



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

HL-AF-5060H203BS32FU70GC-B BLUE \ RED \ GREEN



Features

- CHIPS CAN BE CONTROLLED SEPARATELY.
- SUITABLE FOR ALL SMT ASSEMBLY AND SOLDER PROCESS.
- AVAILABLE ON TAPE AND REEL.
- PACKAGE: 1000PCS / REEL.

Description

The Blue source color devices are made with GaN on Sapphire Light Emitting Diode.

The Red source color devices are made with AlGaInP on substrate Light Emitting Diode.

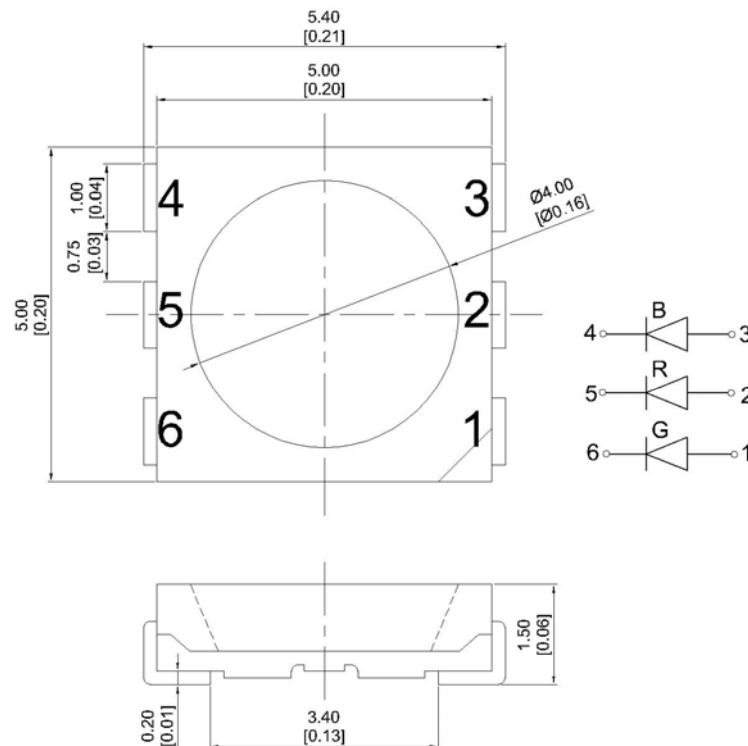
The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.

Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Package Dimensions



Notes:

1. All dimension units are millimeters.
2. All dimension tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.

Selection Guide

Part No.	Lens Type	Iv (mcd) @ 20mA						Viewing Angle
		GREEN (InGaN)		RED (AlGaInP)		BLUE (GaN)		
		Min.	Typ.	Min.	Typ.	Min.	Typ.	2θ1/2
HL-AF-5060H203BS32FU70GC-B	WATER CLEAR	600	780	160	200	125	160	120°

Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Green		Red		Blue		Units	Test Conditions
		Min.	Typ.	Min.	Typ.	Min.	Typ.		
λD	Dominate Wavelength	515	520	618	621	465	470	nm	IF=20mA
C	Capacitance		45		35		110	pF	VF=0V;f=1MHz
VF	Forward Voltage	3.0	3.2	1.6	1.9	3.0	3.2	V	IF=20mA
IR	Reverse Current		5		5		5	uA	VR = 5V

Absolute Maximum Ratings at TA=25°C

Parameter	Green	Red	Blue	Units
Power dissipation	90	75	95	mW
DC Forward Current	25	30	25	mA
Peak Forward Current [1]	150	185	160	mA
Reverse Voltage	5	5	5	V
Operating Temperature	-40°C TO +85°C			
Storage Temperature	-40°C TO +100°C			

Notes:

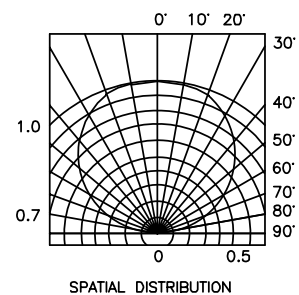
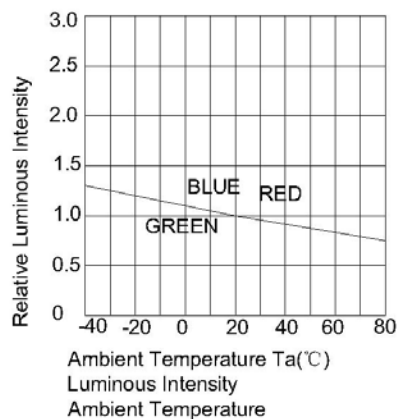
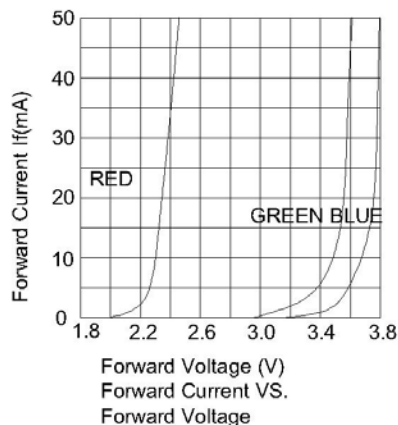
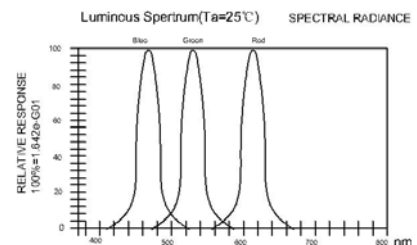
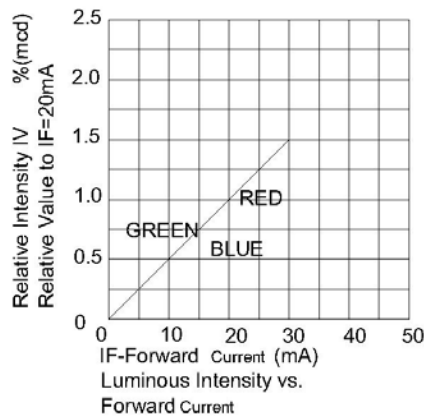
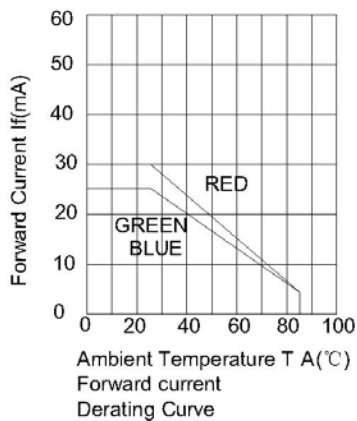
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

HL-AF-5060H203BS32FU70GC-B
Blue/Red/Green
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	Reflow	Temp:260°C max T=5 sec max.	1times.	22Pcs.	0/1
2	Temperature Cycle	100°C±5°C 30 min. ↑↓5 min -40°C±5°C 30 min.	100 Cycles	22Pcs.	0/1
3	Thermal Shock	100°C±5°C 5 min. ↑↓ -40°C±5°C 5 min.	100 Cycles	22Pcs.	0/1
4	High Temperature Storage	Temp.:100°C±5°C	1000Hrs.	22Pcs.	0/1
5	Low Temperature Storage	Temp.: -40°C±5°C	1000Hrs.	22Pcs.	0/1
6	DC Operating Life	Ta=25°C±5°C IF=20mA	1000Hrs.	22Pcs.	0/1
7	High Temperature/High Humidity	85°C±5°C/ 85%RH IF=5mA	1000Hrs.	22Pcs.	0/1

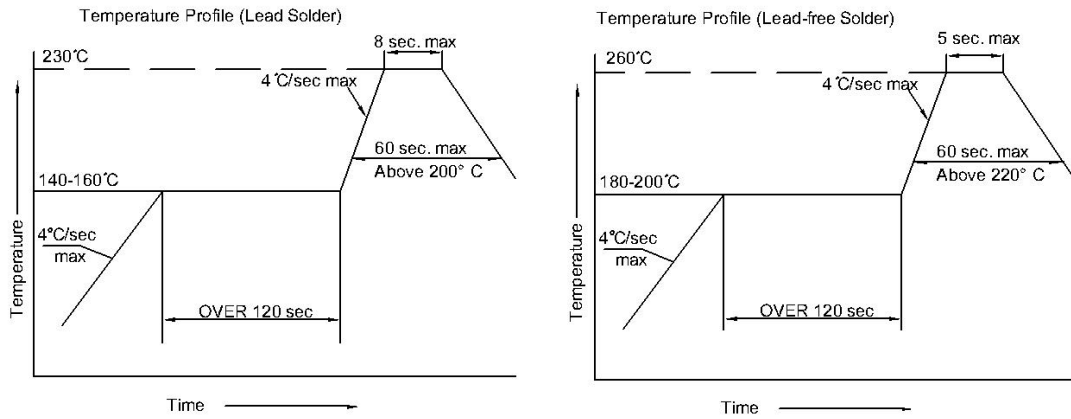
*The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.



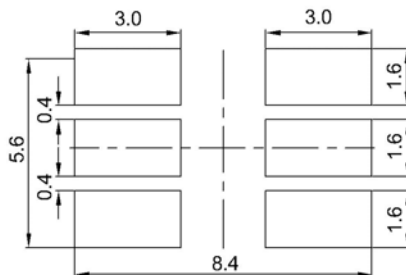
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SMT Reflow Soldering Instructions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and second soldering process.



Recommended Soldering Pattern (Units : mm)



Tape Specifications (Units : mm)

