

客户 (Customer) : _____

承认书

Approval Sheet

谨致执事者：兹提供敝公司之有关详细规格及图面数据, 敬请给予办理试认定手续。
同时敬请送返一份附有贵公司签认之测试认定后之样品承认书。

We are pleased in sending you herewith on specification and drawings for your approval.
Please return to us one copy "Approval sheet" with your approved signature.

型号 (Model No.) : A-SA5HR503RG022-H6101

发文日期 (Issue Date) : 2017/12/4 承认日期 (Approved Date) : _____

Checking signature of Amicc

Designer	Checker	Approver
Allen		

Approval signature of customer

Designer	Checker	Approver

江苏欧密格光电科技股份有限公司

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Lamp LED Type ■ Φ 5mm LED LAMP

A-SA5HR503RG022-H6101



Features

- Φ 5mm LED LAMP
- Wide viewing angle
- Pb-free
- RoHS compliant

Description

The Amicc LAMP package has high efficacy, high power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

Applications

- General lighting
- Decorative and Entertainment Lighting
- Indicators
- Automotive Telecommunication
- Switch lights

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP/GaAs	Green	White Diffused
AlGaInP/GaAs	Red	

Absolute Maximum Ratings ($T_{\text{Soldering}}=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @1ms)	I_{FP}	100	mA
Power Dissipation	P_d	78	mW
Reverse Voltage per chip	V_r	5	V
Operating Temperature	T_{opr}	-25 ~ +85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 ~ +85	$^{\circ}\text{C}$

Note:

The products are sensitive to static electricity and must be carefully taken when handling products.

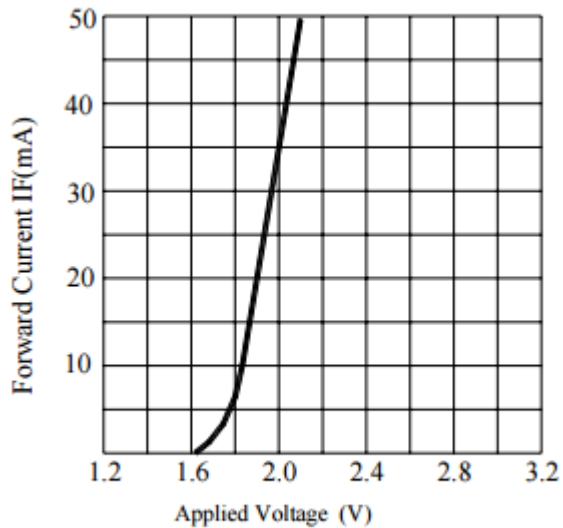
Electro-Optical Characteristics ($T_{\text{Soldering}}=25^{\circ}\text{C}$)

Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_v	G R	-----	220 80	-----	mcd	$I_F=20\text{mA}$
Peak Wavelength	λ_p	G R	-----	573 632	-----	nm	$I_F=20\text{mA}$
Dominant Wavelength	λ_d	G R	-----	570 625	-----	nm	$I_F=20\text{mA}$
Forward Voltage	V_F	G R		1.9 1.9	2.4 2.4	V	$I_F=20\text{mA}$
Viewing Angle	$2\theta_{1/2}$	G R	-----	70 70	-----	deg	$I_F=20\text{mA}$
Reverse Current	I_R	G R	-----	-----	100 100	μA	$V_R=5\text{V}$

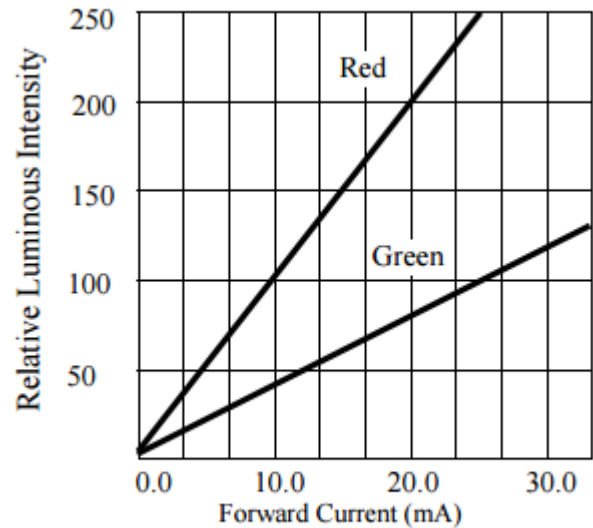
Notes:

1. Tolerance of Luminous Intensity $\pm 10\%$.
2. Tolerance of Dominant Wavelength: $\pm 1\text{nm}$
3. Tolerance of Forward Voltage : $\pm 0.1\text{V}$.

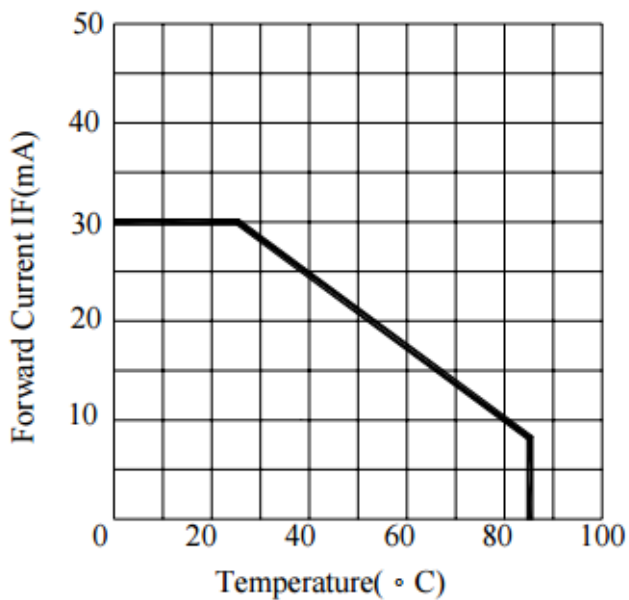
Typical Electro-Optical Characteristics Curve



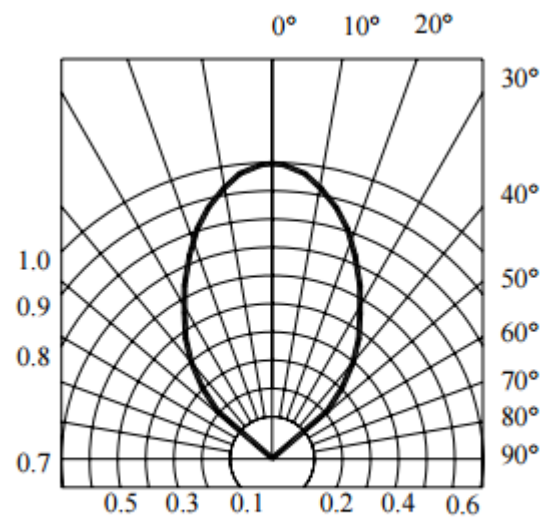
FORWARD CURRENT VS. APPLIED VOLTAGE



FORWARD CURRENT VS. LUMINOUS INTENSITY



FORWARD CURRENT VS. AMBIENT TEMPERATURE



RADIATION DIAGRAM

Bin Range of Luminous Intensity

Red

Bin Code	Min.	Max.	Unit	Condition
B6	60	70	mcd	$I_F=20\text{mA}$
B7	70	80		
B8	80	90		

Note:
Tolerance of Luminous Intensity: $\pm 10\%$.

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
R1	620	625	nm	$I_F=20\text{mA}$
R2	625	630		
R3	630	635		

Note:
Tolerance of Dominant Wavelength: $\pm 1\text{nm}$.

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
A0	1.8	2.0	V	$I_F=20\text{mA}$
A1	2.0	2.2		
A2	2.2	2.4		

Note:
Tolerance of Forward Voltage: $\pm 0.1\text{V}$.

Bin Range of Luminous Intensity

Green

Bin Code	Min.	Max.	Unit	Condition
B10	100	200	mcd	$I_F=20\text{mA}$
B20	200	300		
B30	300	400		

Note:
Tolerance of Luminous Intensity: $\pm 10\%$.

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
G1	565	570	nm	$I_F=20\text{mA}$
G2	570	575		
G3	575	580		

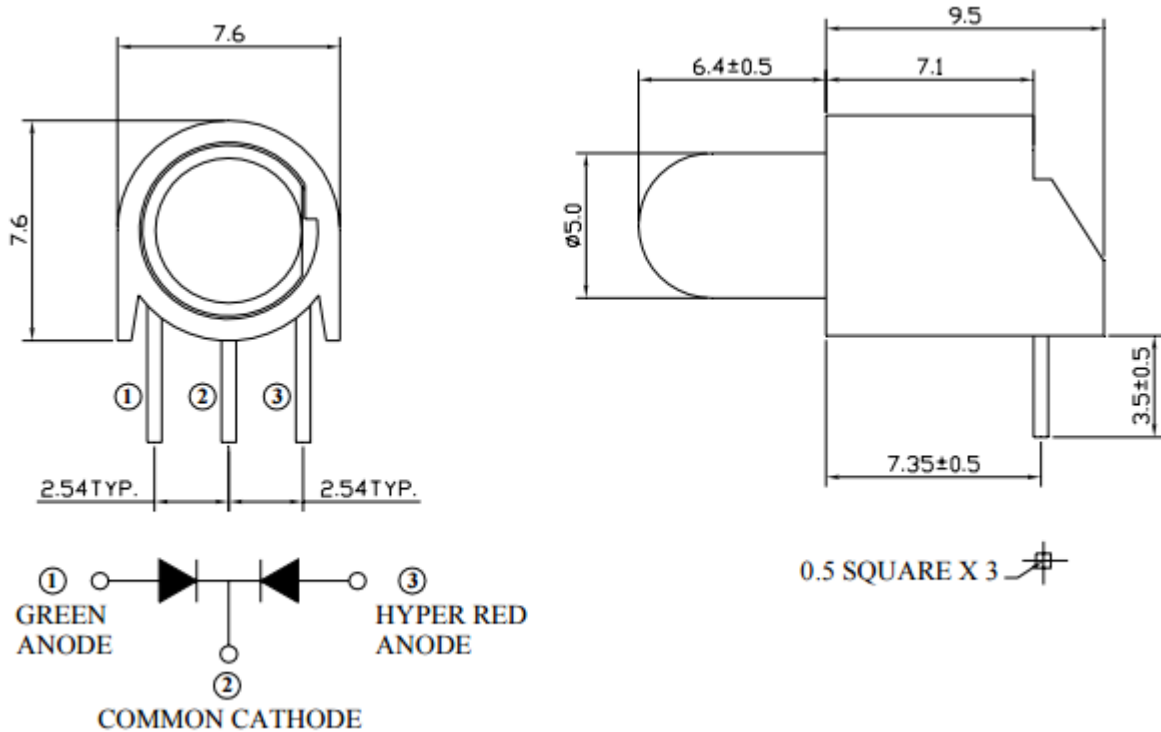
Note:
Tolerance of Dominant Wavelength: $\pm 1\text{nm}$.

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
A0	1.8	2.0	V	$I_F=20\text{mA}$
A1	2.0	2.2		
A2	2.2	2.4		

Note:
Tolerance of Forward Voltage: $\pm 0.1\text{V}$.

Package Dimension





Note:

- 1.All Dimensions are in millimeters.
- 2.Tolerance is ± 0.25 mm unless otherwise specified.
- 3.The color of holder: Black.
- 4.The material of holder:N66.

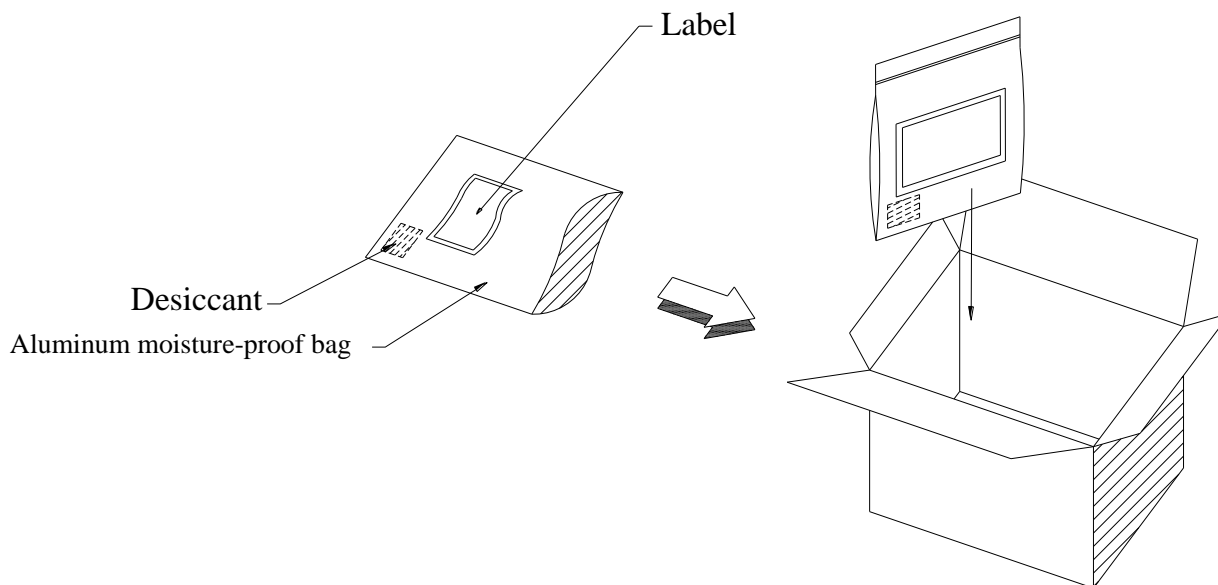
Moisture Resistant Packing Materials

Label Explanation

		AMICC OPTO-ELECTRONICS TECHNOLOGY Co.,LTD		
P/N: ××××××××××				
TYPE: ×-××××××××××				
	CODE	MIN	MAX	UNIT
IV:	××	××	××	mcd
WD:	××	××	××	nm
VF:	××	××	××	V
LOT NO: ××××××××				QTY: ××××
MADE IN CHINA				

- CPN: Customer's Product Number
- P/N: Product Number
- TYPE :Part NO.
- IV: Luminous Intensity Rank
- WD: Dom. Wavelength Rank
- VF: Forward Voltage Rank
- LOT NO.: Lot Number
- QTY: Packing Quantity

Moisture Resistant Packing Process: 1000 PCS/Bag



Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Wave Soldering	T, sol:260°C/5sec	3 min. Max.	22PCS	0/1
2	Solderability	T, sol:230°C/5sec	60 sec. Max.	22PCS	0/1
3	Thermal Shock	H : +105°C 10min ↓ L : -55°C 10min	10 Cycles	22 PCS.	0/1
4	Temperature Cycle	H : +105°C 30min ↓ 25°C 5min ↓ L : -55°C 30min ↓ 25°C 5min	10 Cycles	22 PCS.	0/1
5	High Temperature/Humidity Reverse Bias	Ta=65°C,90%RH	240 Hrs.	22 PCS.	0/1
6	DC Operation Life	Ta=25°C, I _F = 20 mA	1000 Hrs.	22 PCS.	0/1

Precautions for Use

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

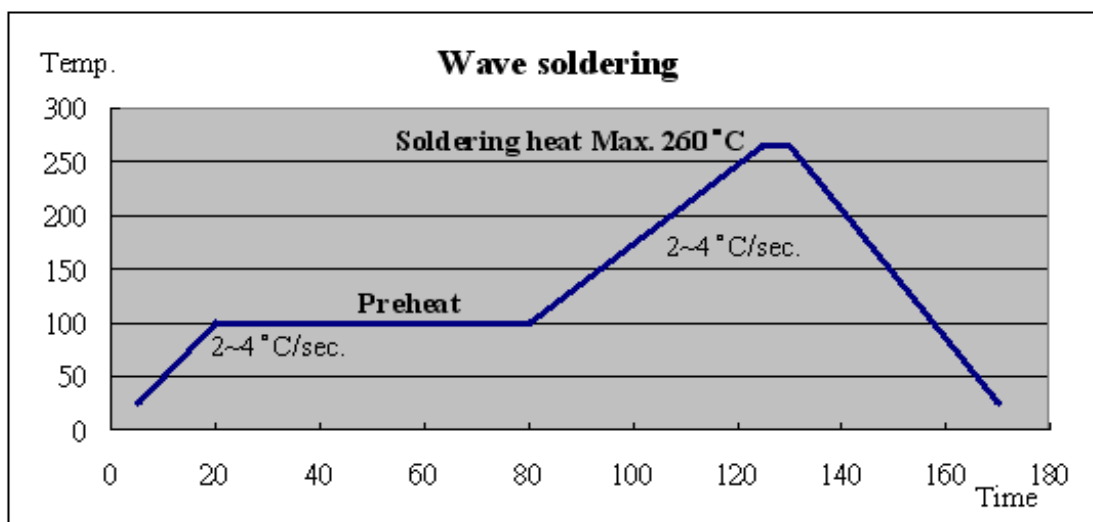
2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment: 60±5°C for 24 hours.

3. Soldering

Method	Remark
Hand Soldering	1. Soldering time : 3 sec MAX. 2. Distance : 3 mm MIN (from solder joint to case)
DIP Soldering	1. Preheat temp : 100 °C MAX , 60 sec MAX. 2. Bath temp : 260 °C MAX. 3. Bath time : 5 sec MAX. 4. Distance : 3 mm MIN (From solder joint to case.)

Lamp wave soldering profile :



4. Cleaning

Do not use unspecified chemical liquid to clean LED. They could harm it IF cleaning is necessary, wipe the pin out with alcohol, Freon TE or Chlorosen at normal temperature for less than 1 minute or wipe the surface with alcohol.

5. Methods Antistatic Static Electricity

Static electricity is the enemy of lamps emitting blue and green. Workers must put on working rings, gloves, clothes that protect static electricity while working. Wires of the rings keep well together with the floor and there must be wires to connect the irons and the floor.

6. Over-current-proof

6-1. Be not over-current.

6-2. In order to cooperate LEDs under stable conditions, put protective resistor in series. Resistor values can be determined by supplying voltage or current for the LEDs. Recommended current is in the range of forward current 5mA-20mA.

6-3. Circuit must be designed so that overvoltage is not applied to the LED during on/off switching. Transient or pulse current will damage junction of LED die.

7. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 300°C for 3 seconds within once in less than the soldering iron capacity 30W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

8. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.