

**KPGB-0607VWA1SEEKFF-TT**

0.65 x 0.65 x 0.25 mm Bi-Color Surface Mount LED

**DESCRIPTIONS**

- The source color devices are made with InGaN on Sapphire substrate Light Emitting Diode
- The Hyper-Red 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**

- 0.65 mm x 0.65 mm SMD LED, 0.25 mm thickness
- Low power consumption
- Package: 4000 pcs / reel
- Moisture sensitivity level: 3
- Halogen-free
- RoHS compliant

**APPLICATIONS**

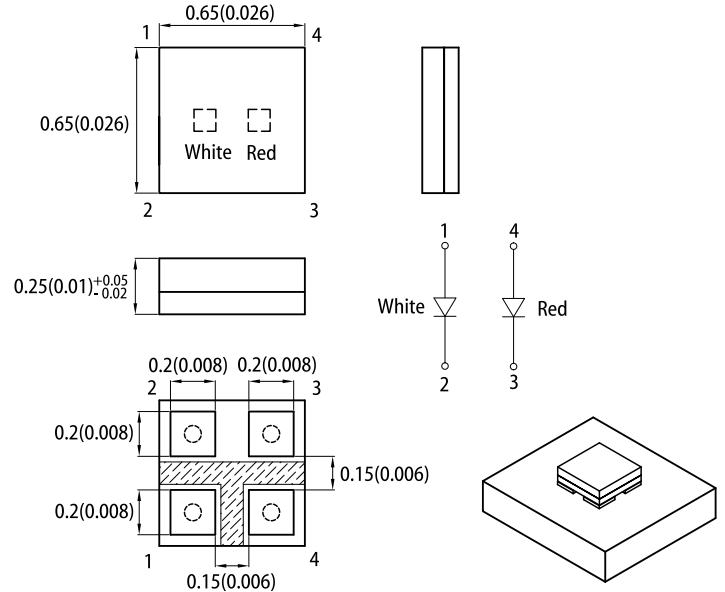
- Backlight
- Status indicator
- Home and smart appliances
- Wearable and portable devices
- Healthcare applications

**ATTENTION**

Observe precautions for handling electrostatic discharge sensitive devices

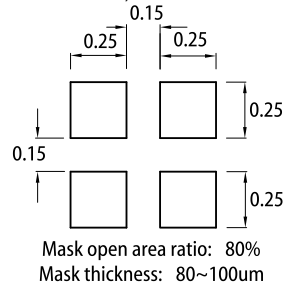


**PACKAGE DIMENSIONS**



**RECOMMENDED SOLDERING PATTERN**

(units : mm; tolerance : ± 0.1)



**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1(0.004") 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) @ 5mA [2]		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KPGB-0607VWA1SEEKFF-TT	White (InGaN)	Yellow Fluorescent	30	165	140°
			*30	*165	
	15		75		
	*6		*25		
	Hyper Red (AlGaInP)				

Notes:  
 1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.  
 2. Luminous intensity / luminous flux: +/-15%.  
 \* Luminous intensity value is traceable to CIE127-2007 standards.

**ELECTRICAL / OPTICAL CHARACTERISTICS at T<sub>A</sub>=25°C (WHITE)**

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Chromaticity Coordinates x I <sub>F</sub> = 5mA	x <sup>[1]</sup>	White	0.31	-	-
Chromaticity Coordinates y I <sub>F</sub> = 5mA	y <sup>[1]</sup>	White	0.31	-	-
Capacitance	C	White	100	-	pF
Forward Voltage I <sub>F</sub> = 5mA	V <sub>F</sub> <sup>[2]</sup>	White	2.9	3.2	V
Reverse Current (V <sub>R</sub> = 5V)	I <sub>R</sub>	White	-	50	μA
Temperature Coefficient of x I <sub>F</sub> = 5mA, -10°C ≤ T ≤ 85°C	TC <sub>x</sub>	White	-0.18	-	10 <sup>-3</sup> /°C
Temperature Coefficient of y I <sub>F</sub> = 5mA, -10°C ≤ T ≤ 85°C	TC <sub>y</sub>	White	-0.19	-	10 <sup>-3</sup> /°C
Temperature Coefficient of V <sub>F</sub> I <sub>F</sub> = 5mA, -10°C ≤ T ≤ 85°C	TC <sub>V</sub>	White	-3.0	-	mV/°C

## Notes:

1. Measurement tolerance of the chromaticity coordinates is ±0.01.

2. Forward voltage: ±0.1V.

3. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

**ELECTRICAL / OPTICAL CHARACTERISTICS at T<sub>A</sub>=25°C (RED)**

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I <sub>F</sub> = 5mA	λ <sub>peak</sub>	Hyper Red	632	-	nm
Dominant Wavelength I <sub>F</sub> = 5mA	λ <sub>dom</sub> <sup>[1]</sup>	Hyper Red	624	-	nm
Spectral Bandwidth at 50% Φ REL MAX I <sub>F</sub> = 5mA	Δλ	Hyper Red	20	-	nm
Capacitance	C	Hyper Red	25	-	pF
Forward Voltage I <sub>F</sub> = 5mA	V <sub>F</sub> <sup>[2]</sup>	Hyper Red	1.95	2.3	V
Reverse Current (V <sub>R</sub> = 5V)	I <sub>R</sub>	Hyper Red	-	10	μA
Temperature Coefficient of λ <sub>peak</sub> I <sub>F</sub> = 5mA, -10°C ≤ T ≤ 85°C	TC <sub>λpeak</sub>	Hyper Red	0.13	-	nm/°C
Temperature Coefficient of λ <sub>dom</sub> I <sub>F</sub> = 5mA, -10°C ≤ T ≤ 85°C	TC <sub>λdom</sub>	Hyper Red	0.06	-	nm/°C
Temperature Coefficient of V <sub>F</sub> I <sub>F</sub> = 5mA, -10°C ≤ T ≤ 85°C	TC <sub>V</sub>	Hyper Red	-1.9	-	mV/°C

## Notes:

1. The dominant wavelength (λ<sub>d</sub>) above is the setup value of the sorting machine. (Tolerance λ<sub>d</sub>: ±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.

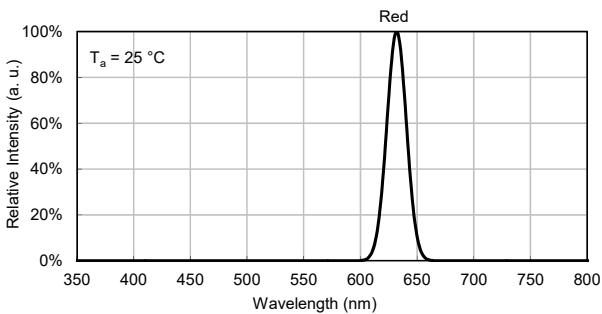
**ABSOLUTE MAXIMUM RATINGS at T<sub>A</sub>=25°C**

Parameter	Symbol	Value		Unit
		White	Hyper Red	
Power Dissipation	P <sub>D</sub> [1]	35		mW
Reverse Voltage	V <sub>R</sub>	5	5	V
Junction Temperature	T <sub>j</sub>	115	115	°C
Operating Temperature	T <sub>op</sub>	-40 to +85		°C
Storage Temperature	T <sub>stg</sub>	-40 to +100		°C
DC Forward Current	I <sub>F</sub> [2]	10	10	mA
Peak Forward Current	I <sub>FP</sub> [3]	50	40	mA
Electrostatic Discharge Threshold (HBM)	-	250	3000	V
Thermal Resistance (Junction / Ambient)	R <sub>th JA</sub> [4]	720	650	°C/W
Thermal Resistance (Junction / Solder point)	R <sub>th JS</sub> [4]	580	480	°C/W

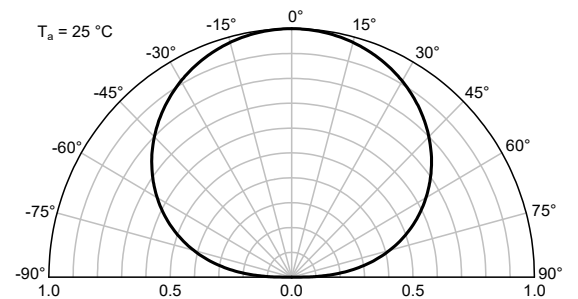
- Notes:
1. Within 35mW when multiple chips are lightened
  2. The maximum ratings are valid for the case of lighting a single chip  
When two chips are lit at the same time, each chip should be driven at a current lower than 50% of the absolute maximum ratings
  3. Duty Cycle ≤ 1 / 20, Pulse Width = 1ms.
  4. R<sub>th JA</sub>, R<sub>th JS</sub> Results from mounting on PC board FR4 (pad size ≥ 16 mm<sup>2</sup> per pad).
  5. 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**

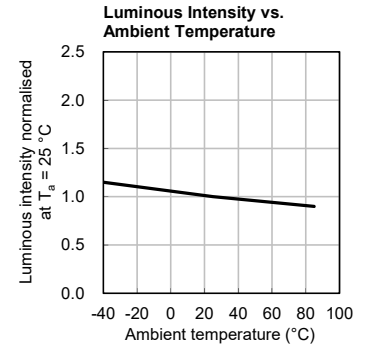
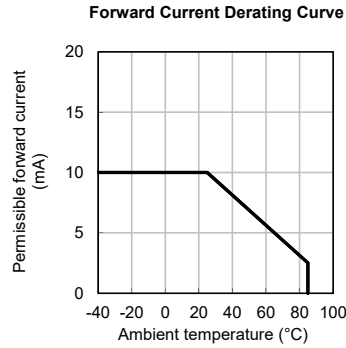
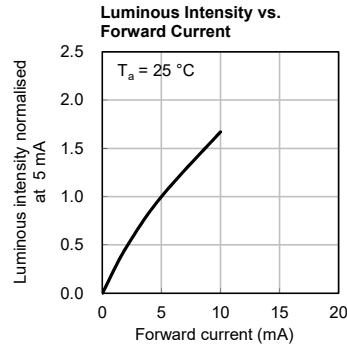
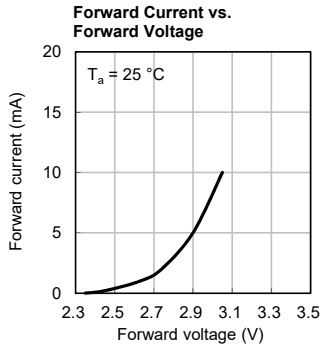


**SPATIAL DISTRIBUTION**

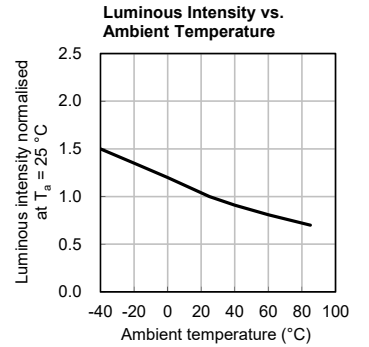
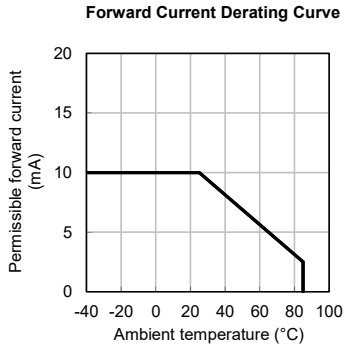
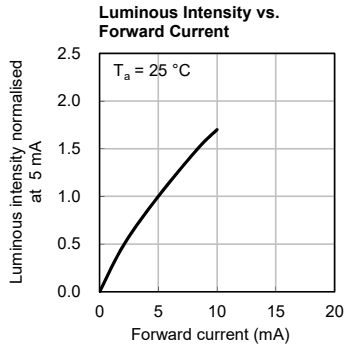
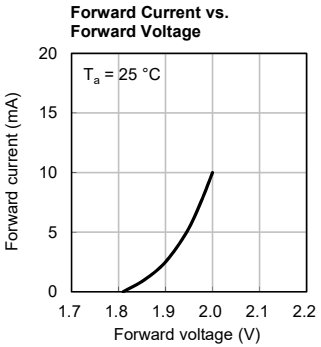


TECHNICAL DATA

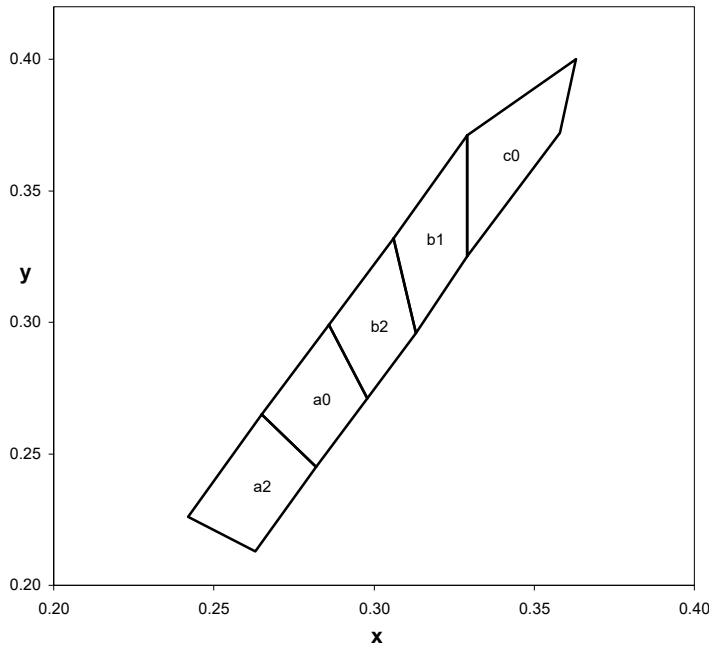
WHITE



HYPER RED



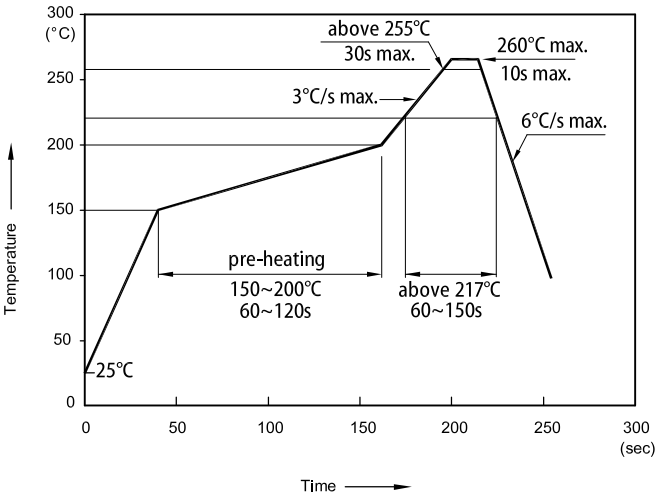
CIE CHROMATICITY DIAGRAM



		x	y		
a2	a0	0.263	0.213	0.282	0.245
		0.282	0.245	0.298	0.271
		0.265	0.265	0.286	0.299
		0.242	0.226	0.265	0.265
b2	b1	0.298	0.271	0.313	0.296
		0.313	0.296	0.329	0.325
		0.306	0.332	0.329	0.371
		0.286	0.299	0.306	0.332
c0		0.329	0.325		
		0.358	0.372		
		0.363	0.400		
		0.329	0.371		

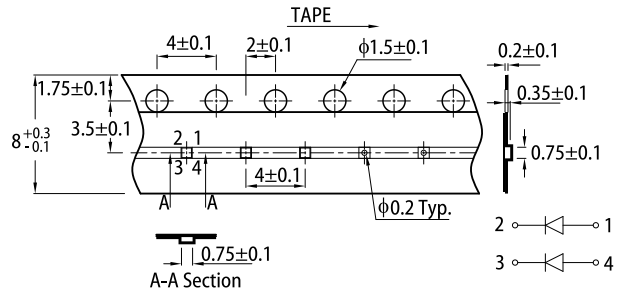
Notes:  
 Shipment may contain more than one chromaticity regions.  
 Orders for single chromaticity region are generally not accepted.  
 Measurement tolerance of the chromaticity coordinates is  $\pm 0.01$ .

REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

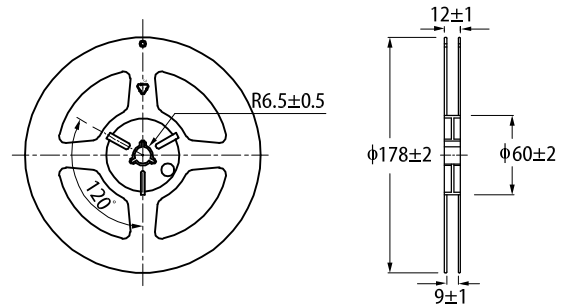


- Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
  2. The maximum number of reflow soldering passes is 2 times.
  3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

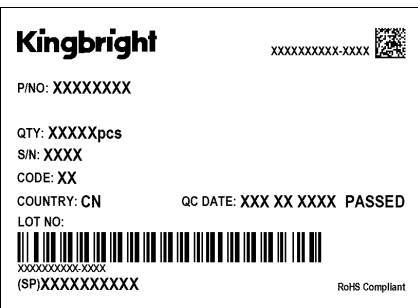
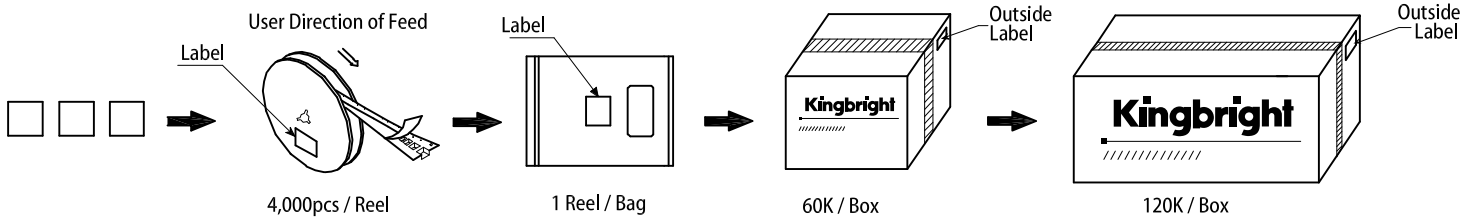
TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS



PRECAUTIONARY NOTES

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. 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.
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