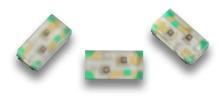


APHB1608QBDCGKC

1.6 x 0.8 x 0.5 mm Bi-Color Surface Mount LED



DESCRIPTIONS

- The Blue source color devices are made with InGaN Light Emitting Diode
- The Green source color devices are made with AlGaInP on GaAs substrate 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 x 0.8 mm SMD LED, 0.5 mm thickness
- · Compatible with reflow soldering
- · Available in various color combination
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- Tinned pads for improved solderability
- Halogen-free
- RoHS compliant

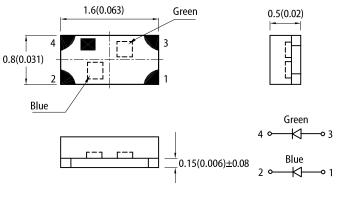
APPLICATIONS

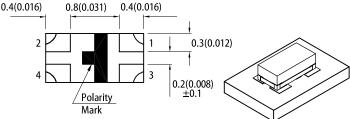
- Backlight
- Status indicator
- · Home and smart appliances
- Wearable and portable devices
- · Healthcare applications

ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

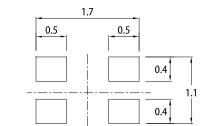






RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



Notes

 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.

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) @ 20mA ^[2]		Viewing Angle ^[1]	
			Min.	Тур.	201/2	
APHB1608QBDCGKC	Blue (InGaN)	Water Clear	40	70	130°	
	Green (AlGaInP)		20	50	130	

Notes

- 1. 81/2 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	Symbol	Emitting Color	Value		Unit
Parameter			Тур.	Max.	Unit
Wavelength at Peak Emission I_F = 20mA	λ_{peak}	Blue Green	460 574	-	nm
Dominant Wavelength I _F = 20mA	λ_{dom} ^[1]	Blue Green	465 570	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 20mA	Δλ	Blue Green	25 20	-	nm
Capacitance	С	Blue Green	100 15	-	pF
Forward Voltage I _F = 20mA	V _F ^[2]	Blue Green	3.3 2.1	4.0 2.5	V
Reverse Current (V _R = 5V)	I _R	Blue Green	-	50 10	μA
Temperature Coefficient of λ_{peak} I_F = 20mA, -10°C $\leq T \leq 85^\circ C$	$TC_{\lambda peak}$	Blue Green	0.04 0.12	-	nm/°C
Temperature Coefficient of λ_{dom} I_F = 20mA, -10°C $\leq T \leq 85^\circ C$	$TC_{\lambda dom}$	Blue Green	0.03 0.08	-	nm/°C
Temperature Coefficient of $~V_F$ I_F = 20mA, -10°C \leq T \leq 85°C	TCv	Blue Green	-3 -1.9	-	mV/°C

Notes: 1. The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±1nm.) 2. Forward voltage: ±0.1V. 3. Wavelength value is traceable to CIE127-2007 standards.

4. 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°C

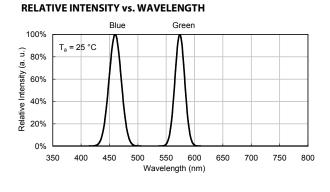
Parameter	Currach al	Va	11-14		
Parameter	Symbol	Blue	Green	Unit	
Power Dissipation	P _D	120	75	mW	
Reverse Voltage	V _R	5	5	V	
Junction Temperature	Tj	115	115	°C	
Operating Temperature	T _{op}	-40 to +85		°C	
Storage Temperature	T _{stg}	-40 to +85		°C	
DC Forward Current	I _F	30	30	mA	
Peak Forward Current	۱ _{FM} ^[1]	150	150	mA	
Electrostatic Discharge Threshold (HBM)	-	250	3000	V	
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	740	640	°C/W	
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	580	510	°C/W	

Notes: 1. 1/10 Duty Cycle, 0.1ms Pulse Width. 2. R_{In. J.A}, 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.

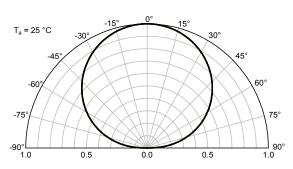
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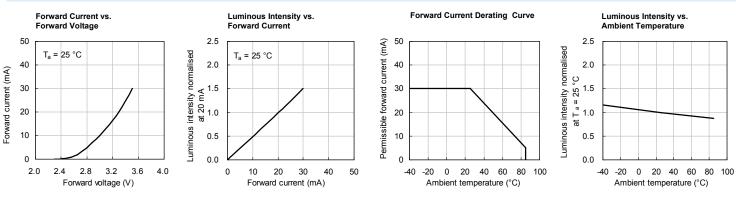
TECHNICAL DATA

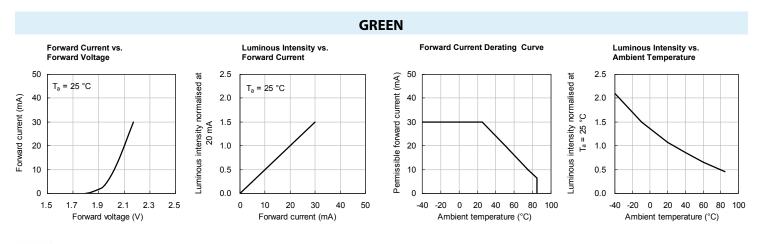


SPATIAL DISTRIBUTION



BLUE





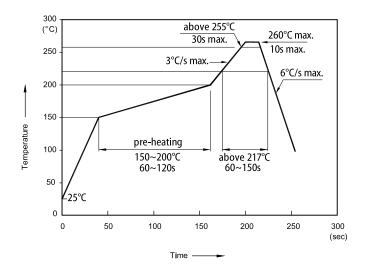
€ Kohs © 2021 Kingbright. All Rights Reserved. Spec No: DSAK7906 / 1203011319 Rev No: V.10B Date: 07/09/2021

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APHB1608QBDCGKC

TECHNICAL DATA

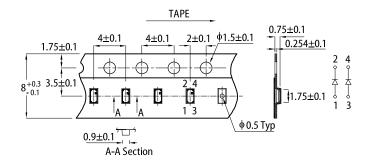
REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



Notes

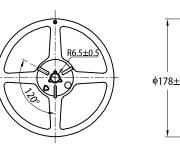
Notes: 1. Don't cause stress to the LEDs while it is exposed to high temperature. 2. The maximum number of reflow soldering passes is 2 times. 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

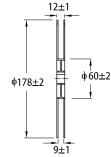
PACKING & LABEL SPECIFICATIONS

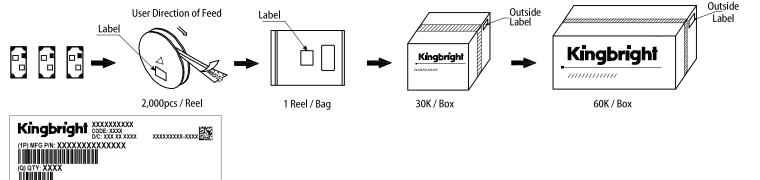


REEL DIMENSION (units : mm)

TAPE SPECIFICATIONS (units : mm)







PRECAUTIONARY NOTES

DE: XXXX

(SP)XXXXXXXXXXX

(4L) COO: CN

- 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. 2
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