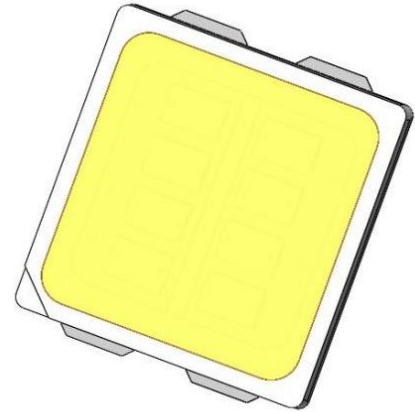


ETI 5050 Square

EMC5050 LED Package 6V Series

WR-EA5WXXS05-HJ-S Datasheet



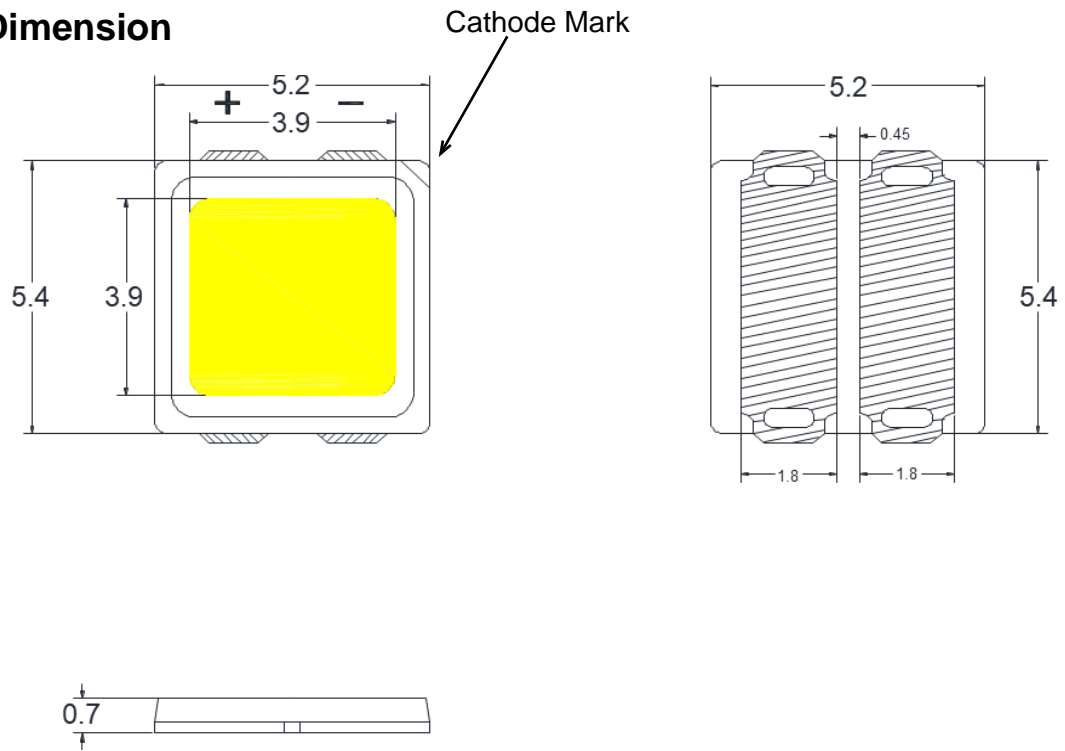
High efficacy and high luminous flux output

Suitable for Street light and High-Bay applications.

Features & Benefits

- High current operation capacity
- High reliability and long lifetime
- Robust coating design for strengthened Anti-sulfur protection capability
- Uniform light distribution under any beam angle
- RoHS compliance

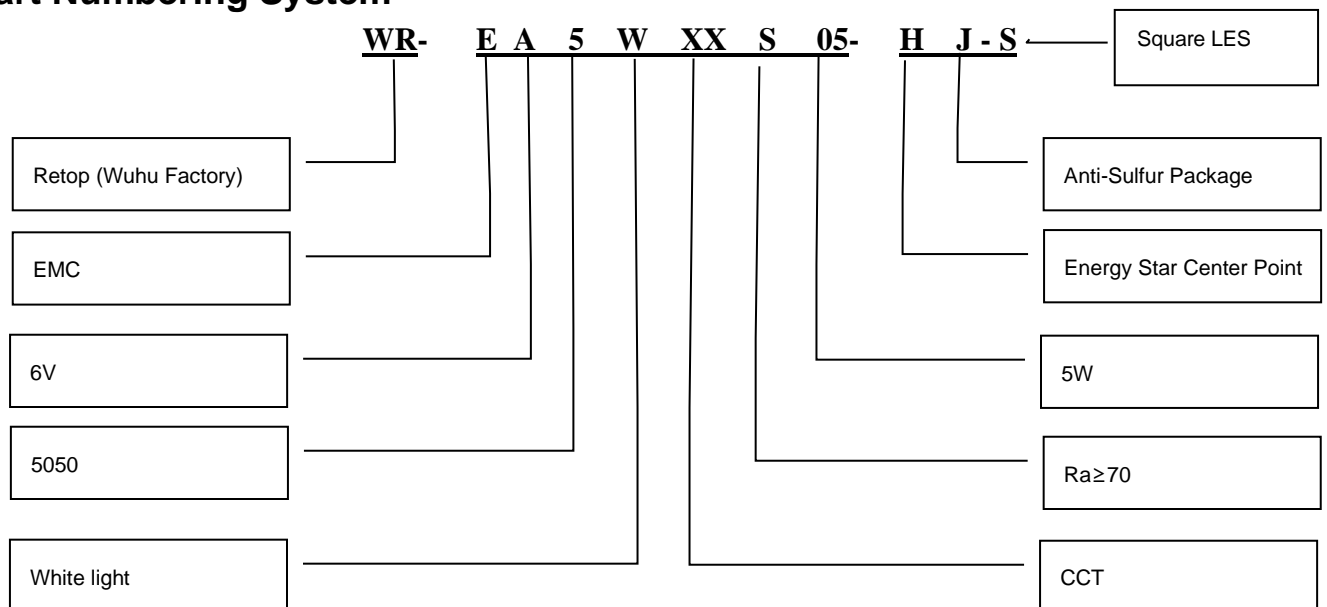
Package Dimension



Notes:1.All dimensions are in millimeters.

2.Tolerances areX.X ±0.1; .

Part Numbering System



Absolute Maximum Ratings (Tsp= 25°C)

Parameter	Symbol	Absolute Maximum Rating	Unit
Forward current	IF	1000	mA
Power Dissipation	PD	6.6	W
Pulse Forward Current[1]	IFP	1200	mA
Operating temperature	Topr	-40~+105	°C
Storage temperature	Tstg	-40~+105	°C
Junction Temperature	Tj	125	°C
Thermal resistance	Rthj,s	3	°C/W
Electrostatic Discharge(HBM)	ESD	2000	V

Notes:

[1]1/10 Duty cycle,0.1ms pulse width.

Electro-optical Characteristics (Tsp=25°C)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Test Condition
Forward Voltage	V _F	5.8	6.2	6.6	V	IF=750mA
Luminous Flux	Φ _v	720	795	870	lm	IF=750mA
Color Temperature	CCT	2700	---	7000	K	IF=750mA
Color Rendering Index	Ra	70	---	80	/	IF=750mA
View Angle	2θ _{1/2}	---	120	---	°	IF=750mA

Notes:

1. Tolerance of Luminous flux: ±7%.
2. Tolerance of Forward Voltage: ±1V.
3. Tolerance of Color Rendering Index:±3
4. Tolerance of View angle2θ_{1/2}:±5

Luminous Flux Characteristics(IF=750mA, Tsp=25°C)

Part No	Nominal CCT	Minimum CRI	Luminous Flux(lm)		
			Rank	Min.	Max.
WR-EA5W27S05-HJ-S	2700K	70	V1	720	780
WR-EA5W30S05-HJ-S	3000K	70	V2	750	810
WR-EA5W35S05-HJ-S	3500K	70	V3	780	840
WR-EA5W40S05-HJ-S	4000K	70	V4	810	870
WR-EA5W50S05-HJ-S	5000K	70	V4	810	870
WR-EA5W57S05-HJ-S	5700K	70	V3	780	840
WR-EA5W65S05-HJ-S	6500K	70	V3	780	840

Flux Bin Rank(IF=750mA, Tsp=25°C)

Flux Rank	Min.	Max.	Unit	Condition
V1	720	780	lm	IF=750mA
V2	750	810		
V3	780	840		
V4	810	870		

Note: Tolerance of Luminous flux: ±10%.

Forward Voltage Bin (IF=750mA, Tsp=25°C)

Voltage Rank	Min.	Max.	Unit	Condition
AM2	5.8	6.0	V	IF=750mA
AN1	6.0	6.2		
AN2	6.2	6.4		
AN3	6.4	6.6		

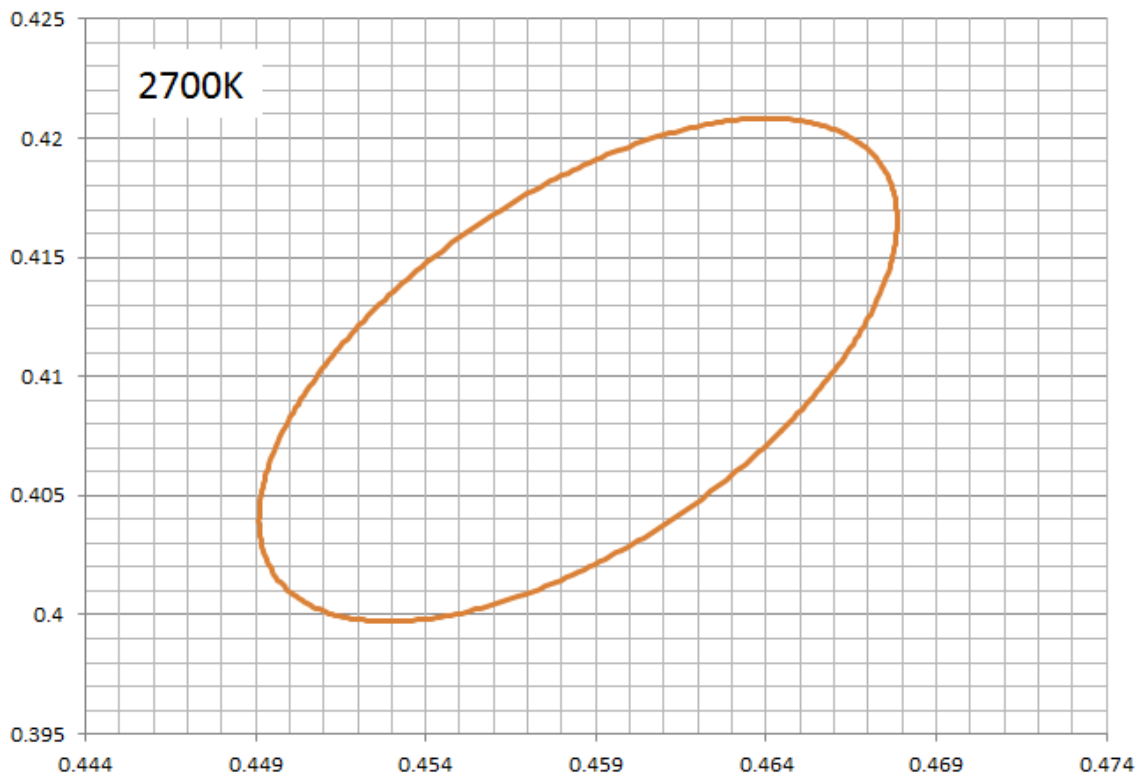
Note: Tolerance of Forward Voltage: ±0.1V.

Available Ranks

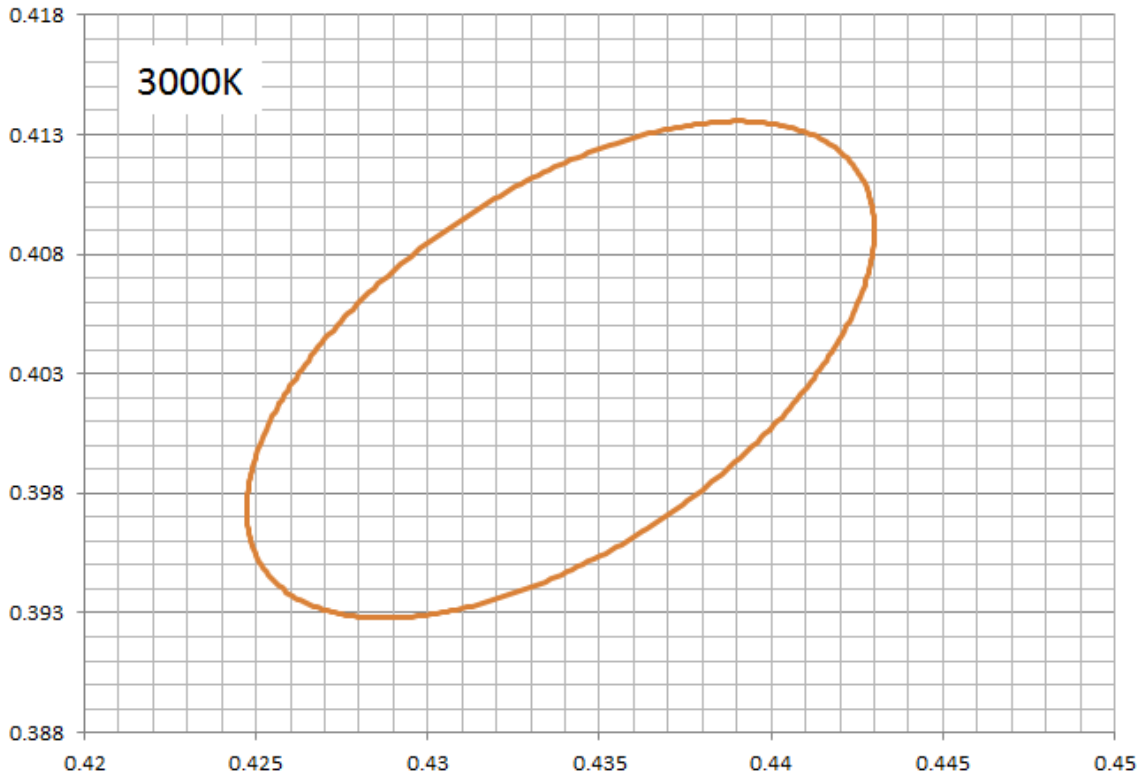
C.I.E. 1931 Chromaticity Diagram

5-step MacAdam ellipse color bin definitions

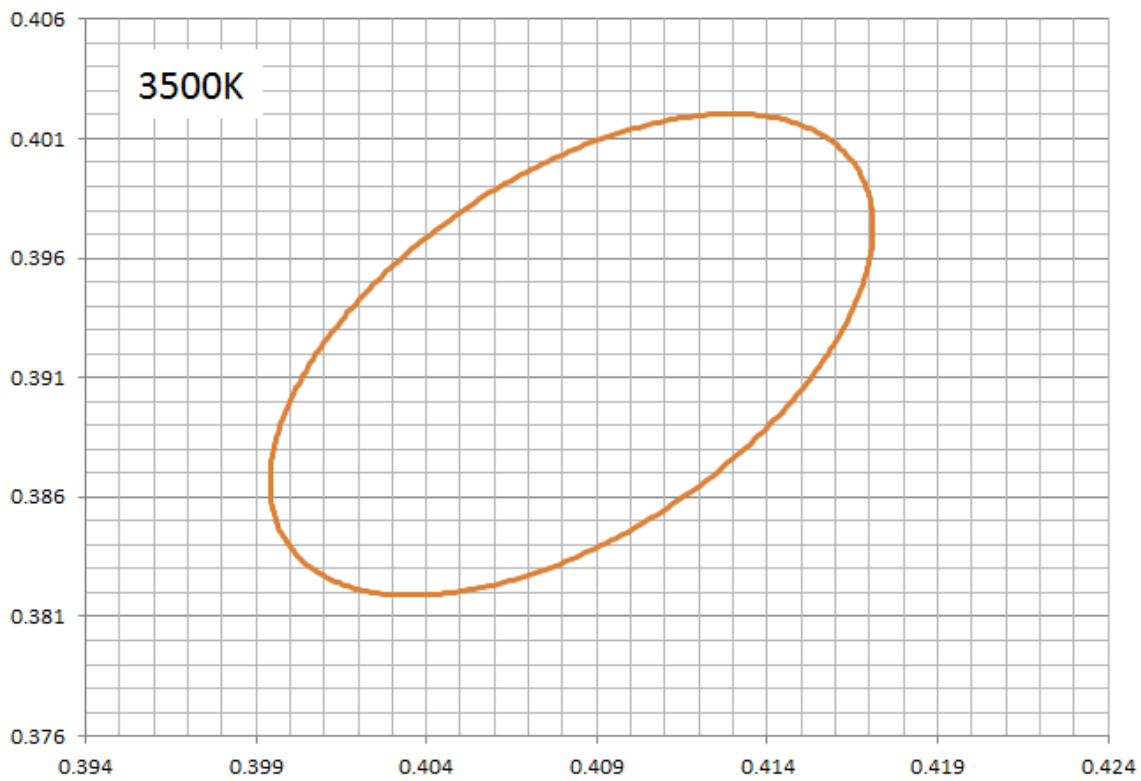
CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
2700K	27R5	5-step	0.4584	0.4101	0.00258	0.00137	57.17



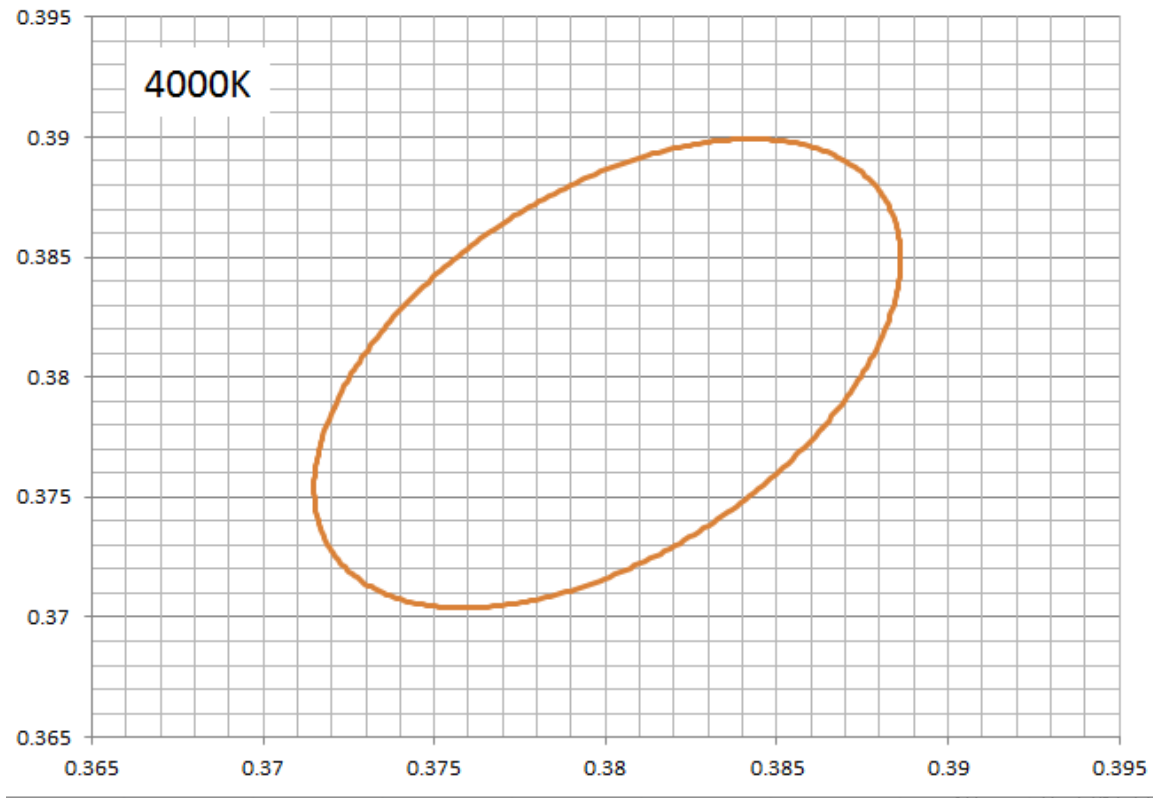
CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
3000K	30R5	5-step	0.4338	0.403	0.00278	0.00136	53.10



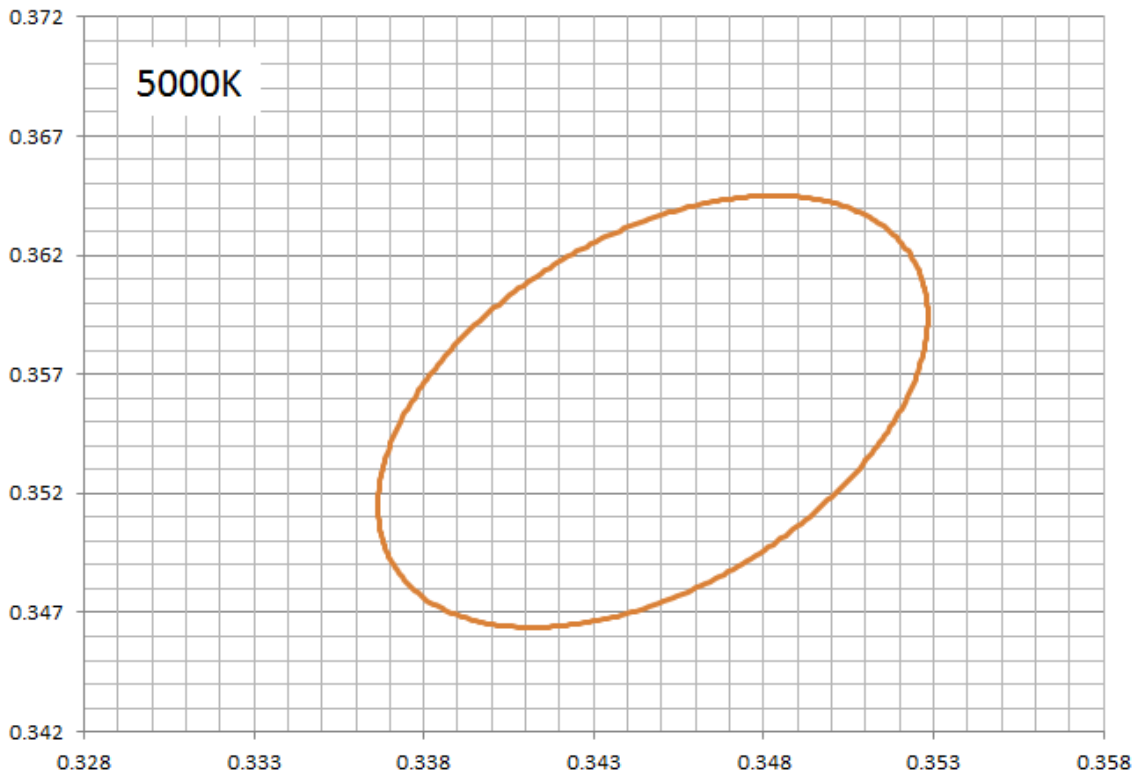
CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
3500K	35R5	5-step	0.4082	0.3918	0.00317	0.00139	52.58



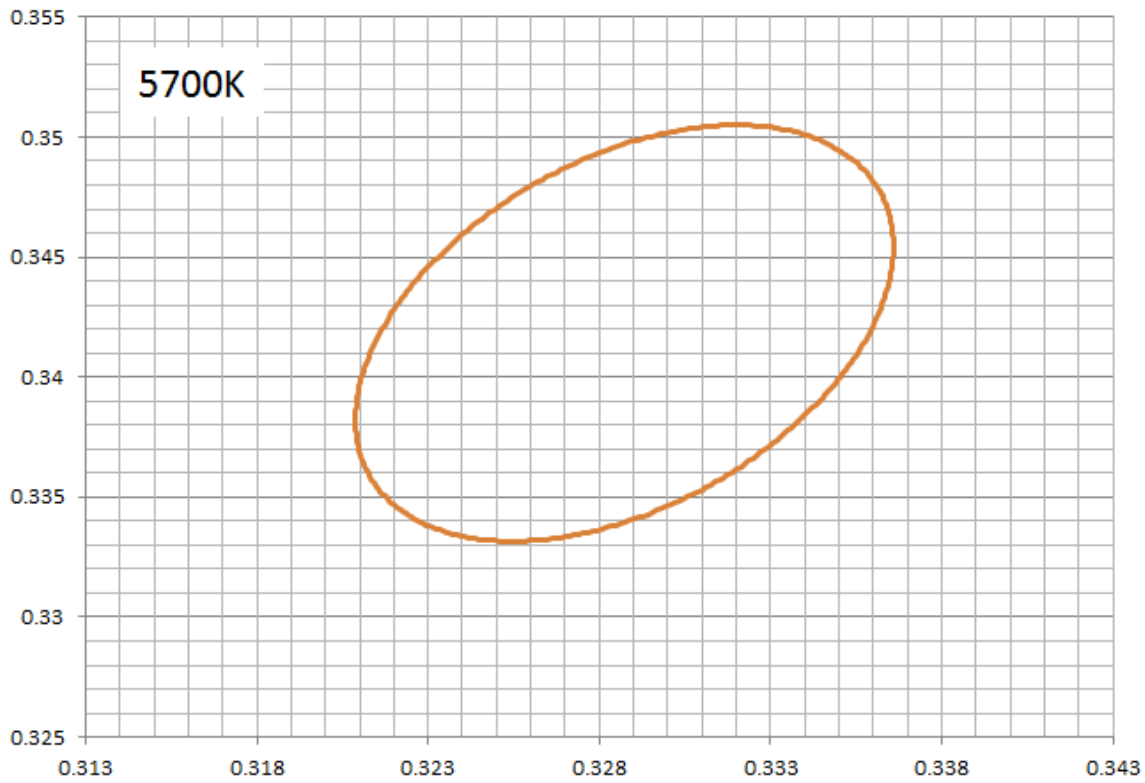
CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
4000K	40R5	5-step	0.38	0.38	0.00313	0.00134	54.00



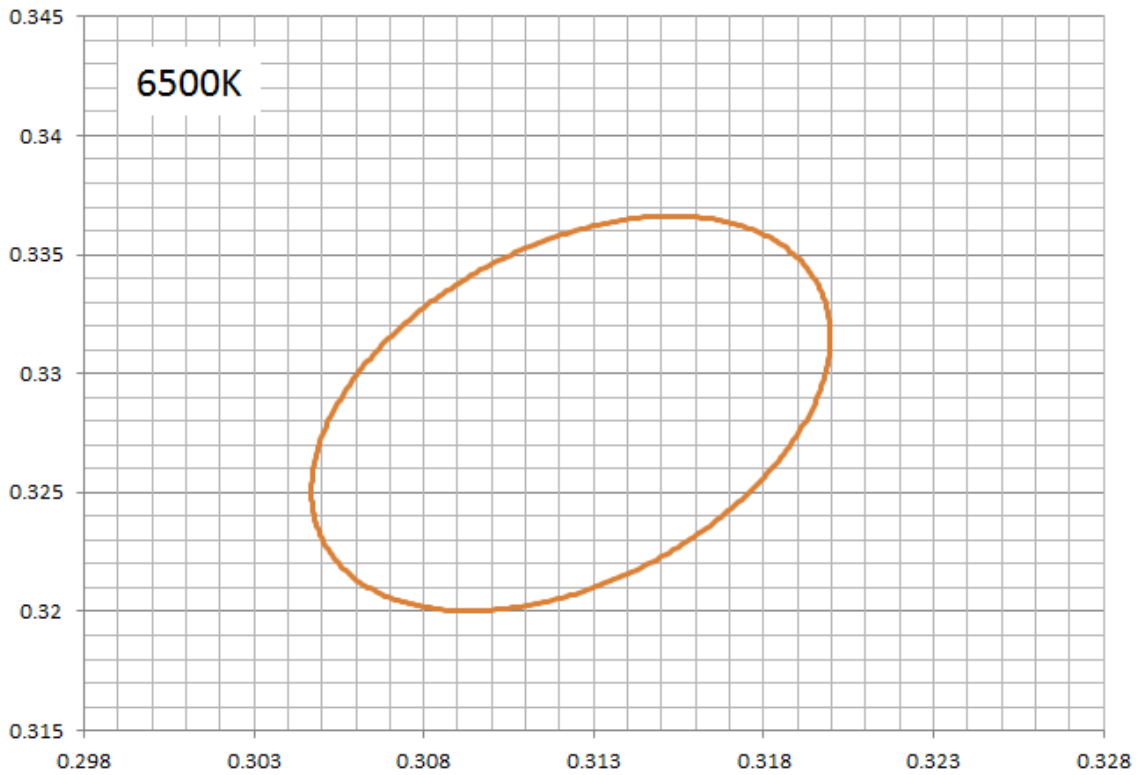
CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
5000K	50R5	5-step	0.3447	0.3553	0.00274	0.00118	59.37



CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
5700K	57R5	5-step	0.3287	0.3417	0.00248	0.00106	58.80



CCT	Bin Code	COLOR SPACE	Chromaticity coordinates(x,y)				
			x	y	a	b	θ
6500K	65R5	5-step	0.3123	0.3282	0.00223	0.00095	58.23

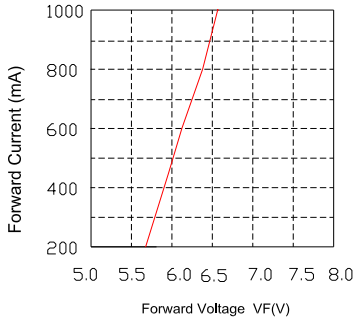


Notes:

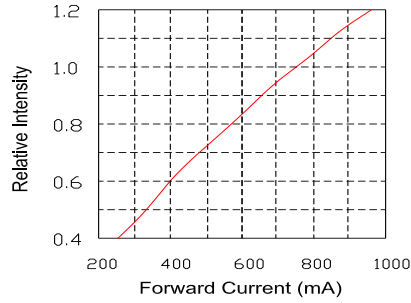
- Energy Star binning applied to all 2600~7000K.
- Measurement Uncertainty of the Color Coordinates : ± 0.005

Typical optical characteristics curves

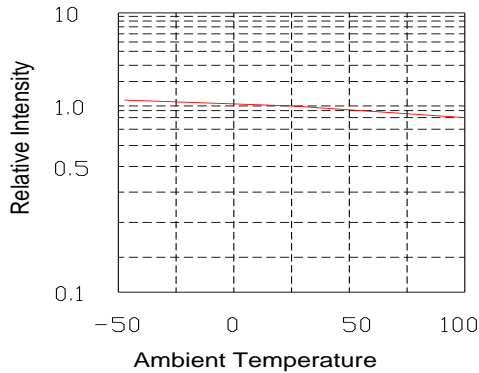
Forward Current vs. Forward Voltage



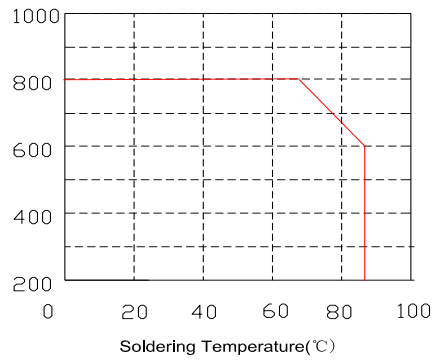
Relative Intensity vs. Forward Current



Relative Intensity vs. Ambient Temperature



Max. Driving Forward Current vs. Soldering Temperature



Spectral Distribution
Relative Intensity vs. Wavelength

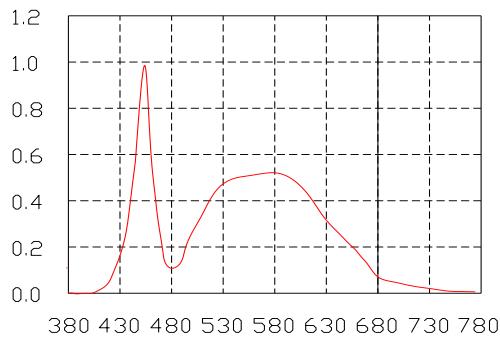
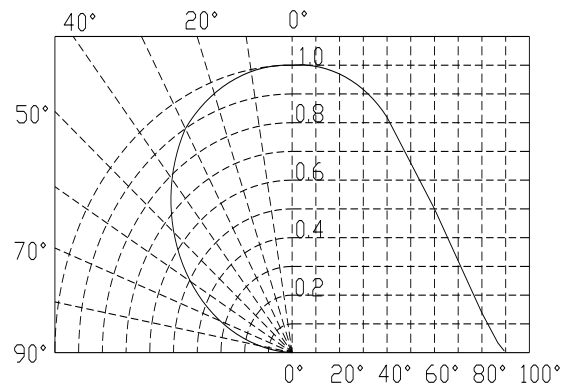


Diagram characteristics of radiation



Reliability

Test items and results

Type	Test Item	Ref. Standard	Test Conditions	Note	Number of Damaged
Environmental Sequence	Resistance to Soldering Heat(Reflow Soldering)	JESD22-B106	Tsld=260°C,10sec	3 times	0/22
	Temperature Cycle	JESD22-A104	-40°C 30min ↑↓5min 100°C 30min	300 cycle	0/22
	Thermal Shock	JESD22-A106	-40°C 15min ↑↓ 100°C 15min	300 cycle	0/22
	High Temperature Storage	JESD22-A103	Ta=100°C	1000 hrs	0/22
	Low Temperature Storage	JESD22-A119	Ta=-40°C	1000 hrs	0/22
Operation Sequence	Life Test	JESD22-A108	Ta=25°C IF=750mA	1000 hrs	0/22
	High Humidity Heat Life Test	JESD22-A101	60°C RH=90% IF=750mA	1000 hrs	0/22

Criteria for judging the damage

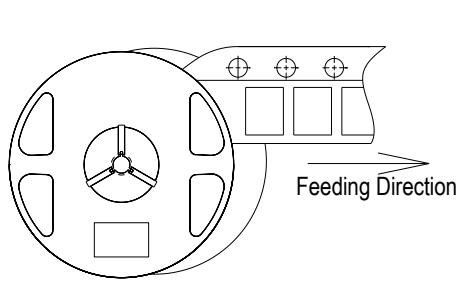
Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	VF	IF=750mA	-	U.S.L*)x1.1
Luminous Intensity	IV	IF=750mA	L.S.L**)x0.7	-

U.S.L.: Upper Standard Level

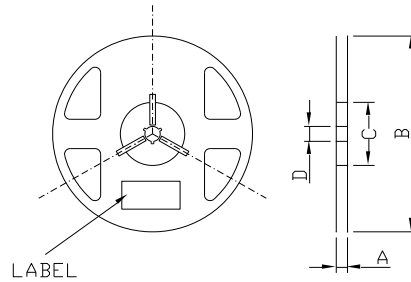
L.S.L.: Lower Standard Level

Tape and Reel

● Feeding Direction

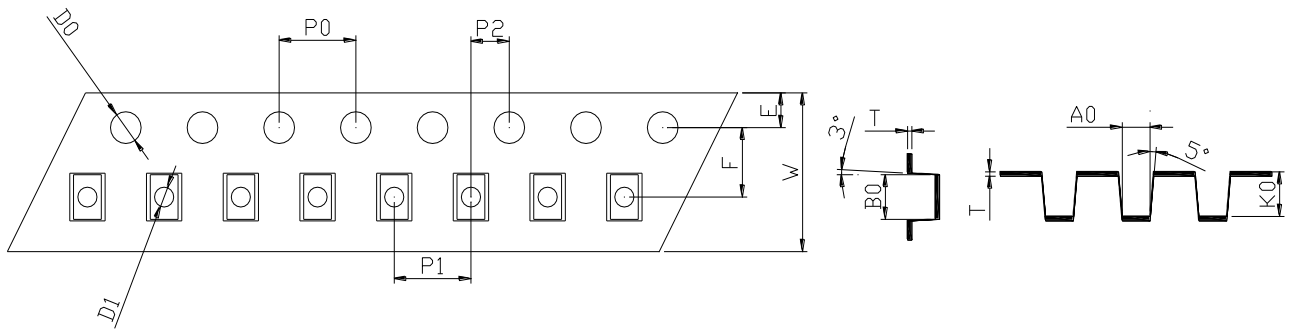


● Reel Dimensions (unit: mm)



A	8.0±0.1mm
B	178±1mm
C	60±1mm
D	13.0±0.5mm

● Arrangement of tape

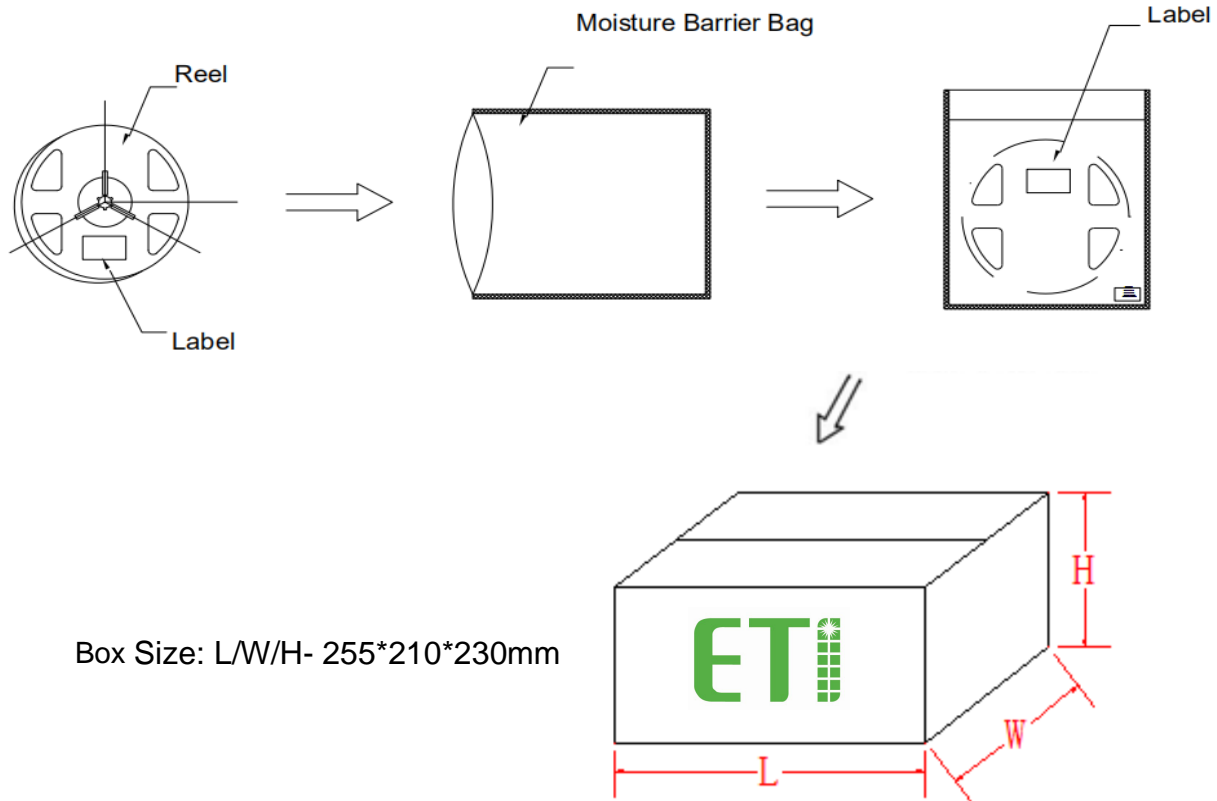


Notes:

- 1.SPQ: 1,500pcs/ Reel.
- 2.Empty component pockets are sealed with top cover tape.
- 3.The maximum number of missing lamps is two.
- 4.The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.

Item	Quantity	Weight(kg)	Size(mm)
Reel	1500pcs	0.16kg	D:178mm * H:8mm

Packaging specifications




Item	Reel per Box	Gross weight	Size(mm)
Box	40reels (60Kpcs)	11kg	255*210*230

Label

Anhui Retop Electronics Co., Ltd. RoHS

Part No:

Lot No:



VF:		IF:	
Φ_v :		BIN:	
IV:		QTY:	
CIE:		DATE:	

- VF: Forward Voltage
- IF: Forward Current
- Φ_v : Luminous Flux
- Lot No: Lot Number
- BIN: Bin Code
- QTY: Packing Quantity
- DATE: MADE DATE

Cautions

Package specifications

Reeled products (numbers of products are 1,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Eighty moisture-proof bag of maximums are put the outside box (size: about 545mm x about 375mm x about 275mm) Together with buffer material, and it is packed. (Pare No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has two steps.

Storage conditions

Before opening the package:

The LEDs should be kept at 30°C or less and 70%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

After opening the package:

The LEDs should be kept at 30°C or less and 50%RH or less. If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.

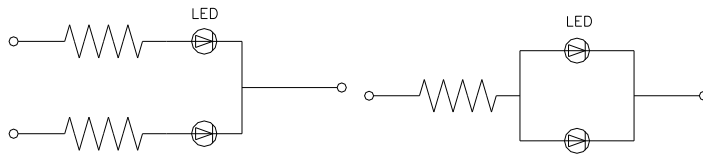
Cleaning

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary.

Drive method

An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.

Circuit model A Circuit model B



(A) Recommended circuit.

(B) The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

Reflow profile

The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package.

The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the picking up nozzle, the pressure on the silicone resin should be proper.



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ETI 5050 Square LED 5W 6V Product Data Sheet Rev.1/2023