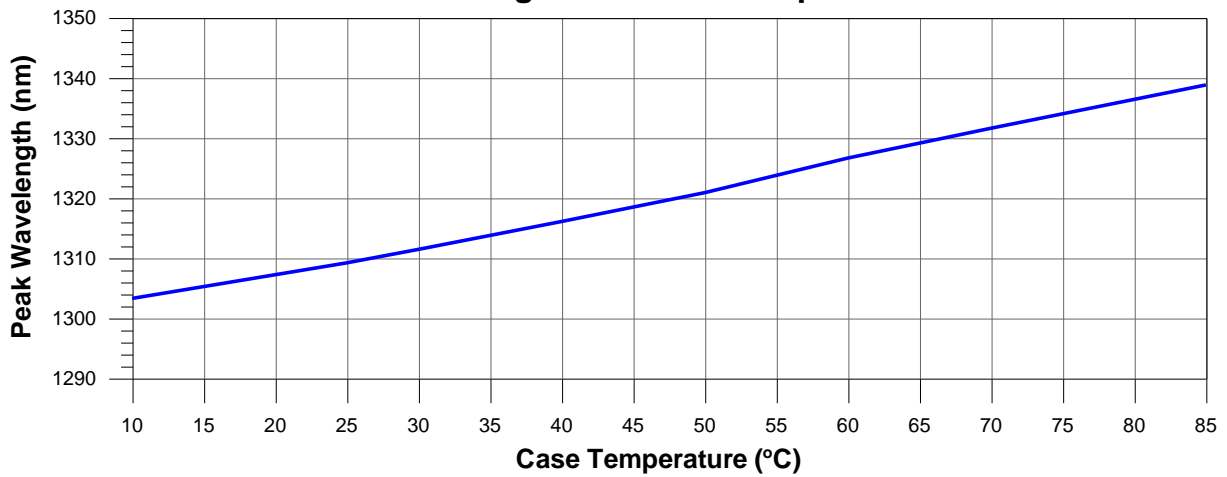
■ Typical characteristic curves



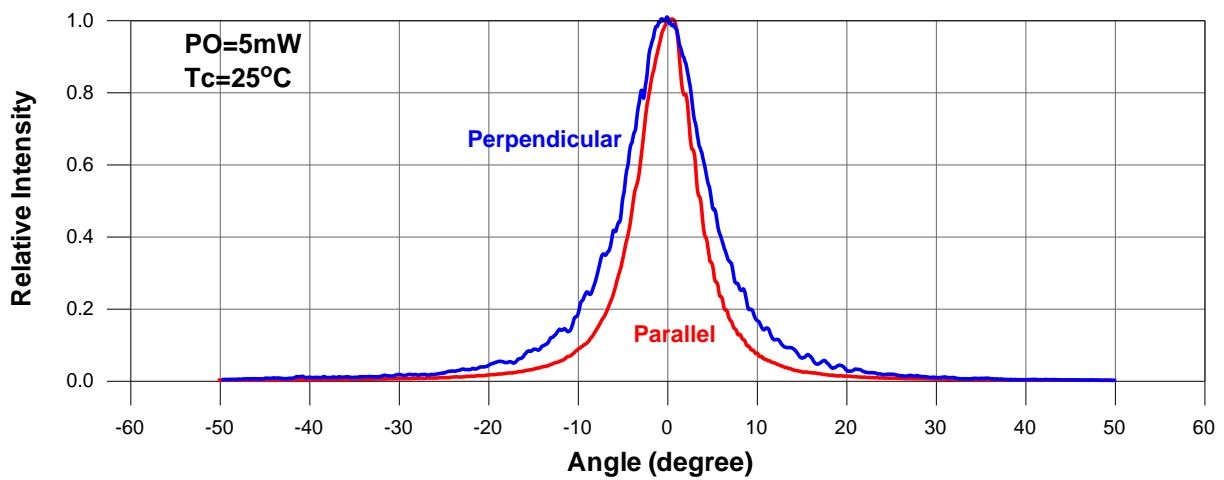
### Forward Voltage v.s. Forward Current



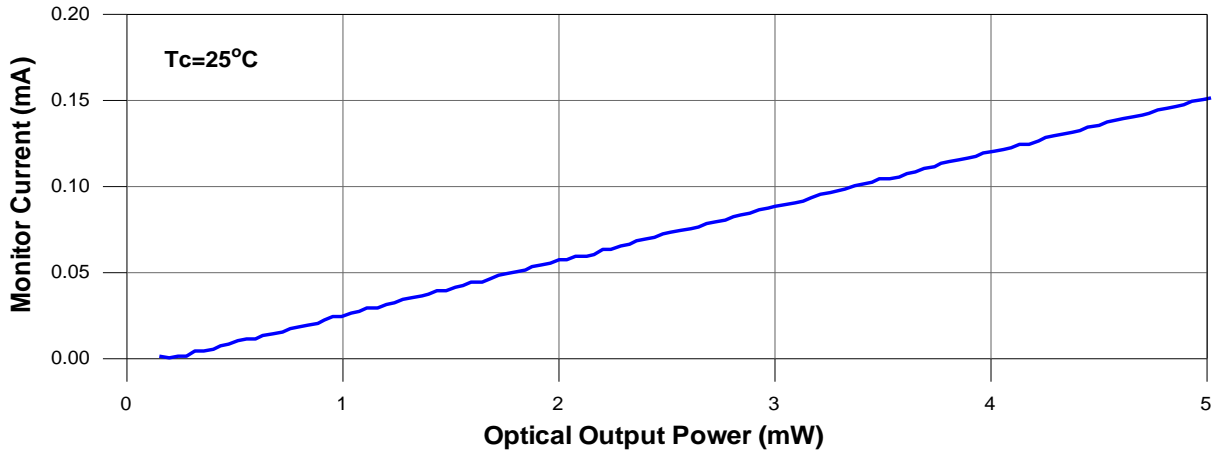
### Peak Wavelength v.s. Case Temperature



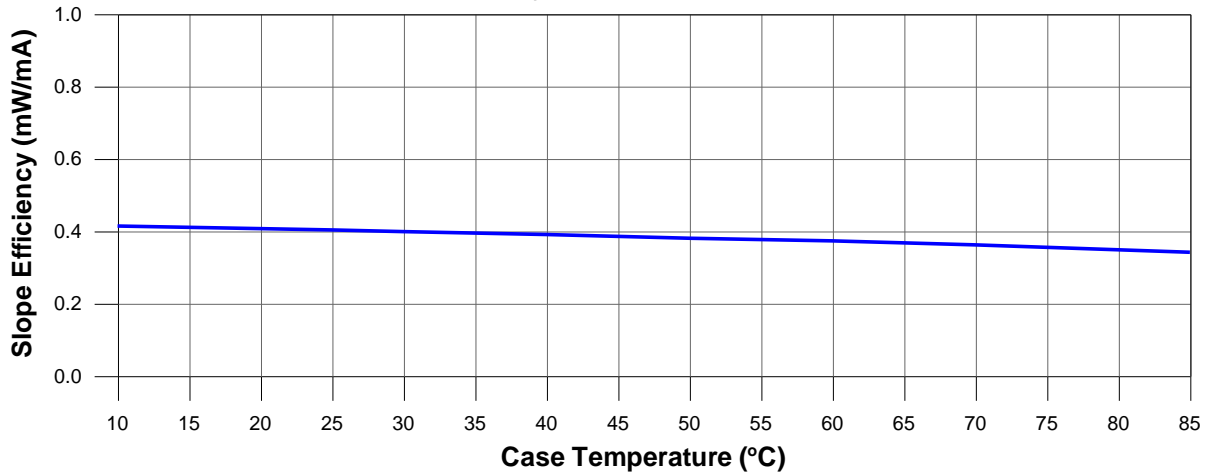
### Far-Field Pattern



### Monitor Current v.s. Optical Output Power



### Slope Efficiency v.s. Case Temperature



### Threshold Current v.s. Case Temperature

