

Laser Diode FNV-402-3000M



FNV-402-3000M is a multimode laser diode with 3W CW output power at 402nm. It is supplied in a 9mm TO can. The laser diode is suitable for the use in various opto-electronic applications.

Absolute Maximum Ratings:

Operating Parameters	Symbol	Rating	Unit
Optical Output Power	P_{out}	3.3	W
Storage Temperature	T_{stg}	-40 to +85	°C
Operating Temperature (Case)	T_c	0 to +50*	°C

*Recommended 20 – 30°C

Optical and Electrical Characteristics ($T_c=25^\circ\text{C}$):

Operating Parameters	Symbol	Min	Typ	Max	Unit
Optical Output Power	P_{out}	-	3	3.3	W
Wavelength	λ	395	402	405	nm
Threshold Current	I_{th}	-	0.43	0.53	A
Operating Current (@3W)	I_f	1.6	1.8	2.2	A
Operating Voltage (@3W)	V_f	-	4.7	5.5	V
Slope Efficiency	η	1.8	2.2	2.6	W/A
Emitter Size	ES		30 x 1		μm
Beam Divergence Parallel*	$\Theta_{ }$	8	13	20	deg.
Beam Divergence Perpendicular*	Θ_{\perp}	36	41	46	deg.

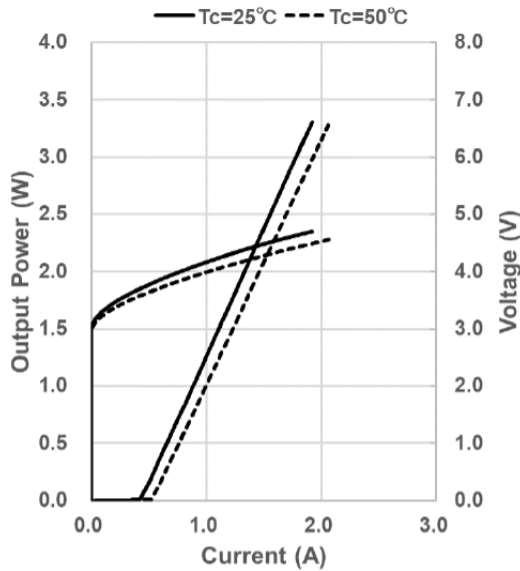
* Full Width $1/e^2$

Characteristics maybe subject to change, and finalizing as further development / analysis proceed

TYPICAL CHARACTERISTICS

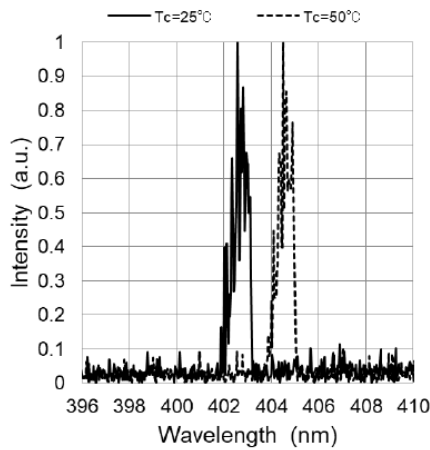
P-I & P-V Curve

[Conditions]
CW



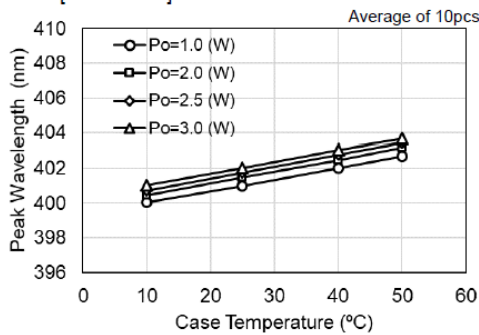
Spectrum

[Conditions] CW, Po=3.0W

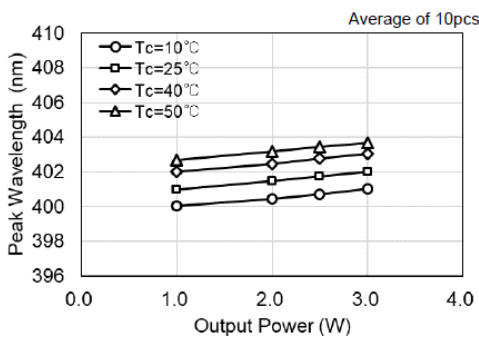


Temperature and Power Dependence

[Conditions] CW



Po(W)	$\Delta\lambda$ (nm/°C)
1.0	0.066
2.0	0.068
2.5	0.068
3.0	0.066

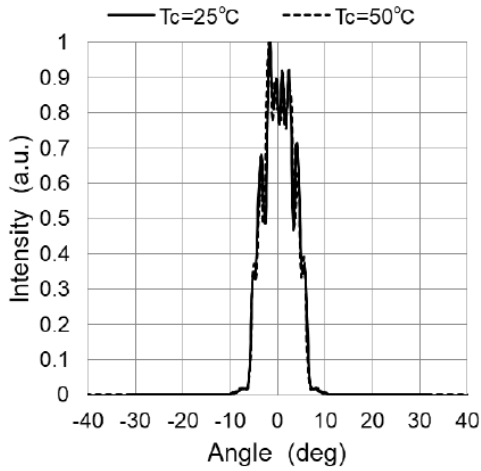


Tc(°C)	$\Delta\lambda$ (nm/W)
10	0.486
25	0.504
40	0.514
50	0.500

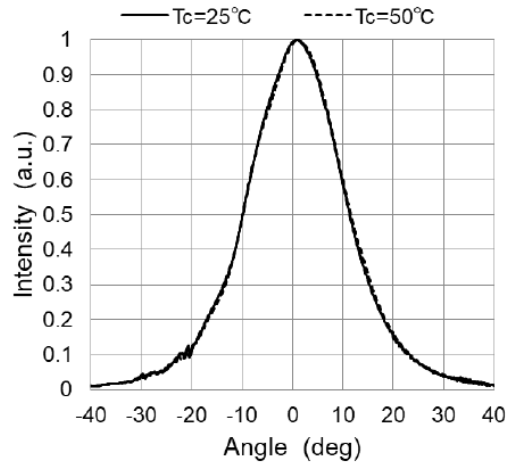
■ Far Field Pattern

[Conditions] CW, Po=3.0W

Parallel



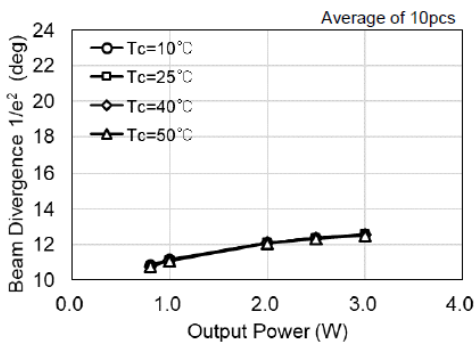
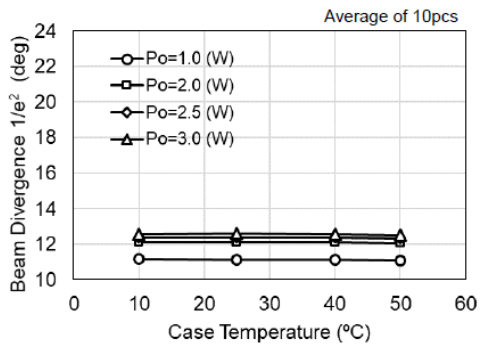
Perpendicular



■ Temperature and Power Dependence

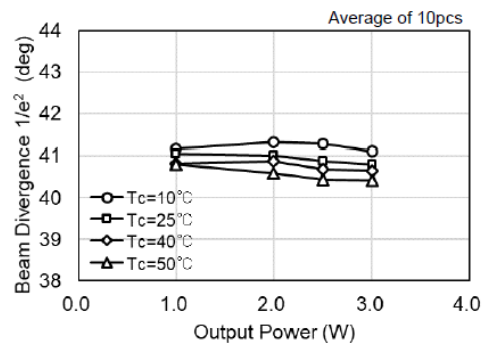
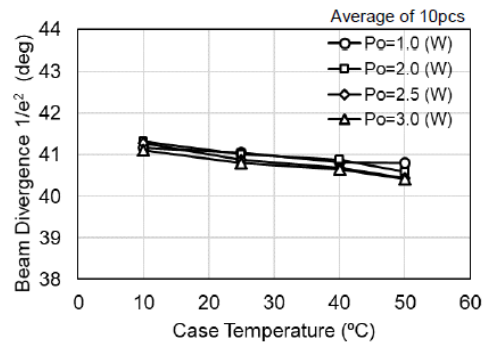
Parallel

[Conditions] CW



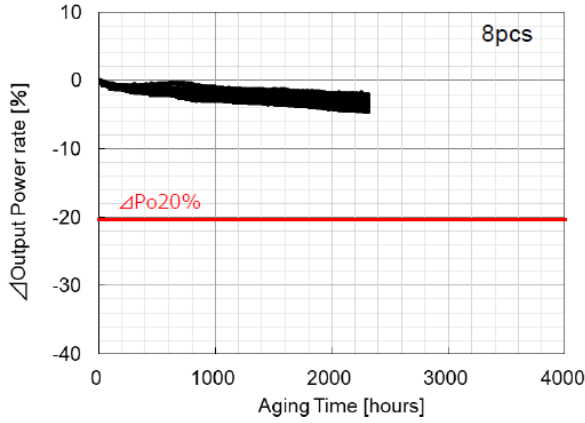
Perpendicular

[Conditions] CW

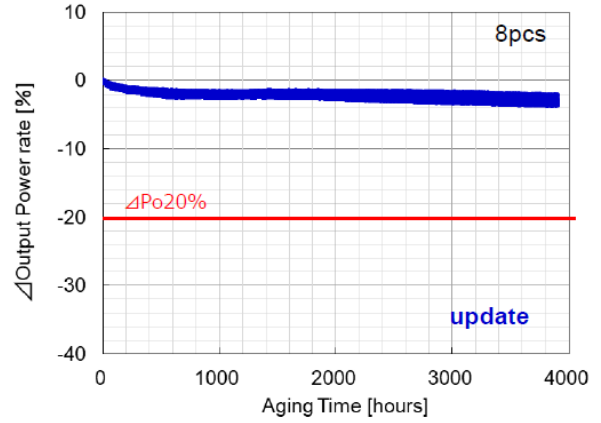


[Conditions]
 CW ACC operation, Initial Po=3.0W, Tc=25°C

Sample LOT *Dec. 2019

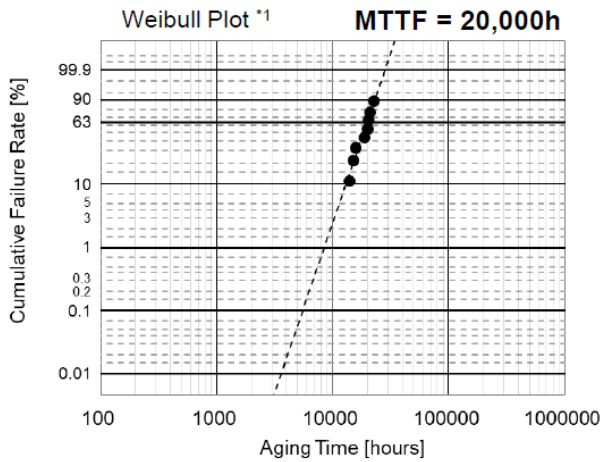


Sample LOT *Nov.2020
 (Process Refinement)



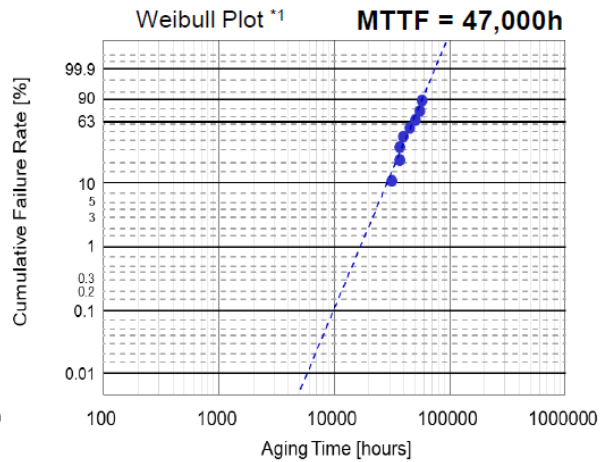
[Conditions]
 CW ACC operation, Initial Po=3.0W, Tc=25°C

Sample LOT *Dec. 2019



*1Estimated by liner extrapolation of degradation rate.
 Failure criterion is defined as the time after which
 the output power drops to 80% of initial power.

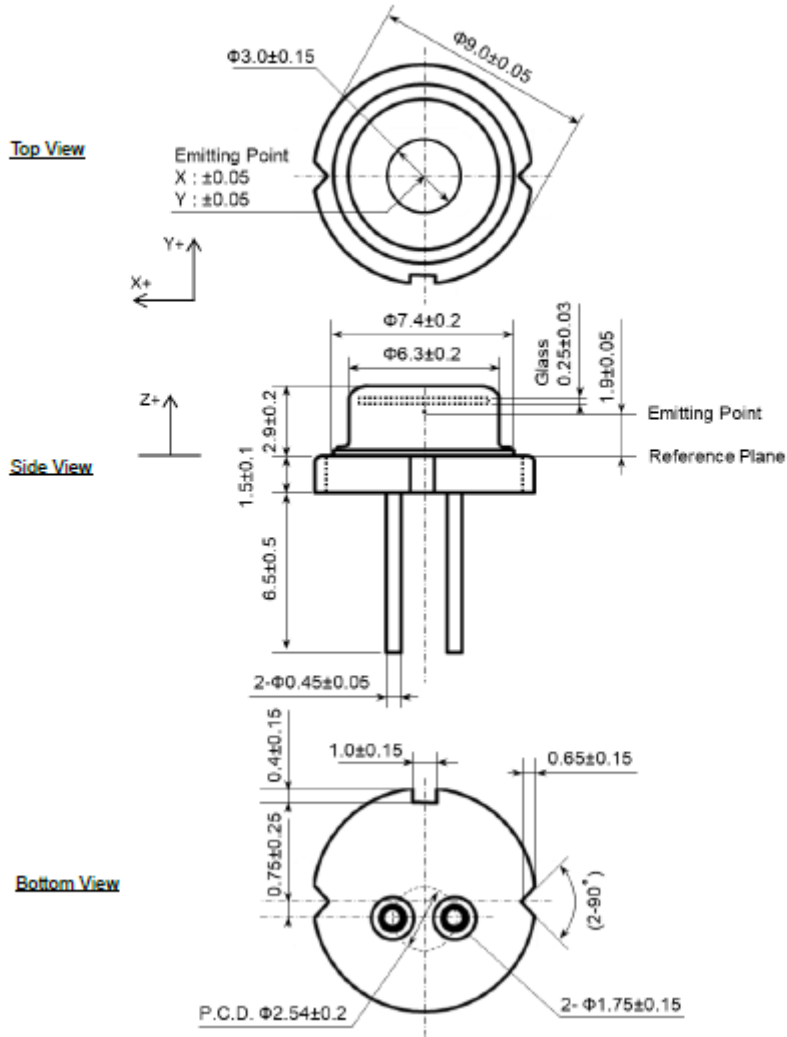
Sample LOT *Nov.2020
 (Process Refinement)



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 Failure criterion is defined as the time after which
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PACKAGING

Dimensions



Pin Connection

