

LCS406105M5X

Blue violet Laser Diode

High Power Blue violet Laser Diode

■ Features

- (1) Wavelength : 406 nm(Typ.)
- (2) Optical power output :
CW 105mW (Max)
Pulse 210mW (Max)
- (3) Φ 5.6mm CAN package

■ Applications

- (1) Blu-ray Disc/HD DVD drive
- (2) other new application

■ Absolute Maximum Ratings

(T_c=25°C^{※1})

Parameter	Symbol	Ratings	unit
※2 Optical power output(CW)	P _o	105	mW
※3 Optical power output(Pulse)	P _p	210	mW
Reverse voltage	V _{rl}	2	V
Operatings temperature (case temp.)	CW ※2	T _{opc(c)}	-10~+70 °C
	Pulse ※3	T _{opp(c)}	-10~+70 °C
Storage temperature(case temp.)	T _{stg}	-40~+85	°C
※4 Soldering temperature	T _{sld}	350	°C

※1 T_c : Case temperature

※2 CW :Continuous Wave Operation

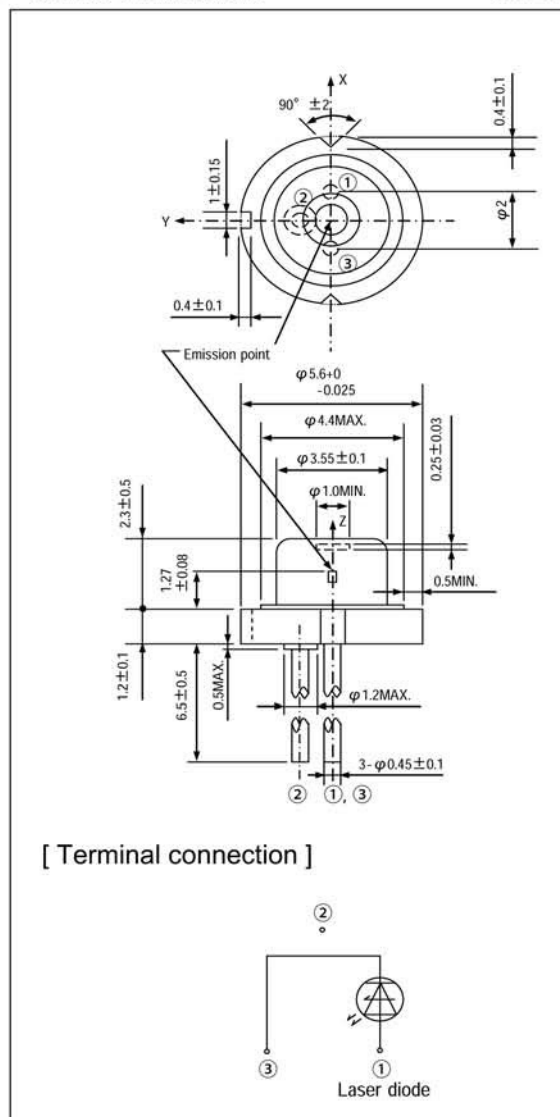
※3 Pulse :Pulse Operation(Pulse Width 50ns Duty:50%)

※4 Soldering position is 1.6mm apart from bottom edge of the case.

(Immersion time: 3s)

■ Outline Dimensions

(Unit :mm)



■ Specifications

($T_c=25^{\circ}\text{C}$ ※1 ※2)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	unit
Threshold current	I_{th}	-	-	40	60	mA
Operating current	I_{op}	$P_o=105\text{mW}$	-	120	150	mA
Operating voltage	V_{op}		-	5.4	6.5	V
Wavelength	λ_p		400	406	413	nm
Half intensity angle ※3 ※4	Parallel		6	9	12	°
	Perpendicular		16	19	22	°
Half intensity angle ※3 ※4	Parallel	$P_o=5\text{mW}$	5.5	8.5	11.5	°
	Perpendicular		16	19	22	°
Misalignment angle ※4	Parallel		-2.5	-	2.5	°
	Perpendicular		-3.0	-	3.0	°
Differential efficiency	η_d	$\frac{95\text{mW}}{I(105\text{mW})-I(10\text{mW})}$	0.9	1.3	-	mW/mA
Kink (Pulse) ※5 ※6	K-LI	$P_1=42\text{mW}$ $P_2=126\text{mW}$ $P_3=210\text{mW}$	-10	-	10	%

※1 T_c : Case temperature

※6 Definition of Kink

※2 Initial value, Continuous Wave Operation.

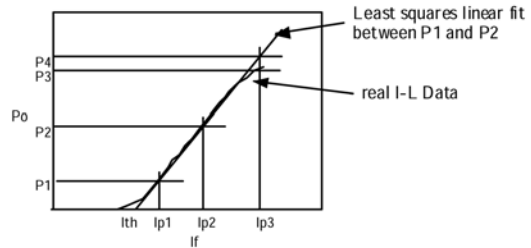
:K-LI= $(P_4-P_3)/P_3$

※3 Angle of 50% peak intensity.(Full angle at half-maximum)

※4 Parallel to the junction plane.(X-Z plane)

Perpendicular to the junction plane.(Y-Z plane)

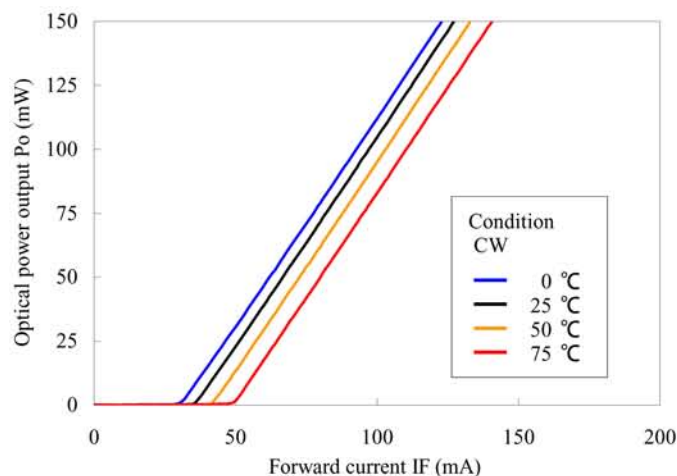
※5 Pulse :Pulse Operation(Pulse Width 50ns Duty:50%)



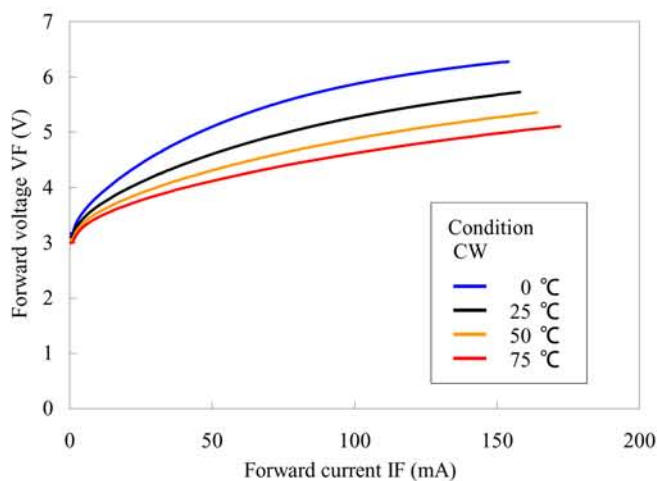
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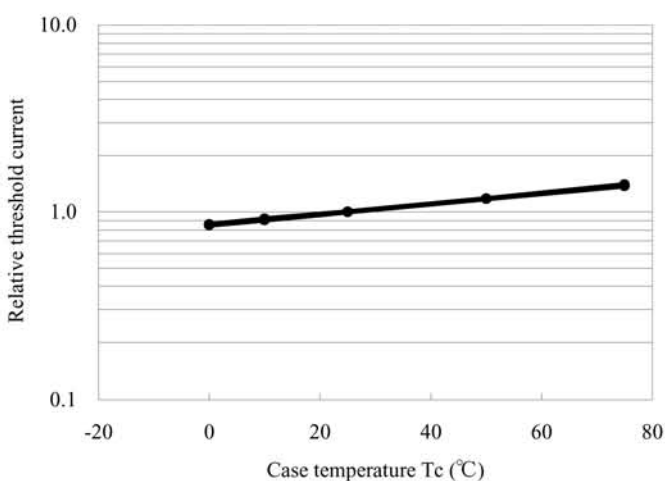
■ Optical power output – Forward current



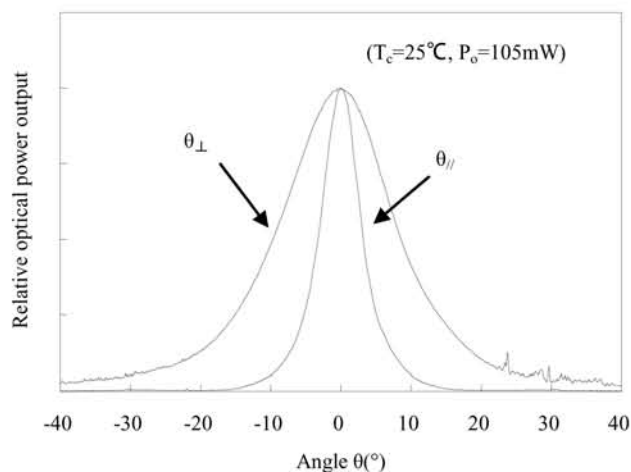
■ Forward voltage – Forward current



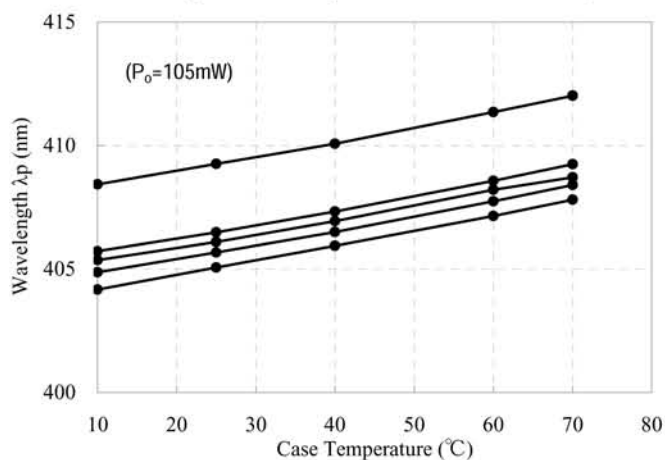
■ Case temperature dependence of threshold current



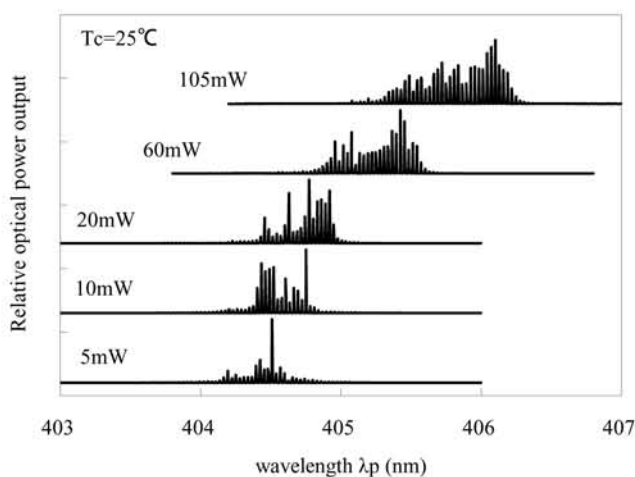
■ Far field pattern (FFP)



■ Case temperature dependence of wavelength



■ Optical power dependence of Lasing spectrum



Note) Characteristics shown in diagrams are typical values.(not assurance value)

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