深圳成光兴光电技术股份有限公司

SHENZHEN CGX OPTOELECTRONIC TECHNOLOGY，INC.

樣 品 規 格 承 認 書

SAMPLE APPROVAL SHEET

客 戶 名 稱 ——————————

Company Name ：

产 品 型 號 ——————————

Part Number： CGX-5050IRPC/3D14A120

送 樣 日 期 ——————————

Sample Date：

APPROVED SIGNATURES（供應商確認）		
核准	品保	工程

客戶確認：□樣品承認通過 □不予承認需重新送樣 □不予承認不用送樣

客戶建議：

APPROVED SIGNATURES（客戶確認）		
核准	工程	品保

请贵司确认回传，谢谢！

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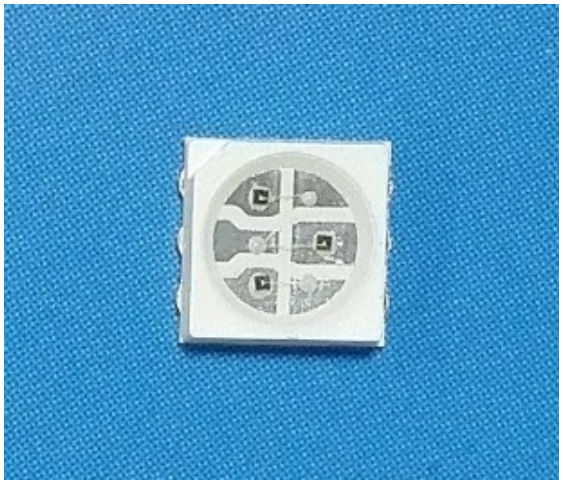
CGX-5050IRPC/3D14A120

SMD Reflector Infrared LED



Features

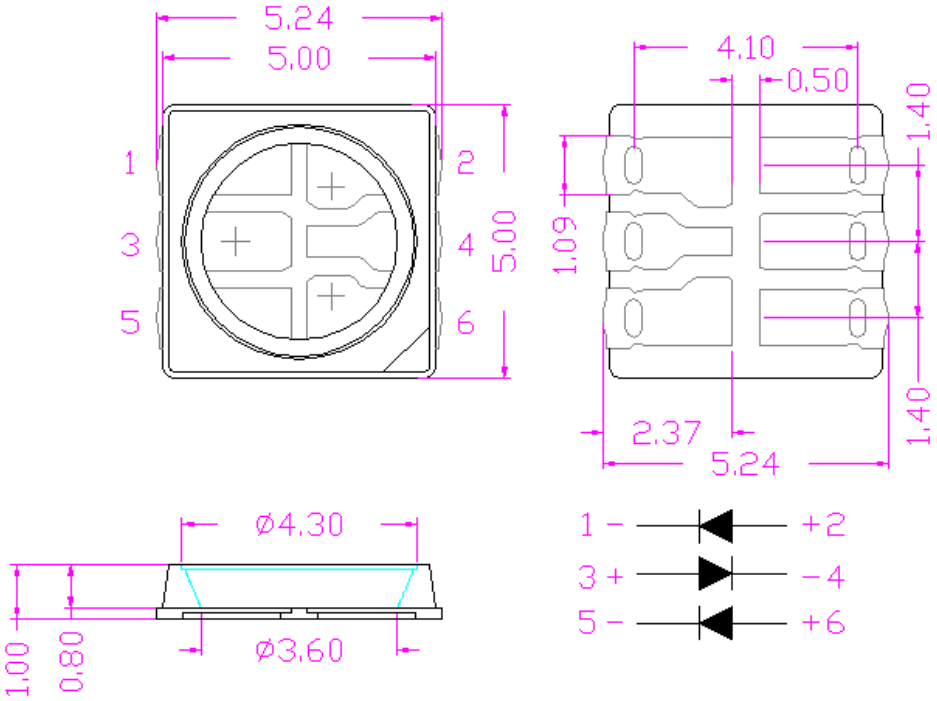
- Compact emitter size
- High luminous efficiency
- Luminous angle: 120°
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes
- Computable with automatic placement equipment
- Available on tape and reel
- Electrically neutral thermal path
- RoHS-compliant

Applications

- Infrared illumination for cameras
- Surveillance system
- Machine vision system
- CCTV
- Wireless communication

Package Dimension

Package Dimension



Notes：1、All dimensions are in millimeters.

2、Tolerance is ±0.25mm unless otherwise noted.

Device Selection Guide

Chip Materials	Lens Color
GaAlAs	Water clear

Absolute Maximum Ratings at Ta=25℃

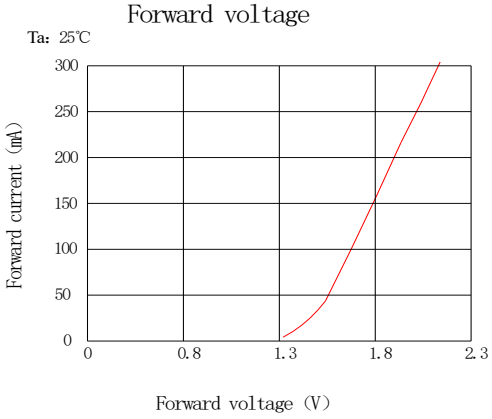
Parameter	Symbol	MAX	Unit
Power Dissipation at(or below) 25℃ free air temperature	P_d	800	mW
Peak Forward Current (1/10 Duty Cycle,0.1ms Pulse Width)	I_{FP}	1.0	A
Continuous Forward Current	I_F	160	mA
Reverse Voltage	V_R	5	V
Operating Temperature Range	T_{opr}	-40℃ to +85℃	
Storage Temperature Range	T_{stg}	-40℃ to +100℃	
Reflow soldering temperature Max	T_{sol}	220℃ for ≤10 seconds	

Electrical Optical Characteristics at Ta=25℃

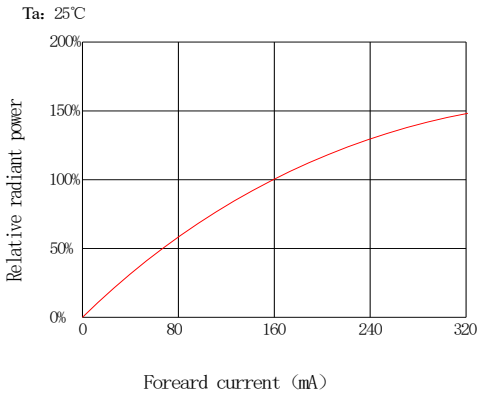
Parameter	Symbol	Min	Typ	Max	Uni	Test Condition
Radiant Intensity	Ee	20	30	-----	Mw/sr	I_F=160mA
Viewing Angle	$2\theta_{1/2}$	----	120	-----	Deg	
Peak Emission Wavelength	λp	840	855	865	nm	I_F=160mA
Spectral Line Half-Width	Δλ	----	40	----	nm	I_F=160mA
Forward Voltage	V_F	1.4	1.7	2.0	V	I_F=160mA
Reverse Current	I_R	----	----	10	μA	V_R=5V

Typical Electro-Optical Characteristics Curve

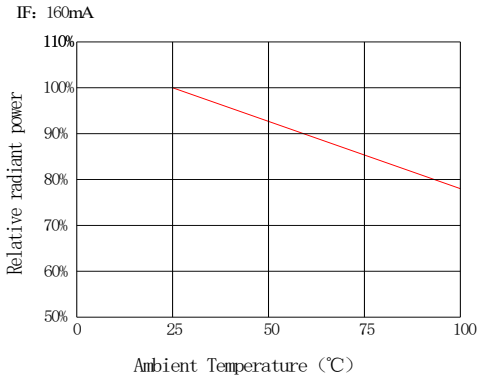
Forward current Vs. Forward voltage



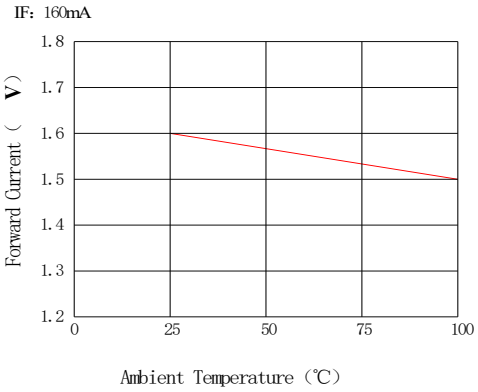
Relative Radiant power vs. Forward Current



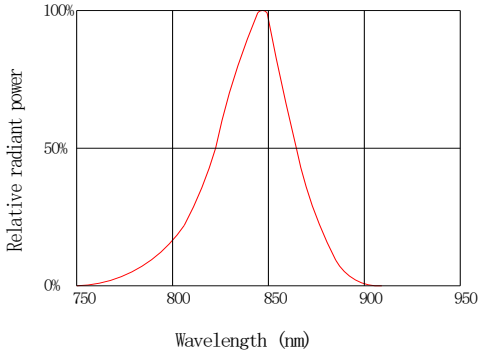
Relative Radiant power vs. Ambient Temperature



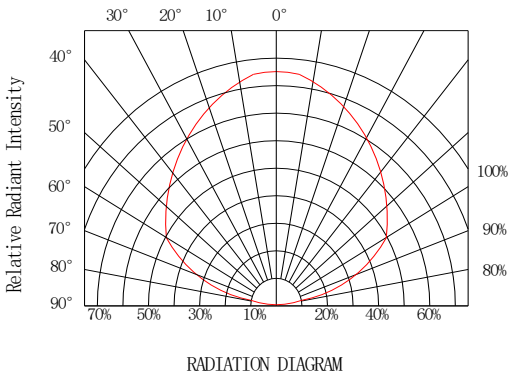
Forward Voltage vs. Ambient Temperature



Spectral Distribution



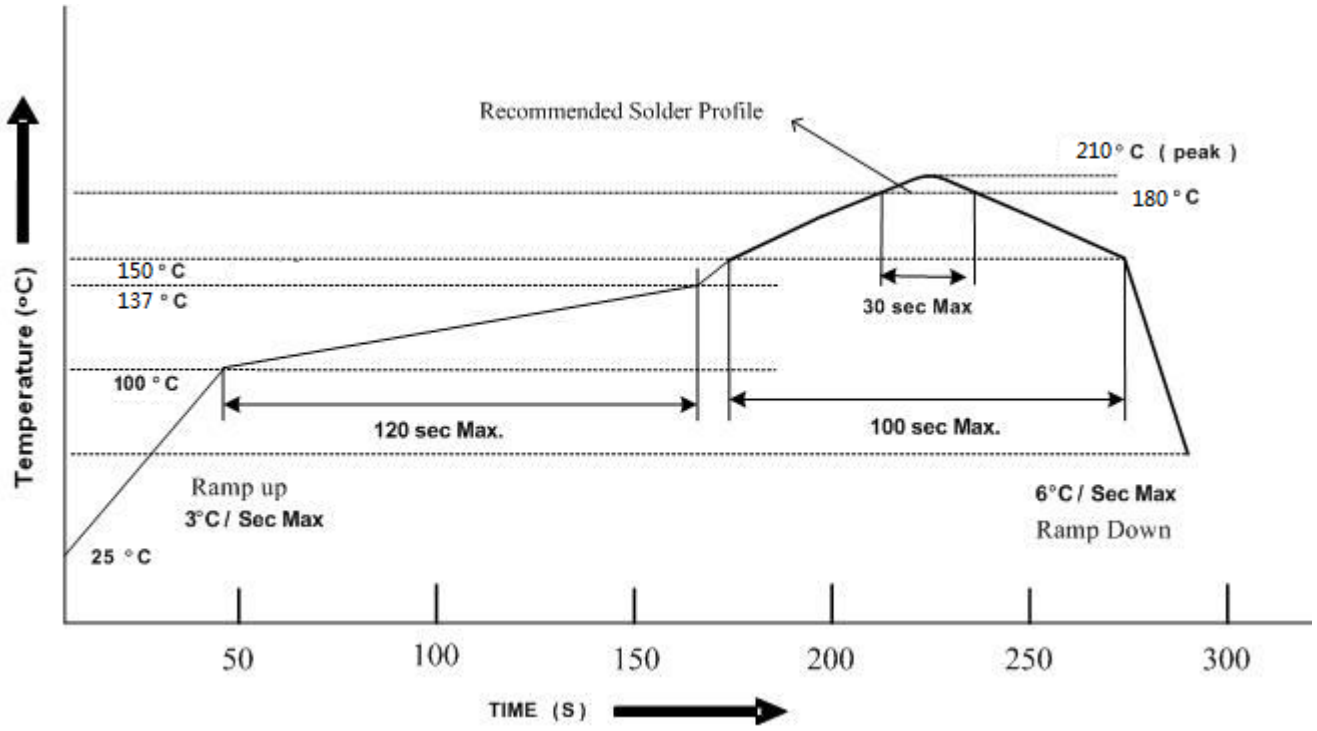
Relative Radiant Intensity vs. Angular Displacement



Reflow Soldering Characteristics

For Reflow Process

1. 2835 series are suitable for SMT processes.
2. Curing of glue in oven must be according to standard operation flow processes.

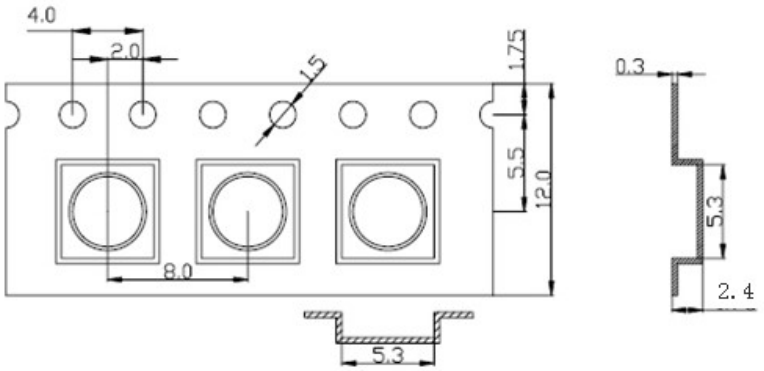


3. Reflow soldering should not be done more than twice.
4. In soldering process, stress on the LEDs during heating should be avoided.
5. **Suggested the use of low melting point solder paste (153℃ low temperature lead-free solder paste),** because the external temperature is low for a LED damage smaller, external temperature higher LED on the destructive force of the.

Package Dimensions

Carrier Tape Dimensions:

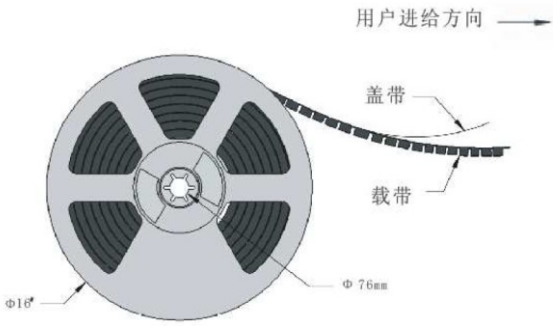
Loaded quantity 2000 PCS per reel.

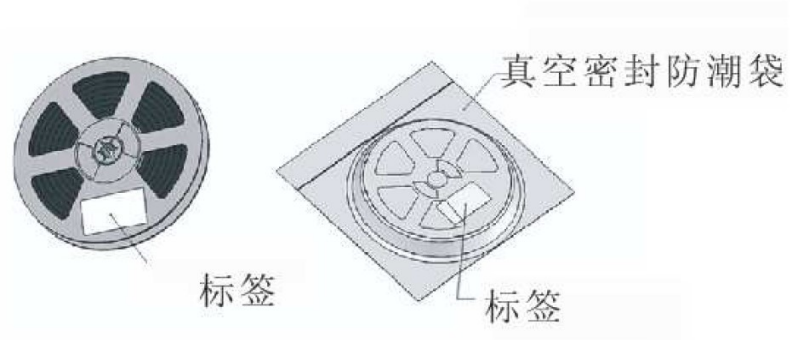


Note: 1. Dimensions are in millimeters

2. The tolerances unless mentioned is ±0.1mm

Moisture Resistant Packaging





Reliability test items and test conditions

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD (group of permitted defect rate): 10%

No.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Ac/Re	Reference Standard
1	REFLOW Soldering	Temp. : 225℃±5℃	5secs	22PCS	0/1	JEITA ED-4701 300 302
2	Temperature Cycle	H : +100℃ 15min ～5 min L : -40℃ 15min	100Cycles	22PCS	0/1	JEITA ED-4701 100 305
3	Thermal Shock	H : +100℃ 5min ～ 10 sec L : -40℃ 5min	100Cycles	22PCS	0/1	MIL-STD-202G
4	High Temperature Storage	Temp. : 100℃	1000Hrs	22PCS	0/1	JEITA ED-4701 200 201
5	Low Temperature Storage	Temp. : -40℃	1000Hrs	22PCS	0/1	JEITA ED-4701 200 202
6	DC Operating Life	IF = 160 mA	1000Hrs	22PCS	0/1	Tested with CGX standard
7	High Temperature/ High Humidity	85℃/RH85%	1000Hrs	22PCS	0/1	JEITA ED-4701 100 103

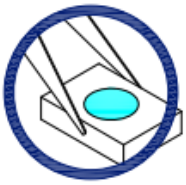
Notes： Failure Judgement Criteria：IR≥U×2 Ie≤L×0.8 VF≥U×1.2

U：Upper Specification Limit L：Lower Specification Limit

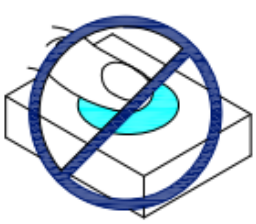
Handling Precautions

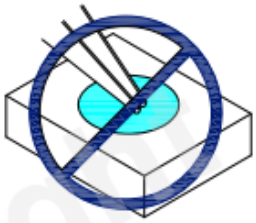
Compare to epoxy encapsulant that is hard and brittle, As a result, special handling precautions need to be observed during assembly using epoxy encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

1. Handle the component along the side surfaces by using forceps or appropriate tools.



2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.





3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.

4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.

4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.

4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.