

SPECIFICATION

MODEL : LCP-XPW13-3600B5

Ceramic P serial



LED SMC SEMICONDUCTOR
KOREA

Part No. LCP-XPW13-360B5

Supplier name :
LED SMC Semiconductor

Acknowledgment number :

Product Acknowledgment

Customer Name :

Customer Model :

Customer Part Number :

Supply-side model :

Acknowledgment Effective Date :

Manufacturers		Client Confirm (Quality)		Client Confirm (R & D)	
Prepared		Qualified <input type="checkbox"/>		Qualified <input type="checkbox"/>	
		Unqualified <input type="checkbox"/>		Unqualified <input type="checkbox"/>	
Audit		Audit		Audit	
Approve		Approve		Approve	

(After both sides confirmed the Acknowledgment qualified, must be signed and sealed)

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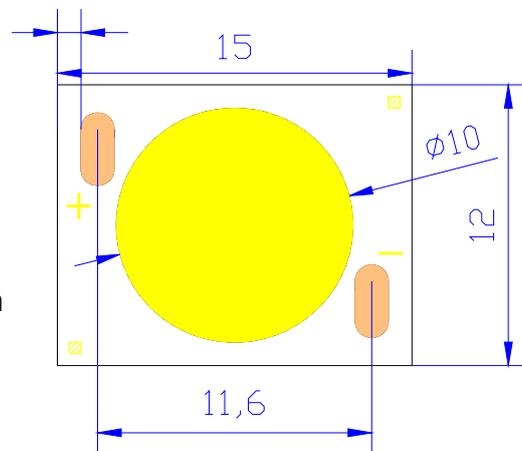
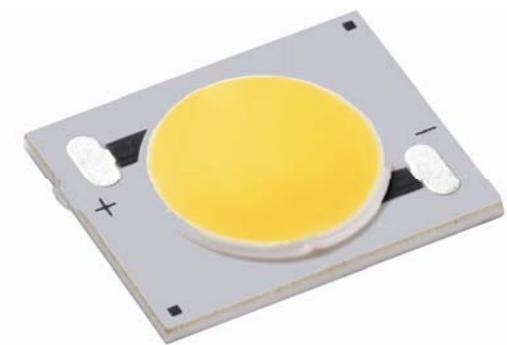
Features :

- ⌘ Higher luminous efficiency and thermal dissipation
- ⌘ Higher flexibility
- ⌘ Higher reflectivity
- ⌘ More reliable and longer life
- ⌘ Lower coefficient of thermal expansion and contraction
- ⌘ More flat under high temperatures
- ⌘ High voltage resistant

Typical Applications :

- ⌘ Spot light
- ⌘ Bulb
- ⌘ Down Light
- ⌘ cornering lamp
- ⌘ Panel Light
- ⌘ Street Light

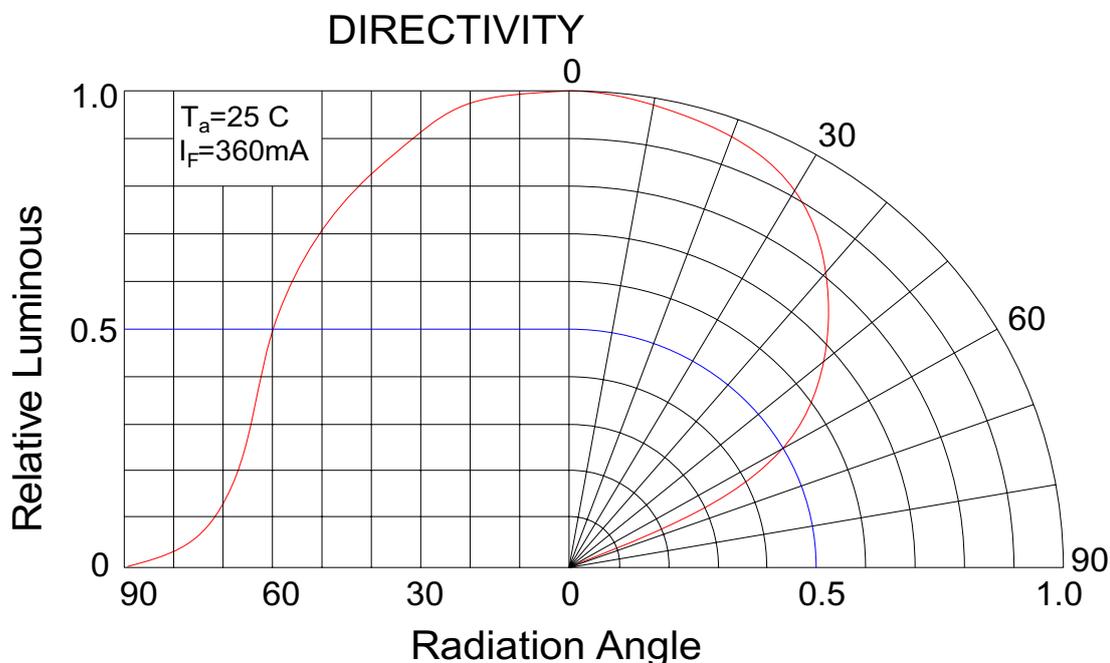
Product Picture:



NOTES:

- ⌘ All dimensions are millimeter.
- ⌘ Tolerance is ± 0.1 mm unless otherwise noted.
- ⌘ It is strongly recommend ed that the temperature of lead be not higher than 85°C .
- ⌘ The appearance and specific ations of the product may be modified for improvement without notice.

Typical Radiation Pattern



Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test Condition	Value		Unit
			Min.	Max.	
DC Forward Current	I_F	----	----	520	mA
Peak Pulse Current	I_{peak}	Duty=1/10 1kHz	----	800	mA
Power Dissipation	P_d	----	----	20.5	W
LED Junction Temperature	T_J	----	----	125	$^\circ\text{C}$
Operating Temperature	T_{opr}	----	-25	+85	$^\circ\text{C}$
Storage Temperature	T_{str}	----	-40	+100	$^\circ\text{C}$
ESD Sensitivity	----	HBM	8000	----	V
Soldering Temperature	----	----	220 $^\circ\text{C}$ for 5 Seconds max		

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Electrical and optical characteristics (T_a = 25°C)

Parameter	Symbol	Test Condition	Value			Unit	
			Min.	Typ.	Max.		
Forward Voltage	V _F	I _F = 360mA		36		V	
Luminous Flux	Φ _v			1400	----	lm	
Viewing Angle	2θ 1/2			----	120	----	Deg.
Color Temperature	CCT		5000	-----	6500	K	
Color Rendering	R _a		70			--	
Thermal Resistance	R _J	-----		1.9		°C/W	

Luminous Flux Bins (T_a = 25°C) Unit:lm

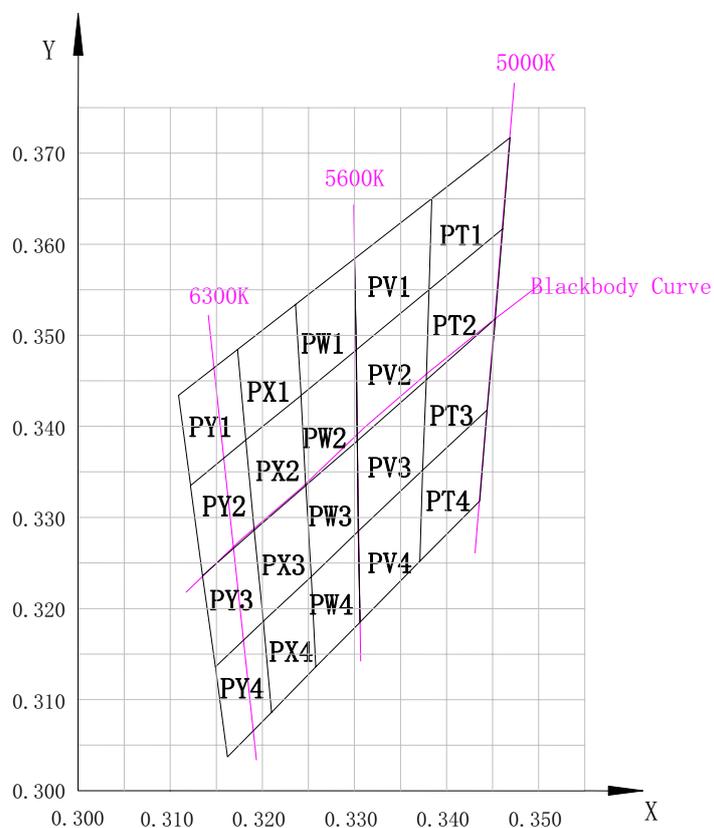
Bin	G2	H2	J2
Min	1200	1400	1600
Max	1400	1600	1800

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Chromaticity Coordinates Ranks($I_F=360\text{mA}$ $T_a=25^\circ\text{C}$)

Bin	x1	y1	x2	y2	x3	y3	x4	y4
PT1	0.3384	0.3650	0.3381	0.3550	0.3461	0.3617	0.3469	0.3717
PT2	0.3381	0.3550	0.3378	0.3451	0.3453	0.3518	0.3461	0.3617
PT3	0.3378	0.3451	0.3374	0.3352	0.3444	0.3418	0.3453	0.3518
PT4	0.3374	0.3352	0.3371	0.3252	0.3436	0.3318	0.3444	0.3418
PV1	0.3300	0.3584	0.3302	0.3484	0.3381	0.3550	0.3384	0.3650
PV2	0.3302	0.3484	0.3303	0.3384	0.3378	0.3451	0.3381	0.3550
PV3	0.3303	0.3384	0.3304	0.3285	0.3374	0.3352	0.3378	0.3451
PV4	0.3304	0.3285	0.3306	0.3185	0.3371	0.3252	0.3374	0.3352
PW1	0.3236	0.3534	0.3242	0.3434	0.3302	0.3484	0.3300	0.3584
PW2	0.3242	0.3434	0.3247	0.3335	0.3303	0.3384	0.3302	0.3484
PW3	0.3247	0.3335	0.3253	0.3235	0.3304	0.3285	0.3303	0.3384
PW4	0.3253	0.3235	0.3258	0.3136	0.3306	0.3185	0.3304	0.3285
PX1	0.3173	0.3484	0.3182	0.3385	0.3242	0.3434	0.3236	0.3534
PX2	0.3182	0.3385	0.3191	0.3286	0.3247	0.3335	0.3242	0.3434
PX3	0.3191	0.3286	0.3201	0.3186	0.3253	0.3235	0.3247	0.3335
PX4	0.3201	0.3186	0.3210	0.3086	0.3258	0.3136	0.3253	0.3235
PY1	0.3109	0.3434	0.3122	0.3335	0.3182	0.3385	0.3173	0.3484
PY2	0.3122	0.3335	0.3135	0.3236	0.3191	0.3286	0.3182	0.3385
PY3	0.3135	0.3236	0.3149	0.3136	0.3201	0.3186	0.3191	0.3286
PY4	0.3149	0.3136	0.3162	0.3037	0.3210	0.3086	0.3201	0.3186

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Notes :

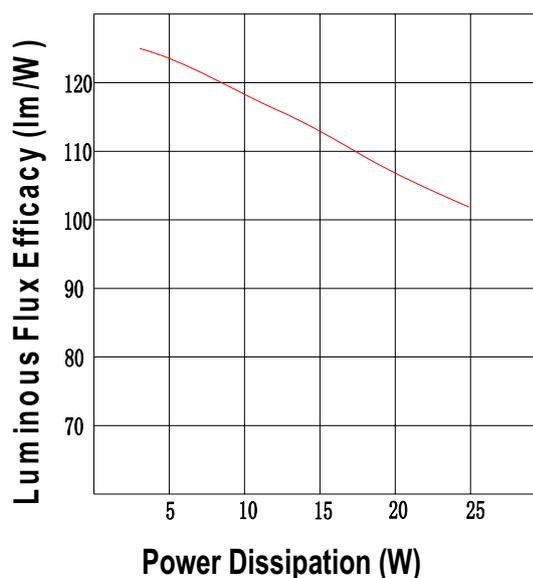
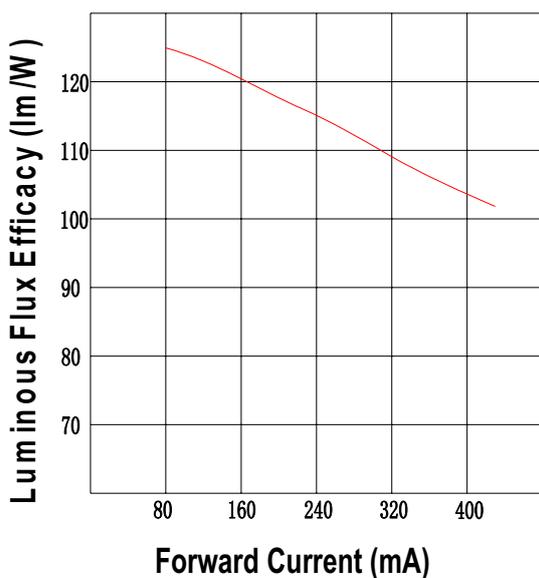
1. * Ranking at $T_C=25^\circ\text{C}$
2. * It is strongly recommended that the temperature of lead be not higher than 85°C
3. * Tolerance of measurements of the Forward Voltage is $\pm 2\%V$
4. * Tolerance of measurements of the Luminous Flux is $\pm 10\%$
5. * Tolerance of measurements of the Color Rendering R_a is ± 3
6. * Chromaticity Coordinates (x,y) is measured with an accuracy of ± 0.01

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Luminous Flux Efficacy characteristics

Current vs Luminous Flux efficacy (lm/W) $T_a=25^{\circ}\text{C}$

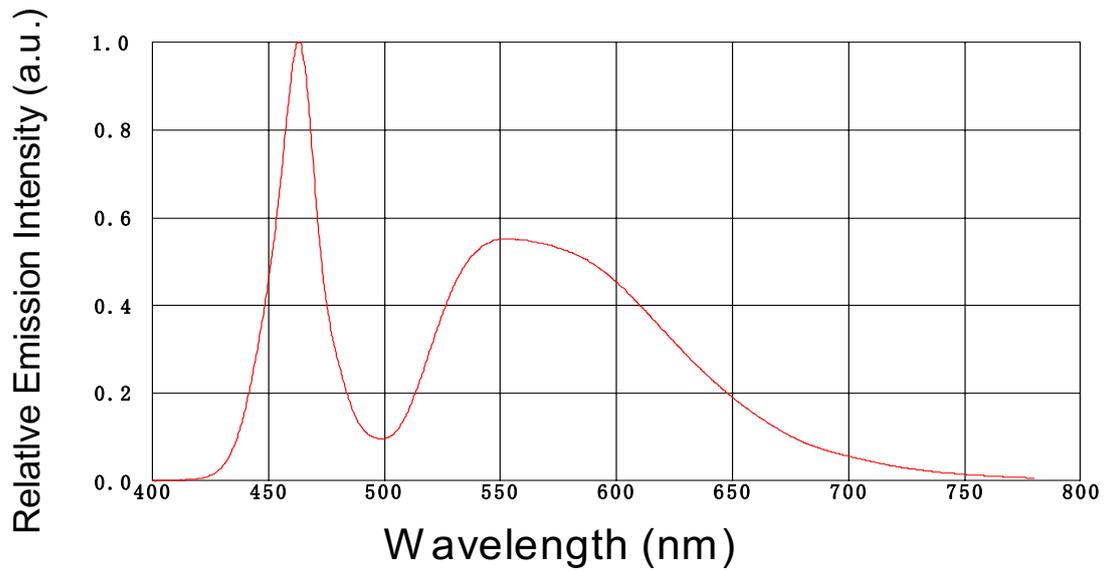
Current (mA)	Forward Voltage (V)	Power Dissipation (W)	Luminous Flux Efficacy (lm/W)
80	33.6	2.7	125
160	34.2	5.5	119
240	35	8.4	114
320	35.5	11.36	107
400	37.2	14.88	105
500	38.4	19.2	100



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Characteristic spectrum : $T_J=25^{\circ}\text{C}$

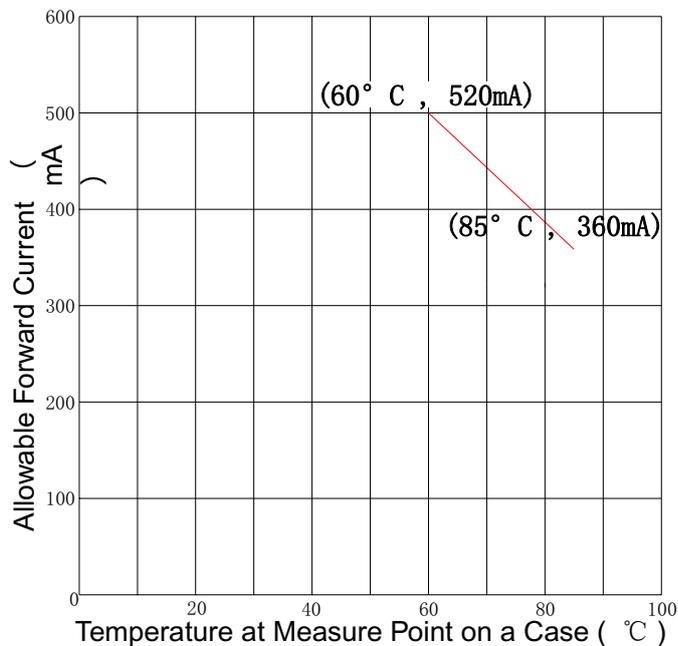
White



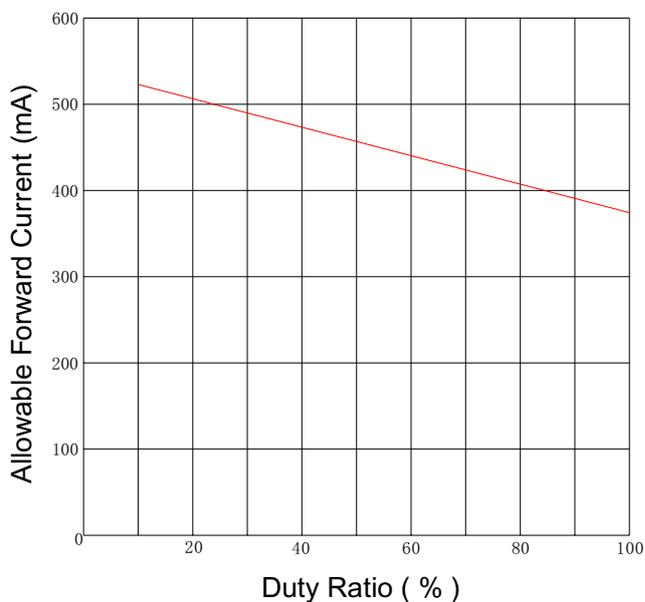
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Derating characteristics :

Temperature at Measure Point on a Case Vs Allowable Forward Current



Duty Ratio Vs Allowable Forward Current



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Typical electrical/optical characteristic curves :

Fig.1 Forward Current (mA) Vs Forward Voltage(V)

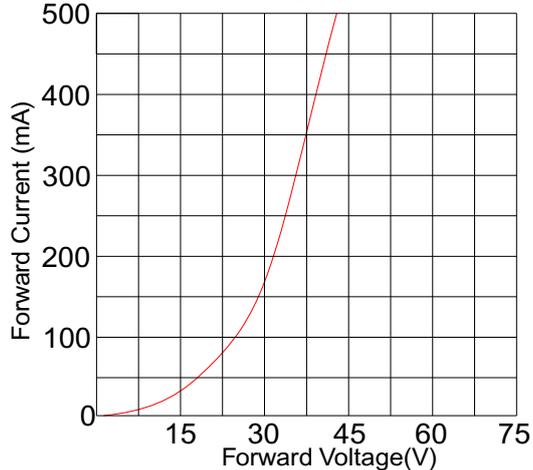


Fig.2 Relative intensity Vs Forward Current (mA)

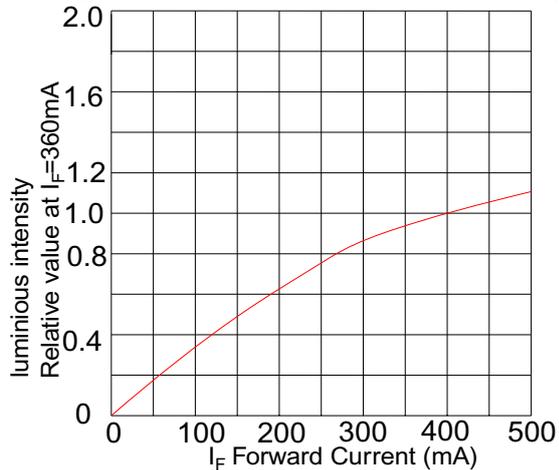


Fig.3 Forward Current Vs Ambient Temperature

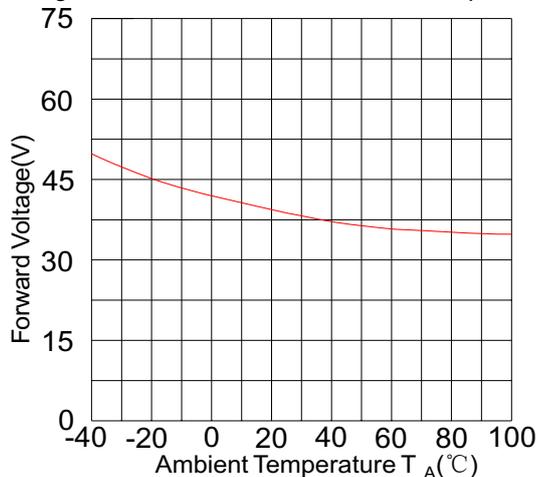
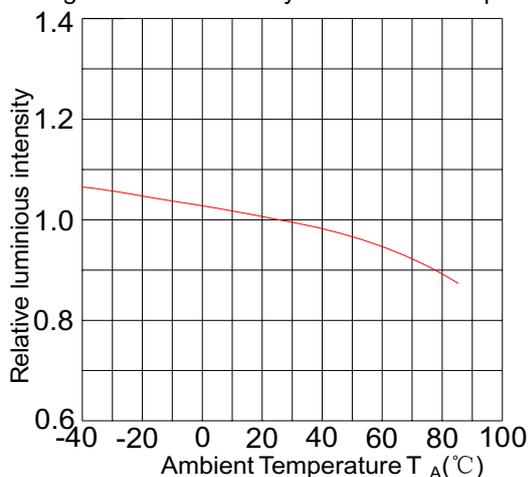
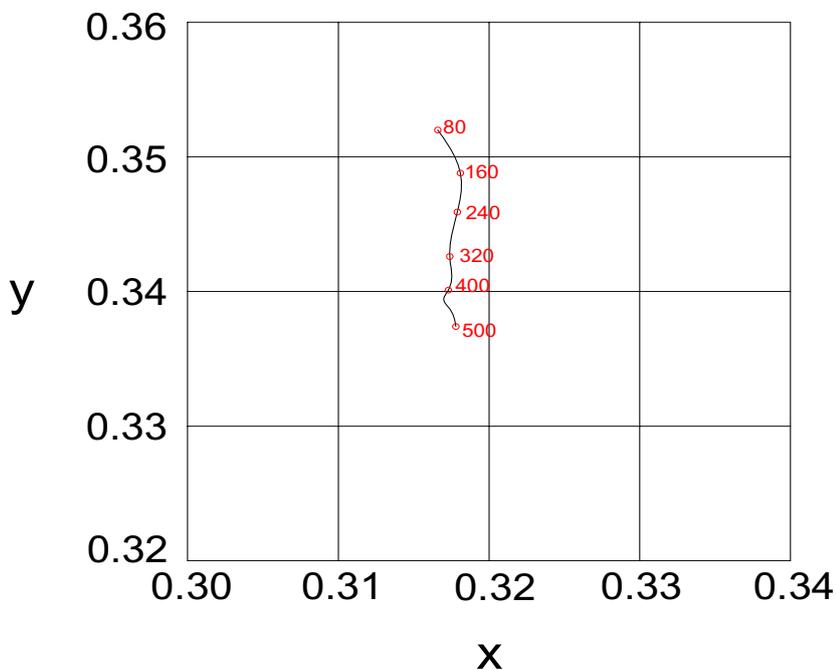


Fig.4 Relative intensity Vs Ambient Temperature

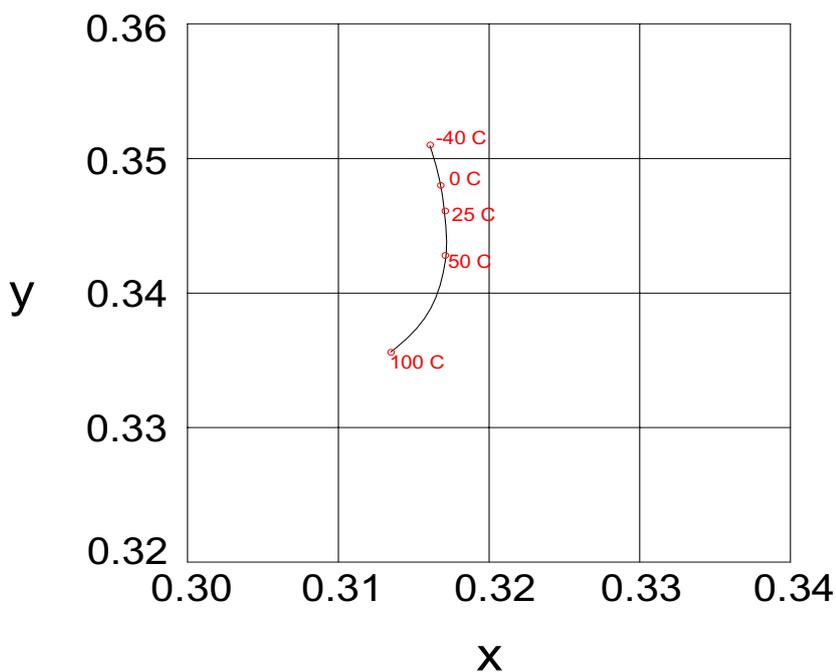


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Forward Current Vs Chromaticity Coordinate



Ambient Temperature Vs Chromaticity Coordinate



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Reliability

Tests and Results

Test	Reference Standard	Test Conditions	Test Duration	Units Failed/ Tested
Temperature Cycle	JEITA ED-4701 100 105	-40°C (30min) ∼ 25°C (5min) ∼ 100°C (30min) ∼ 25°C (5min)	100cycles	0/10
High Temperature Storage	JEITA ED-4701 200 201	T _A =100°C	1000hours	0/10
Temperature Humidity Storage	JEITA ED-4701 100 103	T _A =60°C RH=90%	1000hours	0/10
Low Temperature Storage	JEITA ED-4701 200 202	T _A =-40°C	1000hours	0/10
High Temperature Operating Life		T _C =85°C T _F =520mA	1000hours	0/10
Electrostatic Discharges	JEITA ED-4701 300 304	HBM 8KV 3KΩ 100Pf 3pulses negative		0/10
Temperature Cycle *1	Sunpu-opto	-40°C (30min) ∼ (90s) ∼ 110°C (30min) ∼ (90s) -40°C	300cycles	0/10
Temperature Humidity Storage*2	Sunpu-opto	T _A =85°C RH=85% T _F =360mA	1000hours	0/10

NOTES:

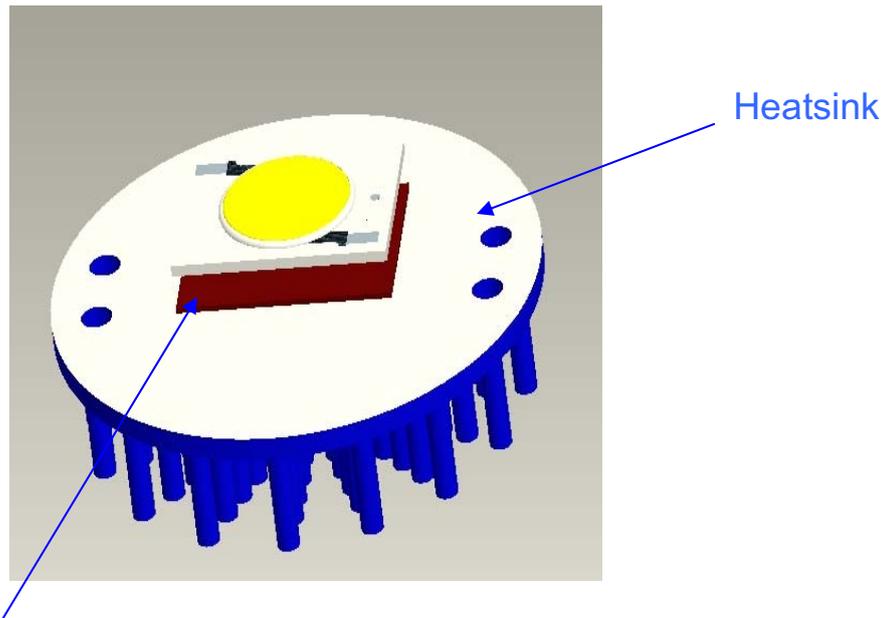
* Measurements are performed after allowing the LEDs to return to room temperature

Failure Criteria

Items	Conditions	Failure Criteria
Forward Voltage (V _F)	I _F =100mA	>Initial value x 1.1
Luminous Flux (Φ _v)	I _F =100mA	<Initial value x 0.7

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Recommended installation screw pitch



Thermal conduction materials

If you can not solve the heat problem, the product will destroy easily. Suggest that the surface of the heat sink is $35\text{cm}^2/\text{W}$