

## 1. Descriptions

The KP3812W00A16 is a side view white LED which consist of small and thin form plastic leaded chip carrier(PLCC) 2-pin package, InGaN blue LED, and phosphor.

## 2. Features

- ◆ Small Footprint Surface Mount Package ( 3.8 L × 1.2 W × 0.6 H [mm<sup>3</sup>])
- ◆ Typical Forward Voltage( $V_F$ ) : 3.1 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
- ◆ LCD backlight unit
- ◆ Architectural / Decorative lighting

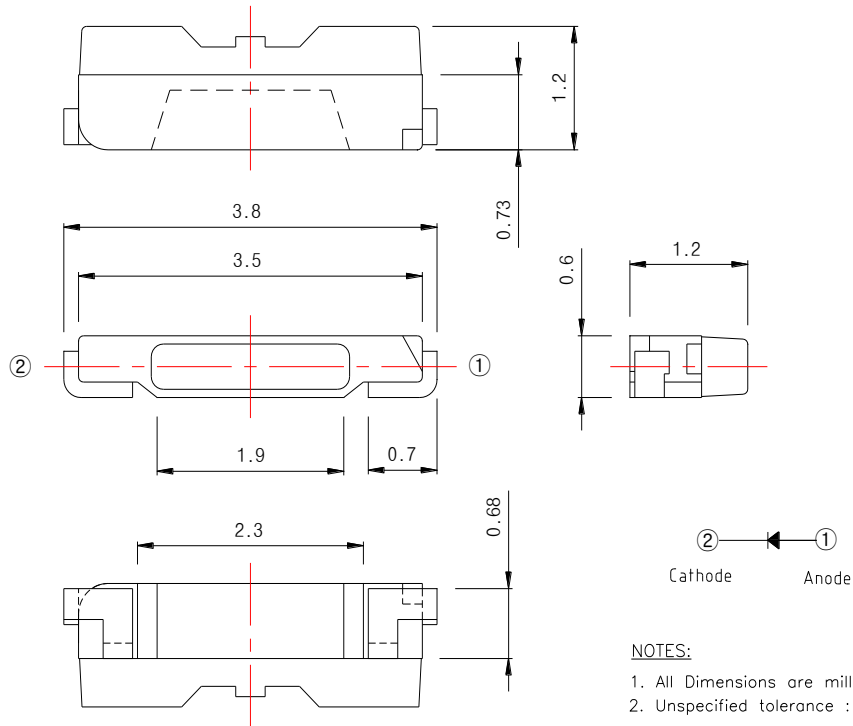
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When using this product, would you please refer to the latest specifications.

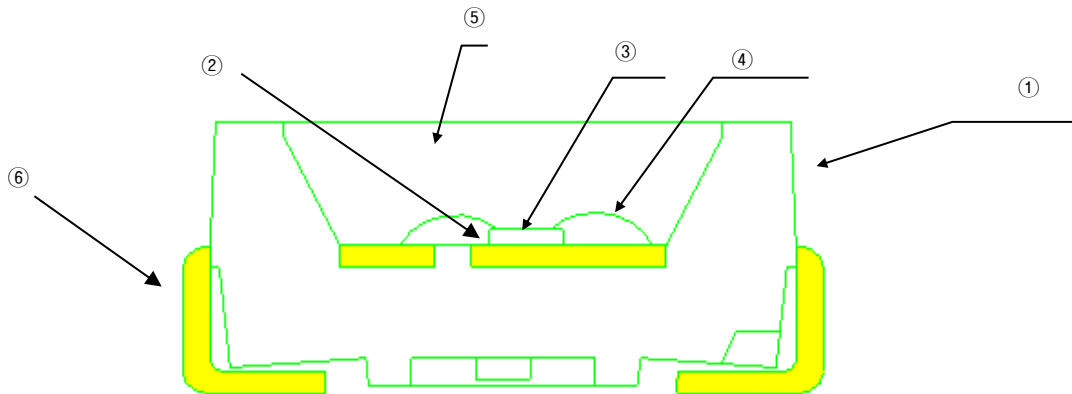
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**4. Outline Dimensions and Material Descriptions**

◆ Outline Dimensions



◆ Material Descriptions



No.	Item	Material
①	Package	PA(Polyamide)
②	Die Adhesive	Clear Silicone
③	LED Chip	InGaN
④	Wire	Au
⑤	Encapsulant	Silicone + Phosphor
⑥	Lead	Fe Alloy

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## 5. Absolute Maximums

Item	Symbol	Min.	Max.	Unit	Conditions
Forward Current	$I_F$	-	30	mA	
Peak Forward Current* <sup>1</sup>	$I_{FP}$	-	80	mA	
Power Dissipation	$P_D$	-	108	mW	
Reverse Voltage	$V_R$	-	5	V	
Operating Temperature	$T_{OP}$	-40	85	°C	
Storage Temperature	$T_S$	-40	100	°C	
Reflow Soldering Temp.* <sup>2</sup>	$T_{sol}$	-	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* <sup>3</sup>	$V_F$	2.7	3.1	3.6	V	$I_F=20\text{mA}$
Reverse current	$I_R$	-	-	10	uA	$V_R=5\text{V}$
Luminous intensity* 1,3	$I_V$	1.7	-	2.1	cd	$I_F=20\text{mA}$
Half angle* <sup>2</sup>	$2\theta_{1/2}$	-	105	-	deg	$I_F=20\text{mA}$

\*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

-  $V_F : \pm 0.05 \text{ V}$ ,  $I_V : \pm 10\%$ ,  $R_a : \pm 3$ ,  $X, Y : \pm 0.01$

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**7. Ranks**

◆  $I_V, V_F$ , Color Rank @  $I_F = 20 \text{ mA}$

Forward Voltage [V]	Luminous intensity [lm]	Chromaticity		
1 : 2.7 ~ 3.6	P : 1.7 ~ 1.75	F1	F2	F3
	Q : 1.75 ~ 1.8	G1	G2	G3
	R : 1.8 ~ 1.85	H1	H2	H3
	S : 1.85 ~ 1.9	J1	J2	J3
	T : 1.9 ~ 1.95	K1	K2	K3
	U : 1.95 ~ 2.0	-	-	-
	V : 2.0 ~ 2.05	-	-	-
W : 2.05 ~ 2.1	-	-	-	

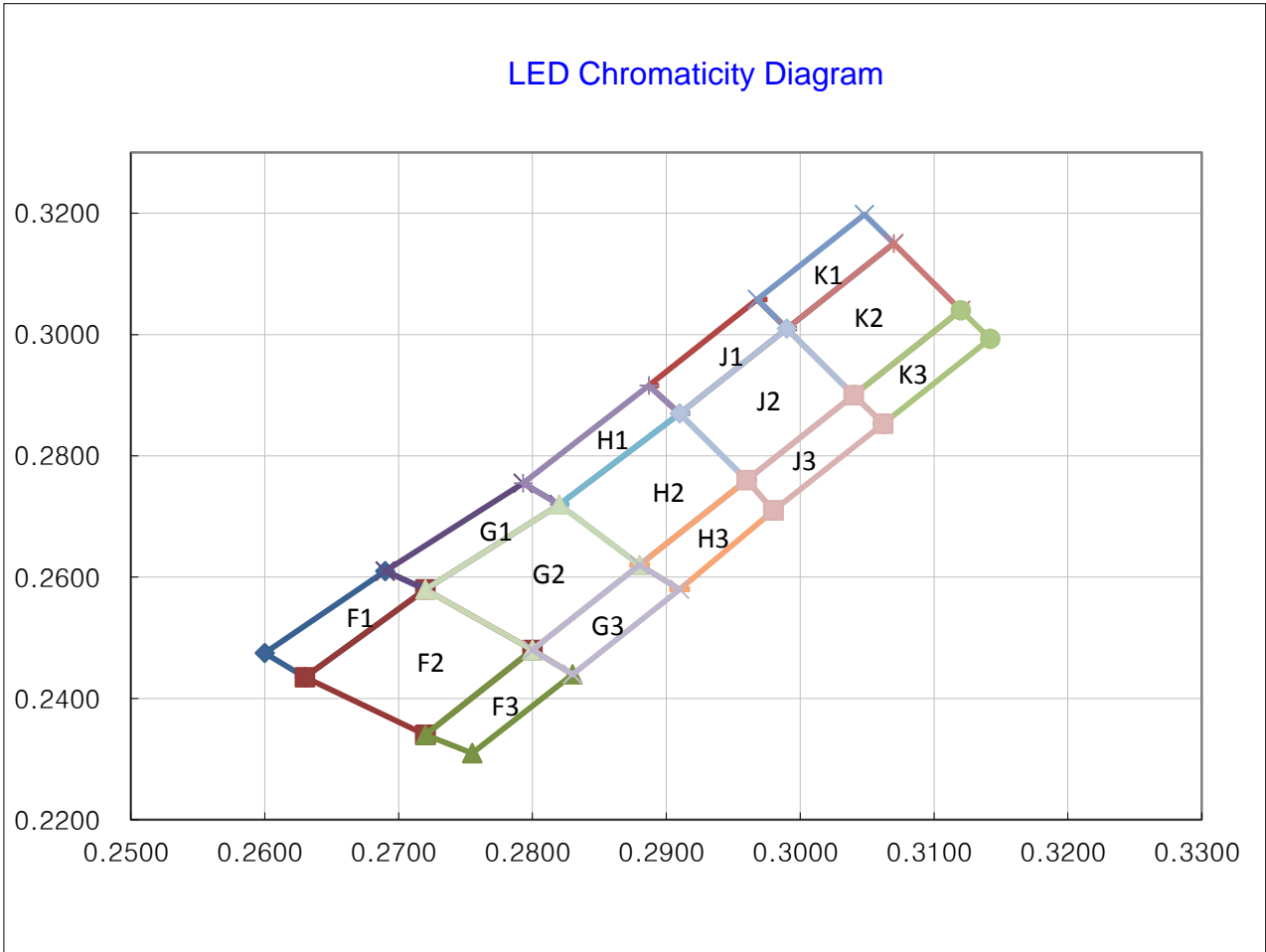
\*1. KP3812W00A16 marked as 1TH1(VF,IV, Color Rank) has the VF rank 2.7~3.6V, IV rank 1.9~1.95 cd and Color range H1 area.

◆ Color Coordinate Rank

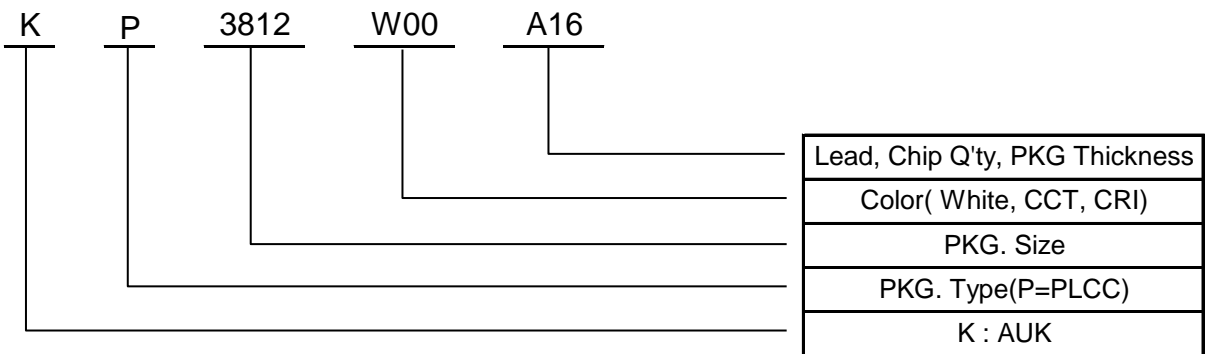
F1		F2		F3		G1	
x	y	x	y	x	y	x	y
0.2630	0.2435	0.2720	0.2340	0.2755	0.2310	0.2690	0.2610
0.2600	0.2475	0.2630	0.2435	0.2720	0.2340	0.2793	0.2755
0.2690	0.2610	0.2720	0.2580	0.2800	0.2480	0.2820	0.2720
0.2720	0.2580	0.2800	0.2480	0.2830	0.2440	0.2720	0.2580
G2		G3		H1		H2	
x	y	x	y	x	y	x	y
0.2800	0.2480	0.2830	0.2440	0.2820	0.2720	0.2880	0.2620
0.2720	0.2580	0.2800	0.2480	0.2793	0.2755	0.2820	0.2720
0.2820	0.2720	0.2880	0.2620	0.2887	0.2916	0.2910	0.2870
0.2880	0.2620	0.2910	0.2580	0.2910	0.2870	0.2960	0.2760
H3		J1		J2		J3	
x	y	x	y	x	y	x	y
0.2910	0.2580	0.2910	0.2870	0.2960	0.2760	0.2980	0.2710
0.2880	0.2620	0.2887	0.2916	0.2910	0.2870	0.2960	0.2760
0.2960	0.2760	0.2968	0.3058	0.2990	0.3010	0.3040	0.2900
0.2980	0.2710	0.2990	0.3010	0.3040	0.2900	0.3062	0.2853
K1		K2		K3			
x	y	x	y	x	y	x	y
0.2990	0.3010	0.3040	0.2900	0.3062	0.2853		
0.2968	0.3058	0.2990	0.3010	0.3040	0.2900		
0.3048	0.3198	0.3070	0.3150	0.3120	0.3040		
0.3070	0.3150	0.3120	0.3040	0.3142	0.2993		

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◆ The CIE(x, y) Chromaticity Diagram



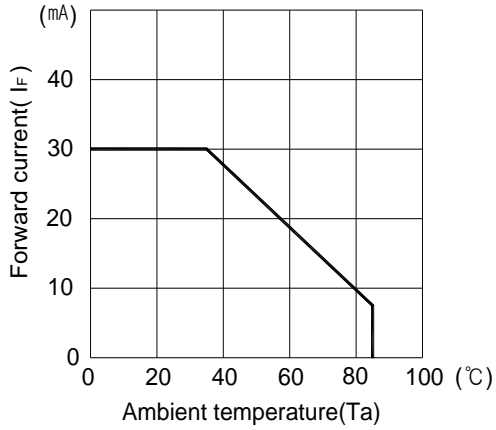
**8. Part Numbering**



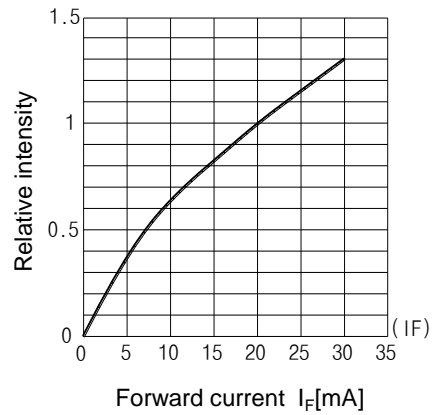
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**9. Characteristic Graphs**

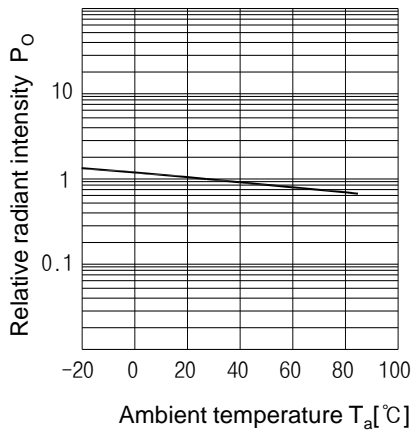
**Forward current vs. Ambient temperature**



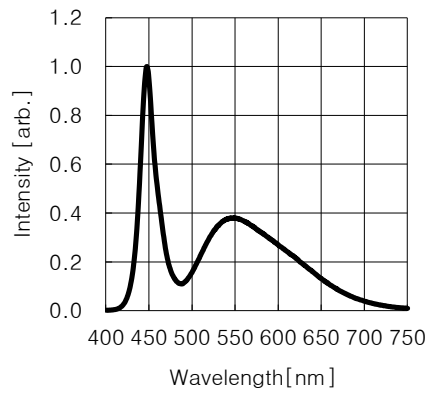
**Luminous intensity vs. Forward current**



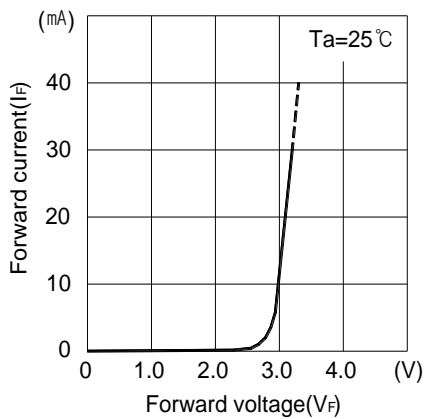
**Relative luminous intensity vs. Ambient temperature**



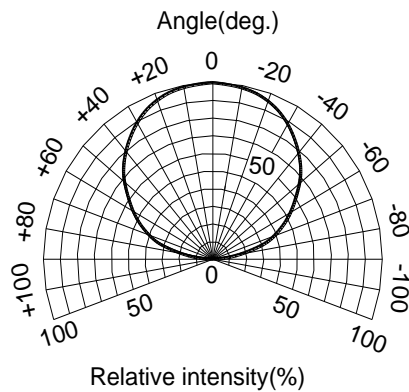
**Relative intensity vs. Wavelength**



**Forward current vs. Forward voltage**



**Radiant Pattern**



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