Kingbright

3.0x1.0mm RIGHT ANGLE SMD CHIP LED LAMP

Part Number: APFA3010SURKZGSYKC

Hyper Red
Green
Super Bright Yellow

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

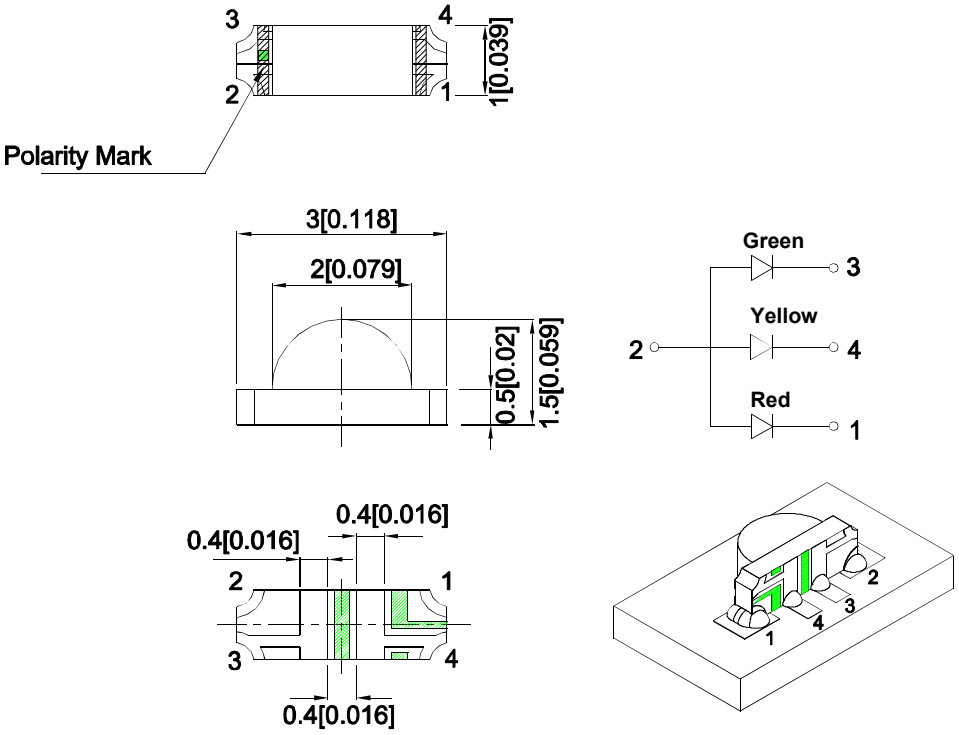
Features

- 3.0x1.5x1.0mm right angle SMD LED, 1.0mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- Tinned pads for improved solderability.
- RoHS compliant.

Descriptions

- The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.
- The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.
- The Super Bright Yellow device is made with AlGaInP (on GaAs substrate) light emitting diode chip.
- 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.

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		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APFA3010SURKZGSYKC	Hyper Red (AlGaInP)	Water Clear	120	220	120°
			*55	*80	
	Green (InGaN)		200	400	
			*200	*400	
	Super Bright Yellow (AlGaInP)		120	180	
			*120	*180	

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 the CIE127-2007 compliant national standards.

Electrical / Optical Characteristics at TA=25°C

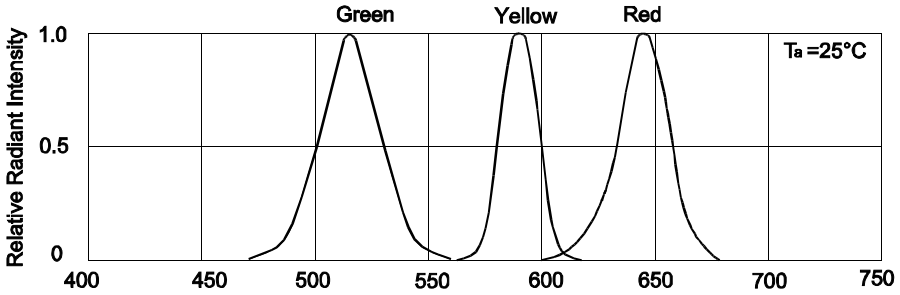
Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red Green Super Bright Yellow	645 515 590		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Red Green Super Bright Yellow	630 525 590		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red Green Super Bright Yellow	28 30 20		nm	I_F=20mA
C	Capacitance	Hyper Red Green Super Bright Yellow	35 45 20		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red Green Super Bright Yellow	1.95 3.3 2	2.5 4.1 2.5	V	I_F=20mA
I_R	Reverse Current	Hyper Red Green Super Bright Yellow		10 50 10	uA	V_R=5V

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national 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

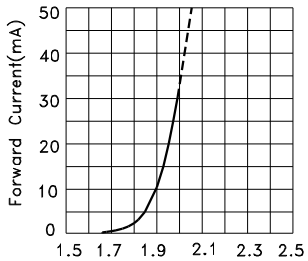
Parameter	Hyper Red	Green	Super Bright Yellow	Units
Power dissipation	75	102.5	75	mW
DC Forward Current	30	25	30	mA
Peak Forward Current [1]	185	150	175	mA
Electrostatic Discharge Threshold (HBM)	3000	450	3000	V
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

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

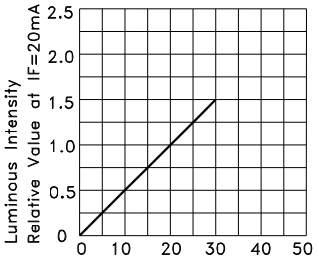


Relative Intensity Vs. Wavelength

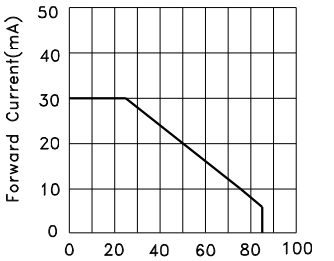
APFA3010SURKZGSYKC
Hyper Red



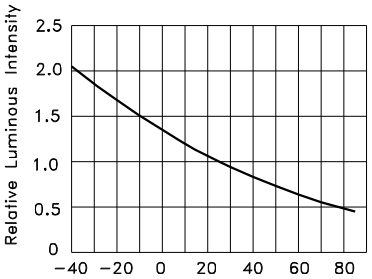
FORWARD CURRENT Vs.
FORWARD VOLTAGE



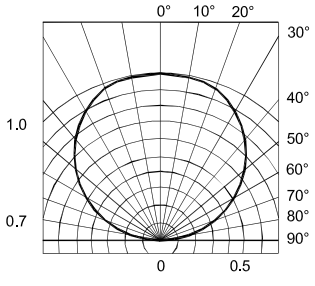
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

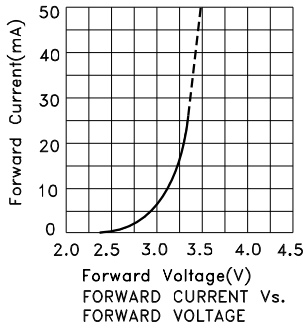


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

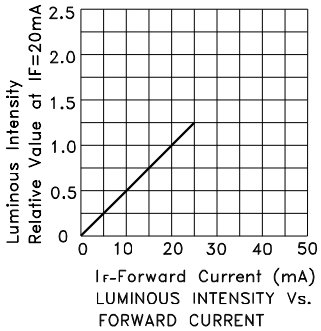


SPATIAL DISTRIBUTION

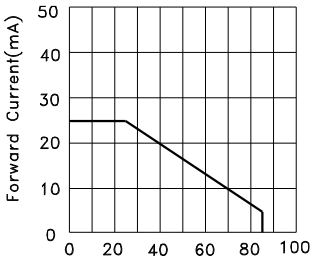
Green



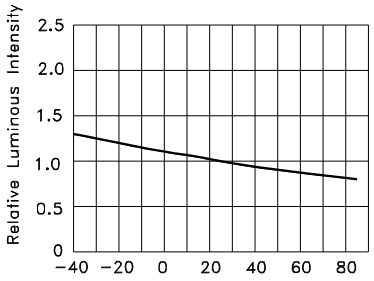
FORWARD CURRENT Vs.
FORWARD VOLTAGE



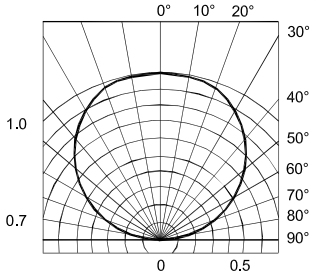
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

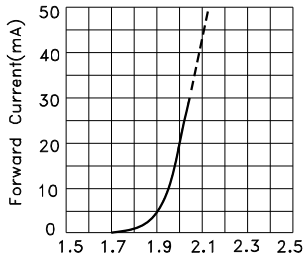


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

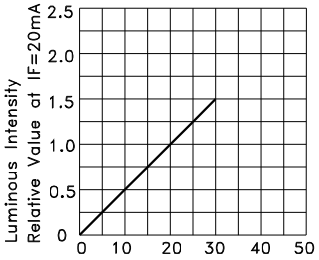


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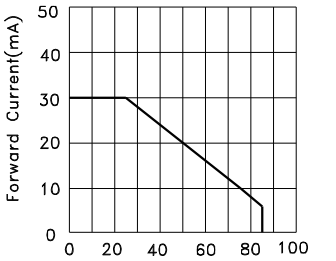
Super Bright Yellow



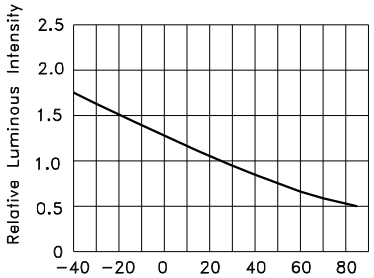
FORWARD CURRENT Vs.
FORWARD VOLTAGE



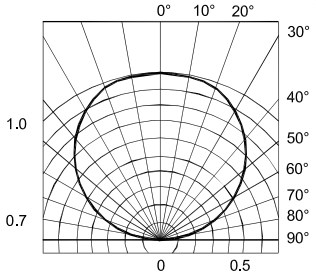
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

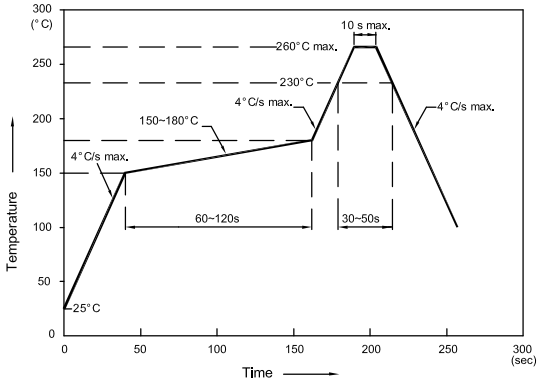


SPATIAL DISTRIBUTION

APFA3010SURKZGSYKC

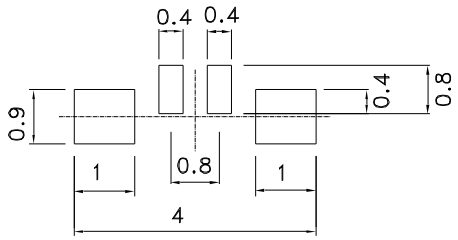
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

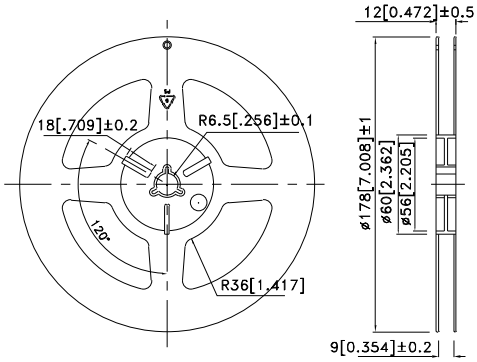


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

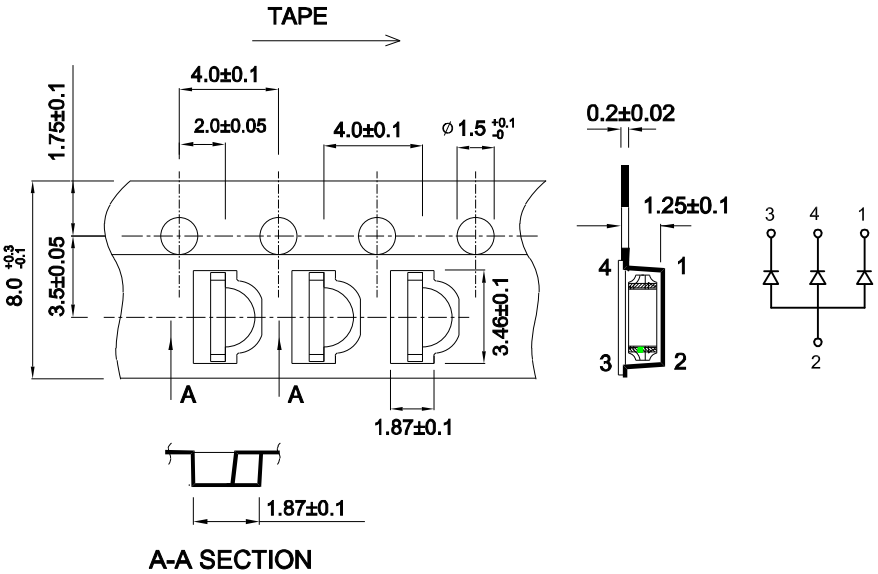
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



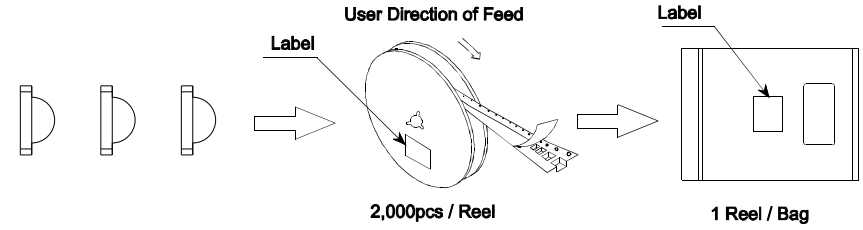
Tape Dimensions (Units : mm)

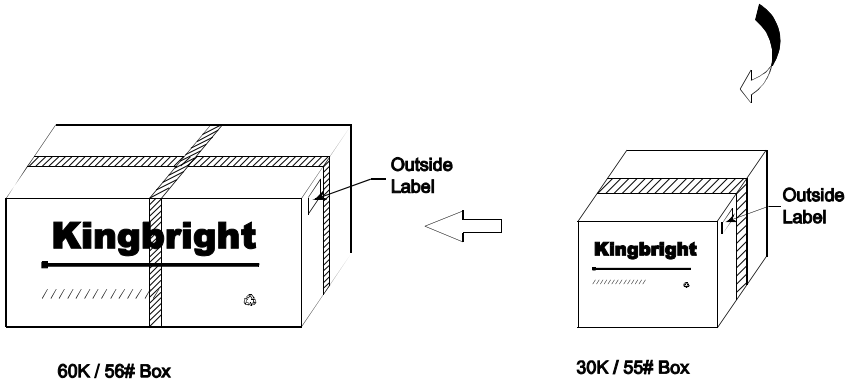


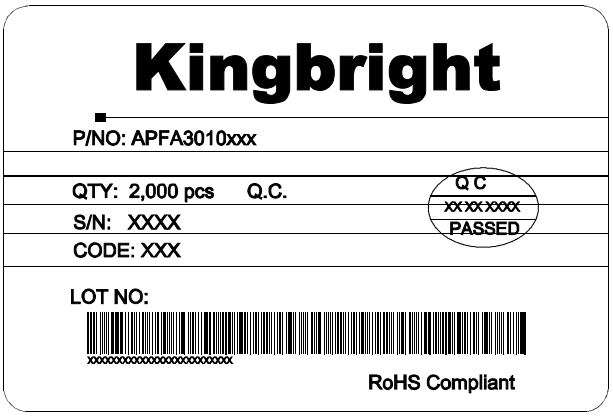
A-A SECTION

Kingbright

PACKING & LABEL SPECIFICATIONS APFA3010SURKZGSYKC







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