

# **KLC310FL01WW**

## **Technical Data**

**Mar. 18th, 2024**

Laser & GaN Technology Business Group  
Nuvoton Technology Corporation Japan

- **Specification**
- **Outline, Pin connection**
- **Technical data**
  - **L-I, V-I**
  - **Wavelength**
  - **Distribution**
  - **FFP**
  - **Aging test**
  - **ESD failure level**

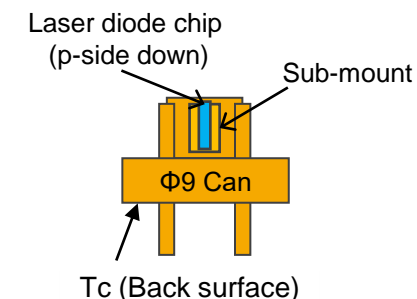
### ■ Features

- Multi transverse mode
- $\Phi 9.0\text{mm}$  TO-CAN package
- Emitter size :  $15\mu\text{m} \times 1\mu\text{m}$



### ■ Absolute maximum ratings

Item	Symbol	Value	Unit	Condition
Optical output power	$P_{max}$	600	mW	CW
Reverse voltage	$V_r$	5.0	V	
Operating temperature (Case)	$T_c$	+20 to +30	$^{\circ}\text{C}$	-
Storage temperature	$T_{stg}$	-40 to +85	$^{\circ}\text{C}$	-



### ■ Electrical and optical characteristics

[ Conditions ] CW,  $T_c=25\pm 3\text{ }^{\circ}\text{C}$

Item	Symbol	Value			Unit	Condition	
		Min	Typ.	Max			
Threshold current	$I_{th}$	-	340	500	mA	-	
Operating current	$I_{op}$	420	620	820	mA	$P_o=500\text{mW}$	
Operating voltage	$V_{op}$	-	5.0	5.5	V	$P_o=500\text{mW}$	
Slope efficiency	$S_e$	1.3	1.8	2.4	W/A	$P_o=200\text{-}500\text{mW}$	
Peak wavelength	$\lambda$	370	378	380	nm	$P_o=500\text{mW}$	
Beam divergence <sup>1)</sup>	Parallel	$\theta_h$	10	18	28	deg.	$P_o=500\text{mW}$
	Perpendicular	$\theta_v$	32	39	46	deg.	$P_o=500\text{mW}$
Angle accuracy of beam center	Parallel	$\theta_x$	-3	-	+3	deg.	$P_o=500\text{mW}$
	Perpendicular	$\theta_y$	-3	-	+3	deg.	$P_o=500\text{mW}$

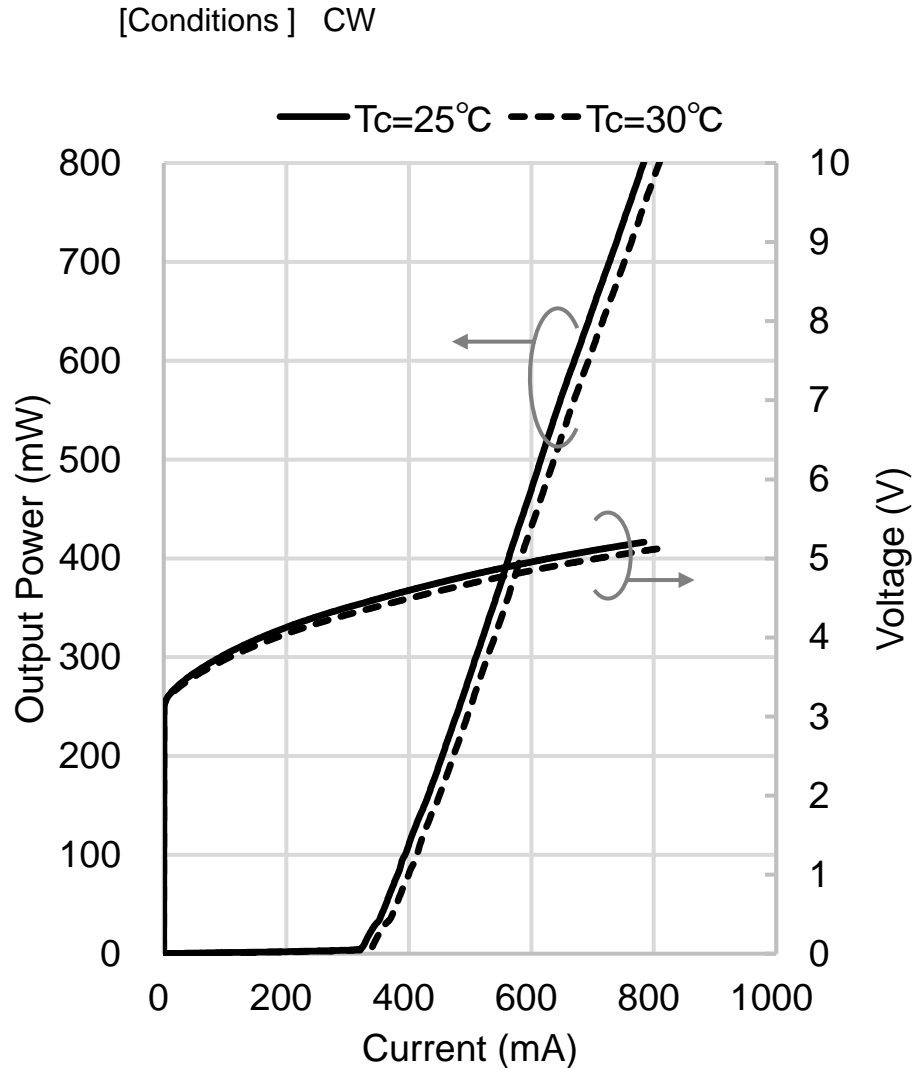
<sup>1)</sup> Full width at  $1/e^2$  of the peak intensity

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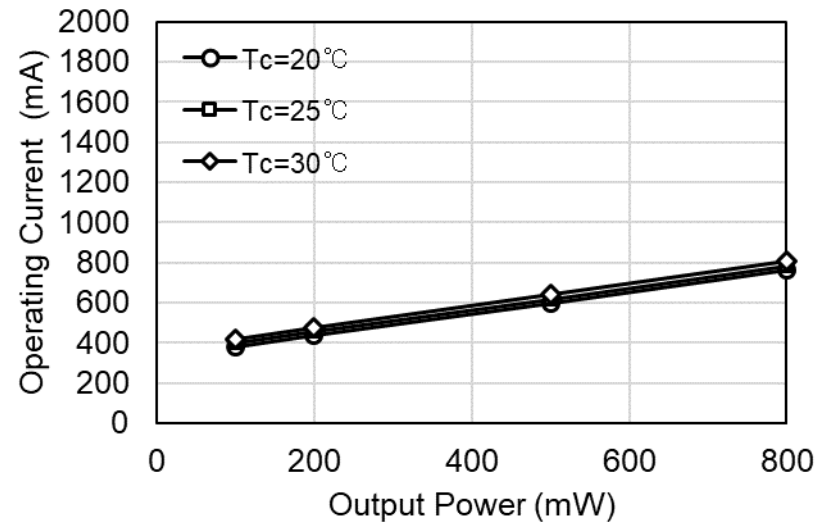
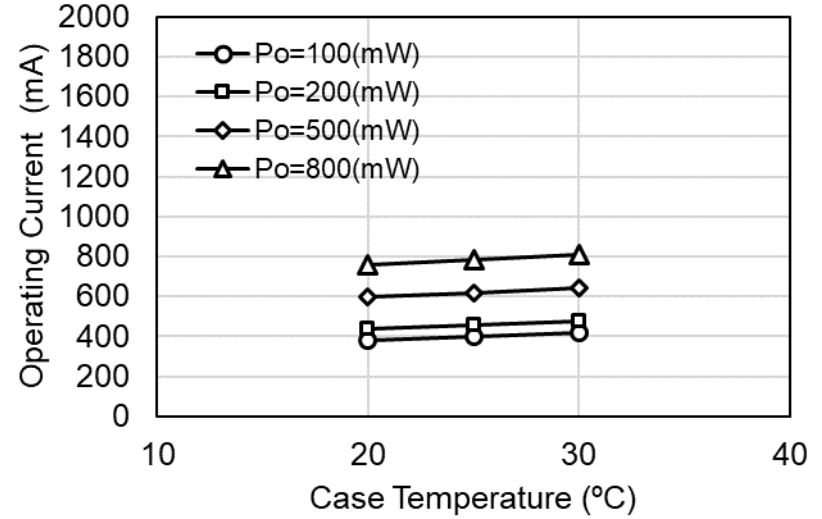


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### L-I, V-I

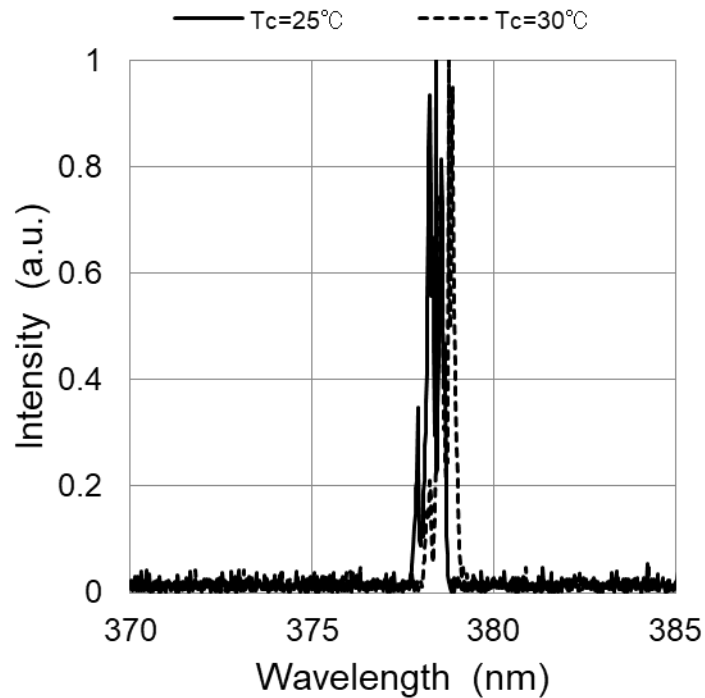


### Temperature and power dependence



### Spectrum

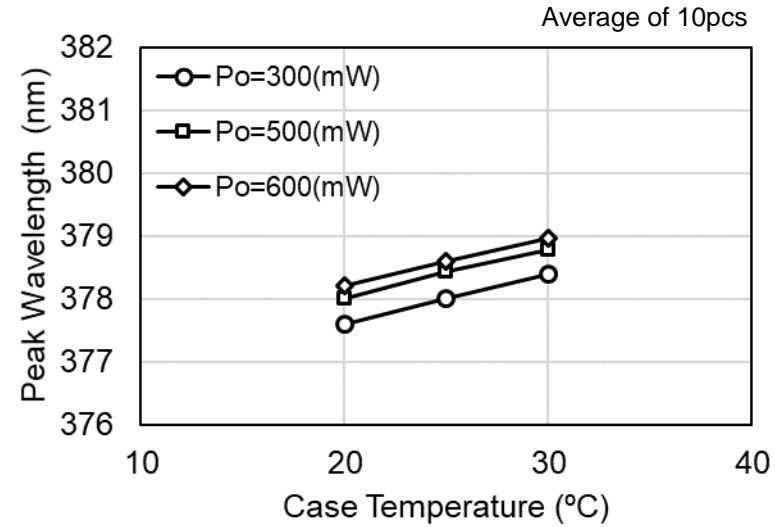
[Conditions] CW, Po=500mW



Tc [°C]	25	30
Peak Wavelength [nm]	378.4	378.8

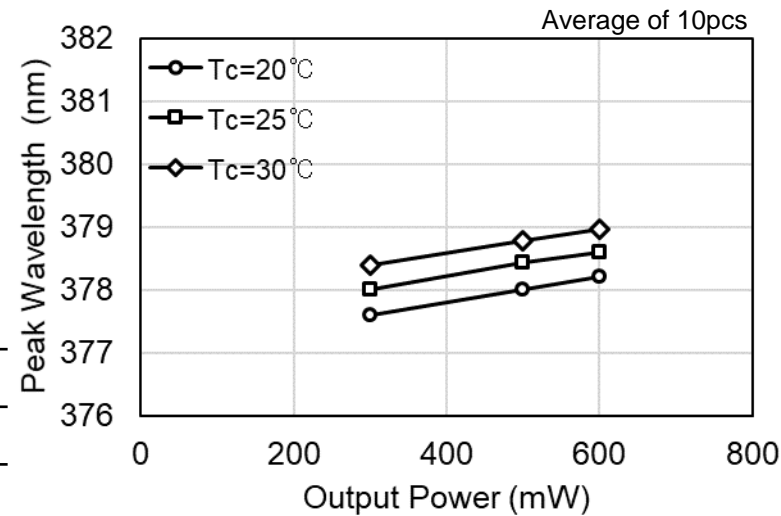
### Temperature and power dependence

[Conditions] CW



Po (mW)	$\Delta$ (nm/°C)
300	0.079
500	0.079
600	0.074

\*1 Between 20 and 30°C



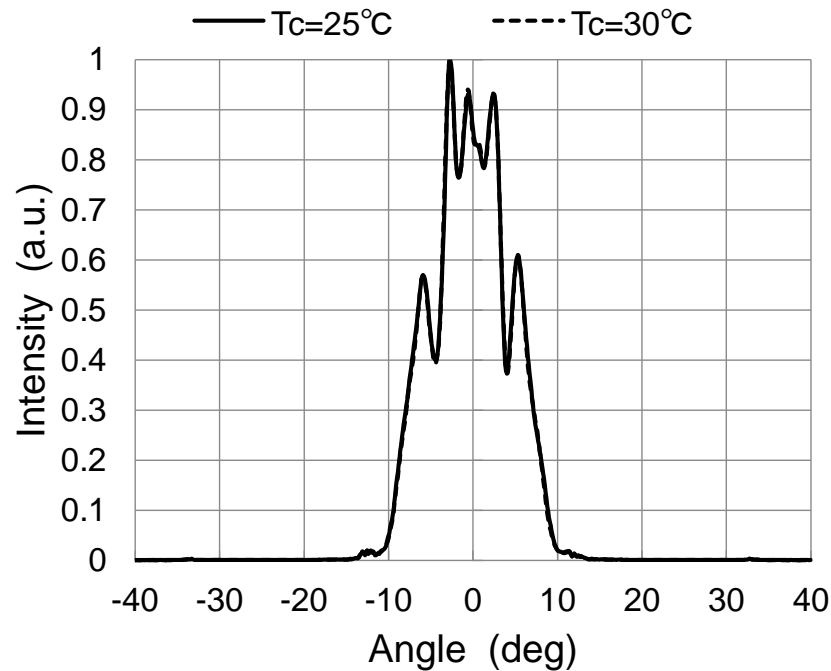
Tc (°C)	$\Delta$ (nm/mW)
20	0.0012
25	0.0012
30	0.0011

\*1 Between 300 and 600mW

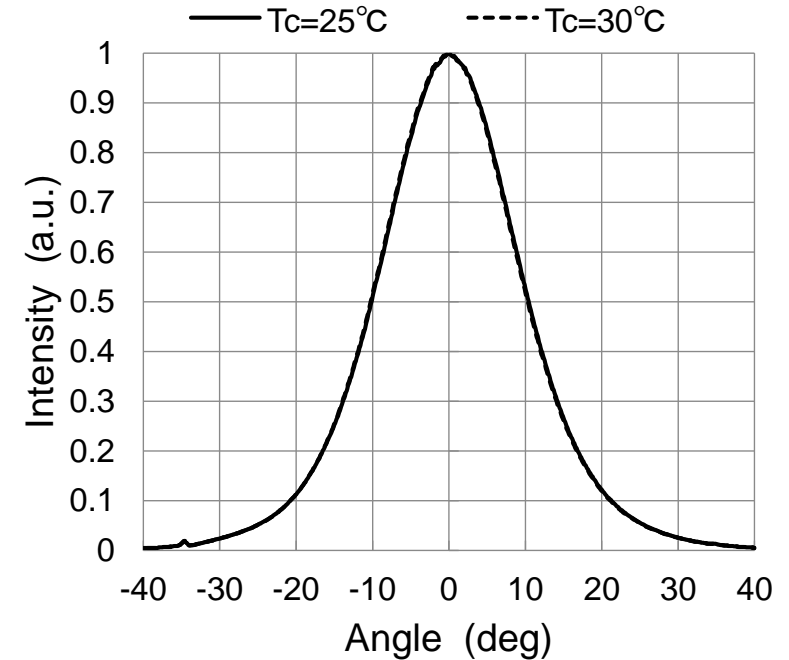
## ■ Far field pattern

[Conditions] CW, Po=500mW

### Parallel

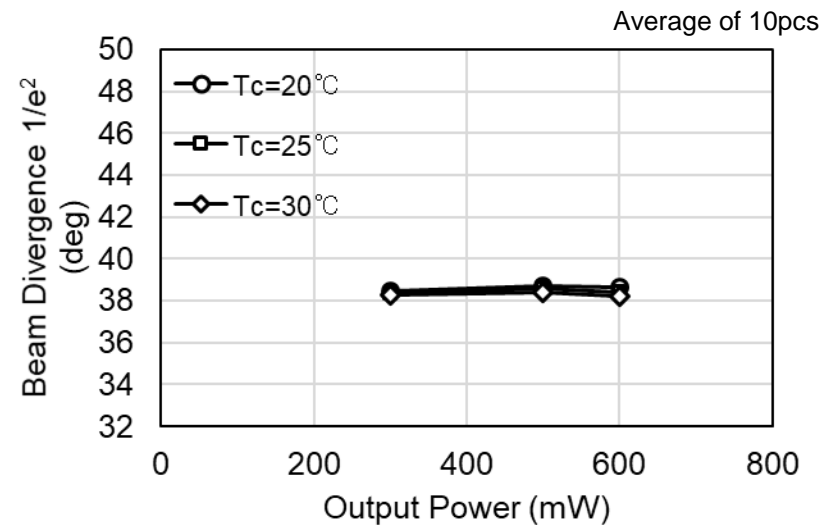
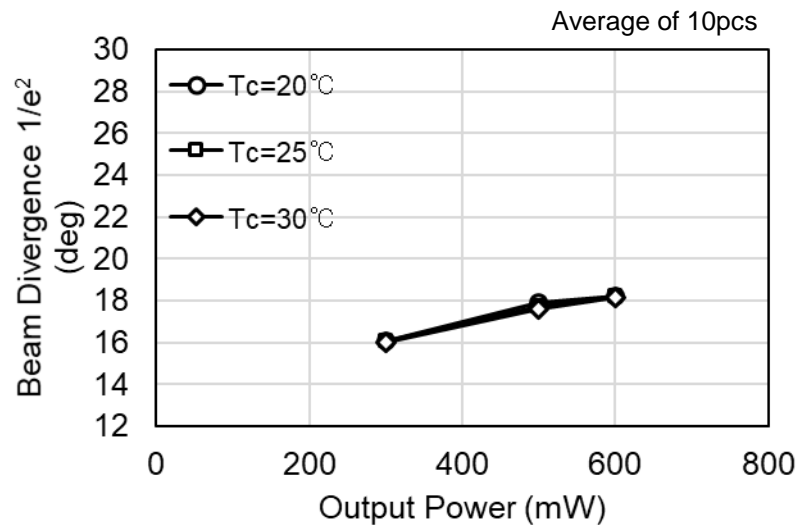
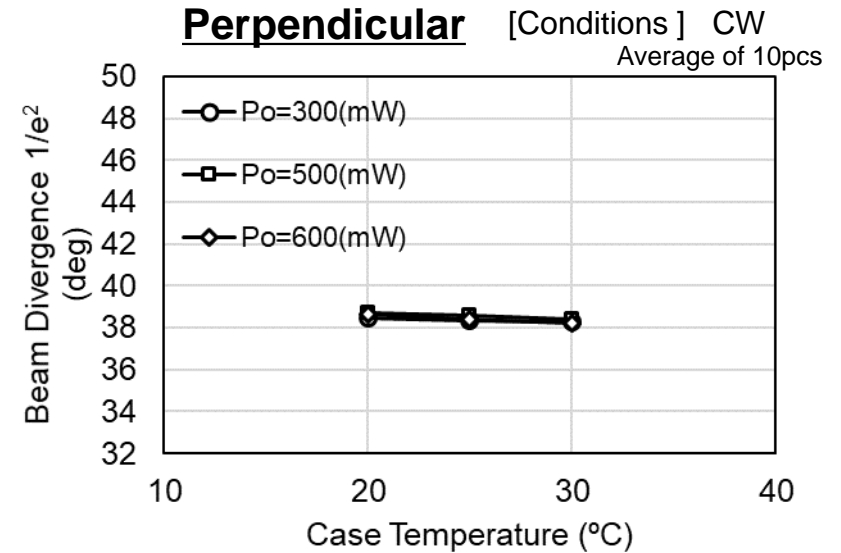
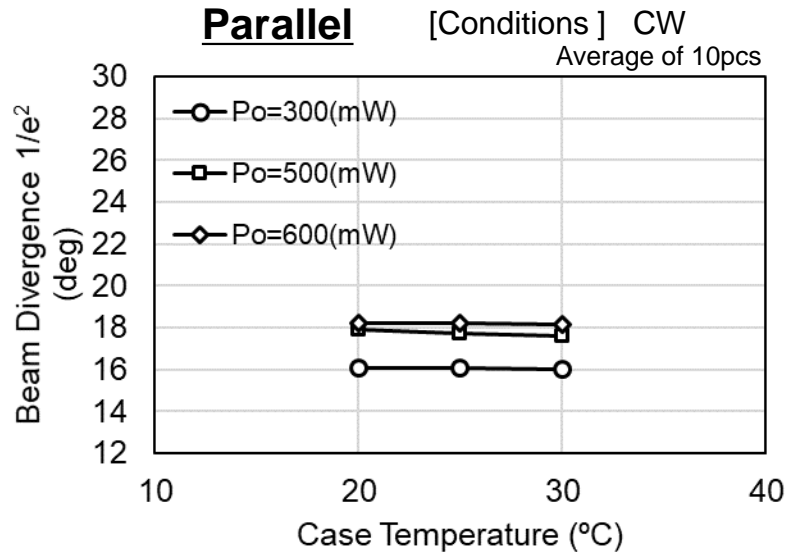


### Perpendicular



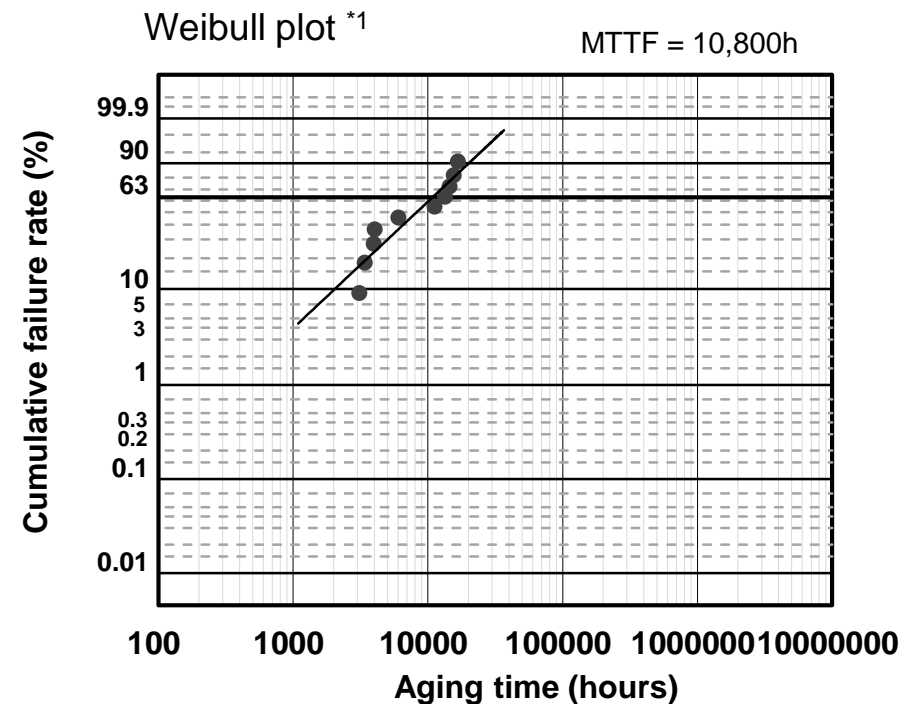
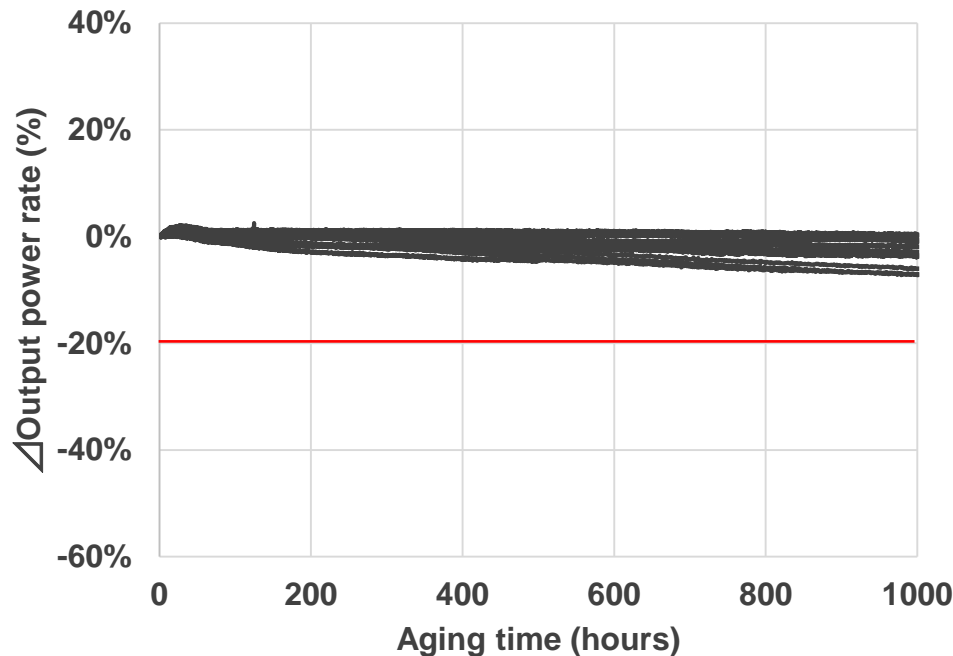
Tc [°C]	25	30
Parallel [deg]	17.9	17.8
Perpendicular [deg]	38.4	38.3

## Temperature and power dependence



[Aging conditions ]

- CW, Tc=25°C, 10pcs
- ACC operation, initial output power P<sub>in</sub>= 500mW



\*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.