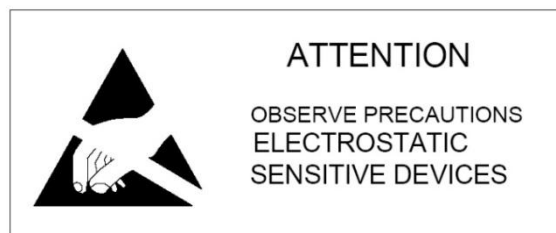




Product Specification

MODEL : 5050B

Product Description: EMC5050 1W 24V



Address : Guanhuang North road Hu'anwei Gaobu Town

Tel: 0769-89080660

Fax: 0769-89080658

● Feature

Viewing angle:120 deg

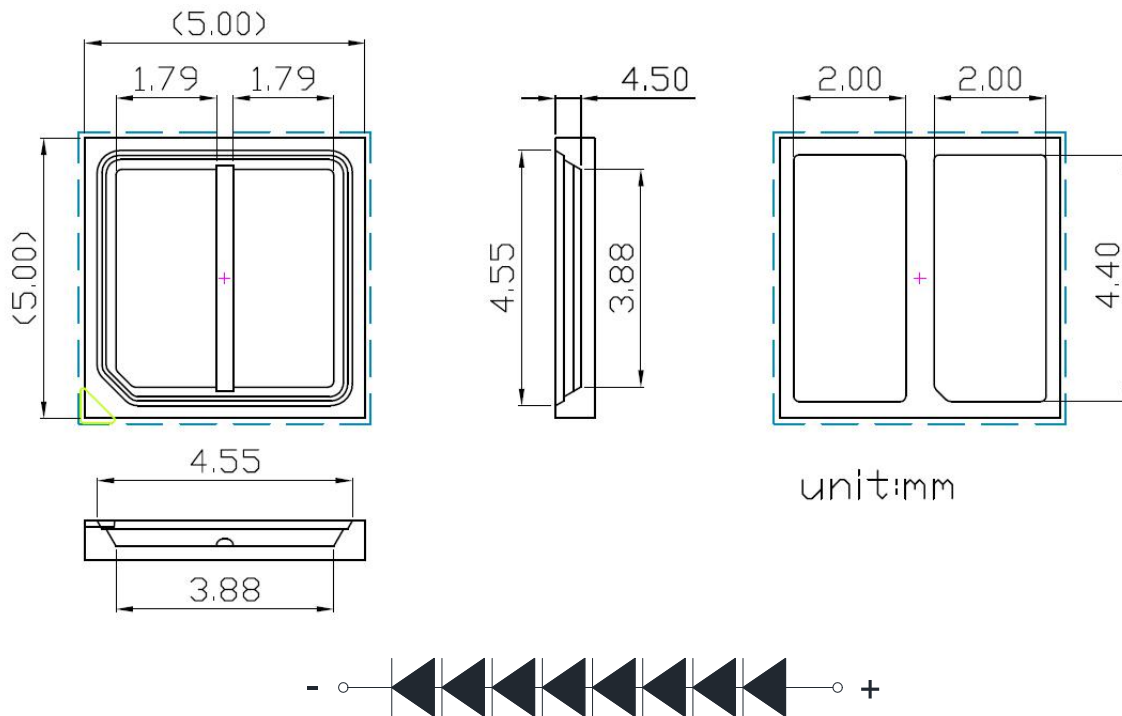
The materials of the LED dice is InGaN

3.50mm×2.80mm×0.7mm

RoHS compliant lead-free soldering compatible

● Package Outline

Unit:mm



NOTES:

1. All dimensions are in millimeters;
2. Tolerances are ± 0.03 mm unless otherwise noted.



● **Absolute maximum ratings**

Ta=25±3℃

Parameter	Symbol	Value	Unit
Power dissipation	Pd	3	W
Forward current	If	45	mA
Reverse voltage	Vr	5	V
Operating temperature range	Topr	-40~+85	℃
Storage temperature range	Tstg	-40~+100	℃
Junction Temperature	Tj	120	℃
Pulse Forward Current	Ifp	200	mA
Electrostatic Discharge	ESD	2000(HBM)	V

● **Electro-optical characteristics**

Ta=25±3℃

Parameter	Test Condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Forward voltage	If=45 mA	Vf	21	22	24	V
Luminous intensity	If=45 mA	Φ	175	--	220	Lm
Viewing angle 50% Iv	If=45 mA	2θ 1/2	--	120	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA
Color Temperature	If=45 mA	TC	2500	--	7500	K
Chromaticity CIE	If=45 mA	CIE				
CRI	If=45 mA	Ra	≥70			

NOTES:

- 1.Luminous Flux measurement tolerance:±10%
- 2.Forward Voltage measurement tolerance:±0.1V
- 3.Color Temperature measurement tolerance:x,y±0.01
- 4.CRI measurement tolerance:±2



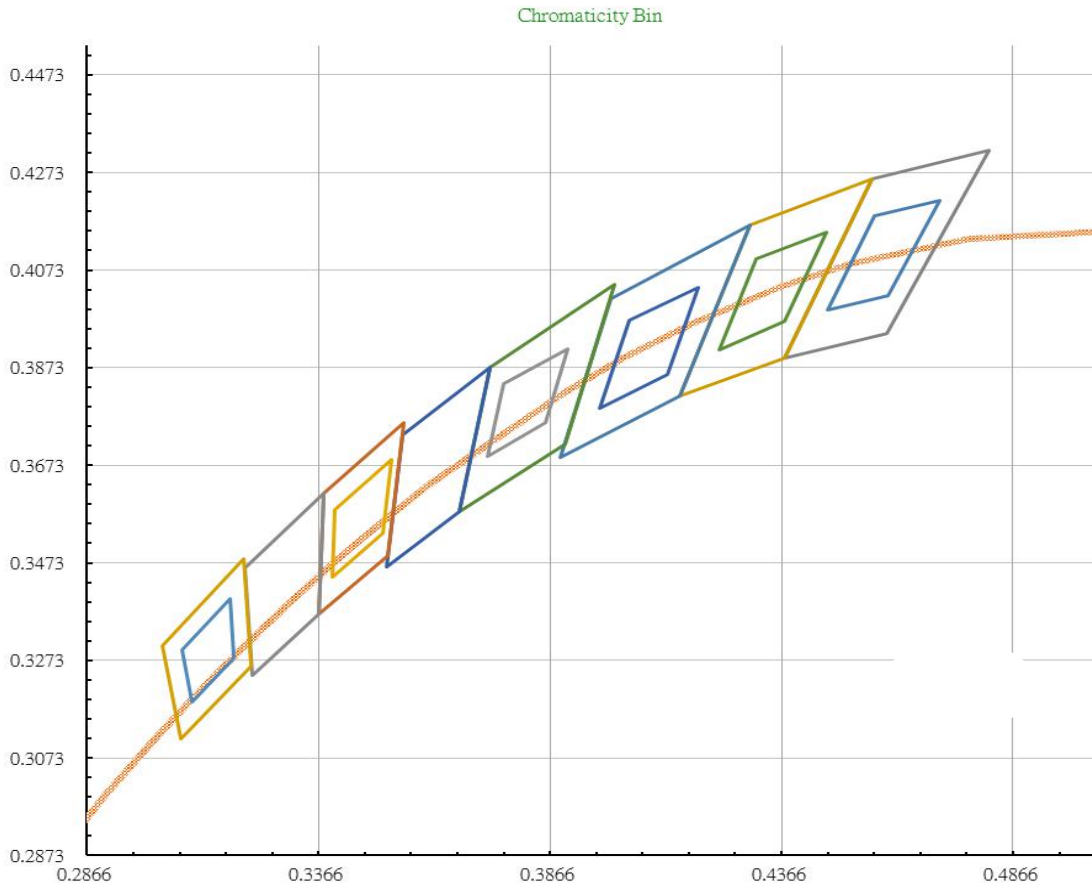
● Intensity Bin Limit (IF = 45 mA)

Bin code	Flux(lm) for reference	
	Min	Max
1	175	190
2	190	205
3	205	220

● VF Bin Limit (IF = 45 mA)

Bin code	Min.(V)	Max.(V)
1	21	22
2	22	23
3	23	24
4	24	25

● Chromaticity CIE





●Requirements for application and reflow soldering

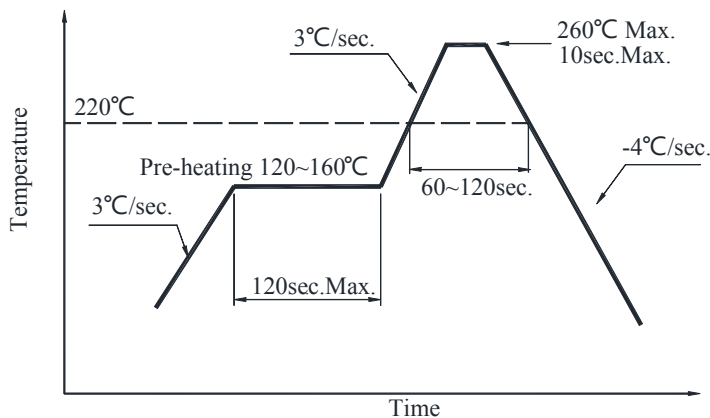
Reflow Soldering	
Pre-heat	120~160°C
Pro-heat time	120 seconds Max.
Peak temperature	245°C Max.
Soldering time	10 seconds Max.
Condition	Refer to Temperature-profile

After reflow soldering rapid cooling should be avoided

Temperature-profile(Surface of circuit board)

Use the following conditions shown in the figure.

<Pb-free solder>



- 1.Reflow soldering should not be done more than two times
- 2.When soldering,do not put stress on the LEDs during heating

●Handling Precautions

Compare to epoxy encapsulation that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more prone to damage by external mechanical force. As a result, Special handling precautions must be observed during assembling using silicone encapsulated LED product, Failure to comply might leads to damage and premature failure of the LED.

◆ Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or handle the silicone lens surface, it may damage the internal circuitry.

◆ Not suitable to operate in acidic environment, PH<7.



◆ LED operating environment and sulfur element composition cannot be over 25 PPM in the LED mating usage material.

When we need to use external glue for LEDs application products, please make sure that the external glue matches the LEDs packaging glue. Additionally, as most of LEDs packaging glue is silica gel, and it has strong Oxygen permeability as well as strong moisture permeability; in order to prevent external material from getting into the inside of LEDs, which may cause the malfunction of LEDs, the single content of Bromine element is required to be less than 225 PPM, the single content of Chlorine element is required to be less than 225 PPM, the total content of Bromine element and Chlorine element in the external glue of the application products is required to be less than 375 PPM.

◆ 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.

◆ Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristics such as the lower forward voltage, or the not light at low current, even not light. All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.

Storage

◆ Before opening the package, the LEDs should be kept at 30°C or less and 60%RH or less. The LEDs should be used within a year.

◆ After opening the package, the product should be stored at 30°C or less and humidity less than 10% RH, and be soldered within 24 H. It is recommended that the product be operated at the workshop condition of 30°C or less and humidity less than 60% RH. 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.



●Reliability

(1) TEST ITEMS AND RESULTS

Type	Test Item	Ref. Standard	Test Conditions	Note	Number of Damage
Environmental Sequence	Resistance to Soldering Heat(Reflow Soldering)回	JESD22-B106	Tsld=260°C , 5sec	2 times	0/100
	Temperature Cycle	JESD22-A104	-40°C30min ↑↓5min 100°C 30min	100 cycle	0/100
	Thermal Shock	JESD22-A106	-40°C15min ↑↓5min 100°C 15min	100 cycle	0/100
	High Temperature Storage	JESD22-A103	Ta=100°C	1000 hrs	0/100
	Low Temperature Storage	JESD22-A119	Ta=-40°C	1000 hrs	0/100
	Power temperature Cycling	JESD22-A105	On 5min -40°C > 15min ↑↓ ↑↓ < 15min Off5min 100°C > 15min	100 cycle	0/100
Operation Sequence	Life Test 老化寿命测试	JESD22-A108	Ta=25°C IF=150mA	1000 hrs	0/100
	High Humidity Heat Life Test 高温高湿老化测试	JESD22-A101	80%CRH=80% IF=150mA	1000 hrs	0/100

(2) CRITERRIA FOR JUDGING THE DAMAGE

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max
Forward Voltage	VF	IF=150mA	--	U.S.L*)×1.1
Reverse Current	IR	VR=5V	--	U.S.L*)×2.0
Luminous Intensity	IV	IF=150mA	L.S.L**)×0.7	

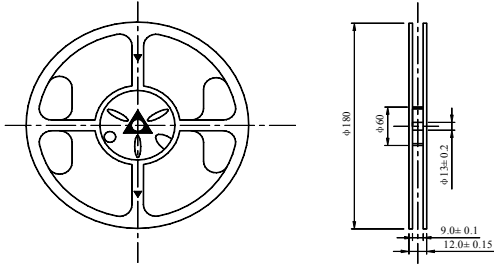
U.S.L.:Upper Standard Level

L.S.L.:Lower Standard Level

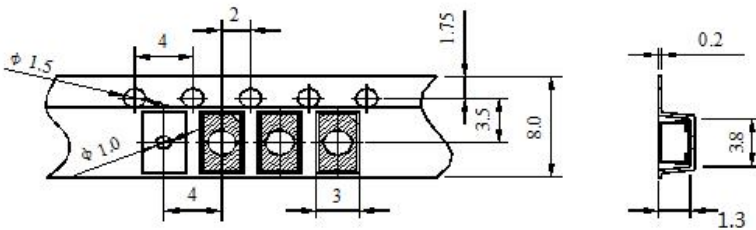


●Packaging Specifications

Package Tape Specifications : (4000 pcs/Reel)



Dimensions of Tape(Unit:mm)



Reel Lead Min.60mm No LEDs

NOTES

1. Empty component pockets are sealed with top cover tape;
 2. The maximum number of missing lamps is two ;
 3. The cathode is oriented towards the tape sprocket hole in accordance with data sheet specifications.
- 4,000 pcs/Reel.