



Middle Power LED: 0.5W

KMxx-300Z

Features

- Industry standard PLCC-2
- High reliability LED package
- Middling Power using AlInGaP and InGaN dice technologies
- High optical efficiency
- Available in full selection of colors
- Super wide viewing angle at 120°
- Available in 8mm carrier tape on 7-inch reel
- Compatible with both IR and TTW soldering process

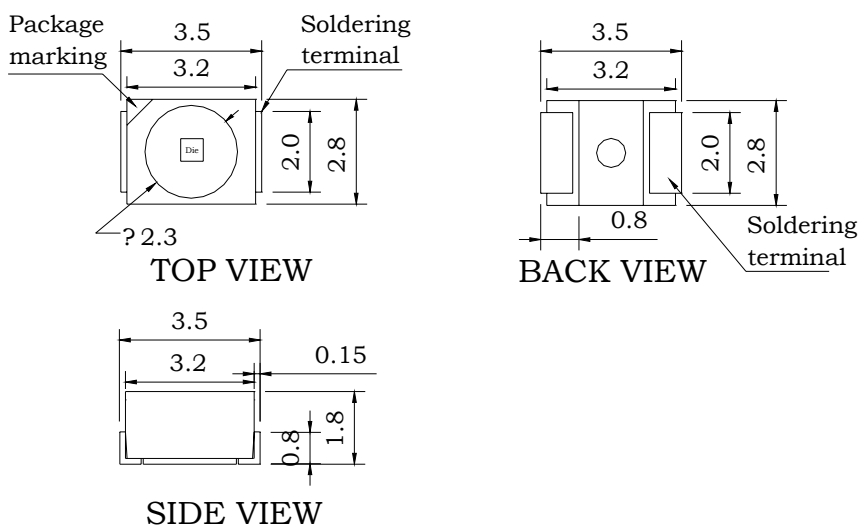


Applications

- Interior automotive
 - Instrument panel backlighting
 - Central console backlighting
 - Cabin backlighting
 - Navigation and audio system
 - Dome lighting
 - Push button backlighting
- Exterior automotive
 - Turn signals
 - CHMSL
 - Rear combination lamp
 - Puddle light
- Electronic signs and signals
 - Interior full color sign
 - Variable message sign
- Office automation, home appliances, industrial equipment
 - Front panel backlighting
 - Push button backlighting
 - Display backlighting



Package Dimensions



Device Selection Guide

Color	Part Number	Min. Iv (mcd)	Max. Iv (mcd)	Test Current (mA)	Dice Technology
Red	KMNR-300-E3-20	880	1140	70	AllnGaP
	KMNR-300-E3-21	1140	1485	70	AllnGaP
	KMNR-300-E7-22	1485	1930	120	AllnGaP
	KMNR-300-E7-23	1930	2510	120	AllnGaP
	KMNR-300-E7-24	2510	3000	120	AllnGaP
Yellow	KMYE-300-E3-21	1140	1485	70	AllnGaP
	KMYE-300-E3-22	1485	1930	70	AllnGaP
	KMYE-300-E7-22	1485	1930	120	AllnGaP
	KMYE-300-E7-23	1930	2510	120	AllnGaP
	KMYE-300-E7-24	2510	3700	120	AllnGaP
Green	KMPG-300-H5-23	1930	2510	120	InGaN
	KMPG-300-H5-24	2510	3265	120	InGaN
	KMPG-300-H5-25	3265	4245	120	InGaN
	KMPG-300-H5-26	4245	5518	120	InGaN
	KMPG-300-H5-27	5518	7500	120	InGaN
Blue	KMBL-300-H5-20	880	1140	120	InGaN
	KMBL-300-H5-21	1140	1650	120	InGaN
White	KMWH-300-T5-24	2510	3265	120	InGaN
	KMWH-300-H5-25	3265	4245	120	InGaN
	KMWH-300-H5-26	4245	5515	120	InGaN
	KMWH-300-H5-27	5515	8000	120	InGaN



Absolute Maximum Ratings (TA = 25°C)

Parameters	KMNR/YE-300-E3	KMNR/YE-300-E7	KMPG/BL-300-H5	KMWH-300-H5
DC Forward Current ^[1]	70 mA	120 mA	120 mA	120 mA
Peak Forward Current ^[2]	150 mA	250 mA	200 mA	200 mA
Power Dissipation	0.2 W	0.2 W	240 mW	114 mW
Reverse Voltage	5V ^[3]		<1 V (Ir=5mA) ^[3]	
Junction Temperature	115° C		125° C	
Operating Temperature	- 40° C to +100° C			
Storage Temperature	- 40° C to +100° C			

Notes:

1. Derate linearly as shown in figure 4.
2. Duty factor = 10%, Frequency = 1 kHz.
3. Polarity:

Part Number	KMNR/YE-300	KMPG/BL/WH-300Z
Polarity		



Optical Characteristics (TA = 25° C)

Color	Part Number	Peak Wavelength λ_{PEAK} (nm) Typ.	Dominant Wavelength $\lambda_D^{[1]}$ (nm) Typ.	Viewing Angle $2\theta_{1/2}^{[2]}$ (Degrees) Typ.	Luminous Efficacy $\eta_v^{[3]}$ (lm/W) Typ.	Luminous Intensity / Total Flux I_v (mcd)/ Φ_v (mlm) Typ.
Red	KMNR-300-E3	633	625	120	-	-
	KMNR-300-E7	633	625	120	-	-
Yellow	KMYE-300-E3	592	590	120	-	-
	KMYE-300-E7	592	590	120	-	-
Green	KMPG-300-H5	-	525	120	-	-
Blue	KMBL-300-H5	-	465	120	-	-
White	KMWH-300-T5	-	x=0.33 y=0.33	120	-	-

Notes:

1. The dominant wavelength, λ_D , is derived from the CIE Chromaticity Diagram and represents the color of the device.
2. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity.
3. Radiant intensity, I_e in watts/steradian, may be calculated from the equation $I_e = I_v/\eta_v$, where I_v is the luminous intensity in candelas and η_v is the luminous efficacy in lumens/watt.

Electrical Characteristics (TA = 25°C)

Part Number	Forward Voltage VF (Volts) @ IF = 70 mA		Reverse Voltage VR @ 2 μ A
	Typ.	Max.	Min.
KMNR-300-E3	1.8	2.7	5
KMYE-300-E3	1.8	2.7	5
Part Number	Forward Voltage VF (Volts) @ IF = 120 mA		Reverse Voltage VR @ 2 μ A
	Typ.	Max.	Min.
KMNR-300-E7	1.8	2.7	5
KMYE-300-E7	1.8	2.7	5
Part Number	Forward Voltage VF (Volts) @ IF = 120 mA		Reverse Voltage VR @ 5 μ A
	Typ.	Max.	Max.
KMPG-300-H5	2.8	4.2	1
KMBL-300-H5	2.8	4.2	1
KMWH-300-T5	2.8	4.2	1

Kindwin Technology (H.K.) LTD.

Address: B Building, Fuxin Road, Xinnan Xinwu, Pinghu Town, Longgang, Zhenzhen, China.

TEL: (86) 755-8467 5199 / 8467 5299 / 8467 5399

FAX: (86) 755-8467 5633

[Http://www.kindwin.com](http://www.kindwin.com)



Figure 1. Relative Intensity Vs. Wavelength.

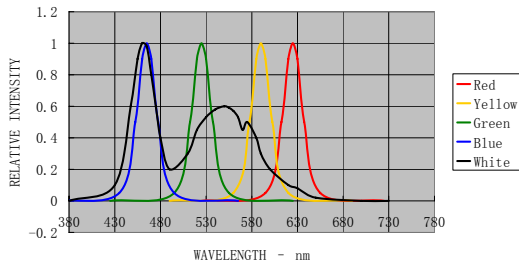


Figure 2. Forward Current Vs. Forward Voltage.

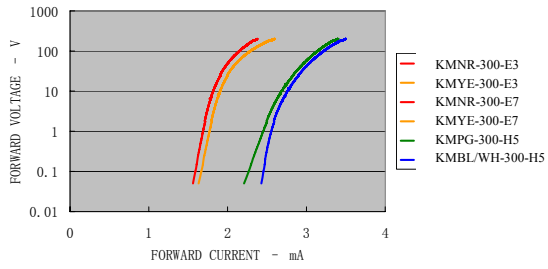


Figure 3. Relative Intensity Vs. Forward Current.

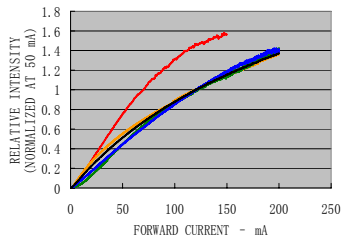


Figure 4a. Maximum Forward Current Vs. Ambient Temperature, Derated Based On Tjmax = 115° C

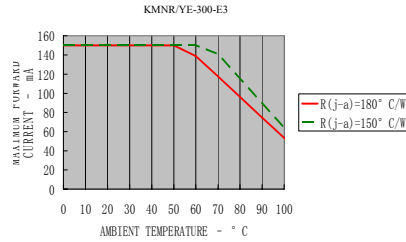


Figure 4b. Maximum Forward Current Vs. Ambient Temperature, Derated Based On Tjmax = 115° C

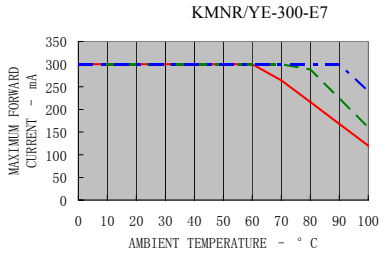


Figure 4c. Maximum Forward Current Vs. Ambient Temperature, Derated Based On Tjmax = 125° C

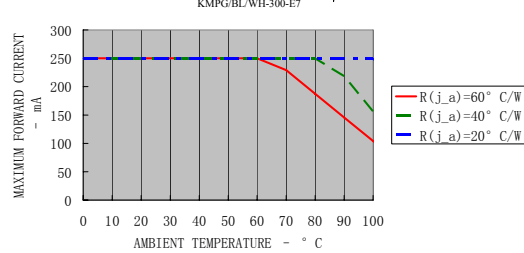


Figure 5a. Dominant Wavelength Vs. Forward Current - AlInGaP Devices.

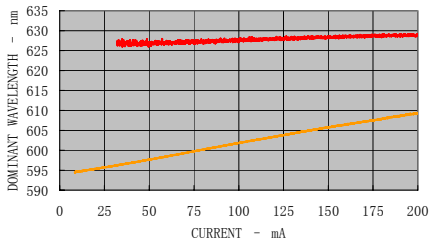


Figure 5b. Dominant Wavelength Vs. Forward Current - InGaN Devices.

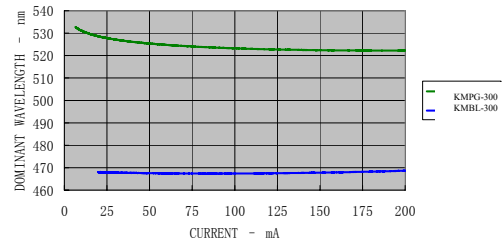


Figure 6. CIE(x,y) transformation For forward current.

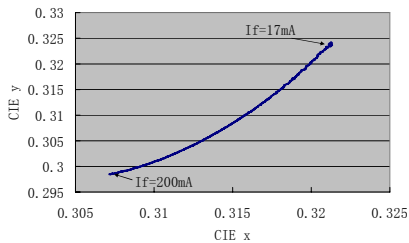


Figure 7. Radiation Pattern.

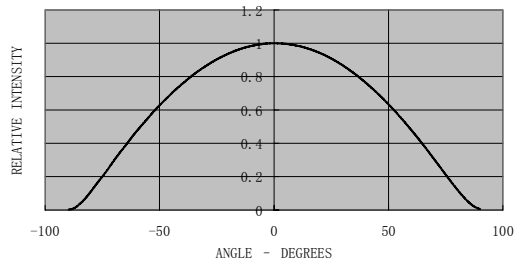




Figure 8. Recommended Soldering Pad Pattern.

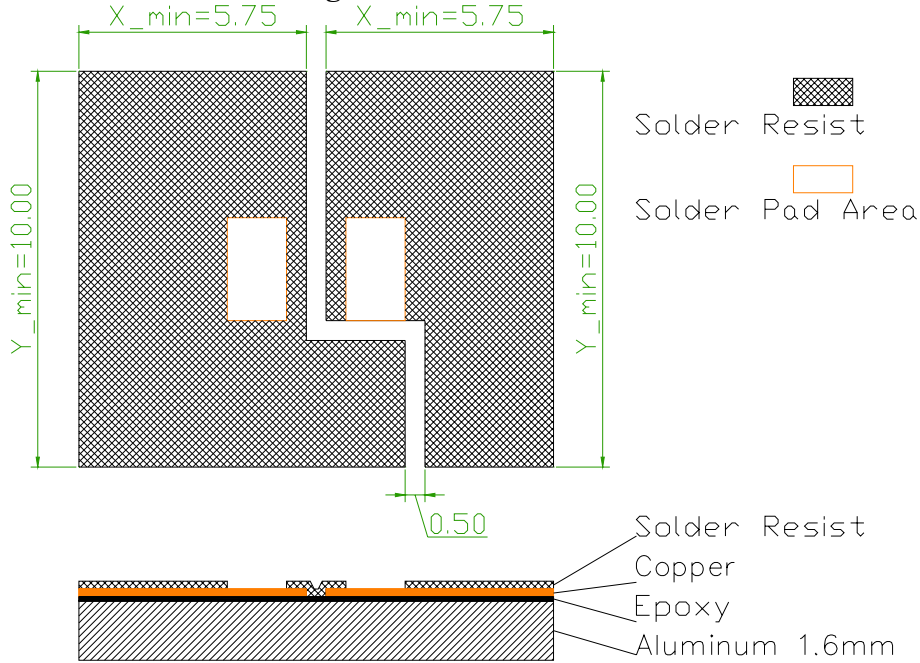


Figure 9. Recommended SnPb Reflow Soldering Profile.

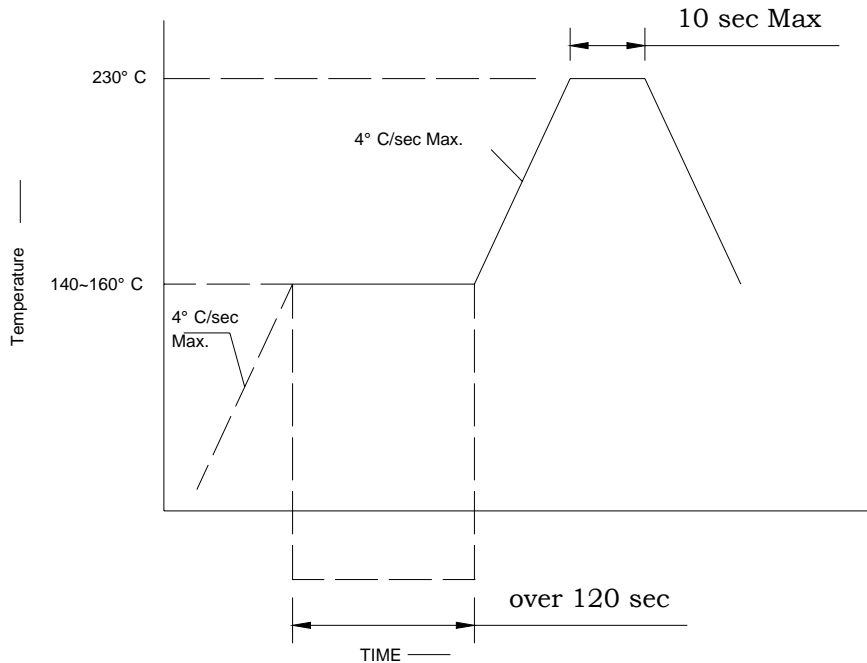




Figure 11. Tape Leader and Trailer Dimensions.

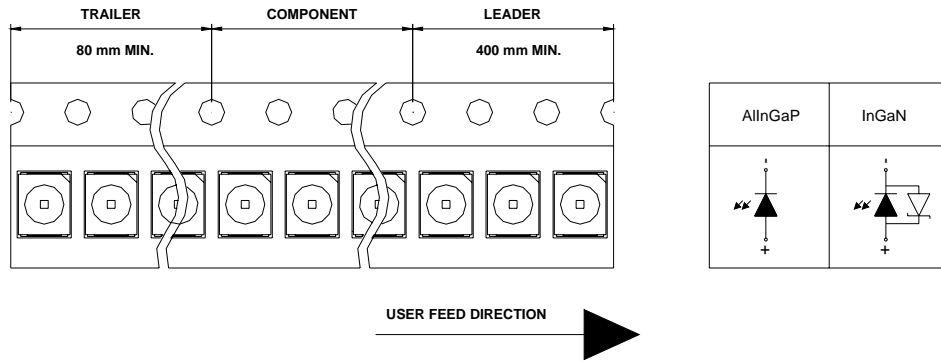


Figure 12. Tape Dimensions.

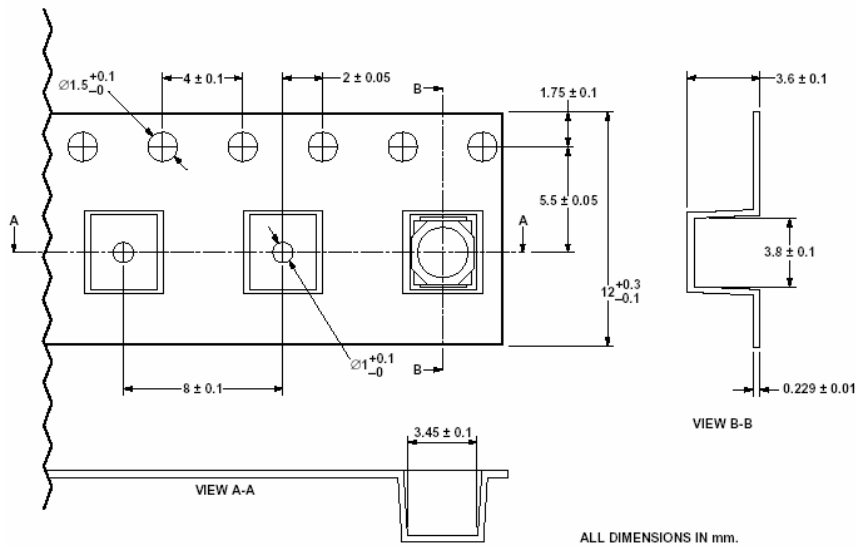
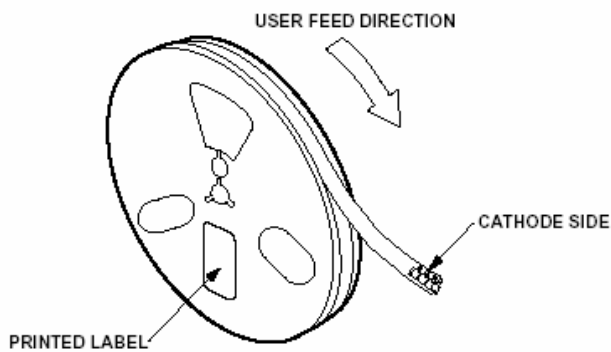


Figure 13. Reeling Orientation.



Storage Condition: 5 to 30°C @ 60% relative humidity max. Baking is required under the condition:

- a) the humidity indicator card color becoming pink
- b) the pack has been opened for more than 4 weeks

Baking recommended condition: 60 ± 5°C for 20 hours.



Intensity Bin Select (X₅X₆)

Intensity Bin limits:

Bin ID	Iv_min(mcd)	Iv_max(mcd)	Red	Yellow	Green	Blue	White
16	310	400					
17	400	520				√	
18	520	675				√	
19	675	880	√			√	
20	880	1140	√	√		√	
21	1140	1485	√	√	√	√	
22	1485	1930	√	√	√		
23	1930	2510	√	√	√		√
24	2510	3265	√	√	√		√
25	3265	4245			√		√
26	4245	5515			√		√
27	5515	7170			√		√
28	7170	9320					√
29	9320	12000					
30	12000	1560					

Color Bin Selection (X₇)

Color Bin Limits:

Iv_max(mcd)	Iv_min(mcd)	Bin ID			
		Red	Yellow	Green	Blue
460	465				A
465	470				F
470	475				K
520	525			F	
525	530			K	
530	535			P	
580	585		A		
585	590		F		
590	595		K		
620	625	A			
625	630	F			
630	635	K			
635	640	P			



KMWH-300-H5 Color Bin Limits:

Color grading	CIE x		CIE y	
	Min	Max	Min	Max
A	0.26	0.28	0.27	0.29
B	0.28	0.3	0.29	0.31
C	0.3	0.32	0.31	0.33
D	0.32	0.34	0.33	0.35

CIE Chromaticity Diagram:

