

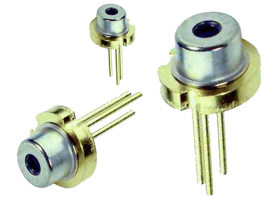
CS4050205M

406nm Compact Laser Diode Key features

Visible light $\lambda = 405\text{nm}$
 Output powers $\approx 20\text{mW}$
 Package type $= 5.6\text{mm}\Phi$
 High reliability

Applications

Blu-ray Disc/HD DVD drive
 Other new application



Laser Diode Solutions

CS4050205M is a MOCVD grown 405nm band GaN laser diode. It's an attractive light source, with a typical light output power of CW 20mW. It's suitable for use as high reliability laser diode in a wide range of industrial application.

Electrical and Optical Characteristics at $T_c = 25^\circ\text{C}$

Item	Symbols	Min.	Typ.	Max.	Unit	Condition
Optical Output Power	Po	-	20	-	mW	-
Threshold Current	I _{th}	-	26	50	mA	Po=10mW
Operating Current	I _{op}	-	35	60	mA	Po=10mW
Differential Efficiency	η	0.7	1.1	-	mW/mA	Po=10mW
Operating Voltage	V _{op}	-	4.8	5.6	V	Po=10mW
Peak Wavelength	λ_p	395	405	415	nm	Po=10mW
Monitoring Output Current	I _m	0.1	0.2	0.5	mA	Po=10mW
Beam Divergence	$\Theta_{//}$	6.0	8.5	12.0	deg	Po=10mW
	Θ_{\perp}	16	19	23	deg	Po=10mW
Beam Angle	$\Delta\Theta_{//}$	-2	-	+2	deg	Po=10mW
	$\Delta\Theta_{\perp}$	-2	-	+2	deg	Po=10mW

* Angle at 50% peak intensity (full-width at half-maximum)

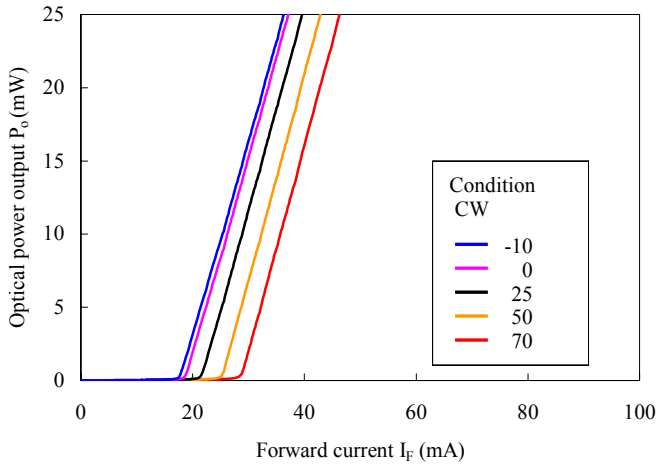
* Parallel to the junction plane (X-Z plane)

Perpendicular to the junction plane (Y-Z plane)

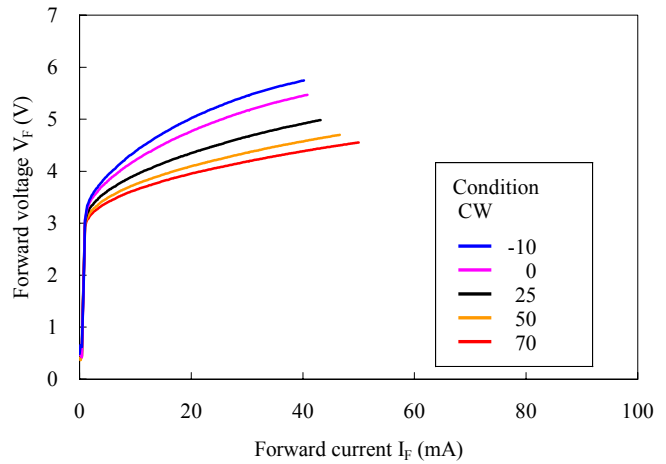
Absolute Maximum Rating at Tc=25°C

Items	Symbols	Values	Unit
Optical Output Power	Po	20	mW
Laser Diode Reverse Voltage	V	2	V
Operating Temperature	To	-0~+75	°C
Storage Temperature	Ts	-40~+85	°C

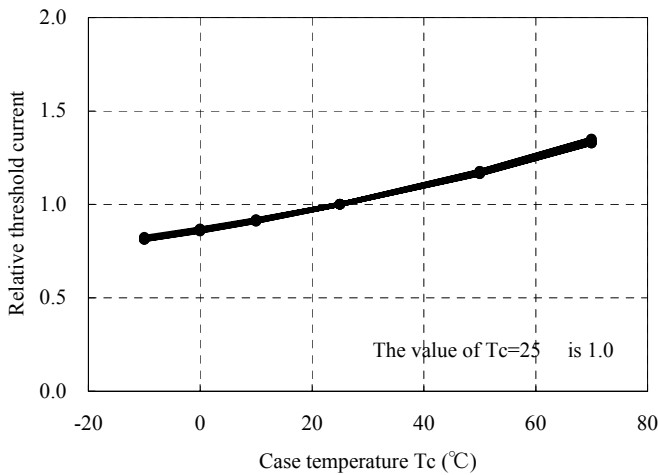
■ Optical power output – Forward current



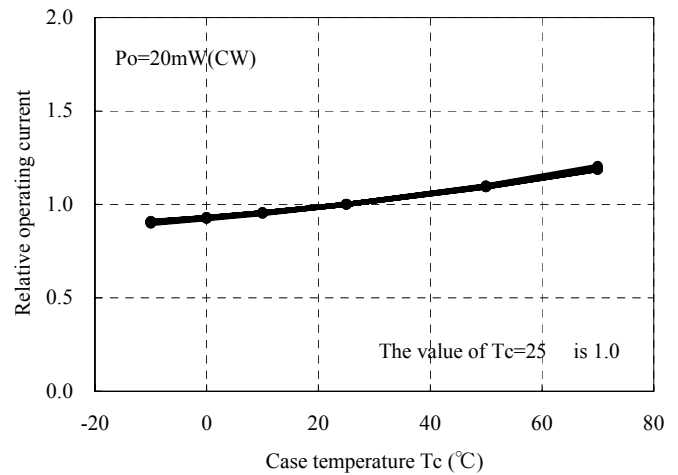
■ Forward voltage – Forward current



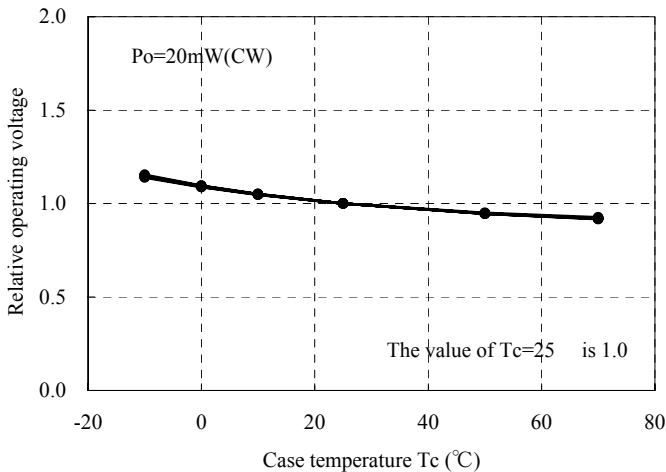
■ Case temperature dependence of threshold current(Ith)



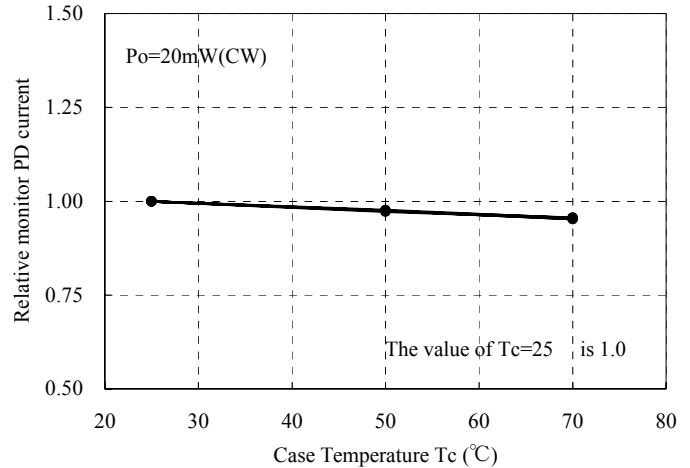
■ Case temperature dependence of operating current(Iop)



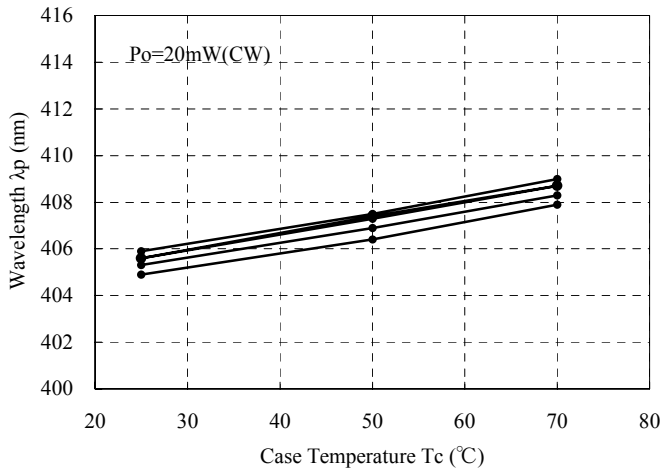
■ Case temperature dependence of operating voltage(Vop)



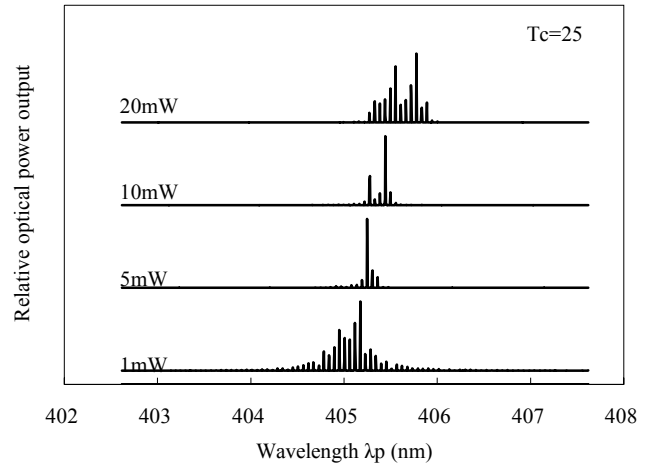
■ Case temperature dependence of monitor PD current(I_m)



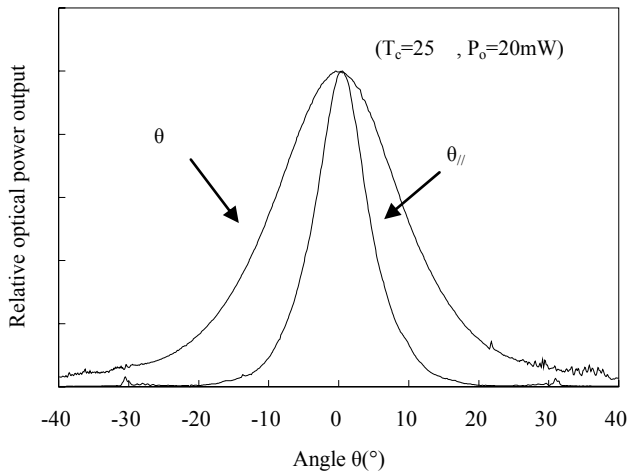
■ Case temperature dependence of wavelength



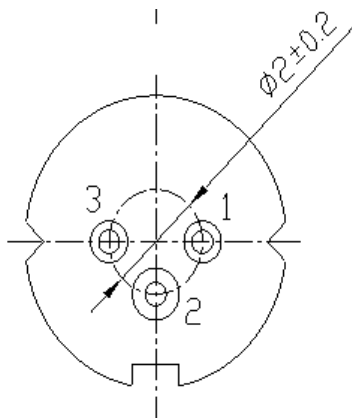
■ Optical power dependence of Lasing spectrum



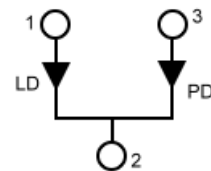
■ Far field pattern (FFP)



Electrical Connection



Package Type



M type(M,R)

Laser Diode Package Drawing

