



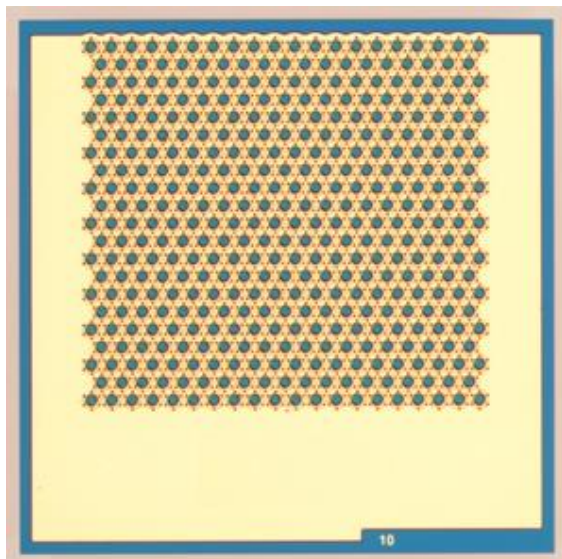
SEOUL SEMICONDUCTOR

2W 940nm VCSELs

RS0940-400IA-S

2019. 11. 22 Rev01

1. Specifications



Unit : mm
 Size : 0.915 x 0.915
 Chip : top side view
 Cathode : backside
 Thickness : 0.15 ± 0.02

Electrical and optical characteristics

(T = 25°C unless otherwise stated)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Output Power	P_o		2		W	1ms, 5% duty pulse
Threshold current	I_{th}		0.5	0.6	mA	
Operating voltage	V_o		2.1	2.3	V	P_o
Series resistance	R_s		0.3	0.5	Ω	P_o
Operating current	I_o		2.5	3.0	A	P_o
Wavelength	λ	930	940	950	nm	P_o
Spectral width	$\Delta\lambda$		2.0	3.0	nm	P_o , FWHM
Slope efficiency	η_d	0.9			W/A	
Peak temperature dependence	$\Delta\lambda/\Delta T$		0.07		nm/°C	T = 0 to 60°C

Absolute maximum ratings

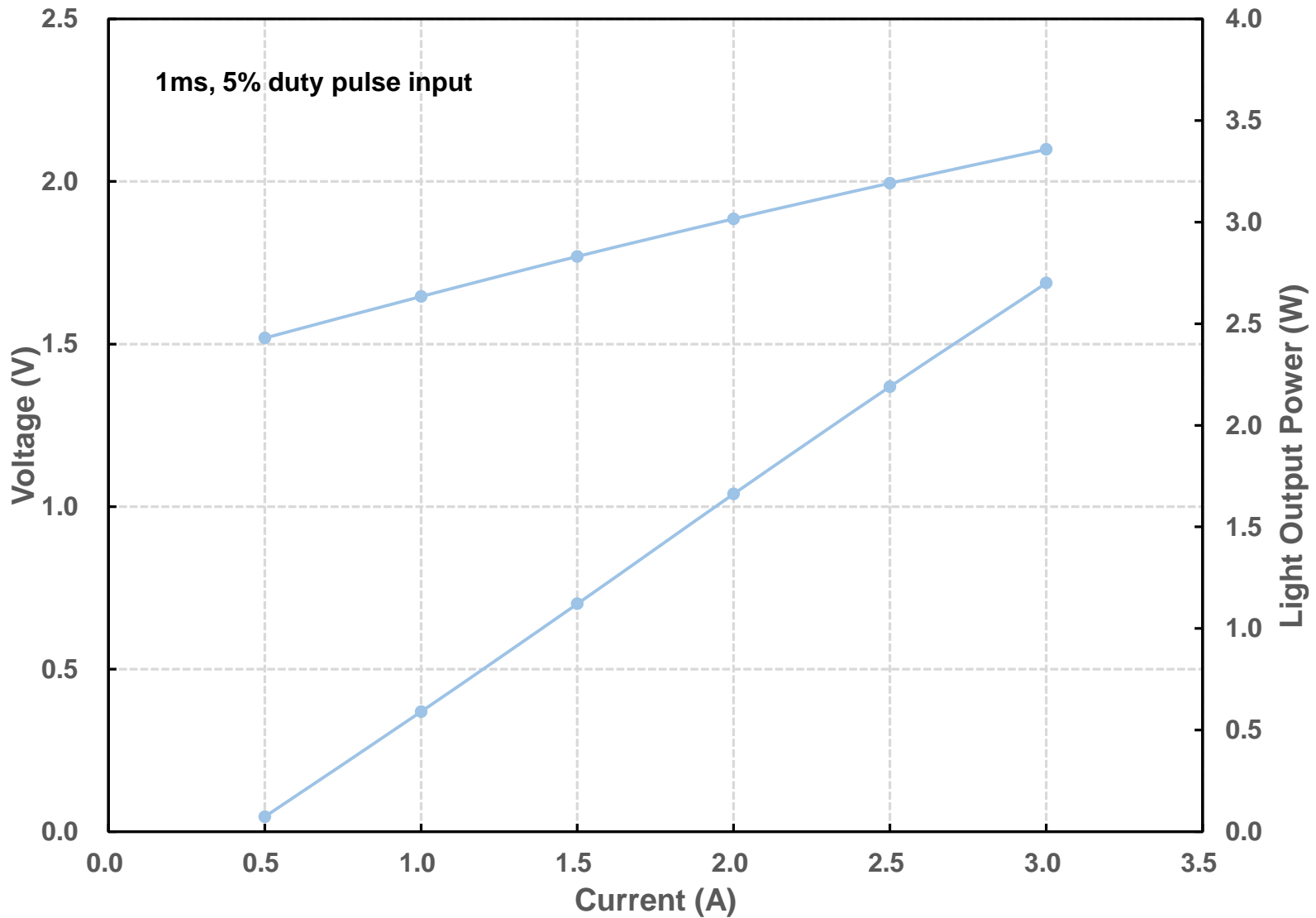
(T = 25°C unless otherwise stated)

Parameter	Symbol	Rating	Unit	Notes
Forward current	I_f	4	A	Max. 10 sec
Reverse voltage	V_r	2	V	
Operating temperature	T_{op}	0 ~ 60	°C	
Storage temperature	T_{stg}	-40 ~ 85	°C	
Reflow temperature	T_{ref}	260	°C	Max. 10 sec. 2 mm from case

Notice

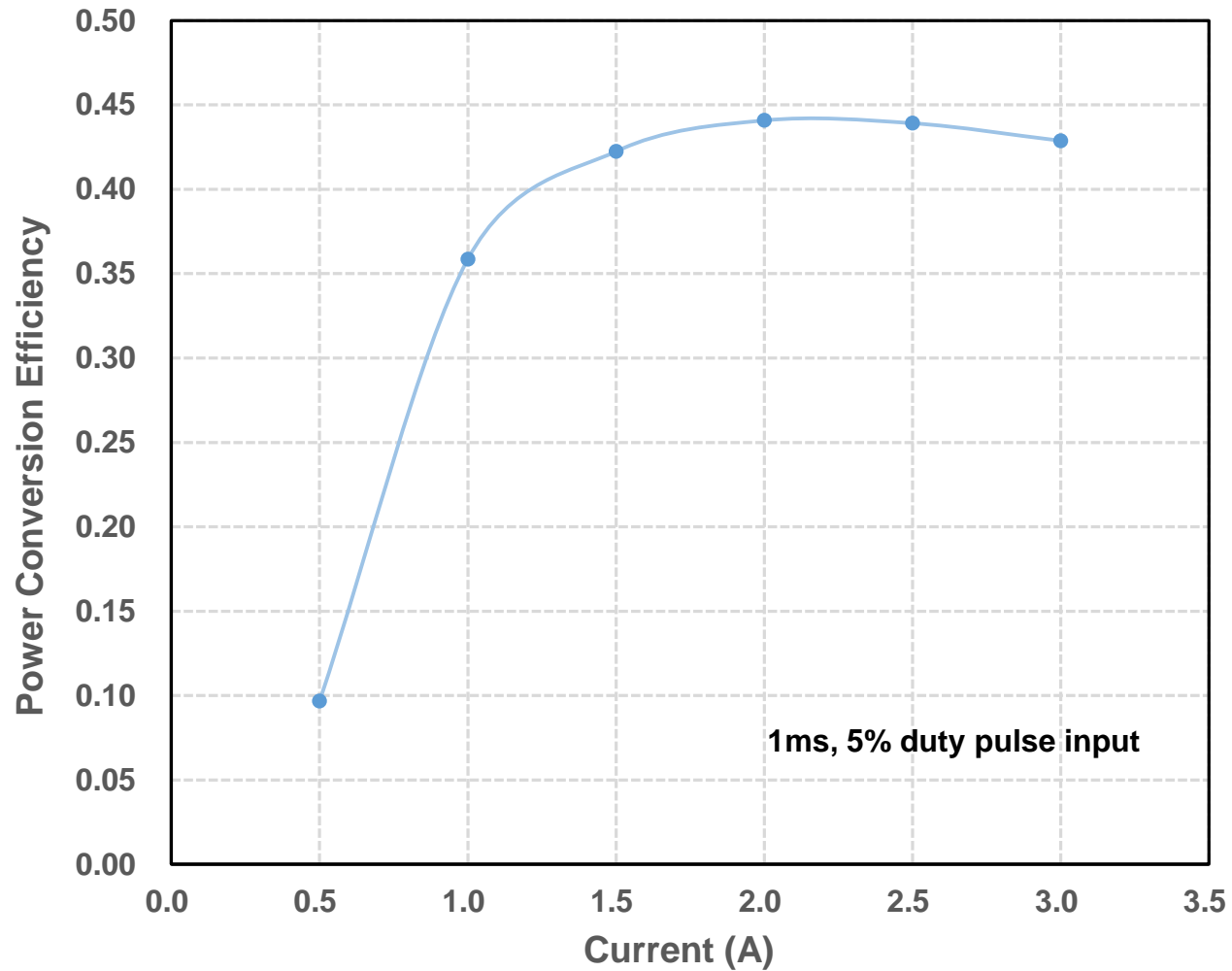
Conditions exceeding those listed may cause permanent damage to the device. Devices subjected to conditions beyond the limits specified for extended periods of time may adversely affect reliability.

2. L-I-V (25°C)



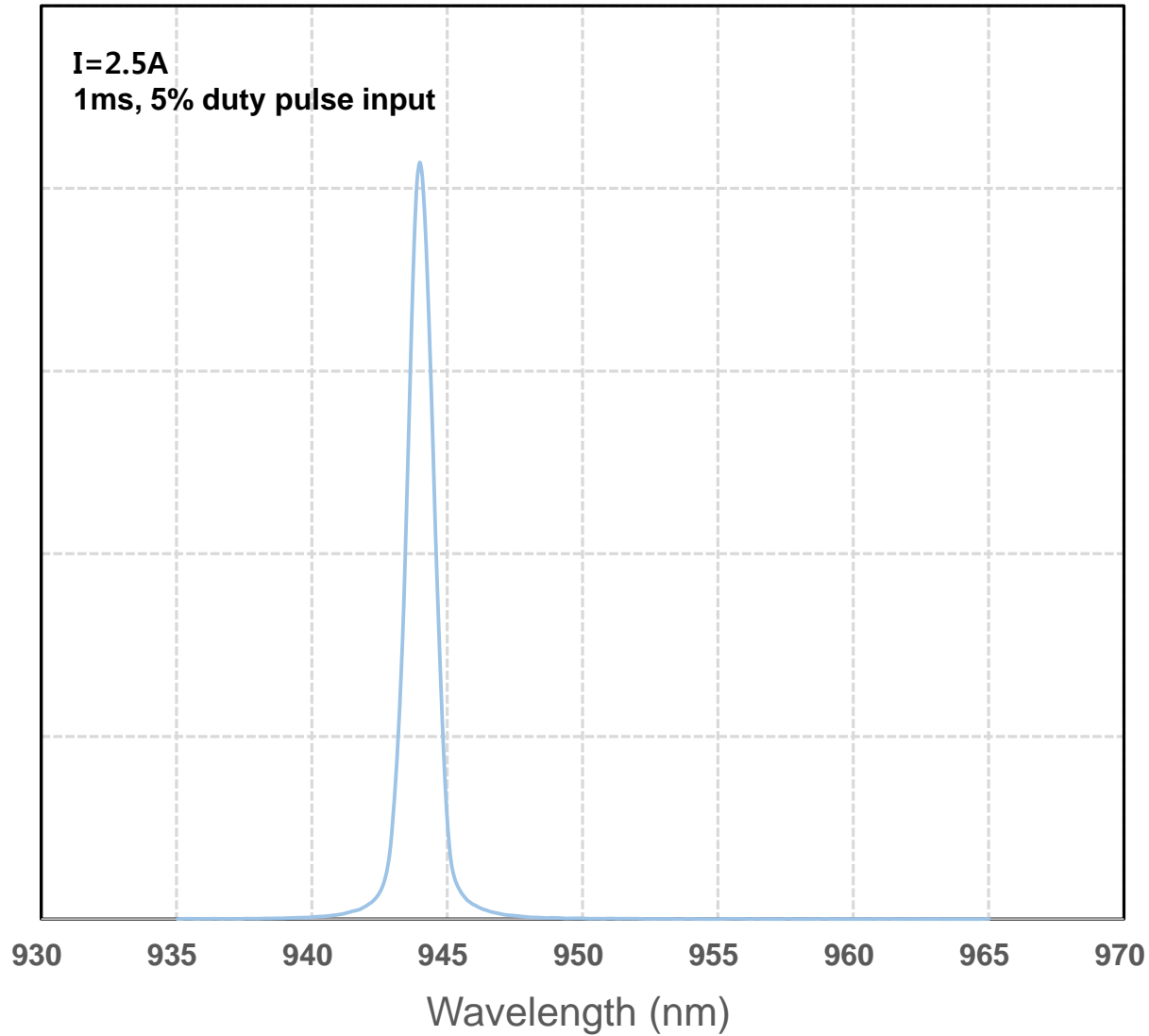
($T = 25^{\circ}\text{C}$ unless otherwise stated)

3. WPE vs Current (25°C)



(T = 25°C unless otherwise stated)

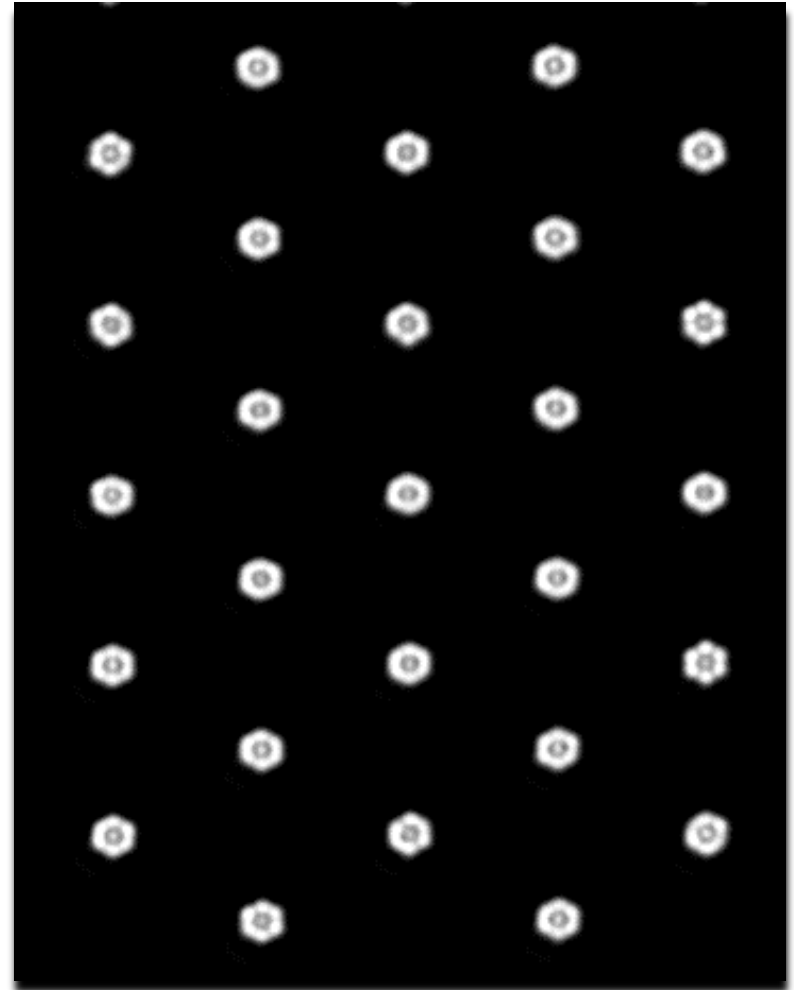
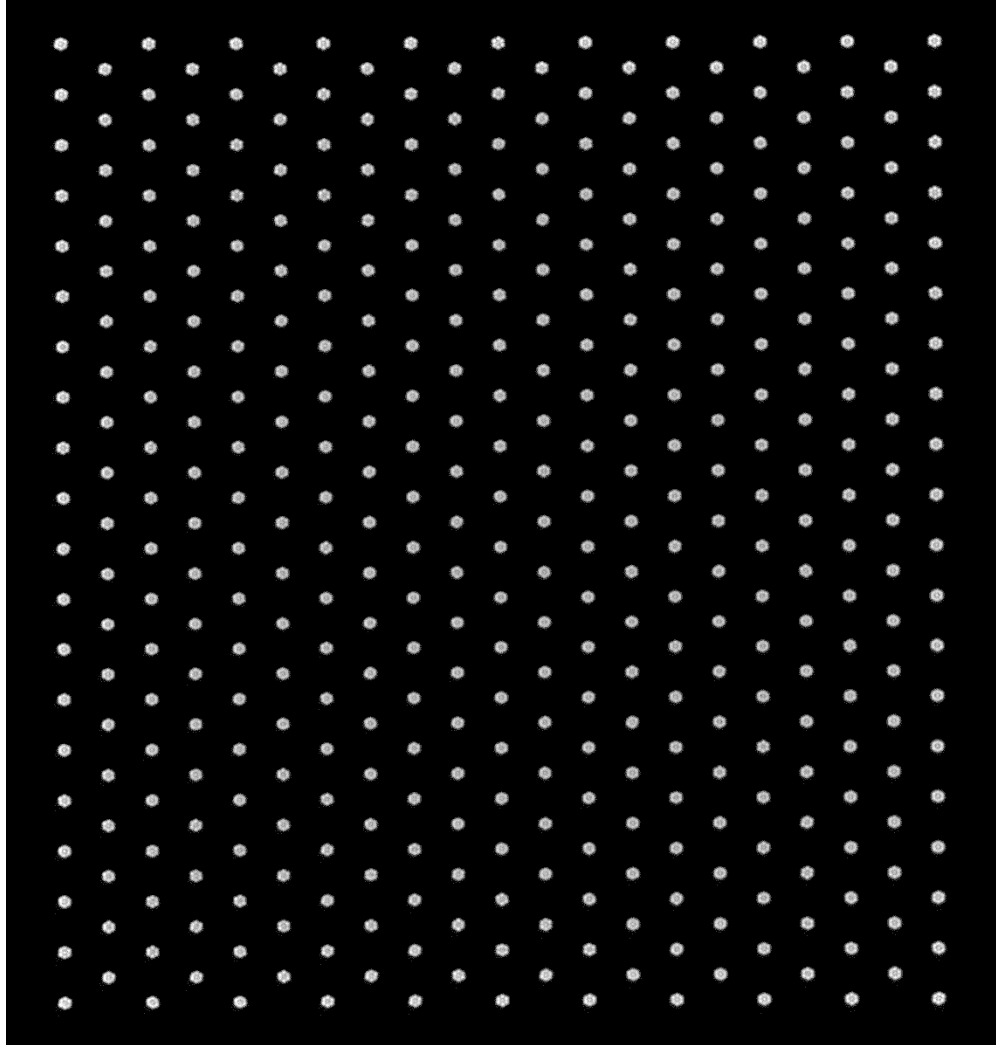
4. Spectrum vs Current (25°C)



($T = 25^{\circ}\text{C}$ unless otherwise stated)

5. Near-field vs Current (25°C)

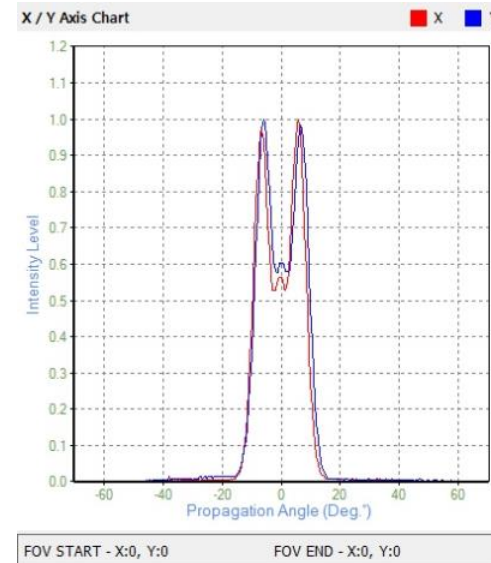
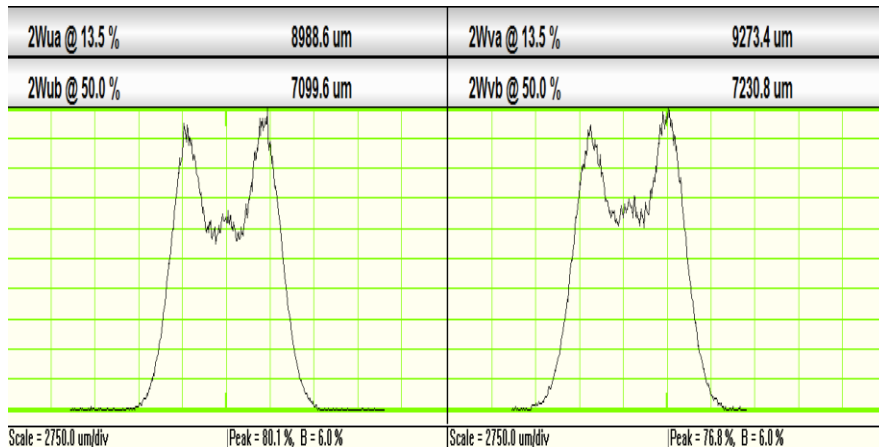
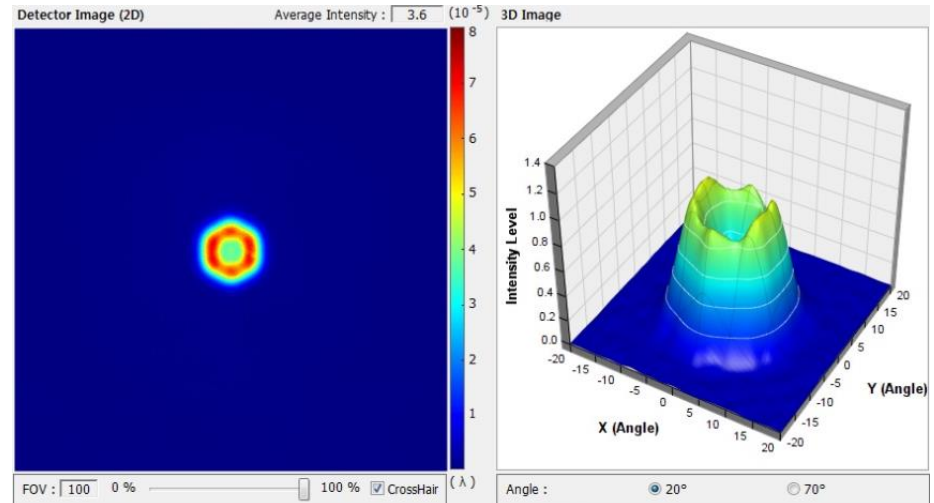
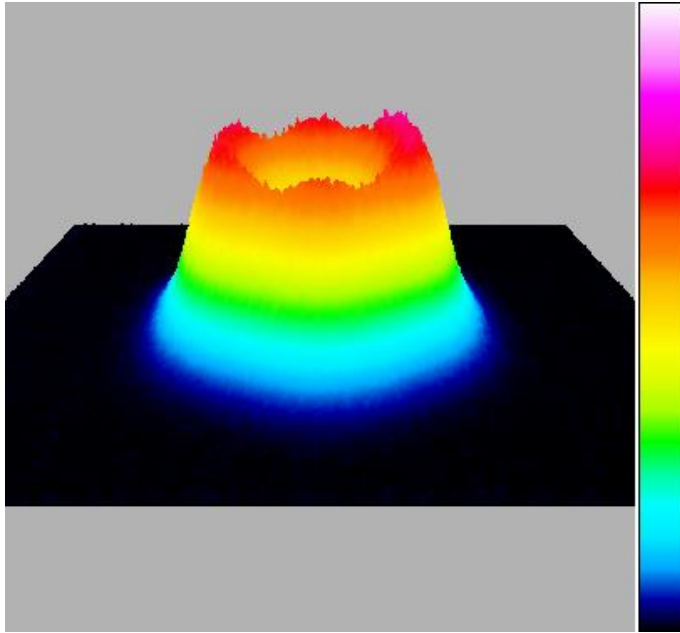
I=2.5A
1ms, 5% duty pulse input



($T = 25^{\circ}\text{C}$ unless otherwise stated)

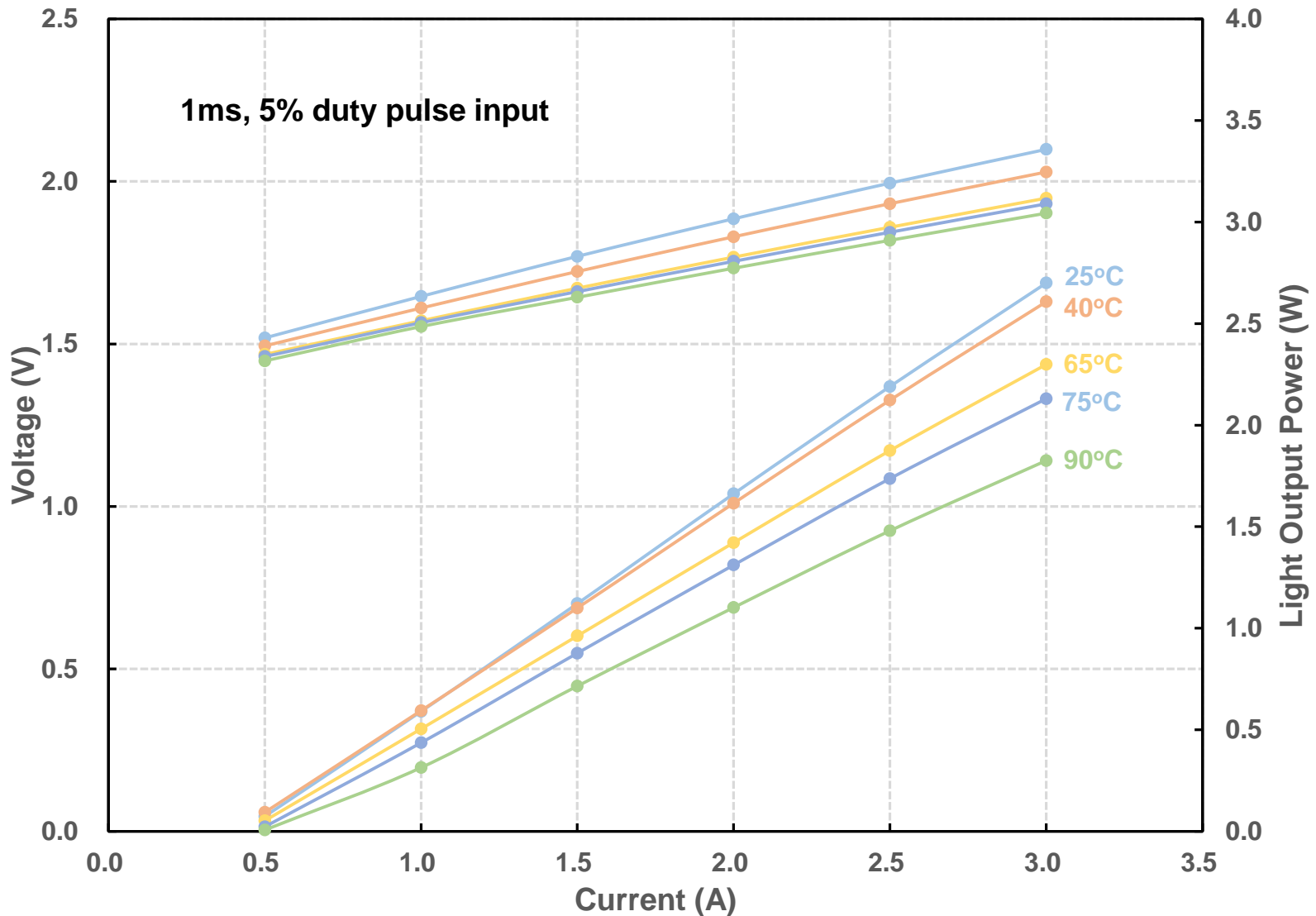
6. Far-field vs Current (25°C)

I=2.5A
1ms, 5% duty pulse input



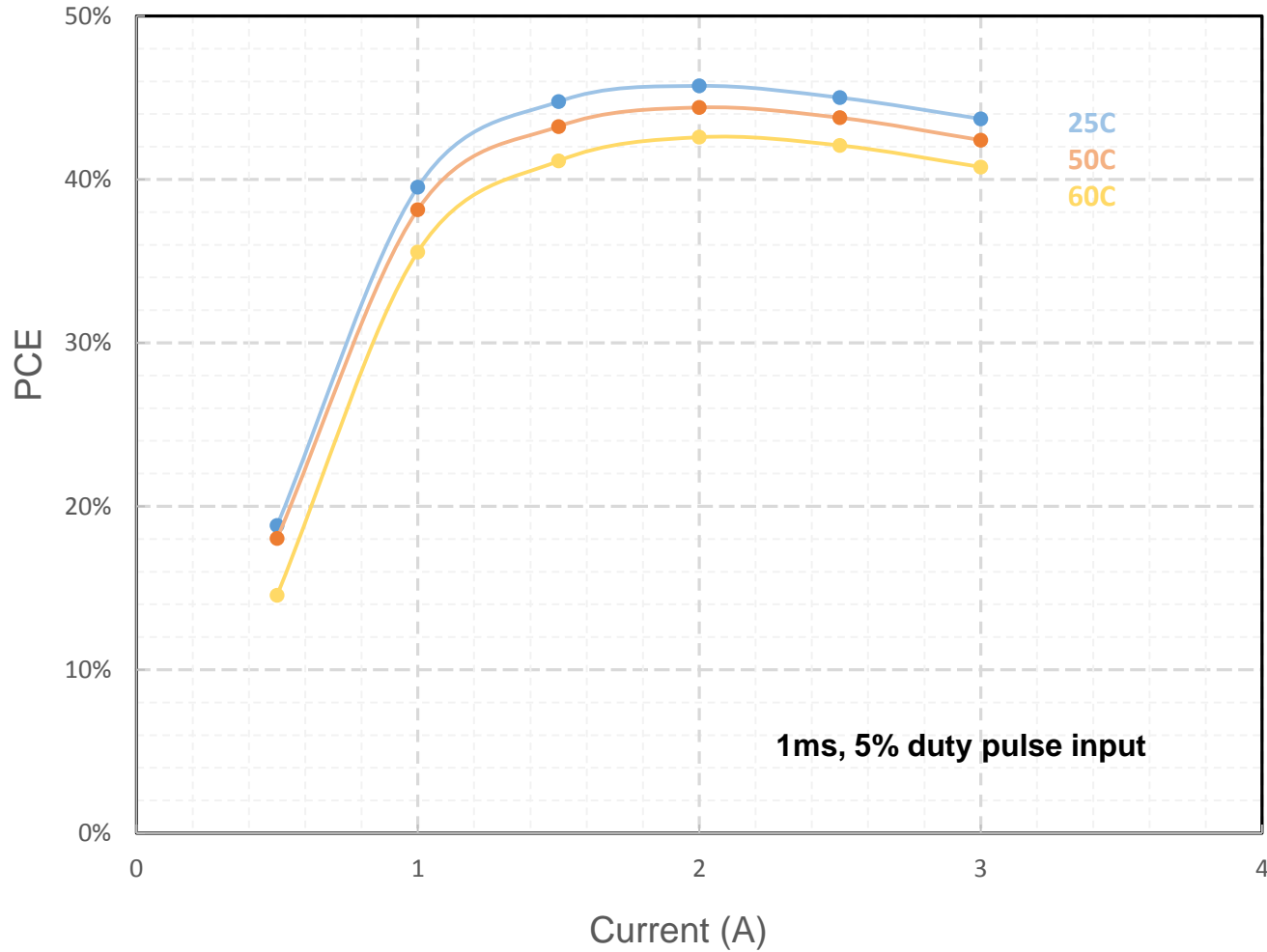
(T = 25°C unless otherwise stated)

7. L-I-V vs Temperature



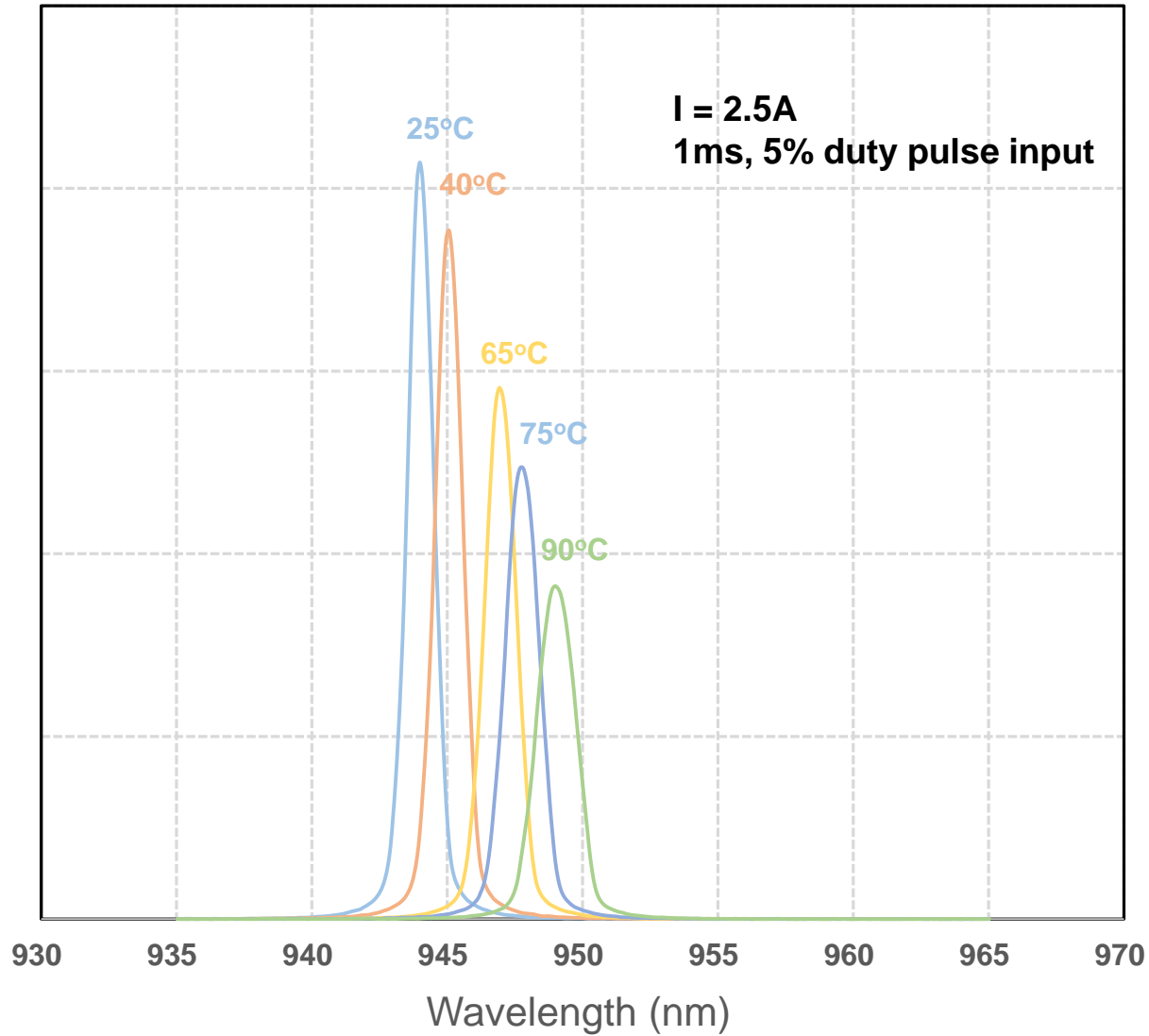
(T = 25°C unless otherwise stated)

8. WPE vs Current (25, 50, 60°C)



(T = 25°C unless otherwise stated)

9. Spectrum vs Temperature



(T = 25°C unless otherwise stated)



THANK YOU!

www.seoulsemicon.com