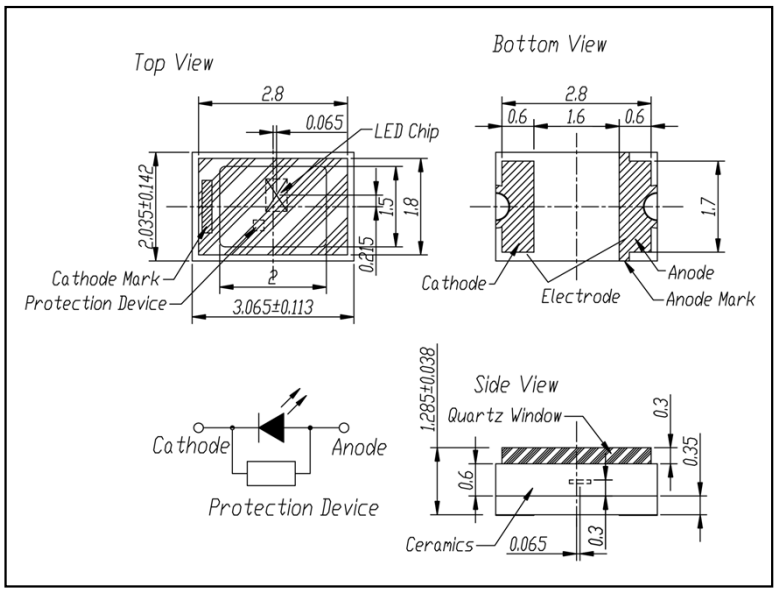
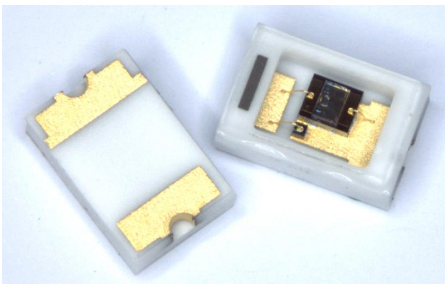
MODEL YL-3020F-xxxnM series

3.0x2.0mm SMD Type

Mechanical Specifications and Materials (Unit: mm)





Product ID

265nm: YL-3020F-265nM
280nm: YL-3020F-280nM
310nm: YL-3020F-310nM
325nm: YL-3020F-325nM
340nm: YL-3020F-340nM

Typical Optical-Electrical Characteristics (I_F=20mA, T_a=25°C)

Item	Symbol	Unit	265nM	280nM	310nM	325nM	340nM
Peak Wavelength	λ_p	nm	265±5	280±10	310±5	325±5	340±5
Radiant Flux	P_o	mW	0.9	1.3	0.80	1.2	1.2
Full Width at Half Maximum	$\Delta\lambda$	nm	13	12	15	11	9
Forward voltage	V_F	V	8-9	6.5	6-7	4.5	4.0
Viewing Half Angle	$2\theta_{1/2}$	deg.	115	115	115	115	115
Thermal resistance*	$R\theta_{J\text{-}Ref}$	℃/W	-	150±5	-	-	-

*Thermal resistance $R\theta_{J\text{-}Ref}$ from LED pn-junction to a reference point.

Absolute Maximum Ratings

Item	Symbol	Unit		Ambient Temperature
Forward Current	I_{Fmax}	mA	40	T_a=25℃
Operating Temperature	T_{OPR}	℃	-20 ~ +80	
Storage Temperature	T_{STG}	℃	-30 ~ +85	
Soldering Temperature	T_{SOL}	℃	260	(within 5sec)

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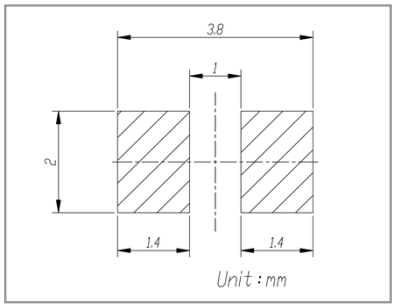
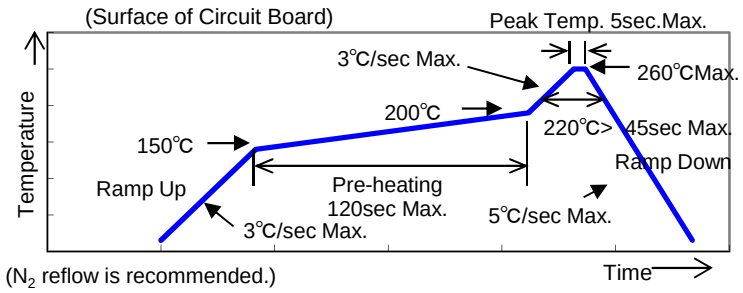
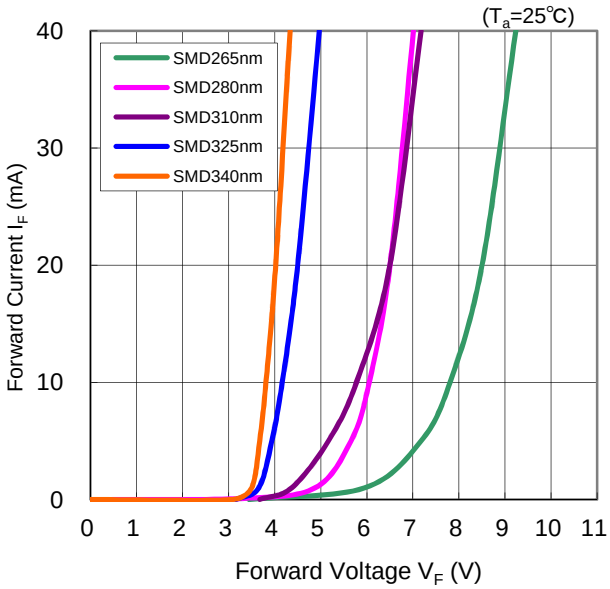
Recommended solder pad



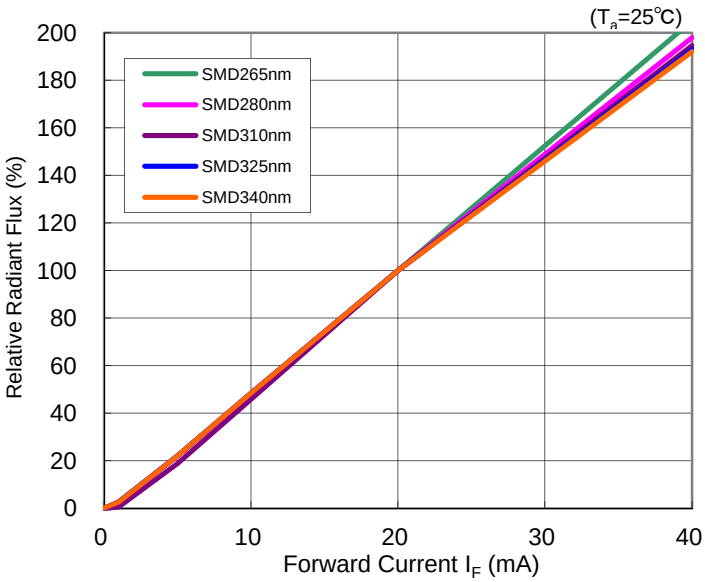
Reflow soldering profile



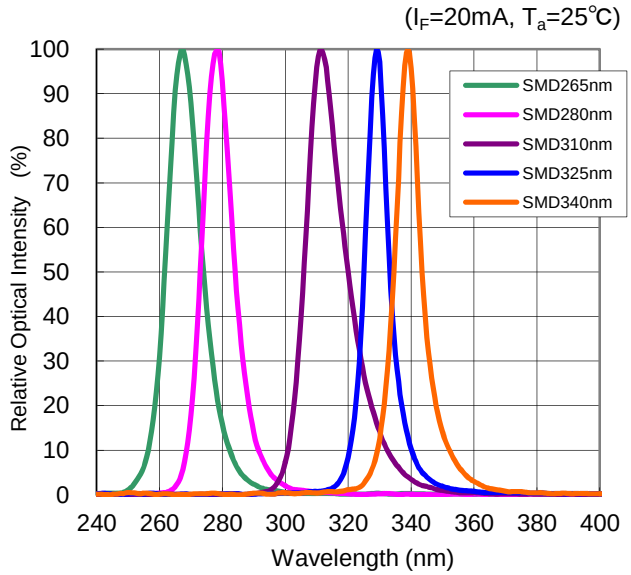
Forward Current vs Forward Voltage



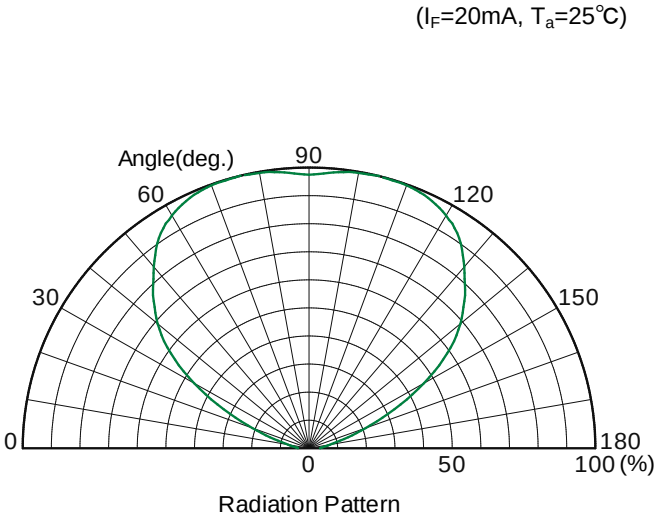
Forward Current vs Radiant Flux



Relavive Intensity vs Peak Wavelength



Radiation Pattern



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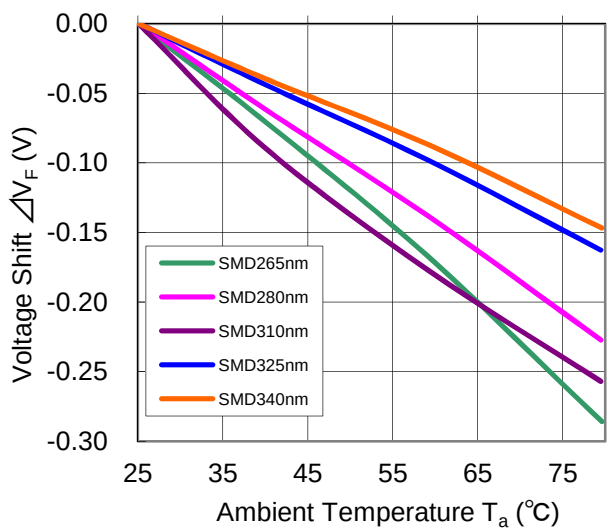
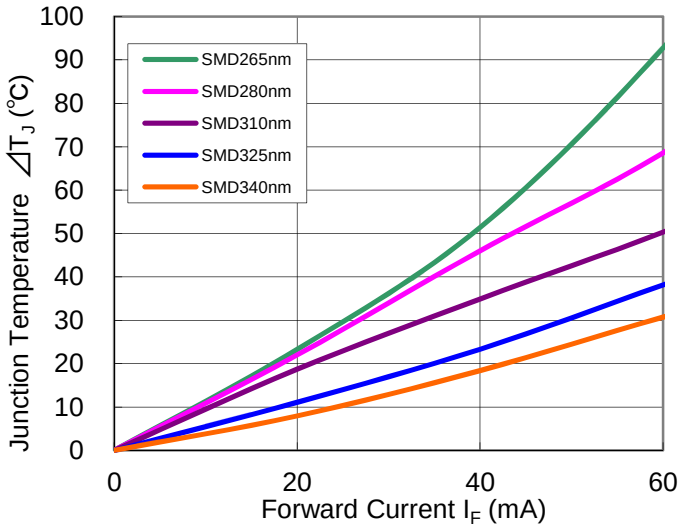
Voltage Shift vs Ambient Temperature

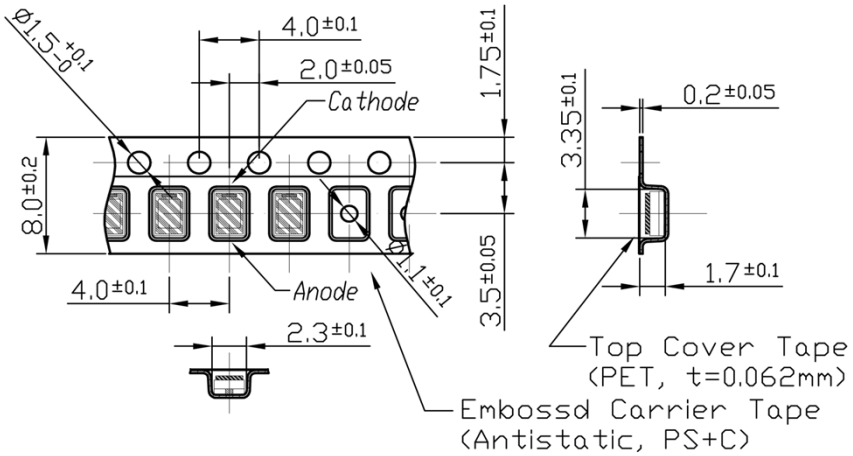


Junction Temperature vs Forward Current



Packing of Products

Taping Outline Dimensions



Thermal Resistance Equation

The basic equation governing the thermal calculation in defined below.

$$R\theta_{J\text{-}Ref} = (\Delta T_{J\text{-}Ref}) / P_D = (T_J - T_{Ref}) / P_D \text{----------} \quad (1)$$

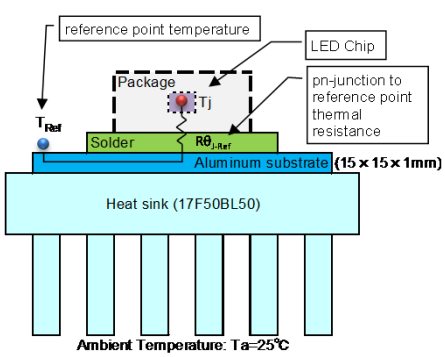
Where:

$Rd_{J\text{-}Ref}$ = pn-junction to reference point thermal resistance :(℃/W)

T_J = pn-junction temperature:(℃)

T_{Ref} = reference point temperature:(℃)

P_D = power dissipation = ($I_F \times V_F$):(W)



Rewrite equation (1):

$$T_J = T_{Ref} + (R\theta_{J\text{-}Ref} \times P_D) \quad \text{----------} \quad (2)$$

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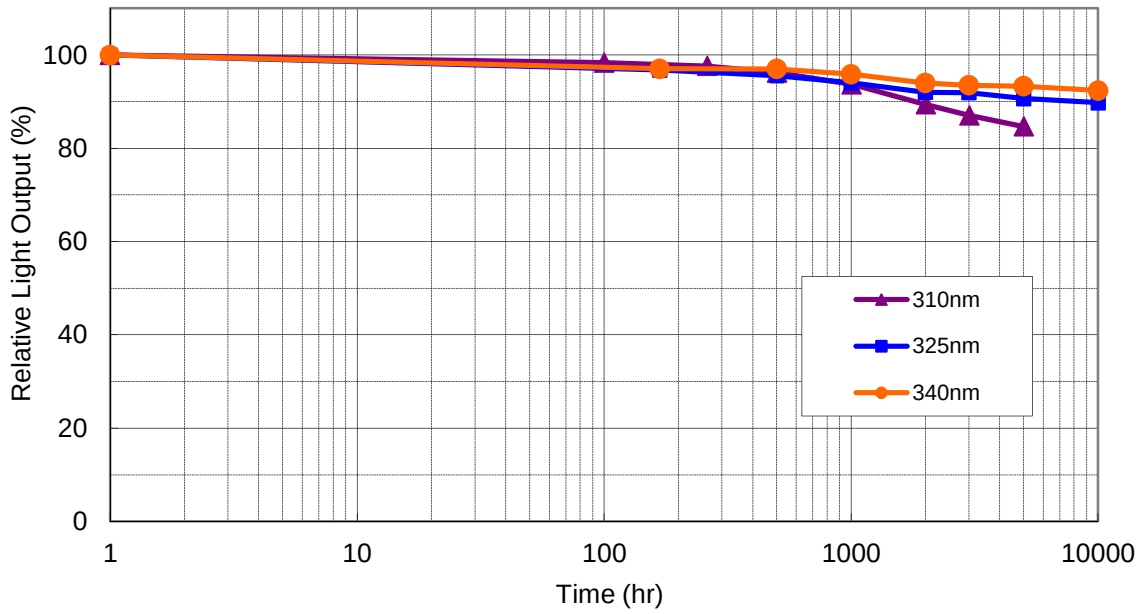
Reliability prospect

T_a=25°C, I_F=40mA



This is just a reference; reliability performance may change in the condition for purposes and applications.

CAUTION

- **LEDs emit very strong UV radiation.**
- **Don't look directly into the LED light.**
  UV radiation can harm your eyes.
- **To prevent even inadequate exposure, wear protective eyewear.**
- **If LEDs are embedded in devices, please indicate warning labels against the UV light LED used.**
- **Keep out of reach of children.**
- **Specification and dimension are subject to change for improvement without notice.**

Issued January 2016.

SPEC informaition (included design, dimension, and typical data) would be changed without prior notice.