



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

Part Number: APTF1616QBDSURKCGKC

Blue  
Hyper Red  
Green

### Features

- 1.6mmX1.6mm SMT LED, 0.7mm thickness.
- Low power consumption.
- One blue, one red and one green chips in one package.
- Can produce any color in visible spectrum, including white light.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

The Blue source color devices are made with InGaN on Sapphire Light Emitting Diode.

The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.

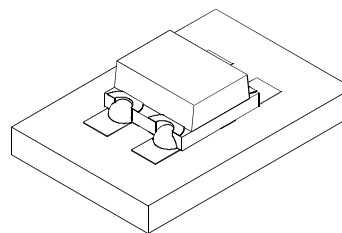
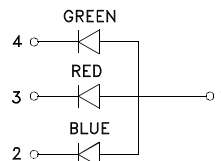
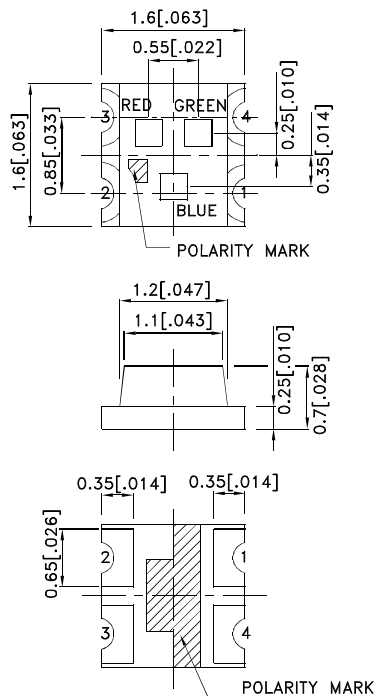
The Green source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.

Static electricity and surge 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 electrically grounded.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.2(0.008)$  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.	Dice	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APTF1616QBDSURKCGKC	Blue (InGaN)	WATER CLEAR	36	100	120°
	Hyper Red (AlGaInP)		110	230	
	Green (AlGaInP)		18	50	

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%.

## Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Hyper Red Green	468 650 574		nm	If=20mA
λD [1]	Dominant Wavelength	Blue Hyper Red Green	470 630 570		nm	If=20mA
Δλ1/2	Spectral Line Half-width	Blue Hyper Red Green	25 28 20		nm	If=20mA
C	Capacitance	Blue Hyper Red Green	100 35 15		pF	Vf=0V;f=1MHz
Vf [2]	Forward Voltage	Blue Hyper Red Green	3.3 1.95 2.1	4 2.5 2.5	V	If=20mA
IR	Reverse Current	Blue Hyper Red Green		10 10 10	uA	VR=5V

Notes:

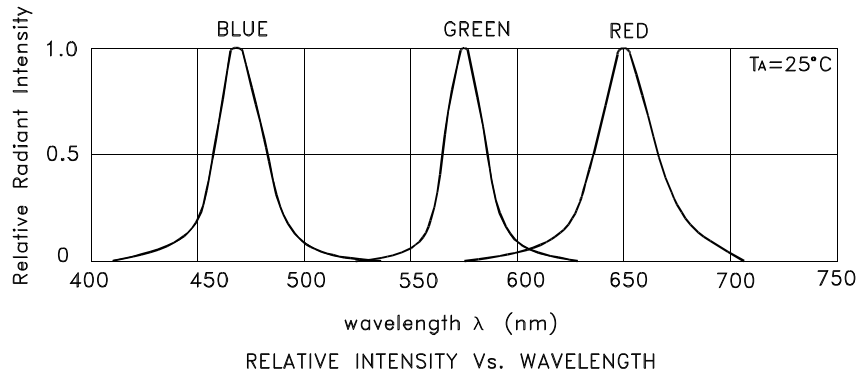
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

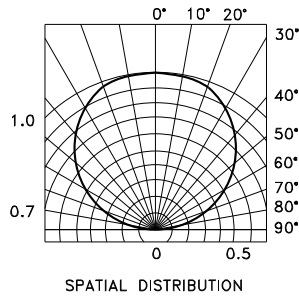
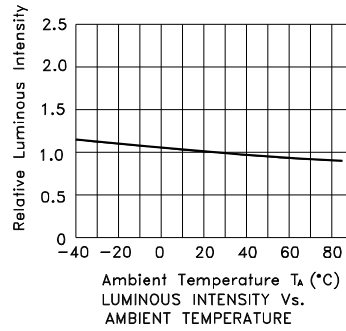
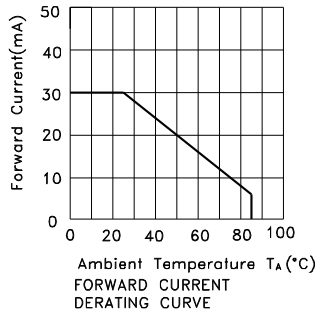
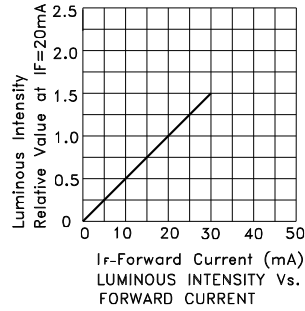
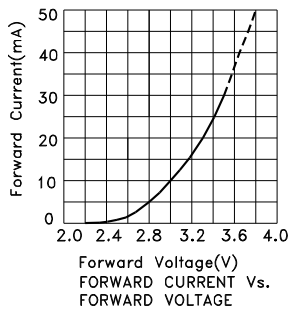
Parameter	Blue	Hyper Red	Green	Units
Power dissipation	120	75	75	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	150	185	150	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

Notes:

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

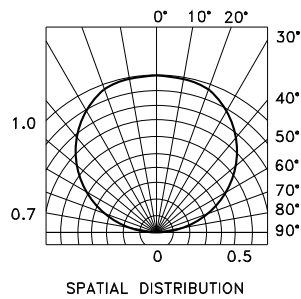
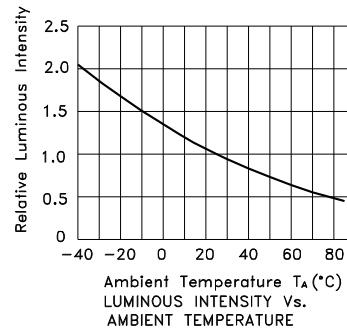
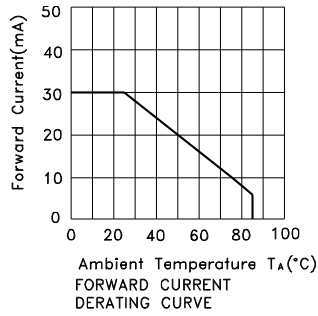
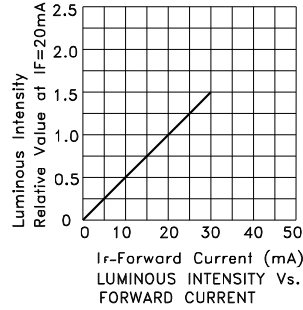
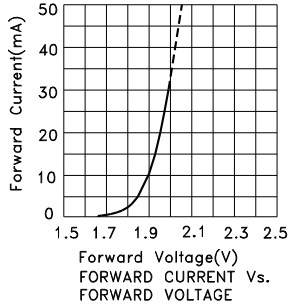


## APTF1616QBDSURKCGKC Blue

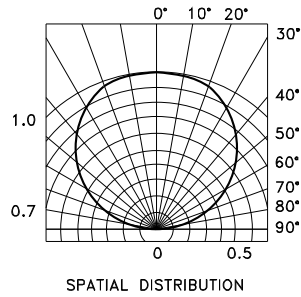
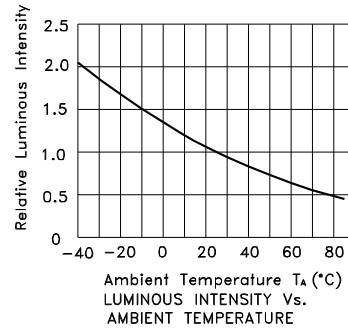
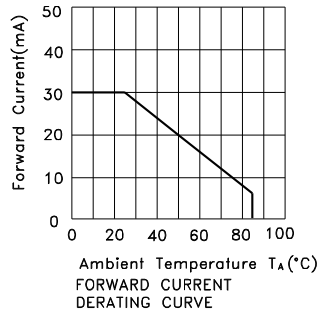
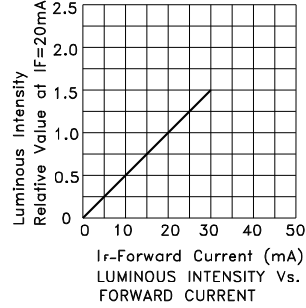
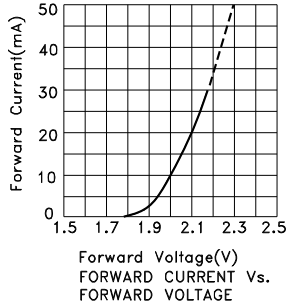


# Kingbright

## Hyper Red



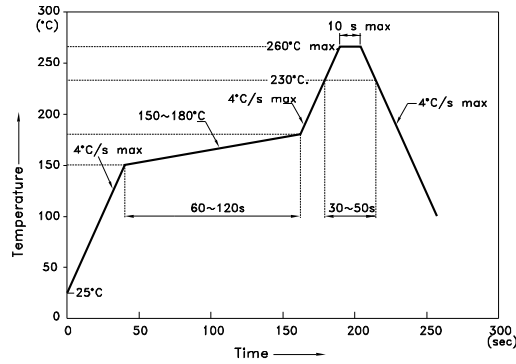
## Green



## APTF1616QBDSURKCGKC

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.

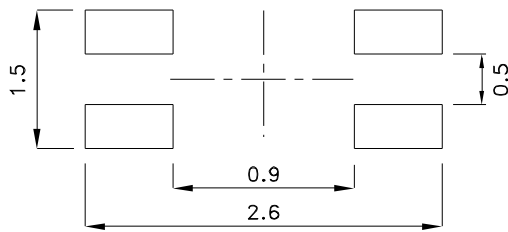
Reflow Soldering Profile For Lead-free SMT Process.



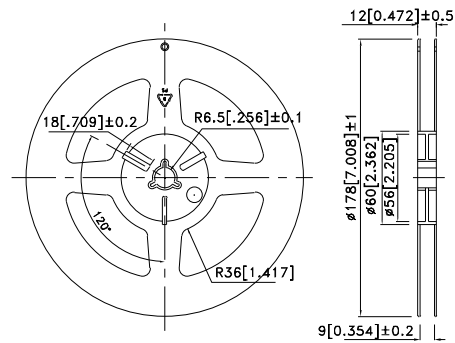
NOTES:

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.

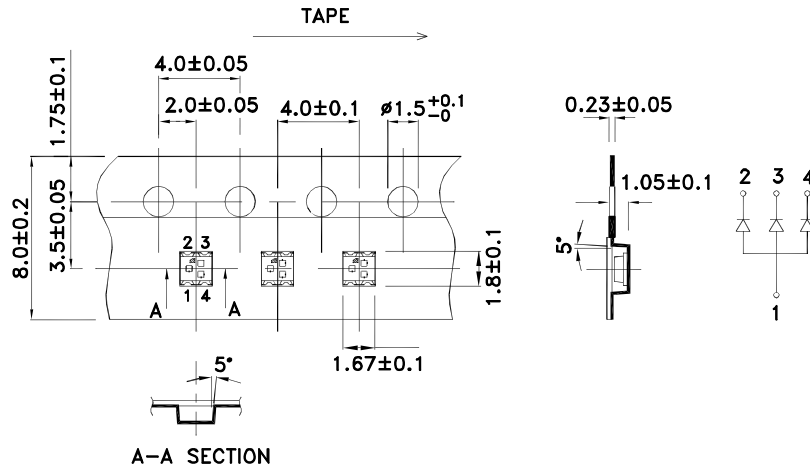
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



### Reel Dimension



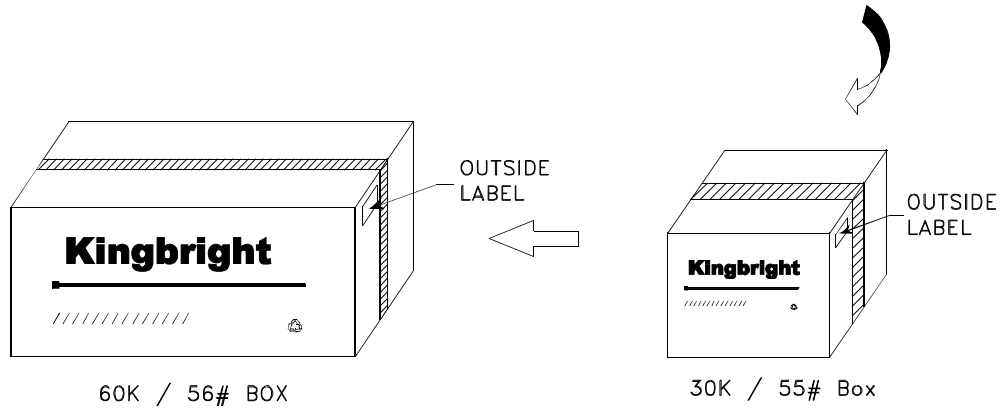
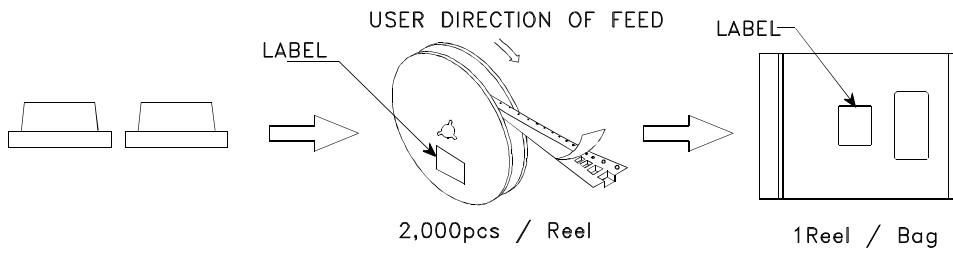
### Tape Dimensions (Units : mm)




# Kingbright

## PACKING & LABEL SPECIFICATIONS

## APTF1616QBDSURKCGKC



<b>Kingbright</b>	
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QTY: 2,000 pcs	Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C XX XX XXXX PASSED</span>
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	