



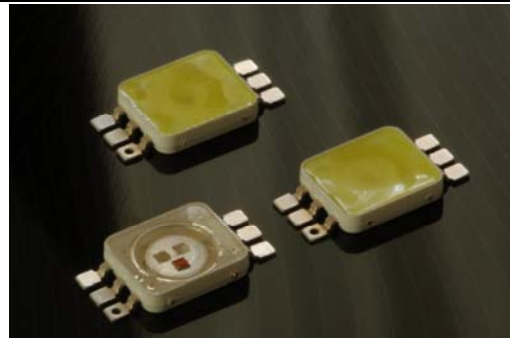
慧明光电(深圳)有限公司  
**KINDWIN**  
TECHNOLOGY (H.K.) CO. LTD.

## High Power LED:1W

### KPXX-0814-1

### FEATURES

High Flux per LED  
Long lifespan(up to 100k hours)  
Available in White、 Warm White、 Green、 Blue、 Red、 Orange  
Lambertian/Collimated Radiation Pattern  
More efficiency than incandescent/most halogen lamps  
Low voltage DC operated  
Cool beam,safe touched



Instant light(less than 100ns)

NO UV

Superior ESD protection

Soldering methods:IR reflow soldering/and hand soldering

### TYPICAL APPLICATLONS

Reading lights (car,bus,aircraft)

Portable lighing(flashlight,bicycle)

Decorative

Appliance

Sign and channel letters

Architectural details

Cove lighting

Automotive Exterior(Stop-tail-turn,CHMSL,Mirror Side Repeat)

LCD backlighths



**Flux Characteristics at 350mA, Junction Temperature, Tj=25 °C**

Color	Min Luminous Flux(lm)	Typical Luminous Flux(lm)	Viewing Angle 2θ 1/2 (degree)
White	50	100	120
Warm White	45	95	
Green	35	50	
Blue	7	18	
Yellow	30	45	
Red	35	50	
Orange	30	50	

**Optical Characteristics at 350mA, Junction Temperature, Tj=25 °C**

Color	Dominant Wavelength λ D Peak Wavelength λ p Color Temperature(CCT)			Spectral Half-Width(nm) Δλ 1/2	Temperature Coefficient or Dominant Wavelength Δλ 1/2 (nm/C)
	Min	Typ	Max		
White	4500K	5500K	10000K	--	--
Warm White	2850K	3300K	3800K	--	--
Green	520nm	530nm	540nm	35	0.04
Blue	460nm	468nm	475nm	25	0.04
Yellow	585nm	590nm	595nm	20	0.05
Red	620nm	628nm	635nm	20	0.05
Orange	600nm	605nm	610nm	20	0.05

**Electrical Characteristics at 350mA, Junction Temperature, Tj=25 °C**

Color	Forward Voltage vf(v)			Dynamic Resistance(Ω)	Temperature Coefficient of vf(mV/C) Δvf/ΔTj	Emitter Thermal Resistance Junction to Board(°C/W)	Star Thermal Resistance Junction to Board(°C/W)
	Min	Typ	Max				
White	2.79	3.55	3.99	1.0	-2	10	15
Warm White	2.79	3.55	3.99	1.0	-2	10	15
Green	2.79	3.55	3.99	1.0	-2	10	15
Blue	2.79	3.55	3.99	1.0	-2	10	15
Yellow	1.9	2.2	3.1	2.4	-2	10	15
Red	1.9	2.2	3.1	2.4	-2	10	15
Orange	1.9	2.2	3.1	2.4	-2	10	15



**ABSOLUTE MAXIMUM RATINGS**

Parameter	White/Warm White/Green/Blue	Yellow/Orange/Red
DC Forward Current(mA)	350	350
Peak Pulse Forward Current(mA)	500	500
Average Forward Current(mA)	350	350
ESD Sensitivity	±16000V HBM	±16000V HBM
LED Junction Temperature(°C)	135	120
Aluminum-core PCB Temperature(°C)	105	105
Storage&Operating Temperature	-40~+100	-40~+100
Reverse Current (uA)	50	50

**Photometric Luminous Flux Bin Structure**

Bin	Minimum photometric Flux(lm)	Maximum photometric Flux(lm)
A	2.9	3.8
B	3.8	4.9
C	4.9	6.3
D	6.3	8.2
E	8.2	10.7
F	10.7	13.9
G	13.9	18.1
H	18.1	23.5
I	23.5	30.6
J	30.6	39.8
K	39.8	51.7
L	51.7	63
M	63	88
N	88	114.4
O	114.4	148
P	148	193
Q	193	251
R	251	326

**Note: Tolerance on each luminous flux bin is ±15%**



**Color Bins for Yellow**

Bin	Minimum Dominant Wavelength(nm)	Maxmum Dominant Wavelength(nm)
1	585	590
2	590	595

**Note:Tolerance on each color bin is  $\pm 15\%$**

**Color Bins for Red**

Bin	Minimum Dominant Wavelength(nm)	Maxmum Dominant Wavelength(nm)
1	620	625
2	625	630
3	630	635

**Note:Tolerance on each color bin is  $\pm 15\%$**

**Color Bins for Orange**

Bin	Minimum Dominant Wavelength(nm)	Maxmum Dominant Wavelength(nm)
1	600	605
2	605	610

**Note:Tolerance on each color bin is  $\pm 15\%$**

**Color Bins for Blue**

Bin	Minimum Dominant Wavelength(nm)	Maxmum Dominant Wavelength(nm)
1	460	465
2	465	470
3	470	475

**Note:Tolerance on each color bin is  $\pm 15\%$**

**Color Bins for Green**

Bin	Minimum Dominant Wavelength(nm)	Maxmum Dominant Wavelength(nm)
1	520	525
2	525	530
3	530	535
4	535	540

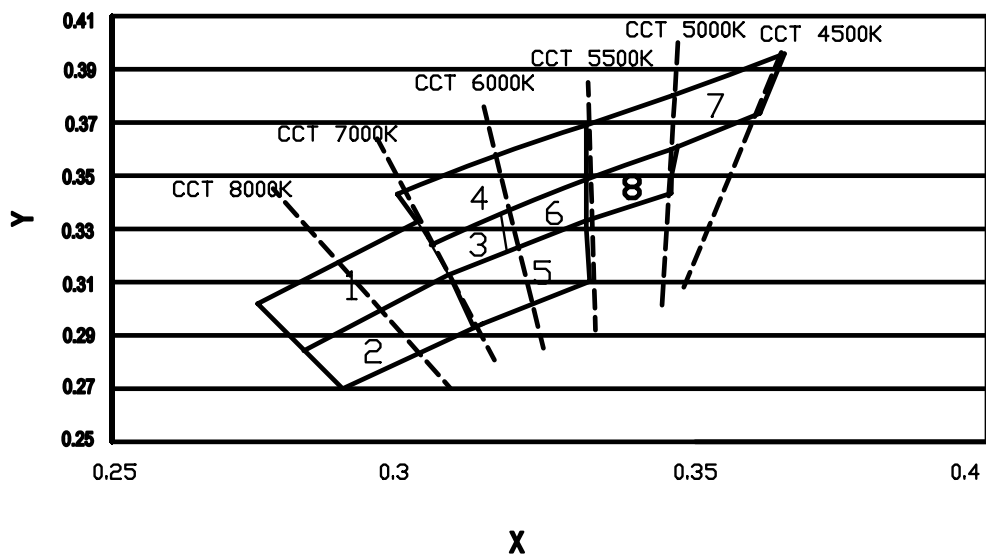
**Note:Tolerance on each color bin is  $\pm 15\%$**



Color Bins for White

Bin Code	X	Y	Typ. CCT (K)	Bin Code	X	Y	Typ. CCT (K)
8	0.346	0.359	5500	4	0.329	0.369	6300
	0.344	0.344			0.329	0.345	
	0.329	0.331			0.305	0.322	
	0.329	0.345			0.301	0.342	
7	0.367	0.4	5350	3	0.316	0.333	6700
	0.362	0.372			0.317	0.32	
	0.329	0.345			0.308	0.311	
	0.329	0.369			0.305	0.322	
6	0.329	0.345	6050	2	0.308	0.311	8000
	0.329	0.331			0.311	0.293	
	0.317	0.32			0.29	0.27	
	0.316	0.333			0.283	0.284	
5	0.329	0.331	6300	1	0.303	0.333	8000
	0.33	0.31			0.308	0.311	
	0.311	0.293			0.283	0.284	
	0.308	0.311			0.274	0.301	

Note: Tolerance on each color bin (X,Y) is  $\pm 0.01$

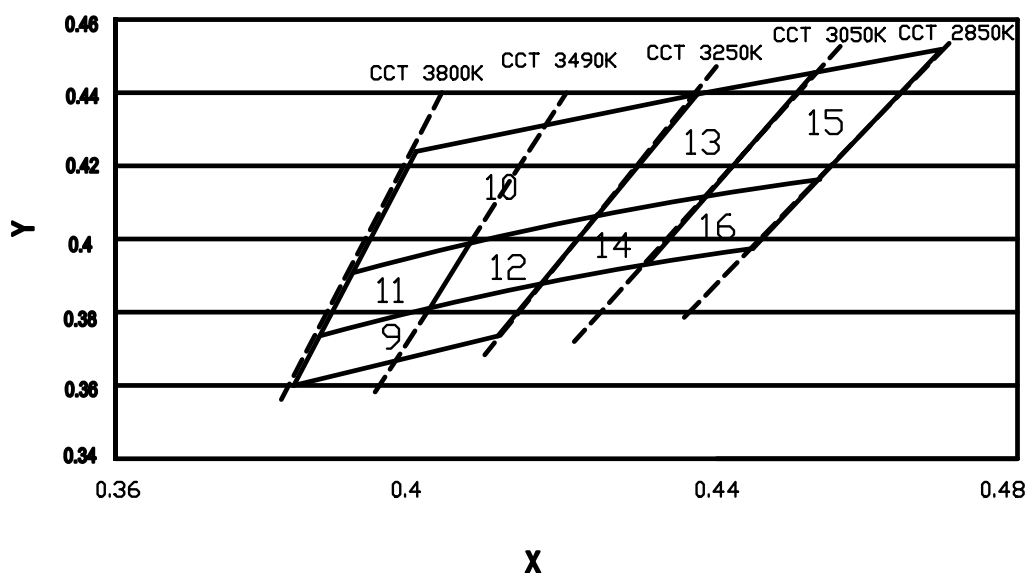




Color Bins for White

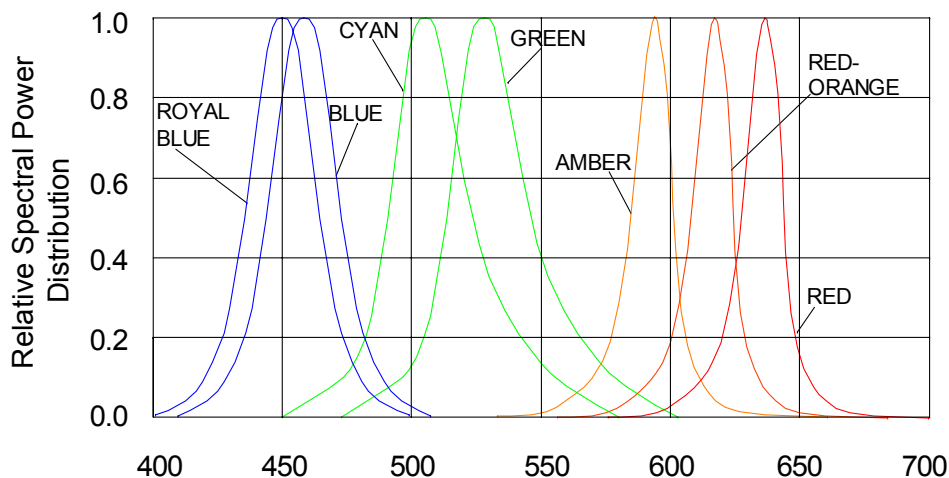
Bin Code	X	Y	Typ. CCT (K)	Bin Code	X	Y	Typ. CCT (K)
16	0.438	0.412	2950	12	0.409	0.400	3370
	0.429	0.394			0.402	0.382	
	0.444	0.399			0.416	0.389	
	0.453	0.416			0.424	0.406	
15	0.454	0.446	2950	11	0.392	0.391	3640
	0.438	0.412			0.387	0.374	
	0.453	0.416			0.402	0.382	
	0.471	0.451			0.409	0.400	
14	0.424	0.406	3150	10	0.402	0.423	3500
	0.416	0.389			0.392	0.391	
	0.429	0.394			0.424	0.406	
	0.438	0.412			0.438	0.440	
13	0.438	0.440	3150	9	0.387	0.374	3500
	0.424	0.406			0.383	0.360	
	0.438	0.412			0.410	0.374	
	0.454	0.446			0.387	0.389	

Note: Tolerance on each color bin (X,Y) is  $\pm 0.01$





**TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES**



**White Color Spectrum**

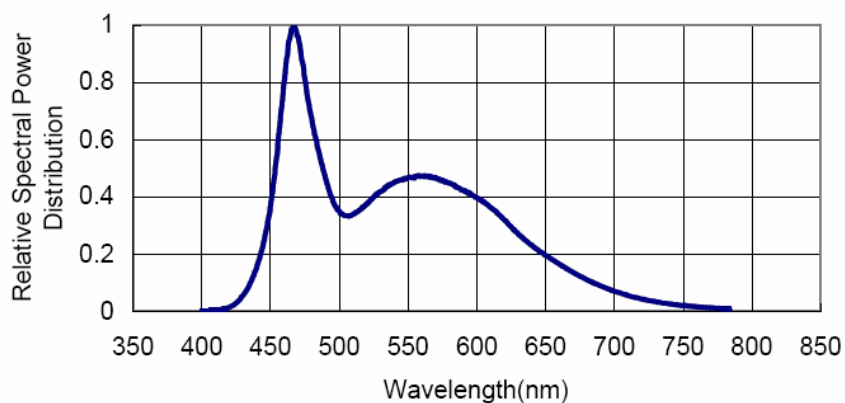


Figure 1b. White Color Spectrum of Typical 5500K Part.

**Warm White Color Spectrum**

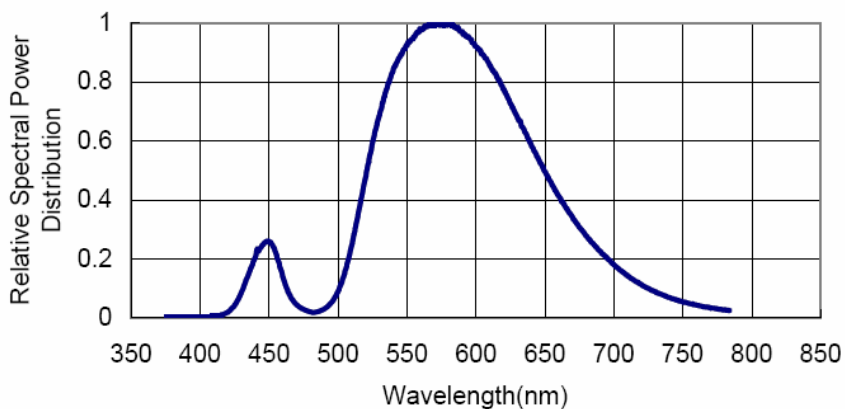


Figure 1c. Warm White Color Spectrum of Typical 3300K Part.



**LIGHT OUTPUT CHARACTERISTICS**

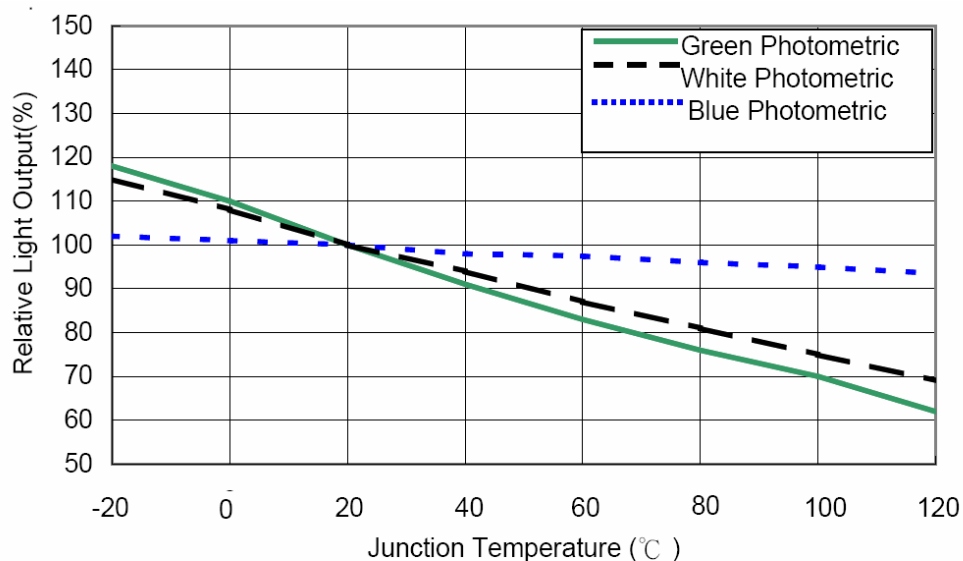


Figure 2a. Relative Light Output vs. Junction Temperature

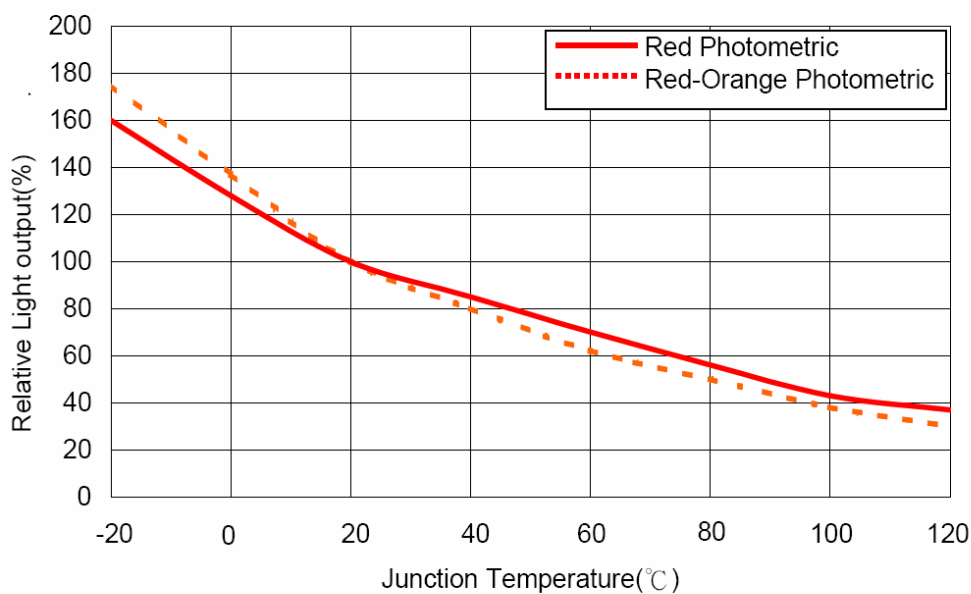


Figure 2b. Relative Light Output vs. Junction Temperature



**FORWARD CURRENT CHARACTERISTICS,  $T_J = 25^\circ\text{C}$**

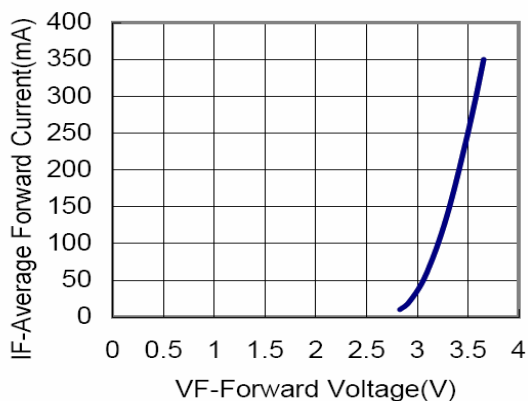


Fig 3a. Forward Current vs. Forward Voltage for White, Warm White, Blue and Green.

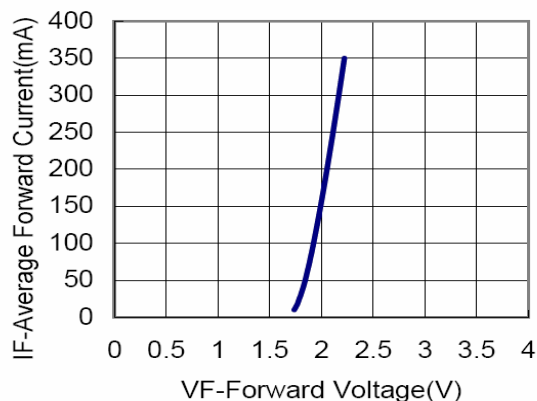


Fig 3b. Forward Current vs. Forward Voltage for Amber, Red-Orange and Red.

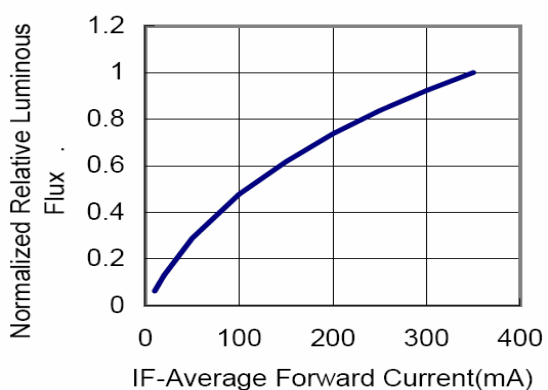


Fig 4a. Relative Luminous Flux vs. Forward Current for White, Warm White, Blue and Green at  $T_J=25^\circ\text{C}$  maintained.

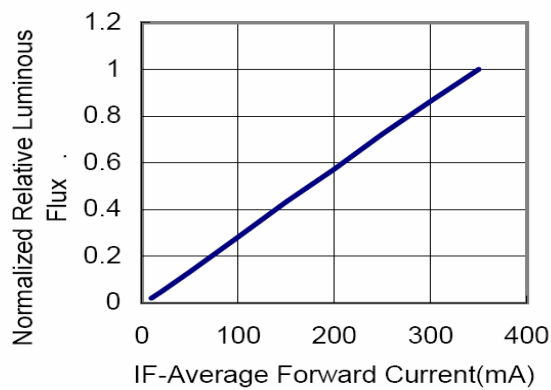


Fig 4b. Relative Luminous Flux vs. Forward Current for Amber, Red-Orange, Red at  $T_J=25^\circ\text{C}$  maintained.



**CURRENT DERATING CURVES**

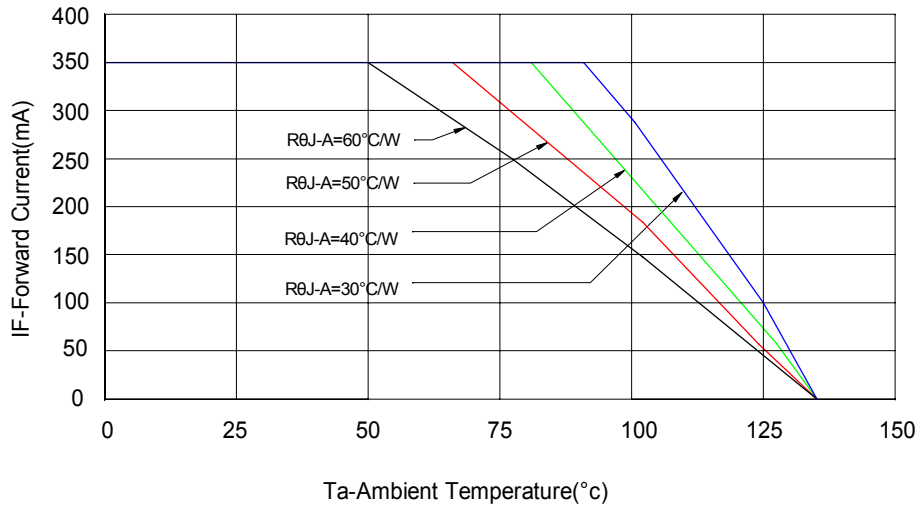


FIG. 5. Maximum Forward Current vs. Ambient Temperature. Derating based on  $T_{jMAX}=135^{\circ}C$  for White, Warm White, Blue and Green.

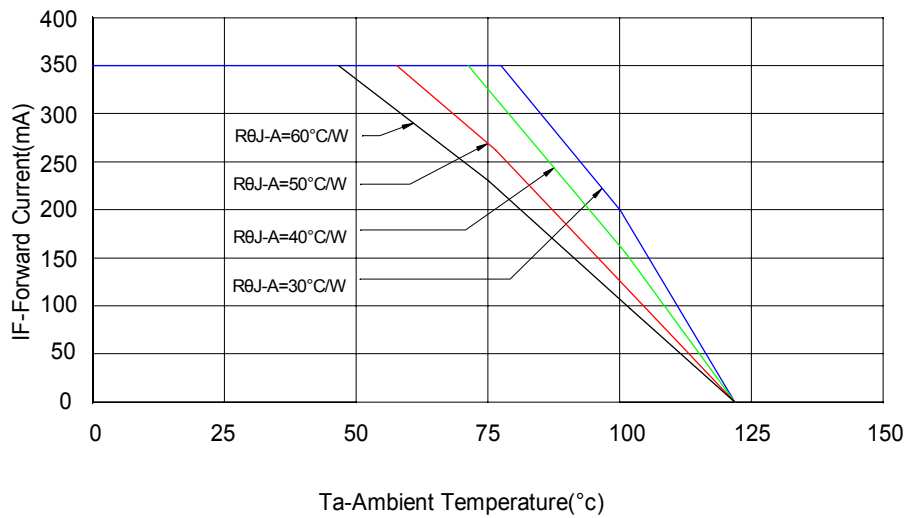
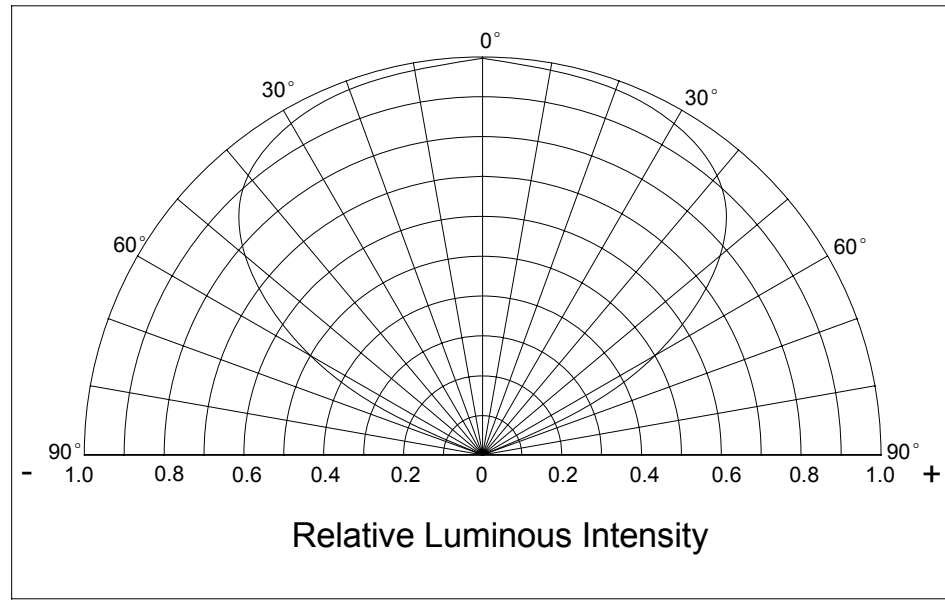


FIG. 5. Maximum Forward Current vs. Ambient Temperature. Derating based on  $T_{jMAX}=120^{\circ}C$  for Amber, Red-Orange and Red.

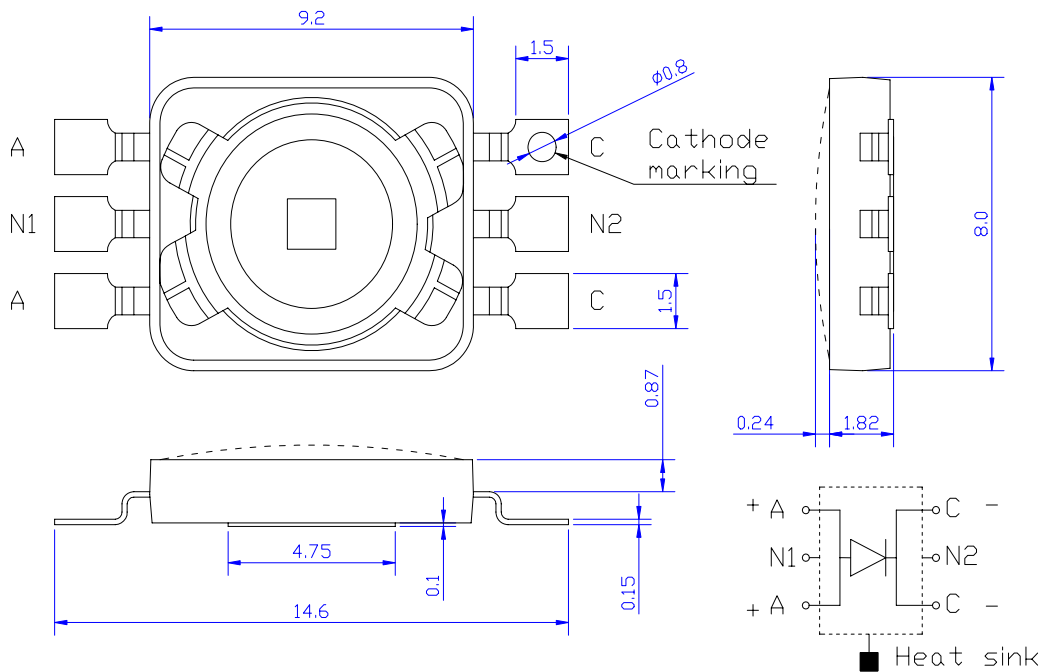


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**Directive Characteristics(Ta=25°C)**

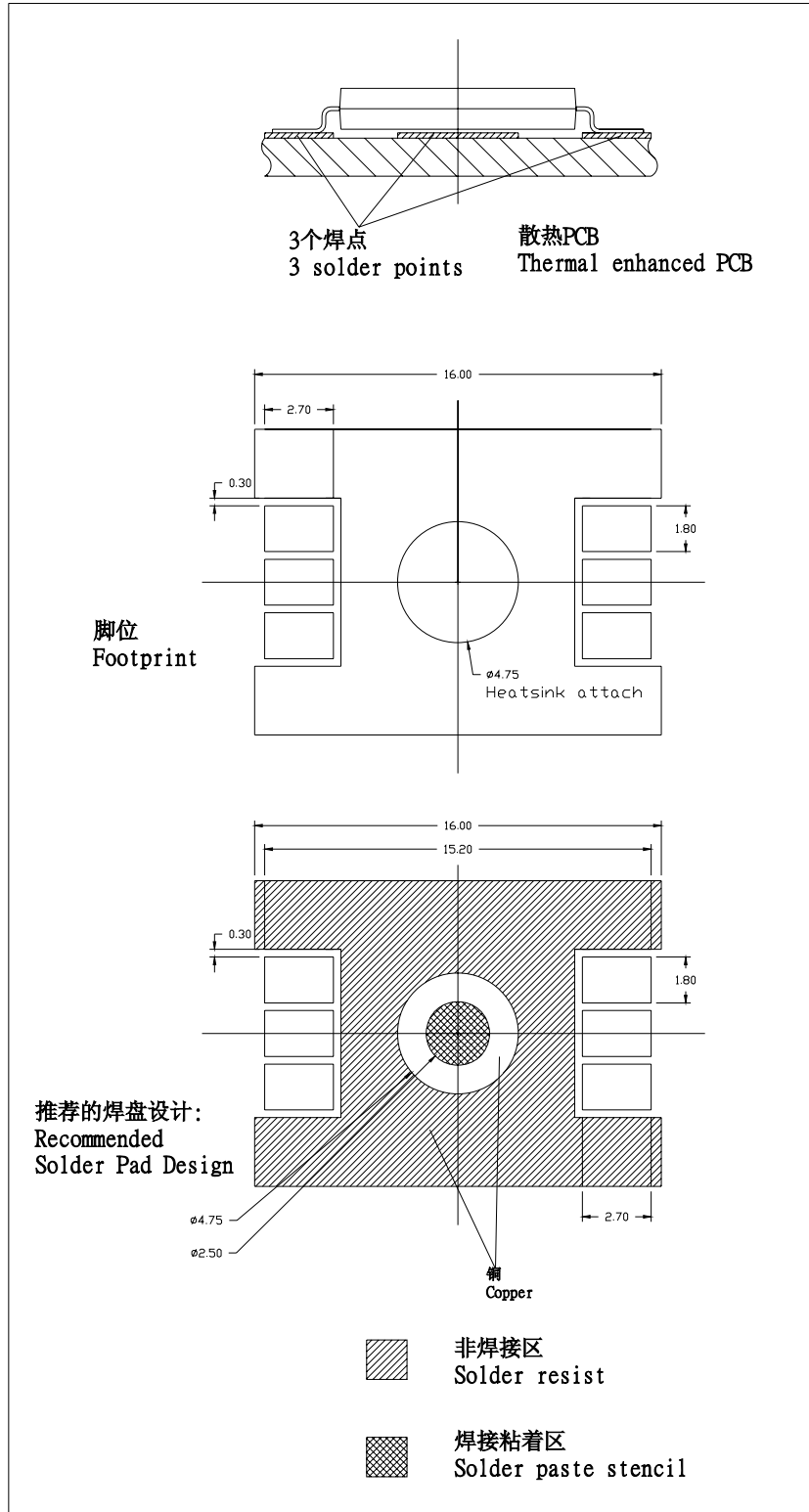


**Package Outlines**





**Recommended Soldering Pad8) page 16IR Reflow Soldering**





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