

APHD1608LQBC/D

1.6 x 0.8 mm SMD Chip LED Lamp



DESCRIPTIONS

- The Blue source color devices are made with InGaN Light Emitting Diode
- · Electrostatic discharge and power surge could damage the LEDs
- · It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs
- · All devices, equipments and machineries must be electrically grounded

FEATURES

- 1.6 mm x 0.8 mm SMD LED, 0.65 mm thickness
- Low power consumption
- Wide viewing angle
- · Ideal for backlight and indicator
- Package: 4000 pcs / reel
- Moisture sensitivity level: 3
- RoHS compliant

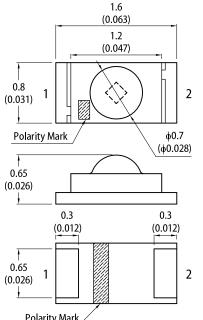
APPLICATIONS

- Backlight
- · Status indicator
- · Home and smart appliances
- · Wearable and portable devices
- · Healthcare applications

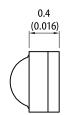
ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

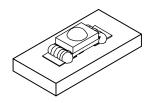




PACKAGE DIMENSIONS



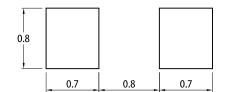






RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



Notes:

1. All dimensions are in millimeters (inches).

Tolerance is ±0.15(0.006") unless otherwise noted.
 The specifications, characteristics and technical data described in the datasheet are subject to

change without prior notice.4. The device has a single mounting surface. The device must be mounted according to the specifications.

SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	lv (mcd) @ 2mA ^[2]		Viewing Angle ^[1]
			Min.	Тур.	201/2
APHD1608LQBC/D	Blue (InGaN)	Water Clear	10	25	100°

Notes

41/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
 2. Luminous intensity / luminous flux: +/-15%.
 3. Luminous intensity value is traceable to CIE127-2007 standards.

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ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	r Symbol Emitting Color	Emitting Color	Value		Unit
Parameter		Тур.	Max.		
Wavelength at Peak Emission I_F = 2mA	λ_{peak}	Blue	460	-	nm
Dominant Wavelength I _F = 2mA	λ_{dom} ^[1]	Blue	465	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 2mA	Δλ	Blue	25	-	nm
Capacitance	С	Blue	100	-	pF
Forward Voltage I _F = 2mA	V _F ^[2]	Blue	2.65	3.1	V
Reverse Current (V _R = 5V)	I _R	Blue	-	50	uA
Temperature Coefficient of λ_{peak} I_F = 2mA, -10°C $\leq T \leq 85^\circ\text{C}$	TC_{\lambdapeak}	Blue	0.04	-	nm/°C
Temperature Coefficient of λ_{dom} I_F = 2mA, -10°C \leq T \leq 85°C	TC _{λdom}	Blue	0.03	-	nm/°C
Temperature Coefficient of $~V_F$ I_F = 2mA, -10°C \leq T \leq 85°C	TCv	Blue	-2.9	-	mV/°C

Notes:

The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±1nm.)
 Forward voltage: ±0.1V.
 Wavelength value is traceable to CIE127-2007 standards.
 Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

ABSOLUTE MAXIMUM RATINGS at $T_A=25^{\circ}C$

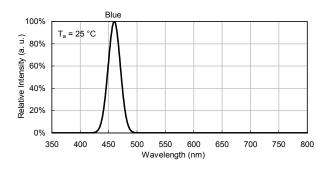
Parameter	Symbol	Value	Unit
Power Dissipation	P _D	80	mW
Reverse Voltage	V _R	5	V
Junction Temperature	Tj	115	°C
Operating Temperature	T _{op}	-40 to +85	°C
Storage Temperature	T _{stg}	-40 to +85	°C
DC Forward Current	I _F	20	mA
Peak Forward Current	I _{FM} ^[1]	100	mA
Electrostatic Discharge Threshold (HBM)	-	250	V
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	540	°C/W
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	390	°C/W

Notes: 1. /1/10 Duty Cycle, 0.1ms Pulse Width. 2. R_{in, Ja}, R_{in, JS} Results from mounting on PC board FR4 (pad size ≥ 16 mm² per pad). 3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

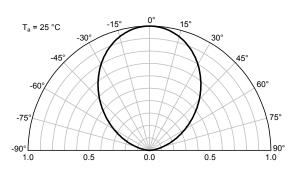
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TECHNICAL DATA

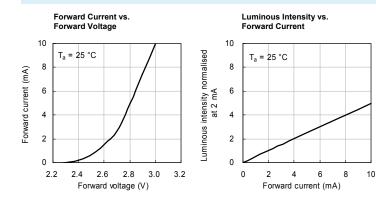
RELATIVE INTENSITY vs. WAVELENGTH

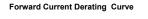


SPATIAL DISTRIBUTION

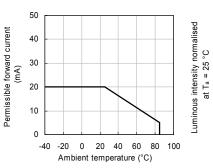


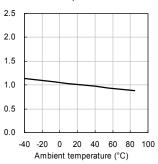
BLUE



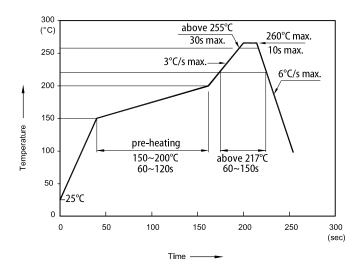


Luminous Intensity vs. Ambient Temperature

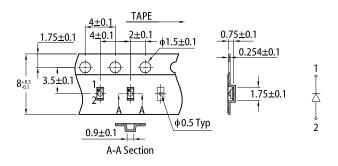




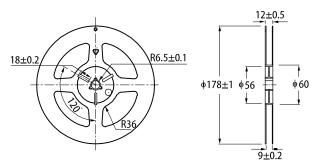
REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



Notes

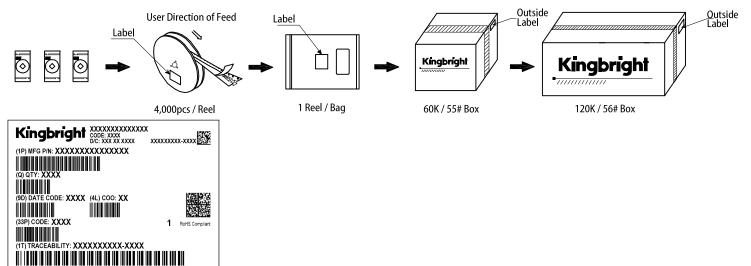
- 1. Don't cause stress to the LEDs while it is exposed to high temperature.
- The maximum number of reflow soldering passes is 2 times.
 Reflow soldering is recommended. Other soldering methods are not recommended as they might

cause damage to the product.

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PACKING & LABEL SPECIFICATIONS



PRECAUTIONARY NOTES

- 1. 2.
- The information included in this document reflects representative usage scenarios and is intended for technical reference only. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
- 3.
- When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance. 4.
- 5. 6.
- All design applications should refer to Kingbright application notes available at http://www.Kin lotes