Kingbright

3.0x2.5mm SURFACE MOUNT LED LAMP

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APB3025SURKF3C-01

Hyper Red

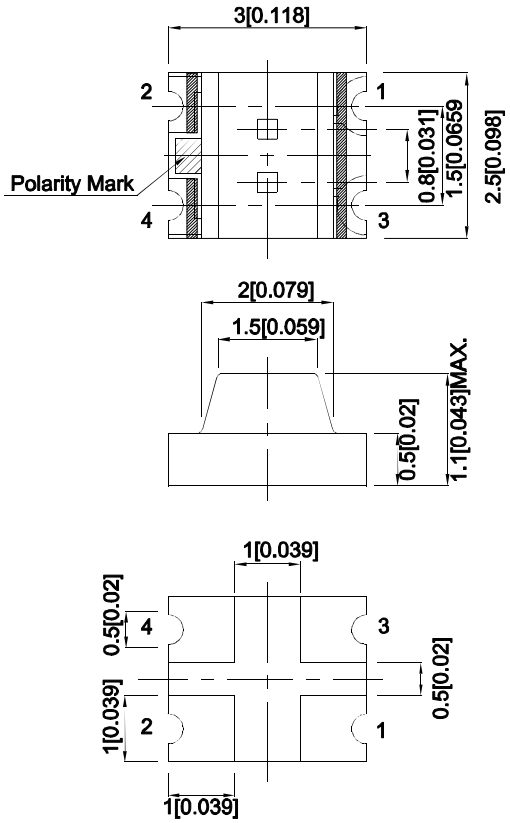
Features

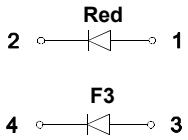
- 3.0mmx2.5mm SMD LED, 1.4mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for back light and indicator.
- Inner lens type.
- Moisture sensitivity level : level 3.
- Package : 2000pcs / reel.
- RoHS compliant.

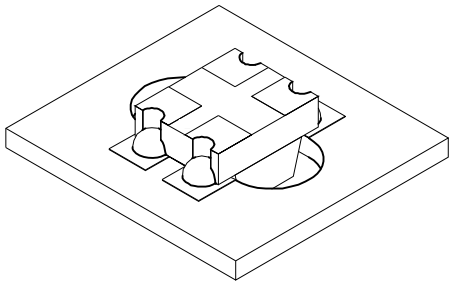
Descriptions

- The Hyper Red source color devices are made with Al GaInP on GaAs substrate Light Emitting Diode.
- F3 Made with Gallium Arsenide Infrared Emitting diodes.
- 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, equipment and machinery must be electri cally grounded.

Package Dimensions







Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2(0.008") 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 No.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 20mA		Po (mW/sr) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2θ1/2
APB3025SURKF3C-01	Hyper Red(AlGaInP)	Water Clear	120	250	-	-	160°
			*40	*70	-	-	
	Infrared (GaAs)		-	-	2	3	
			-	-	*2	*3	

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

Electrical / Optical Characteristics at TA=25°C (Red)

Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red	645		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Red	630		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red	28		nm	I_F=20mA
C	Capacitance	Hyper Red	35		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red	1.95	2.5	V	I_F=20mA
I_R	Reverse Current	Hyper Red		10	uA	V_R = 5V

Notes:
1. Wavelength: +/-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 TA=25°C (Red)

Parameter	Values	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	185	mA
Reverse Voltage	5	V
Operating Temperature	-40°C To +85°C	
Storage Temperature	-40°C To +85°C	

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 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.

Electrical / Optical Characteristics at TA=25°C (F3)

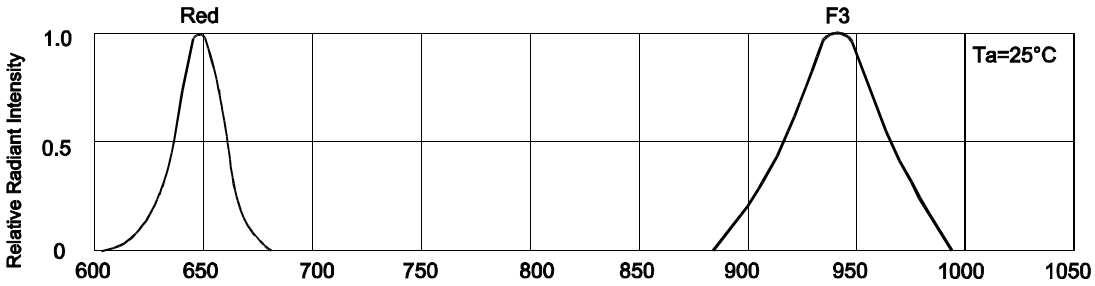
Parameter	P/N	Symbol	Typ.	Max.	Units	Test Conditions
Forward Voltage [1]	F3	V_F	1.2	1.6	V	I_F=20mA
Reverse Current	F3	I_R		10	uA	V_R = 5V
Capacitance	F3	C	90		pF	V_F=0V;f=1MHz
Peak Spectral Wavelength	F3	λP	940		nm	I_F=20mA
Spectral Bandwidth	F3	Δλ1/2	50		nm	I_F=20mA

Notes:
1. Forward Voltage: +/-0.1V.
2. Wavelength value is traceable to CIE127-2007 standards.
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Absolute Maximum Ratings at TA=25°C (F3)

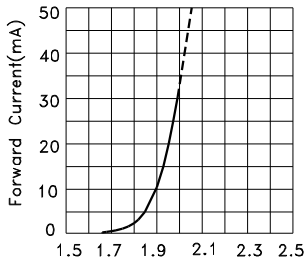
Parameter	Symbol	Values	Units
Power dissipation	P_T	80	mW
DC Forward Current	I_F	50	mA
Peak Forward Current [1]	i_{FS}	1.2	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_A	-40 To +85	°C
Storage Temperature	T_{STG}	-40 To +85	°C

Note:
1. 1/100 Duty Cycle, 10μs Pulse Width.
2. 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.

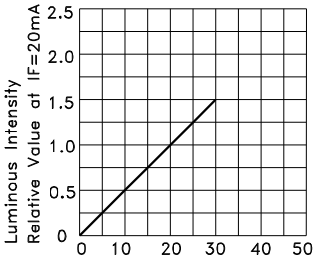


Relative Intensity Vs. Wavelength

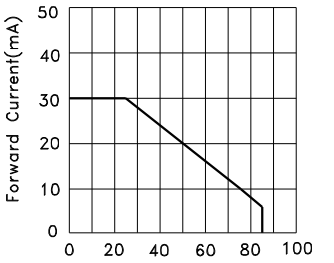
APB3025SURKF3C-01
Hyper Red



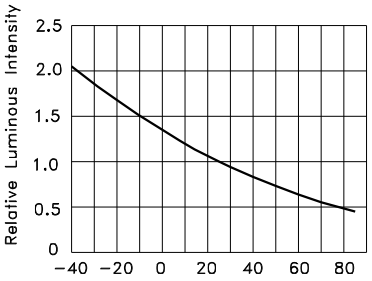
FORWARD CURRENT Vs.
FORWARD VOLTAGE



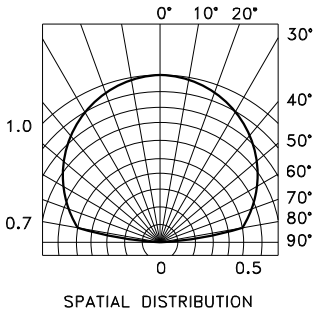
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

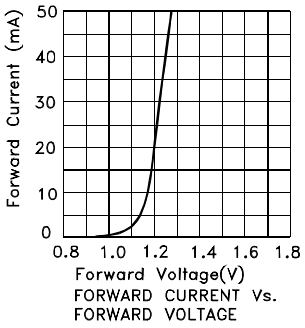


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

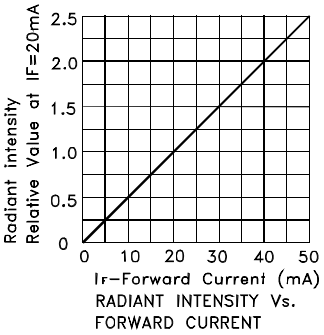


SPATIAL DISTRIBUTION

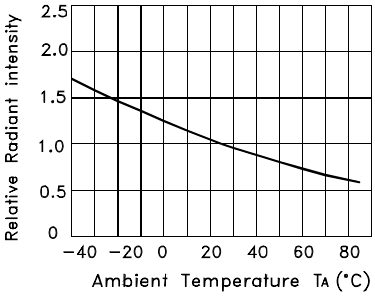
F3



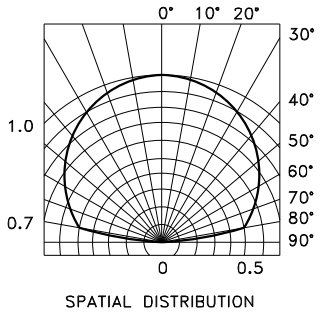
FORWARD CURRENT Vs.
FORWARD VOLTAGE



RADIANT INTENSITY Vs.
FORWARD CURRENT



RADIANT INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

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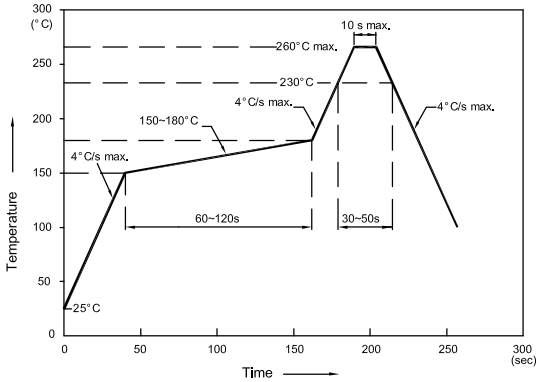
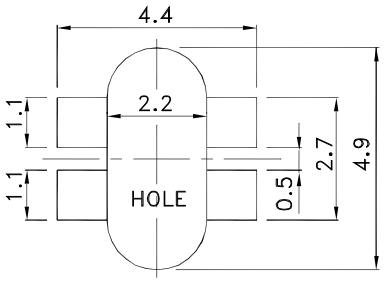
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

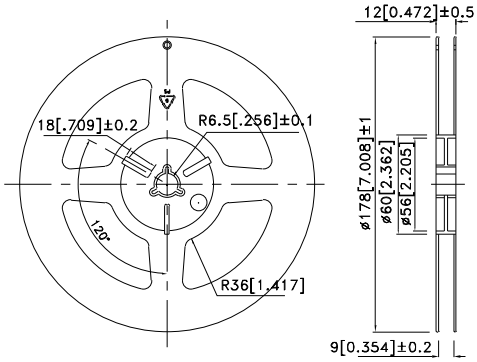


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

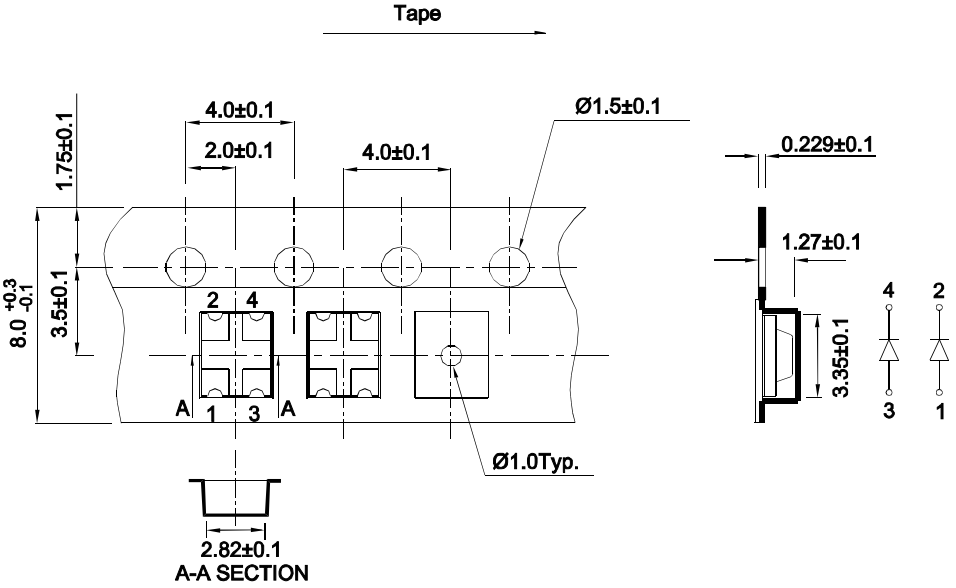
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



Tape Dimensions (Units : mm)



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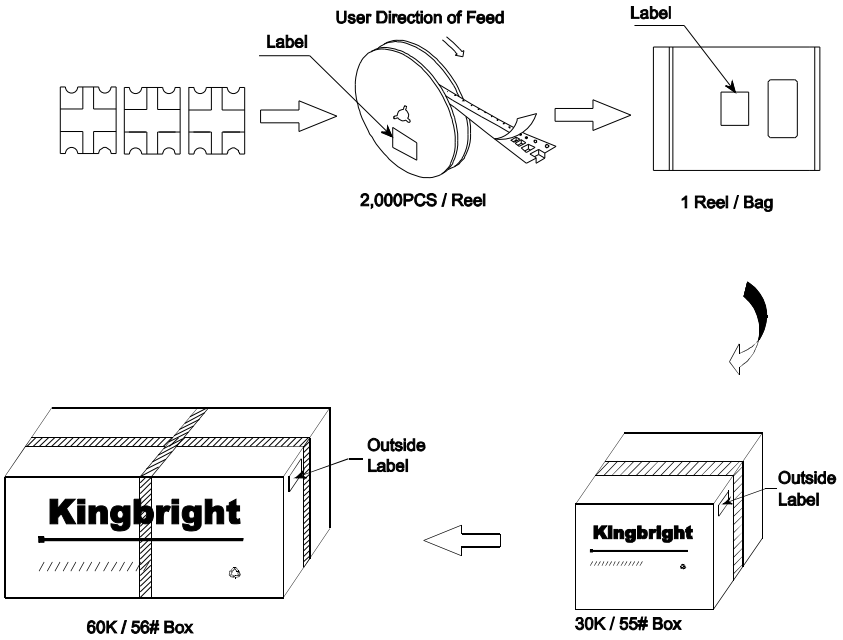
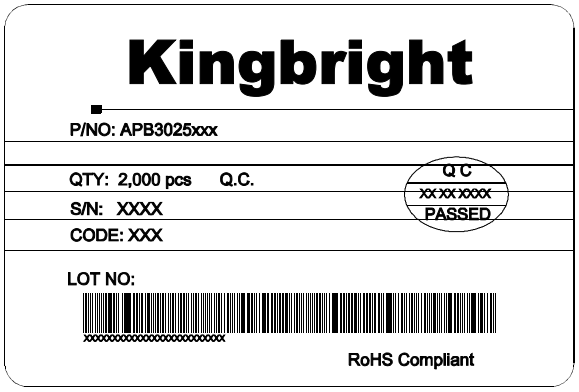
PACKING & LABEL SPECIFICATIONS **APB3025SURKF3C-01**





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