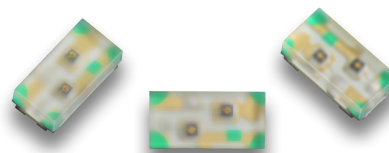


## APHB1608QBDCGKC

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

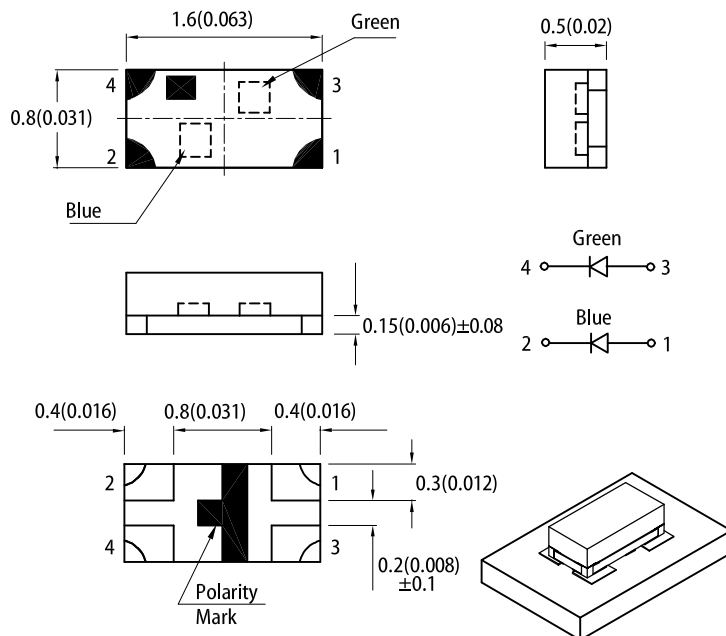
- Backlight
- Status indicator
- Home and smart appliances
- Wearable and portable devices
- Healthcare applications

### ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

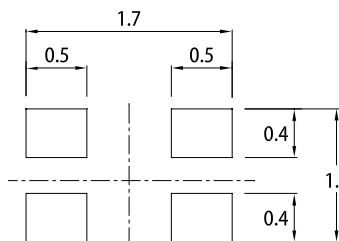


### PACKAGE DIMENSIONS



### RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance :  $\pm 0.1$ )



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.15(0.006)$  unless otherwise noted.
3. 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	Iv (mcd) @ 20mA <sup>[2]</sup>		Viewing Angle <sup>[1]</sup>
			Min.	Typ.	2θ1/2
APHB1608QBDCGKC	■ Blue (InGaN)	Water Clear	40	70	130°
	■ Green (AlGaInP)		20	50	

Notes:  
 1.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.  
 2. Luminous intensity / luminous flux:  $\pm 15\%$ .  
 3. Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at  $T_A=25^\circ\text{C}$ 

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission $I_F = 20\text{mA}$	$\lambda_{\text{peak}}$	Blue Green	460 574	-	nm
Dominant Wavelength $I_F = 20\text{mA}$	$\lambda_{\text{dom}}^{[1]}$	Blue Green	465 570	-	nm
Spectral Bandwidth at 50% $\Phi$ REL MAX $I_F = 20\text{mA}$	$\Delta\lambda$	Blue Green	25 20	-	nm
Capacitance	C	Blue Green	100 15	-	pF
Forward Voltage $I_F = 20\text{mA}$	$V_F^{[2]}$	Blue Green	3.3 2.1	4.0 2.5	V
Reverse Current ( $V_R = 5\text{V}$ )	$I_R$	Blue Green	-	50 10	$\mu\text{A}$
Temperature Coefficient of $\lambda_{\text{peak}}$ $I_F = 20\text{mA}$ , $-10^\circ\text{C} \leq T \leq 85^\circ\text{C}$	$TC_{\lambda_{\text{peak}}}$	Blue Green	0.04 0.12	-	nm/ $^\circ\text{C}$
Temperature Coefficient of $\lambda_{\text{dom}}$ $I_F = 20\text{mA}$ , $-10^\circ\text{C} \leq T \leq 85^\circ\text{C}$	$TC_{\lambda_{\text{dom}}}$	Blue Green	0.03 0.08	-	nm/ $^\circ\text{C}$
Temperature Coefficient of $V_F$ $I_F = 20\text{mA}$ , $-10^\circ\text{C} \leq T \leq 85^\circ\text{C}$	$TC_V$	Blue Green	-3 -1.9	-	mV/ $^\circ\text{C}$

## Notes:

1. The dominant wavelength ( $\lambda_d$ ) above is the setup value of the sorting machine. (Tolerance  $\lambda_d : \pm 1\text{nm}$ .)
2. Forward voltage:  $\pm 0.1\text{V}$ .
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  $T_A=25^\circ\text{C}$ 

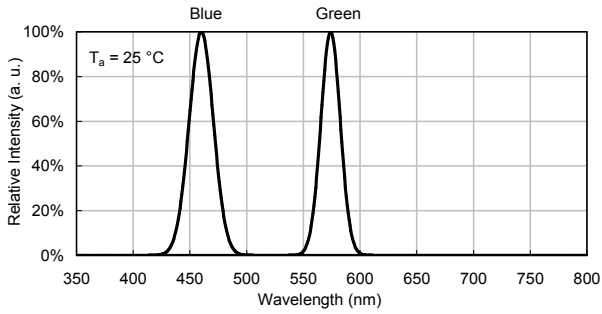
Parameter	Symbol	Value		Unit
		Blue	Green	
Power Dissipation	$P_D$	120	75	mW
Reverse Voltage	$V_R$	5	5	V
Junction Temperature	$T_j$	115	115	$^\circ\text{C}$
Operating Temperature	$T_{\text{op}}$	-40 to +85		$^\circ\text{C}$
Storage Temperature	$T_{\text{stg}}$	-40 to +85		$^\circ\text{C}$
DC Forward Current	$I_F$	30	30	mA
Peak Forward Current	$I_{FM}^{[1]}$	150	150	mA
Electrostatic Discharge Threshold (HBM)	-	250	3000	V
Thermal Resistance (Junction / Ambient)	$R_{\text{th JA}}^{[2]}$	740	640	$^\circ\text{C/W}$
Thermal Resistance (Junction / Solder point)	$R_{\text{th JS}}^{[2]}$	580	510	$^\circ\text{C/W}$

## Notes:

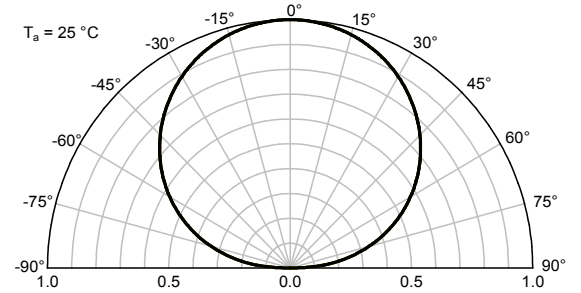
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2.  $R_{\text{th JA}}, R_{\text{th JS}}$  Results from mounting on PC board FR4 (pad size  $\geq 16\text{mm}^2$  per pad).
3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity –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

## TECHNICAL DATA

### RELATIVE INTENSITY vs. WAVELENGTH

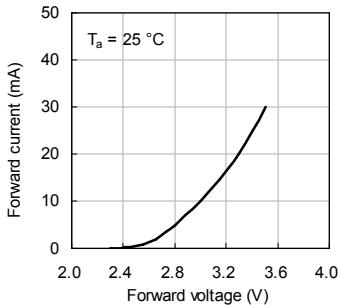


### SPATIAL DISTRIBUTION

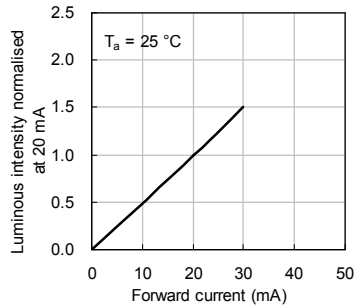


## BLUE

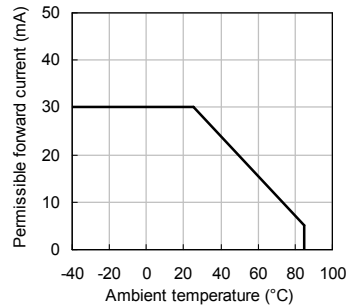
Forward Current vs. Forward Voltage



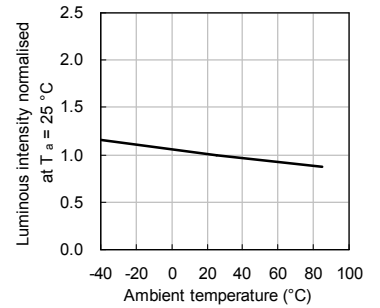
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

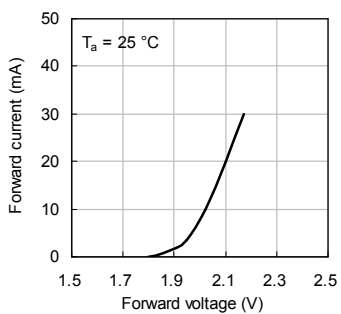


Luminous Intensity vs. Ambient Temperature

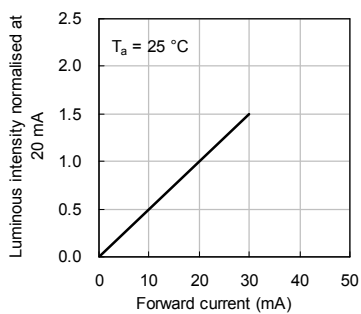


## GREEN

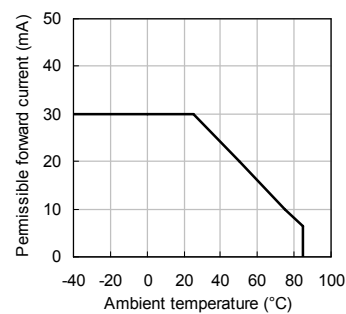
Forward Current vs. Forward Voltage



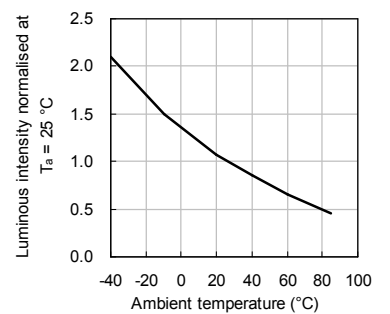
Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature





## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Standard LEDs - SMD category](#):*

*Click to view products by [Kingbright manufacturer](#):*

Other Similar products are found below :

[LTST-C190KYKT](#) [LTST-C19GD2WT](#) [LTST-N683GBEW](#) [LTW-170ZDC](#) [LTW-M140SZS40](#) [598-8110-100F](#) [598-8170-100F](#) [598-8610-202F](#) [67-22VRVGC/TR8](#) [AAAF5060QBFSEEZGS](#) [HLMA-QG00-S0021](#) [HLMP-6305-L0011](#) [ALMD-LB36-SV002](#) [APT1608QGW](#) [15-21UYC/S530-A3/TR8](#) [EAST2012YA0](#) [EASV1803BA0](#) [LG M67K-H1J2-24-0-2-R18-Z](#) [LS A676-P2S1-1](#) [SML310BATT86](#) [SML-LX0606SISUGC/A](#) [SML-LXL1307SRC-TR](#) [SML-LXR851SIUPGUBC](#) [LT1ED53A](#) [FAT801-S](#) [AM27ZGC03](#) [APB3025SGNC](#) [APFA3010SURKCGKQBDC](#) [APHK1608VGCA](#) [APT2012QGW](#) [LTST-C250KGKT](#) [LTW-010DCG](#) [LTW-020ZDCG](#) [LTW-21TS5](#) [LTW-220DS5](#) [LY L29K-H1J2-26](#) [UYGT801-S](#) [42-21UYC/S530-A3/TR8](#) [LO T67F-V1AB-24-1](#) [YGFR411-H](#) [598-8330-117F](#) [SML-LX0402IC-TR](#) [CMDA20AYAA7D1S](#) [CMDA16AYDR7A1X](#) [598-8040-100F](#) [598-8070-100F](#) [598-8140-100F](#) [598-8610-200F](#) [EAST2012GA0](#) [EAPL3527GA5](#)