

1. Descriptions

The KP3020BSKA2C-GD is a Skyblue LED consisting of small and thin plastic leaded chip carrier (PLCC) 2-pin package, InGaN blue chip and phosphor.

2. Features

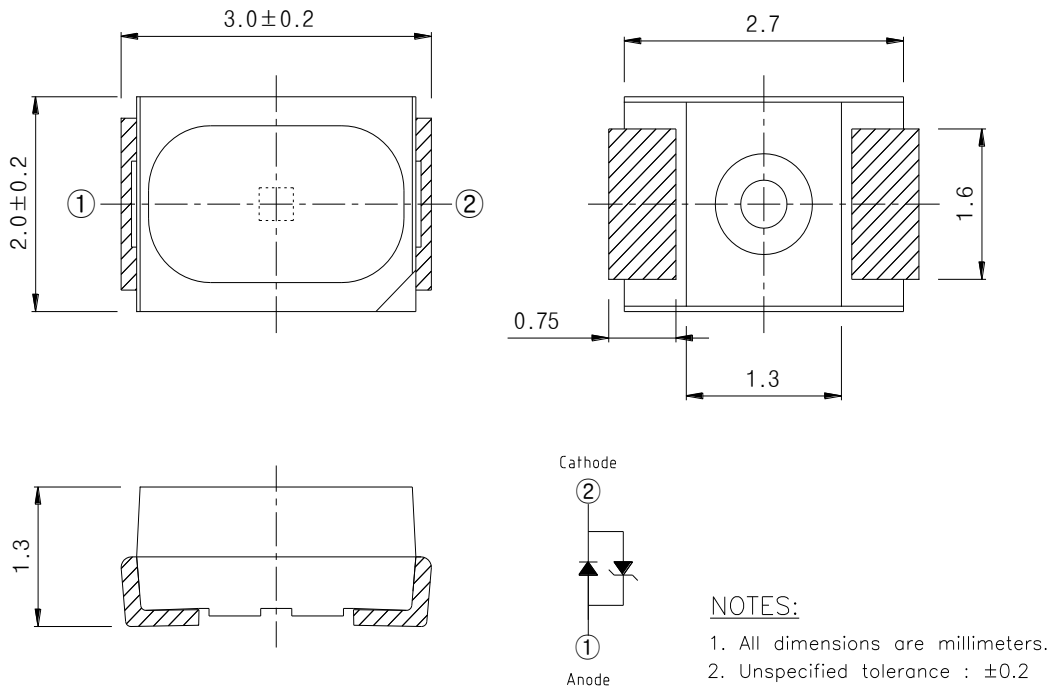
- ◆ Small Footprint Surface Mount Package (3.0 L × 2.0 W × 1.3 H [mm³])
- ◆ Typical Forward Voltage(V_F) : 3.2 V @ Forward Current(I_F)=20mA
- ◆ Operation Temperature from -40 °C to +85 °C
- ◆ Soldering methods : IR reflow soldering
- ◆ Taping : 8mm conductive black carrier tape & antistatic clear cover tape

3. Applications

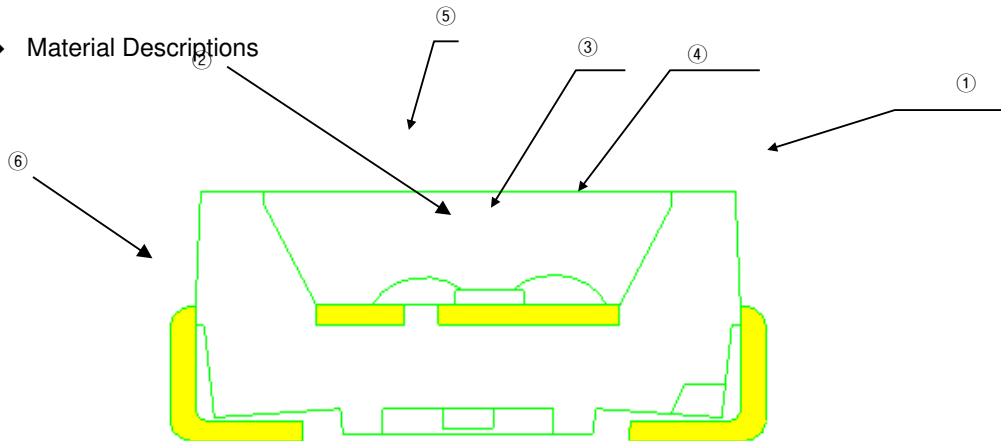
- ◆ Interior lighting
- ◆ General lighting
- ◆ Indoor and out door displays
- ◆ Architectural / Decorative lighting

4. Outline Dimensions and Material Descriptions

◆ Outline Dimensions



◆ Material Descriptions



No.	Item	Material
①	Package	PPA
②	Die Adhesive	Clear Silicone
③	LED Chip	InGaN
④	Wire	Au
⑤	Encapsulant	Clear Silicone + Phosphor
⑥	Lead	Cu Alloy

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5. Absolute Maximums

Item	Symbol	Min.	Max.	Unit	Conditions
Forward Current	I_F	-	30	mA	
Peak Forward Current ^{*1}	I_{FP}	-	90	mA	
Power Dissipation	P_D	-	114	mW	
Reverse Voltage	V_R	-	5	V	
Operating Temperature	T_{OP}	-40	85	°C	
Storage Temperature	T_s	-40	100	°C	
Reflow Soldering Temp.* 2	T_{sol}	-	260	°C	

*1. IFP was measured at $T_w \leq 1$ msec of pulse width and $D \leq 1/10$ of duty ratio.

*2. Soldering time : 5 Sec

6. Electro-Optical Characteristics ($T_A = 25^\circ\text{C}$)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage ^{*3}	V_F	2.4	3.2	3.8	V	$I_F=10\text{mA}$
Reverse voltage	V_R	0.5	-	1.5	V	$I_R=5\text{mA}$
Luminous intensity ^{1,3}	I_V	260	320	410	mcd	$I_F=10\text{mA}$
Chromaticity coordiante ^{*3}	x	0.1512	-	0.1610	-	$I_F=10\text{mA}$
	y	0.0960	-	0.1150	-	$I_F=10\text{mA}$
Half angle ^{*2}	$2\theta_{1/2}$	-	120	-	deg	$I_F=10\text{mA}$

*1. The luminous intensity I_V was measured at the peak of the spatial pattern which may not be aligned with the mechanical axis of the LED package.

*2. $2\theta_{1/2}$ is the off-axis where the luminous intensity is 1/2 of the peak intensity.

*3. Measuring Tolerance

- $V_F : \pm 0.1 \text{ V}$, $I_V : \pm 10\%$, $R_a : \pm 3$, $X, Y : \pm 0.01$

7. Ranks

◆ I_V , V_F , Color Rank Table^{*1}

V_F , I_V , Color Rank @ $I_F = 10 \text{ mA}$			
Forward Voltage [V]	Luminuous Intensity [mcd]	Chromaticity	
1 : 2.4 ~ 3.1	P : 260 ~ 310	H1	H2
2 : 3.1 ~ 3.8	Q : 310 ~ 360	H4	H5
-	R : 360 ~ 410	-	-

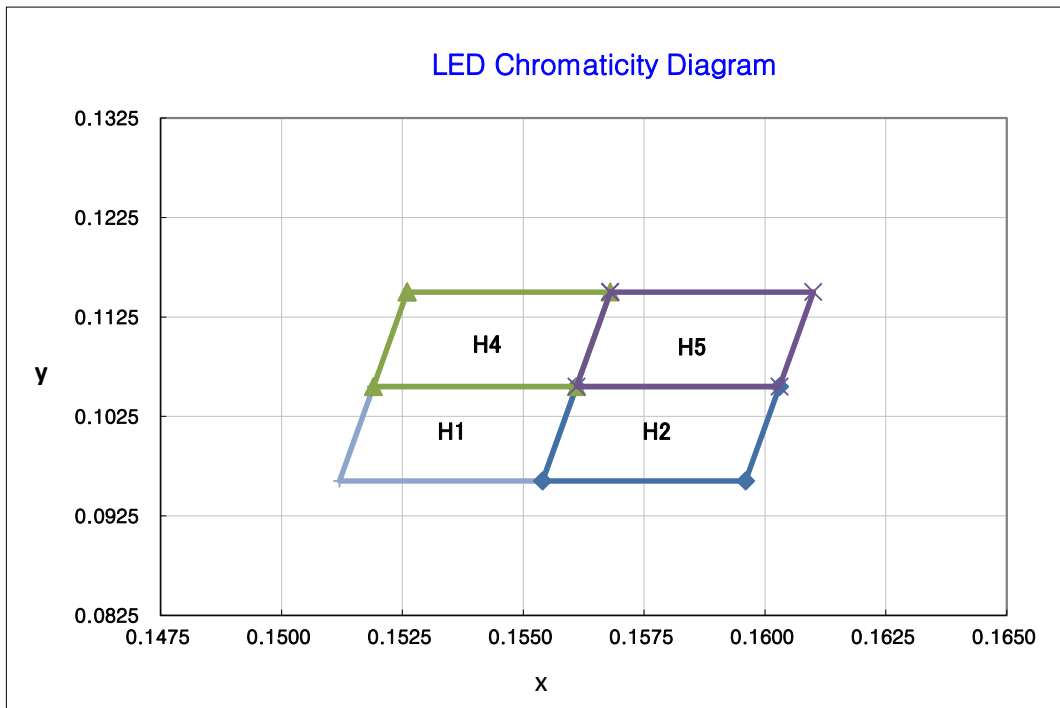
*1. KP3020BSKA2C-GD marked as 2QH1(V_F , I_V , Color Rank) has the I_V range 310~360mcd, V_F rank 3.1~3.8V and Color range H1 area.

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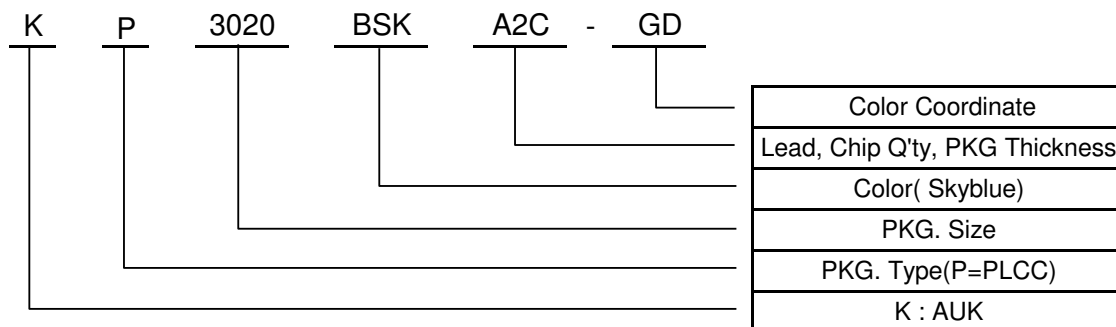
◆ Color Coordinate Rank

H1		H2		H4		H5	
x	y	x	y	x	y	x	y
0.1519	0.1055	0.1561	0.1055	0.1526	0.1150	0.1568	0.1150
0.1512	0.0960	0.1554	0.0960	0.1519	0.1055	0.1561	0.1055
0.1554	0.0960	0.1596	0.0960	0.1561	0.1055	0.1603	0.1055
0.1561	0.1055	0.1603	0.1055	0.1568	0.1150	0.1568	0.1150

◆ The CIE(x, y) Chromaticity Diagram



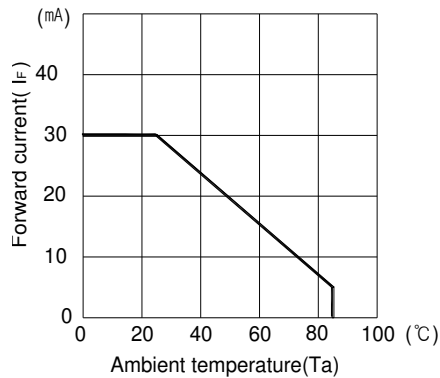
8. Part Numbering



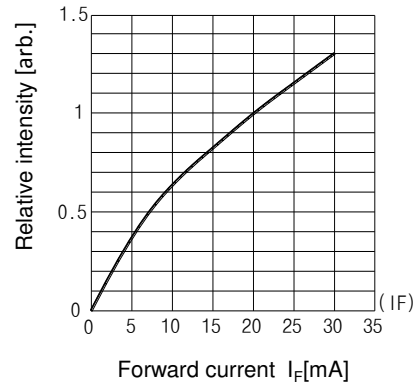
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9. Characteristic Graphs

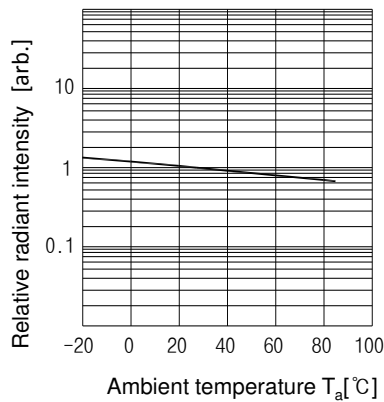
**Forward current vs.
Ambient temperature**



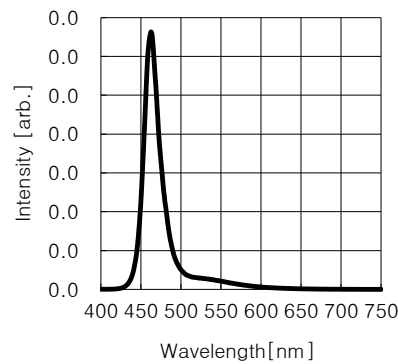
**Luminous Intensity vs.
Forward current**



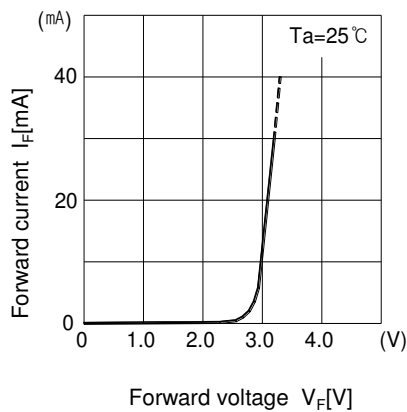
**Relative luminous intensity vs.
Ambient temperature**



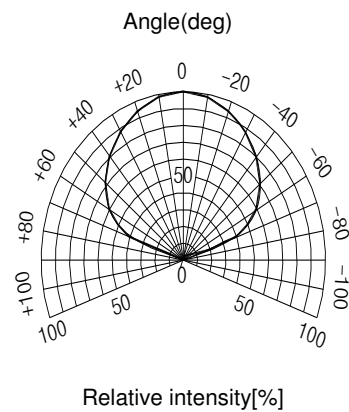
**Relative intensity vs.
Wavelength**



**Forward current vs.
Forward voltage**



Radiant Pattern



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