

Technical Information

Reference Purpose Only.

Model

NDG7D75E

Features

- **Optical Output Power : 1500mW**
- **Multi Transverse Mode**
- **Can Type : ϕ 9.0mm Floating Mounted with Zener Diode**

Specifications

Reference Purpose Only.

Absolute Maximum Ratings

Item	Symbol	Absolute Maximum Ratings	Unit
Forward Current (Tc=25°C)	If	2.3	A
Allowable Reverse Current(Tc=25°C)	Ir(LD)	85	mA
Storage Temperature	Tstg	-40 ~ 85	°C
Operating Case Temperature	Tc	0 ~60	°C

Initial Electrical/Optical Characteristics

(Tc=25°C)

Item	Condition	Symbol	Min.	Typ.	Max.	Unit	
Optical Output Power	If=1.9A	Po	0.7	1.5	-	W	
Dominant Wavelength	If=1.9A	λ_d	518	525	532	nm	
Threshold Current	CW	Ith	150	260	500	mA	
Slope Efficiency	CW	η	0.5	1.0	1.4	W/A	
Operating Voltage	If=1.9A	Vop	4.0	4.7	5.5	V	
Beam Divergence *	Parallel	If=1.9A	$\theta_{//}$	5	8.2	15	°
	Perpendicular	If=1.9A	θ_{\perp}	30	42	50	°
Beam Point Accuracy	Perpendicular	If=1.9A	$\Delta\theta_{\perp}$	-5.0	-	5.0	°

() are reference figures.

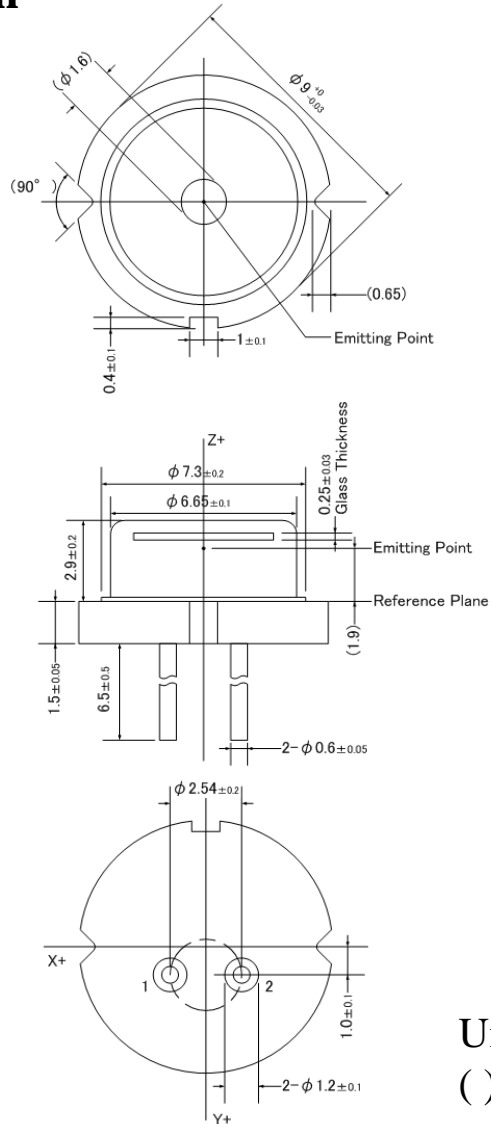
* Full angle at $1/e^2$ from peak intensity.

All figures in this specification are measured by Nichia's method and may contain measurement deviations.

Outline

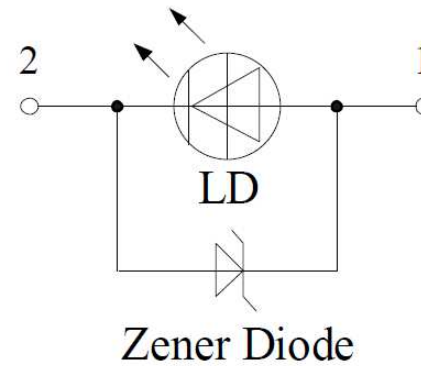
Reference Purpose Only.

Dimension



Unit (mm)
() are reference figures

Pin Connection

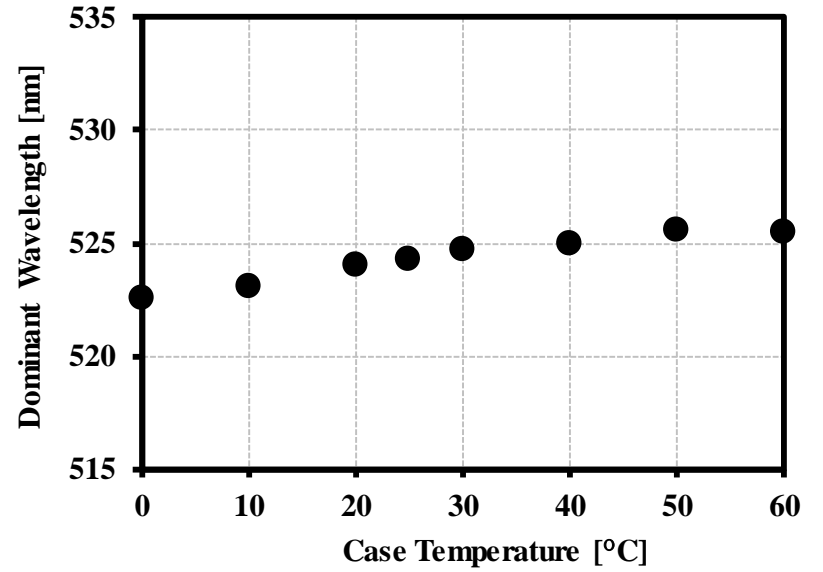
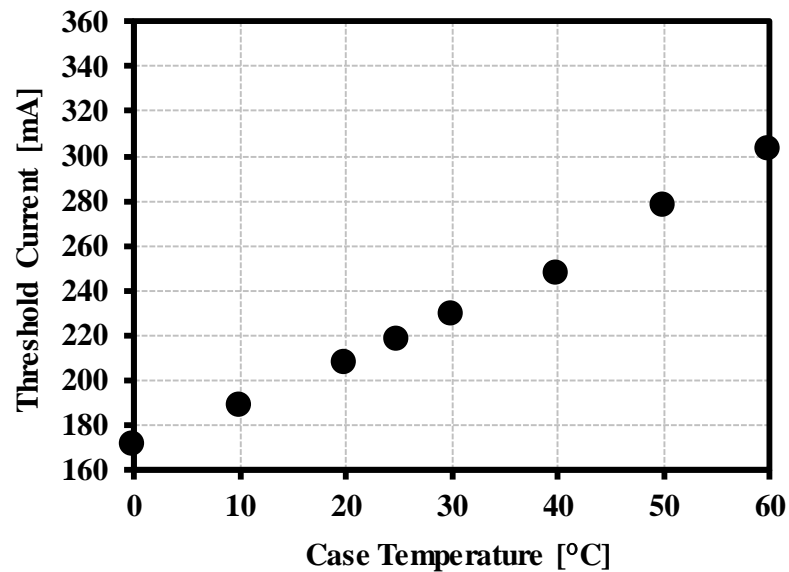
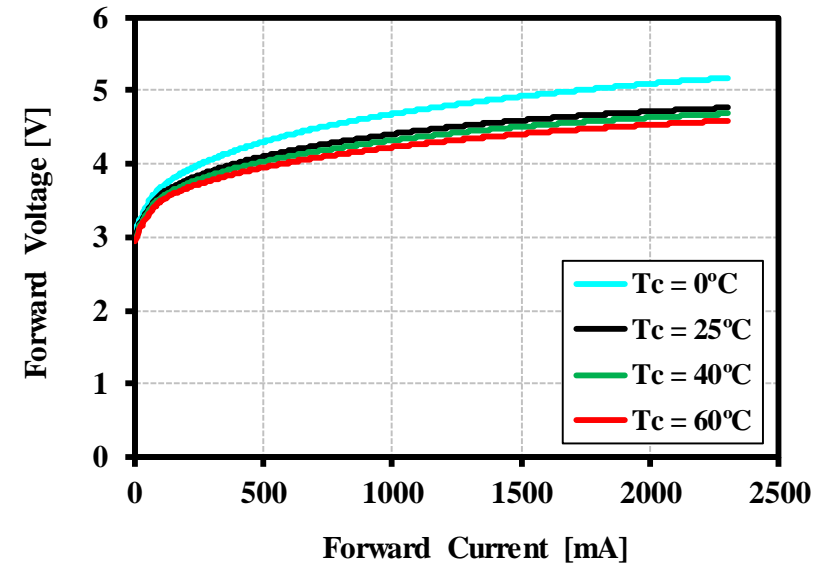
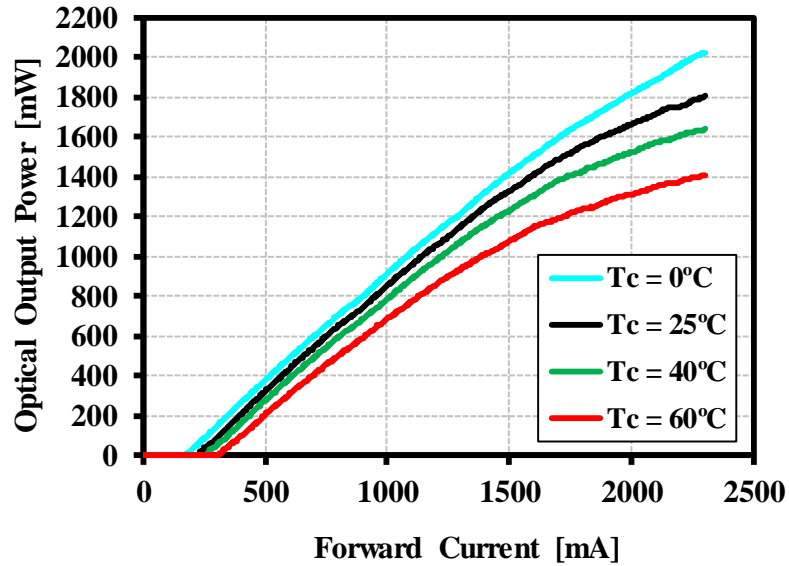


1. LD Anode
2. LD Cathode

This model has no Photo Diode.
This model has a Zener Diode built in as a protection circuit against static electricity.

Typical Optical / Electrical Characteristics

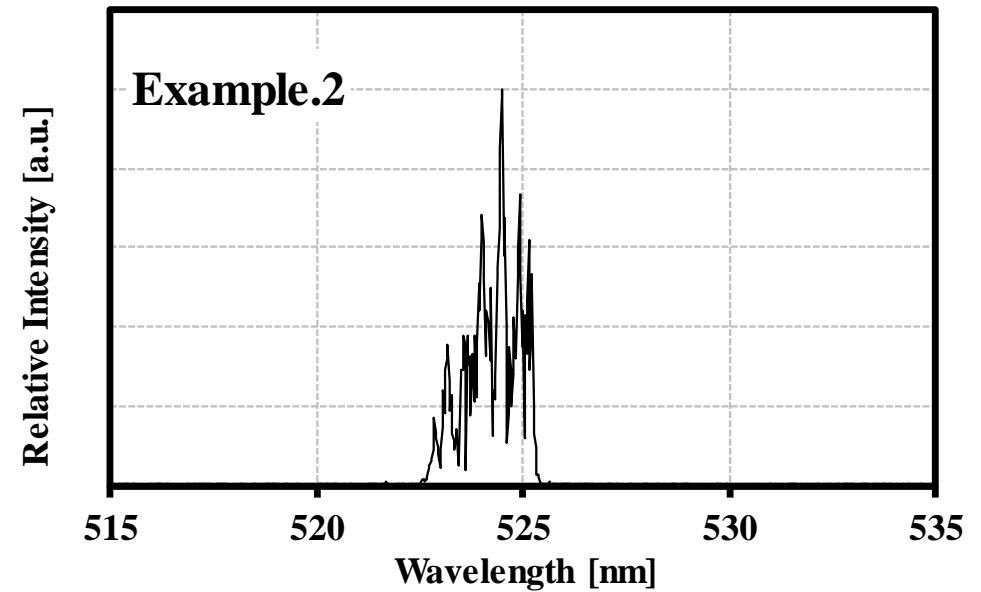
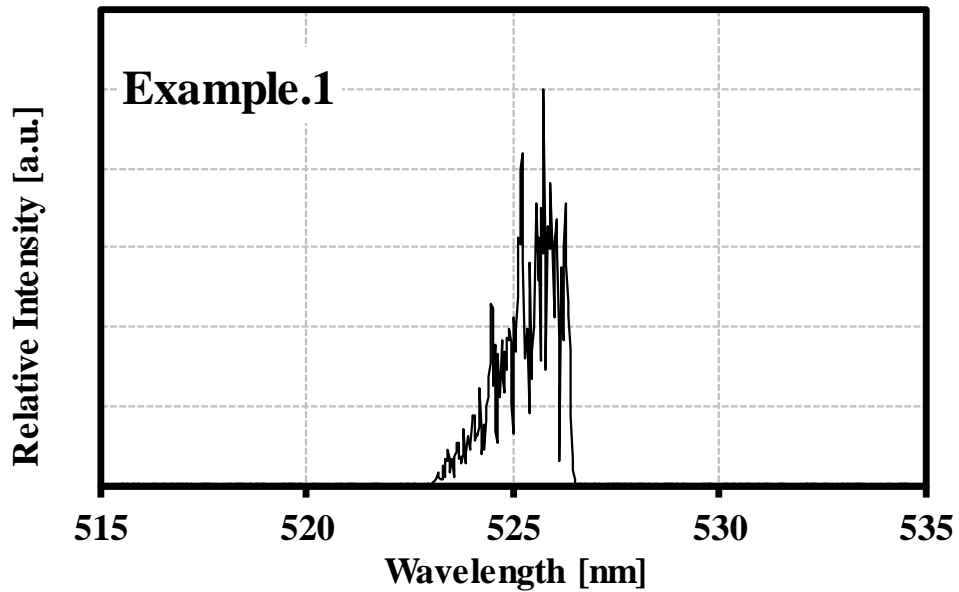
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Spectrum (Typical Characteristics)

Reference Purpose Only.

Conditions : Case Temperature = 25°C
Forward Current = 1.9A, CW



Spectrum (Forward Current Dependence)

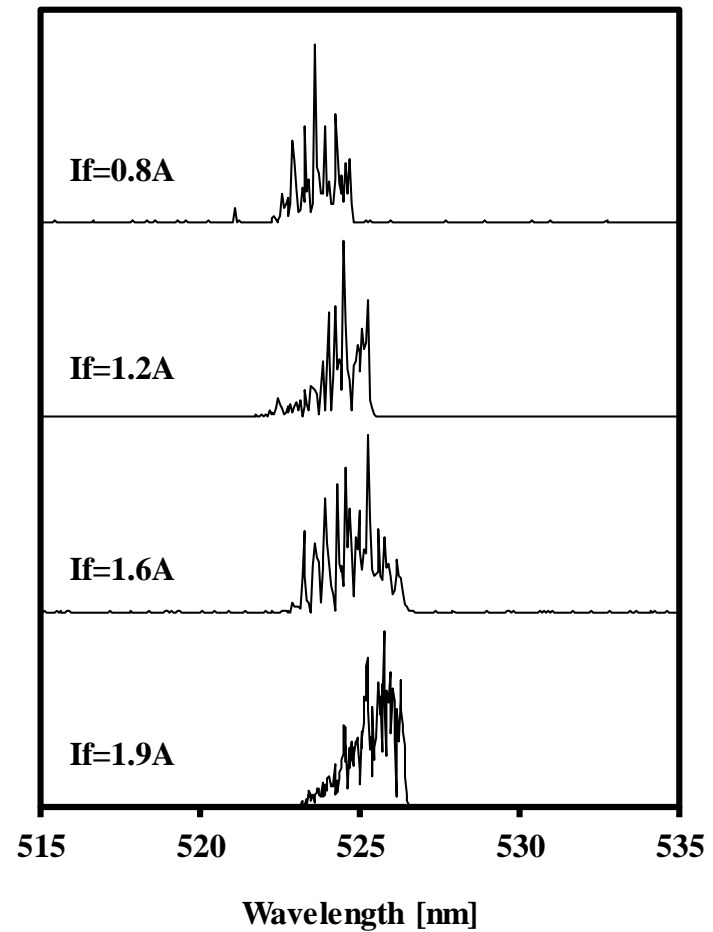
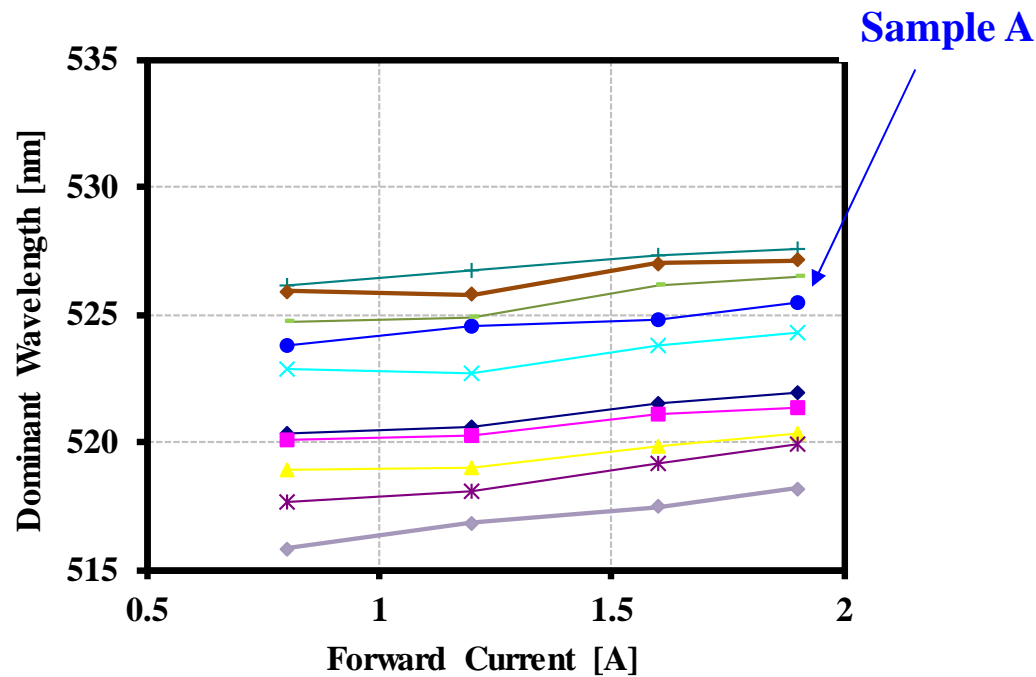
Reference Purpose Only.

Conditions : Case Temperature = 25°C

Forward Current = 0.8A, 1.2A, 1.6A, 1.9A, CW

N=10

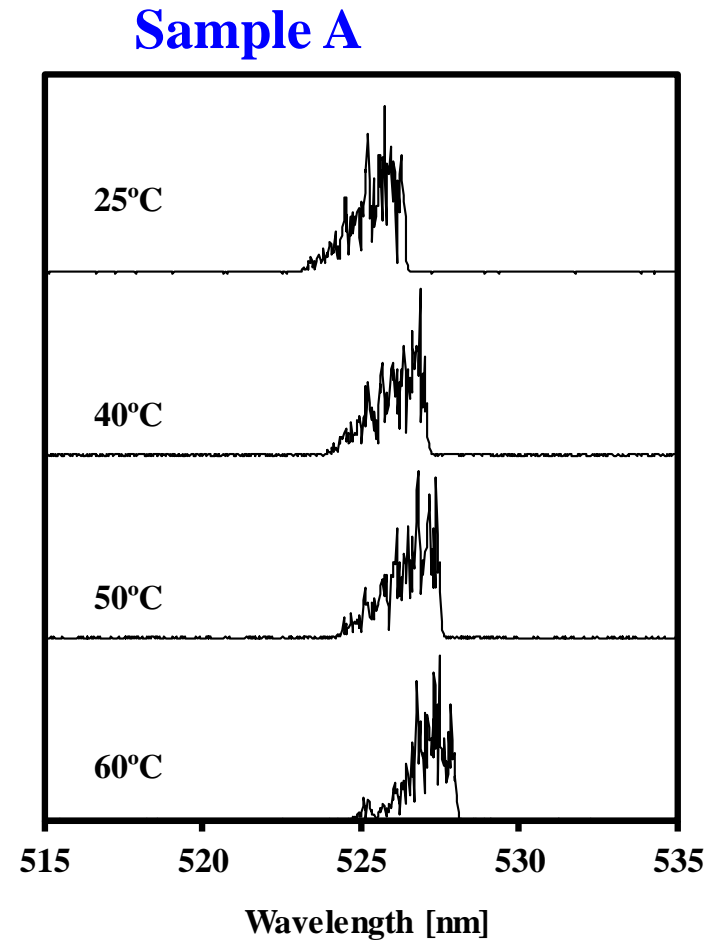
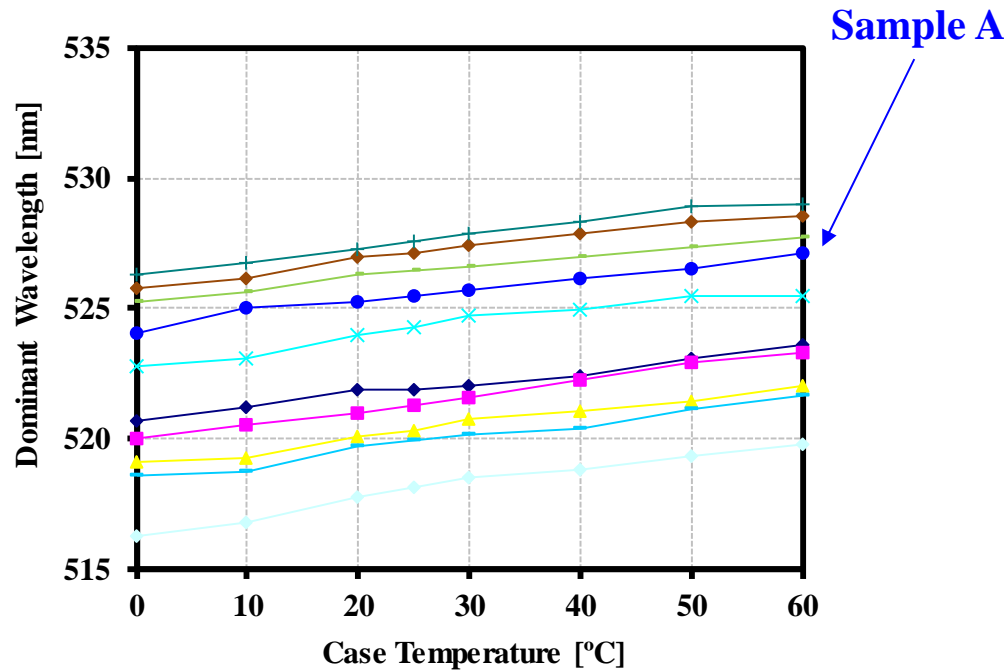
Sample A



Spectrum (Case Temperature Dependence)

Reference Purpose Only.

Conditions : Case Temperature = 0, 10, 20, 25, 30, 40, 50, 60°C
Forward Current = 1.9A, CW
N=10



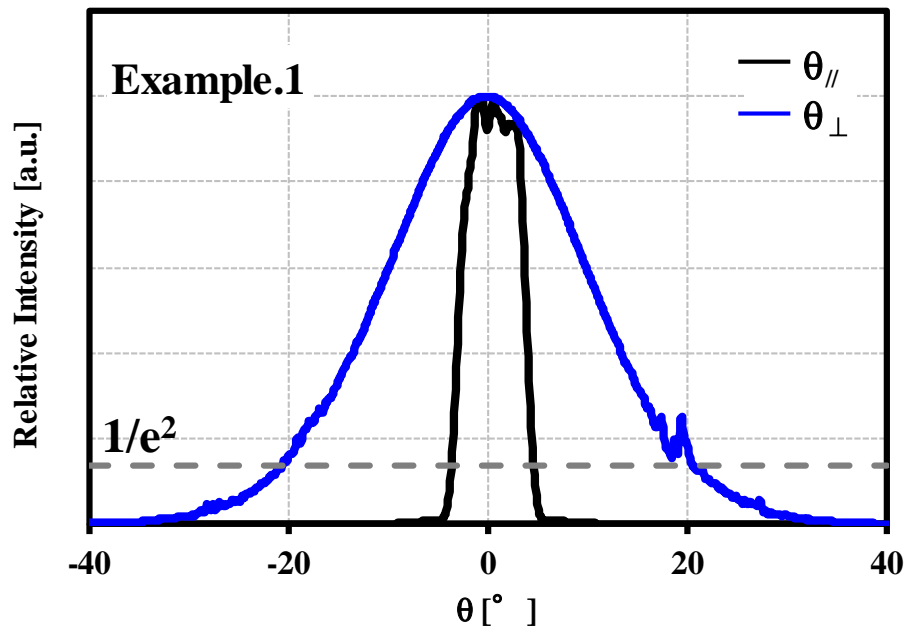
Far Field Pattern (Typical Characteristics)

Reference Purpose Only.

Conditions : Case Temperature = 25°C
 Forward Current = 1.9A, CW

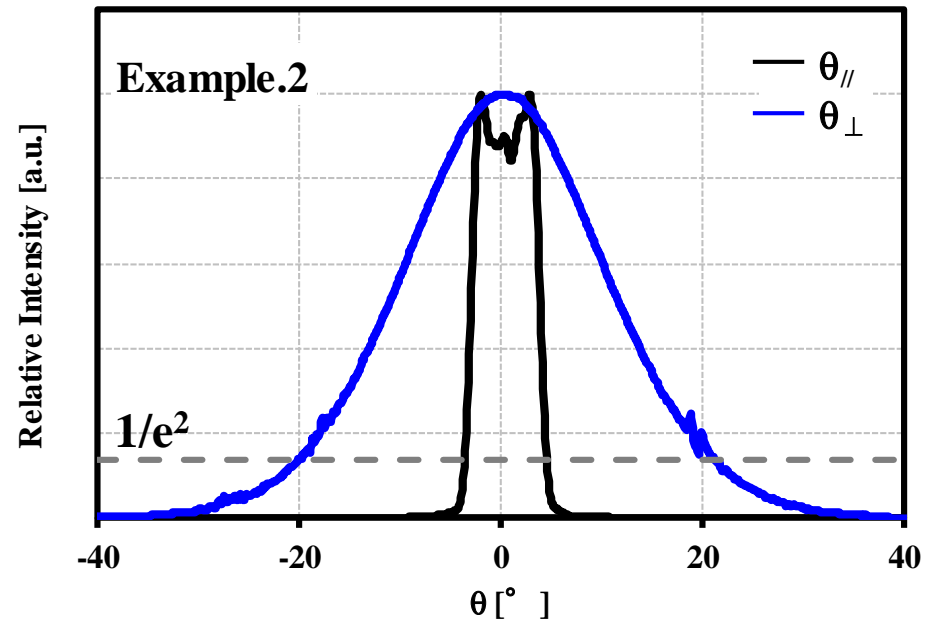
Example 1

$\theta_{//} (1/e^2) : 8.3 [^\circ]$
 $\theta_{\perp} (1/e^2) : 41.3 [^\circ]$



Example 2

$\theta_{//} (1/e^2) : 8.1 [^\circ]$
 $\theta_{\perp} (1/e^2) : 41.5 [^\circ]$



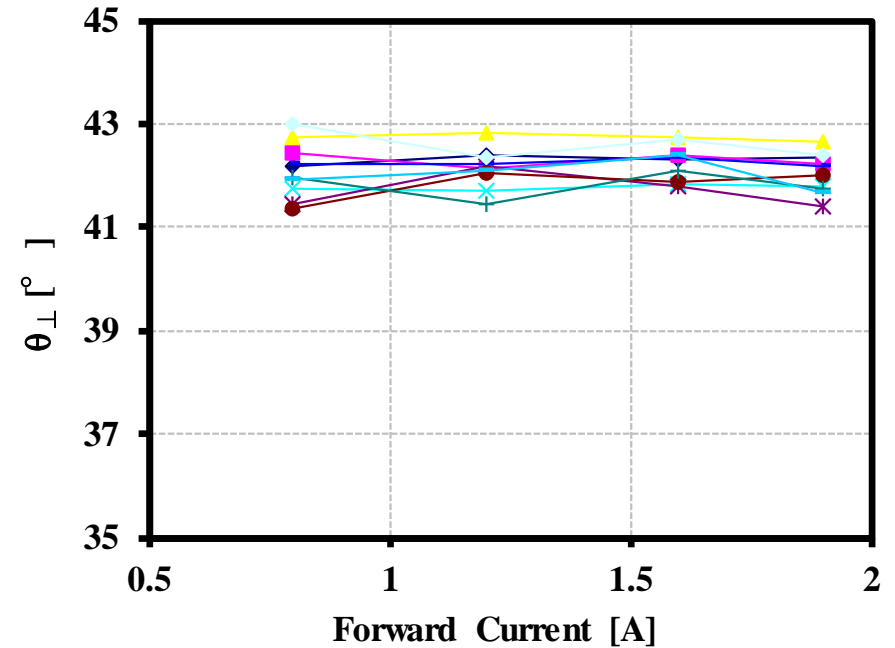
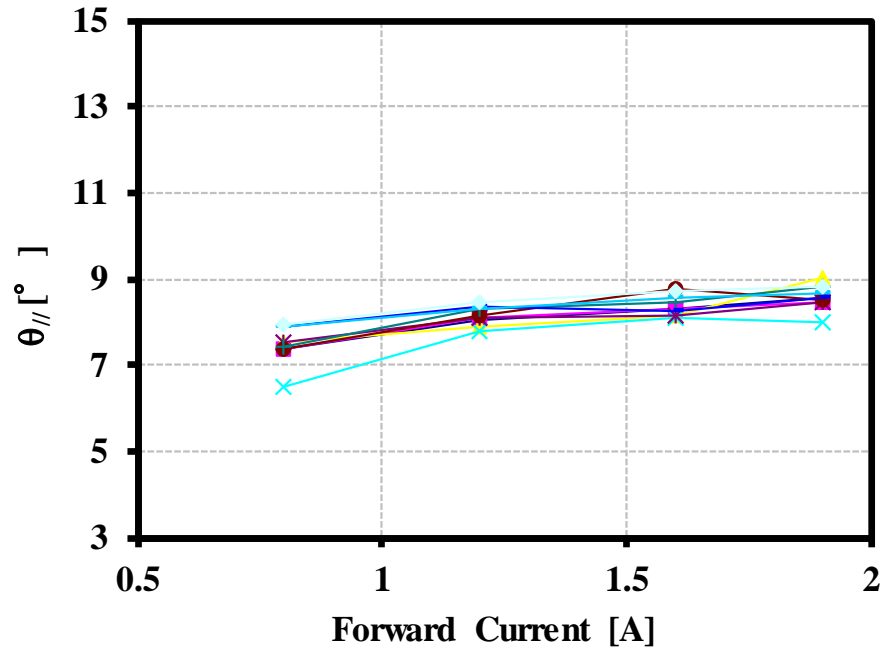
Far Field Pattern (Forward Current Dependence)

Reference Purpose Only.

Conditions : Case Temperature = 25°C

Forward Current = 0.8A, 1.2A, 1.6A, 1.9A, CW

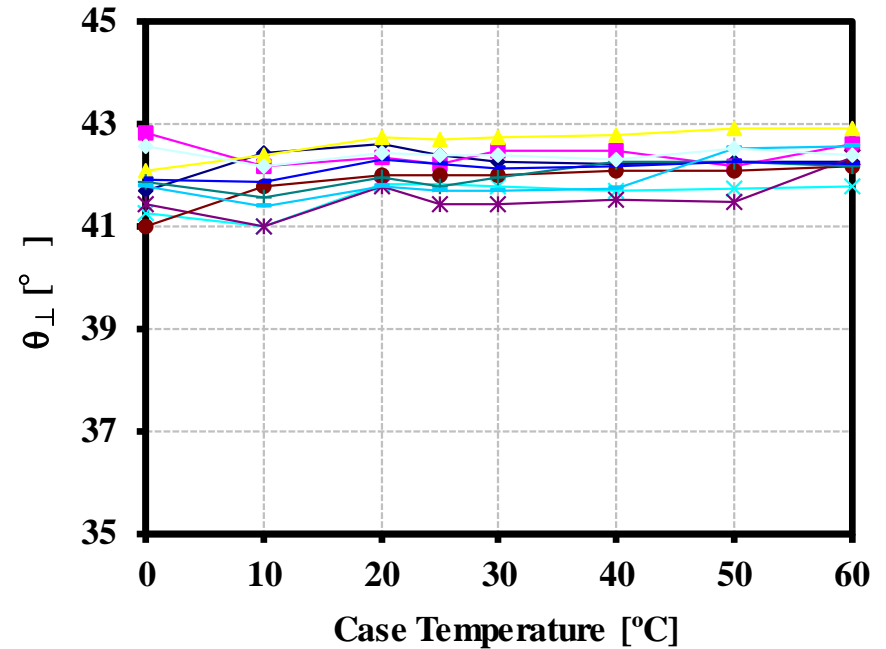
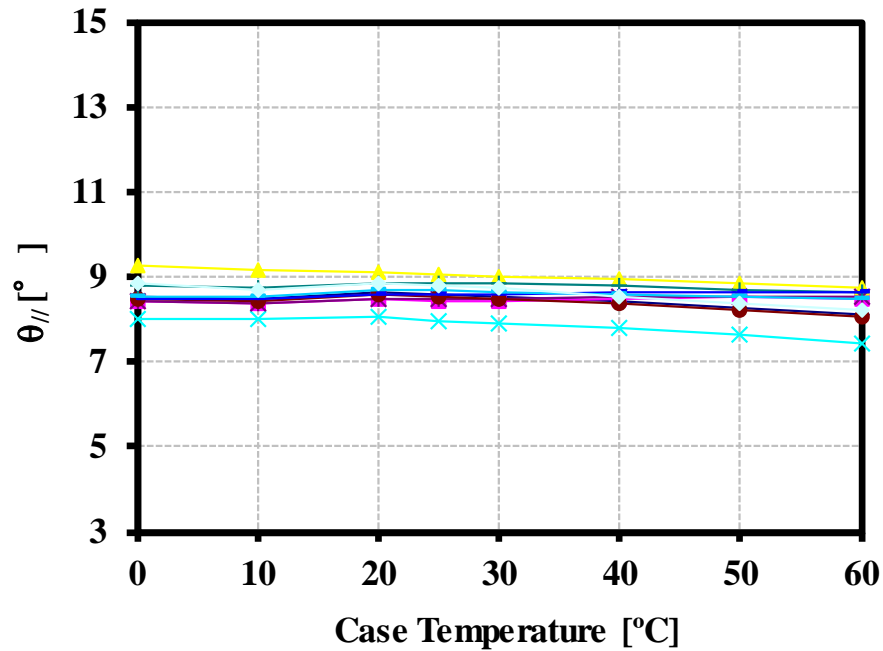
N=10



Far Field Pattern (Case Temperature Dependence)

Reference Purpose Only.

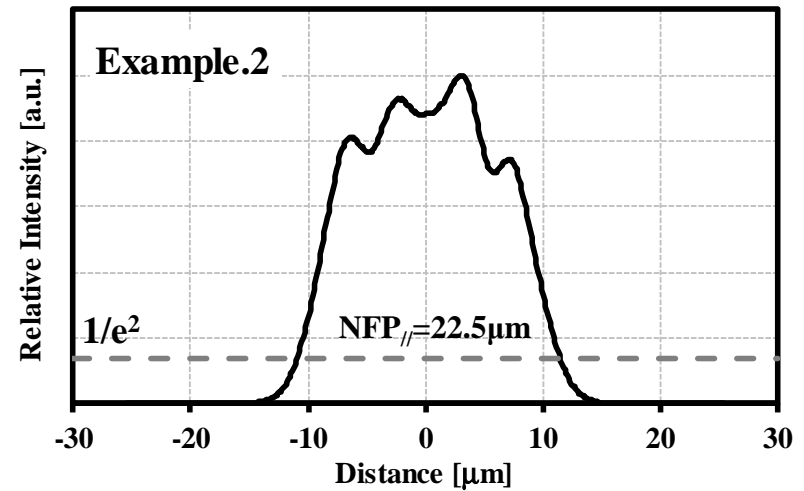
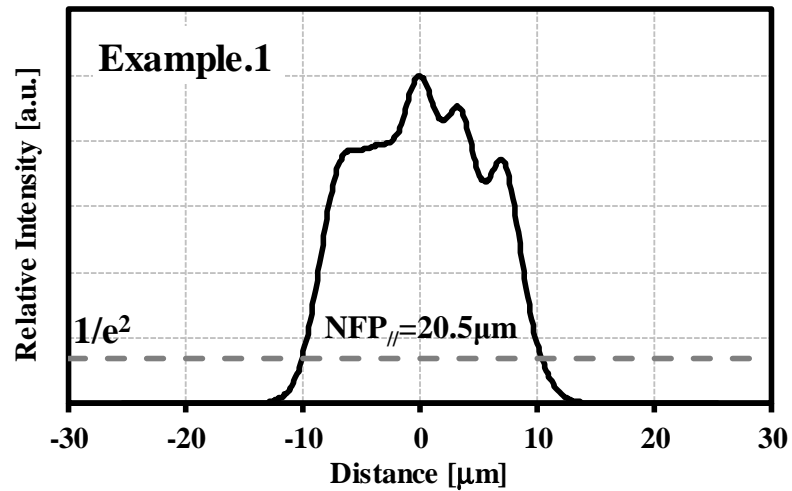
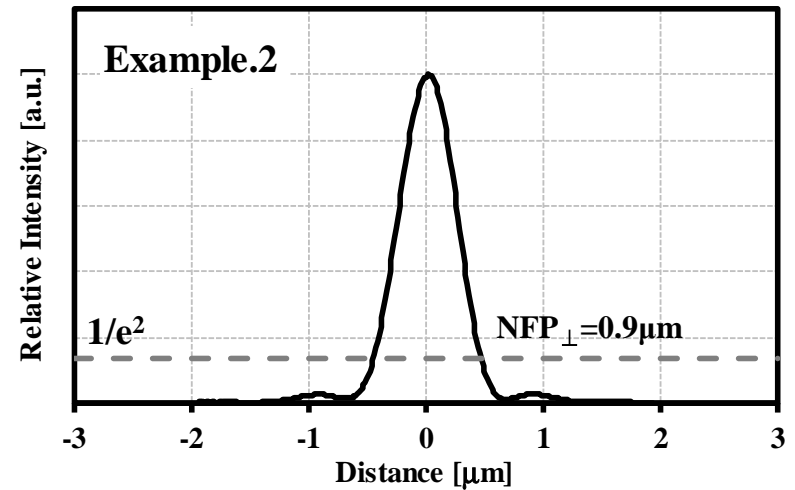
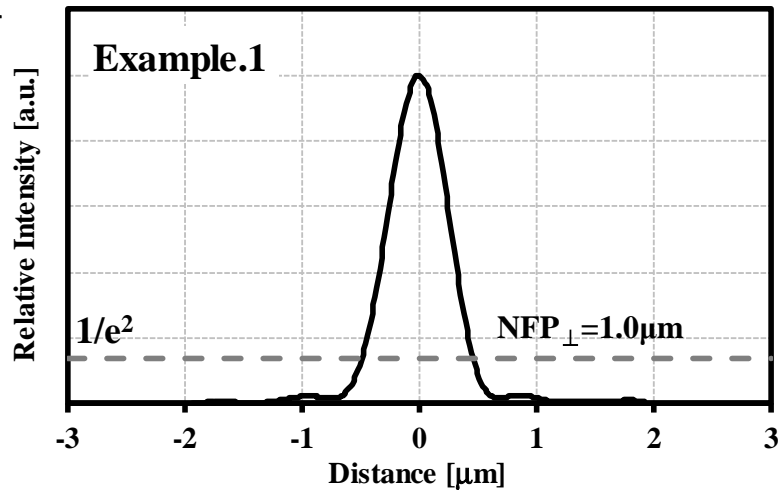
Conditions : Case Temperature = 0, 10, 20, 25, 30, 40, 50, 60°C
Forward Current = 1.9A, CW
N=10



Near Field Pattern (Typical Characteristics)

Reference Purpose Only.

Conditions : Case Temperature = 25°C
Forward Current = 1.9A, CW

NFP_{//}

NFP_⊥


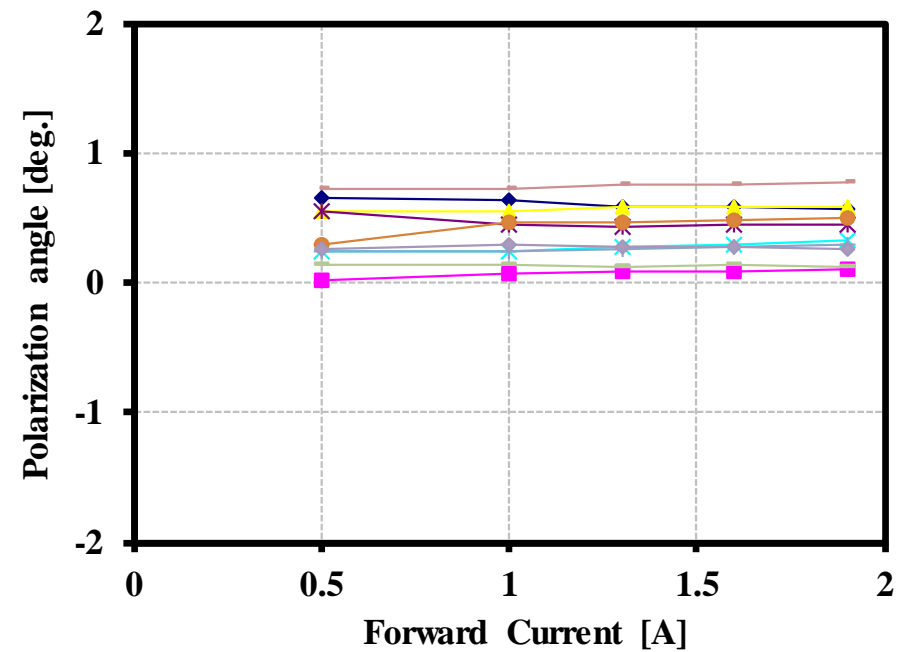
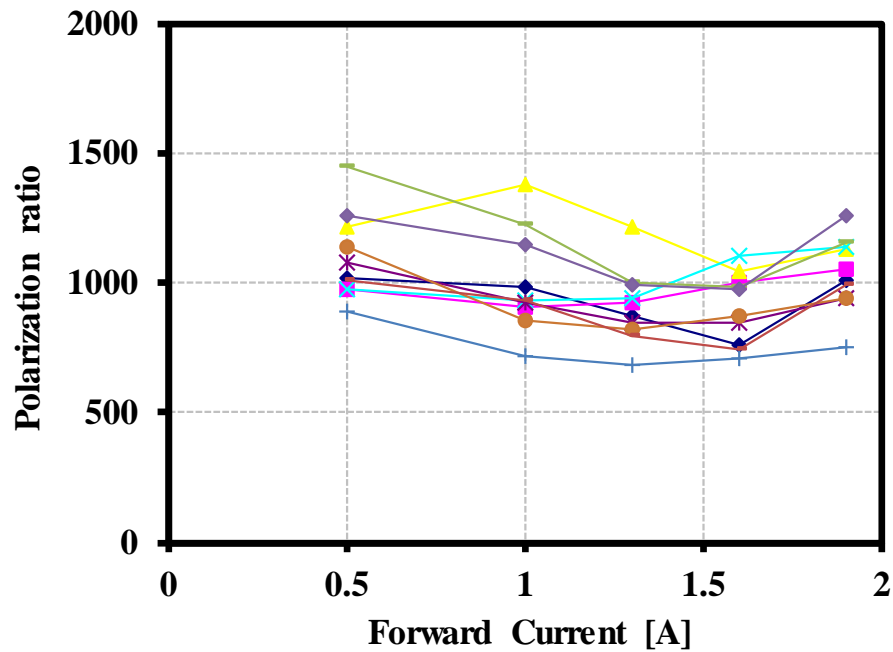
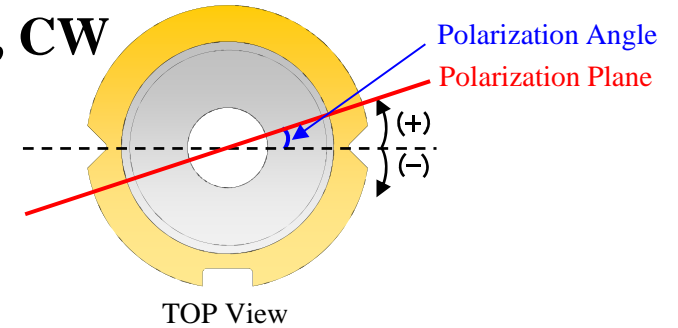
Polarization

Reference Purpose Only.

Conditions : Case Temperature = 25°C, CW, N=10

Forward Current = 0.5A, 1.0A, 1.3A, 1.6A, 1.9A, CW

Numerical Aperture=0.5



Life Test

Reference Purpose Only.

Conditions : Case Temperature = 25°C
Forward Current = 1.9A, CW, ACC
Tested Duration = 2000hr, N= 8
Definition of Lifetime : $Pop_{initial} \times 0.5$

