

Kingbright

1.6x1.6mm FULL-COLOR SURFACE MOUNT LED

PRELIMINARY SPEC



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APTF1616PBASURKCGKC

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 SiC Light Emitting Diode.

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

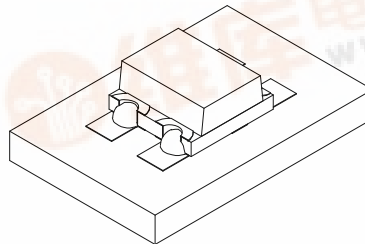
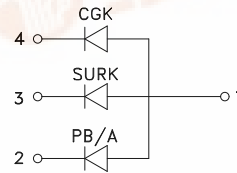
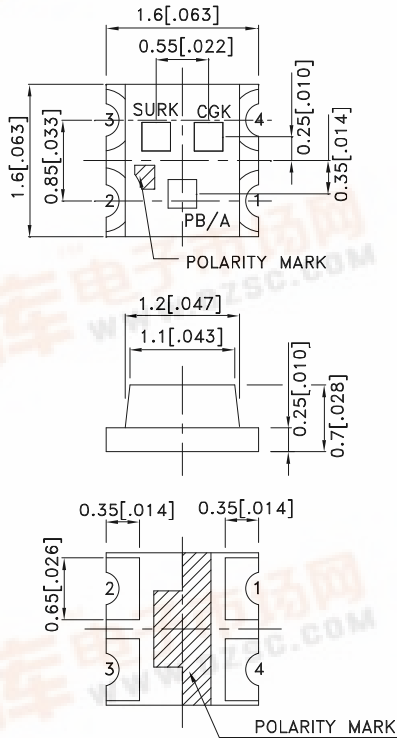
The Green source color devices are made with InGaAlP on GaAs substrate Light Emitting Diode.

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. Specifications are subjected to change without notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



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Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APTF1616PBASURKCGKC	Blue (InGaN)	WATER CLEAR	10	40	120°
	Hyper Red (InGaAlP)		110	230	
	Green (InGaAlP)		18	50	

Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity/ luminous Flux: +/-15%.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ_{peak}	Peak Wavelength	Blue Hyper Red Green	468 650 574		nm	I _F =20mA
λ_D [1]	Dominant Wavelength	Blue Hyper Red Green	470 635 570		nm	I _F =20mA
$\Delta\lambda_{1/2}$	Spectral Line Half-width	Blue Hyper Red Green	21 28 20		nm	I _F =20mA
C	Capacitance	Blue Hyper Red Green	100 35 15		pF	V _F =0V;f=1MHz
V _F [2]	Forward Voltage	Blue Hyper Red Green	3.2 1.95 2.1	4 2.5 2.5	V	I _F =20mA
I _R	Reverse Current	Blue Hyper Red Green		10 10 10	uA	V _R =5V

Notes:

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

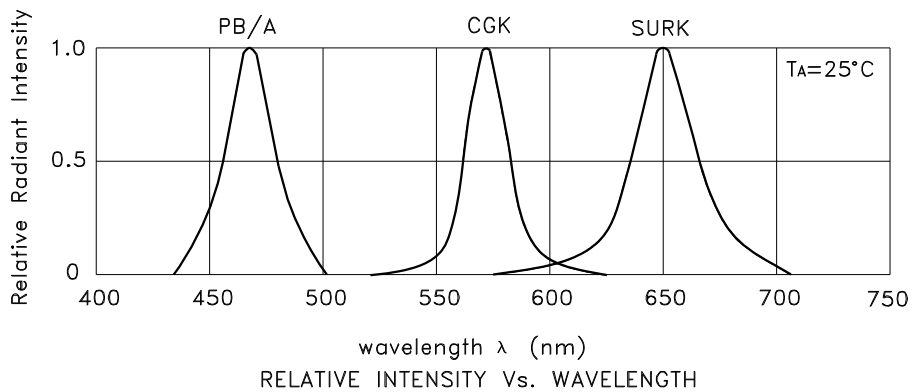
Absolute Maximum Ratings at TA=25°C

Parameter	Blue	Hyper Red	Green	Units
Power dissipation	120	75	75	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	100	185	150	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

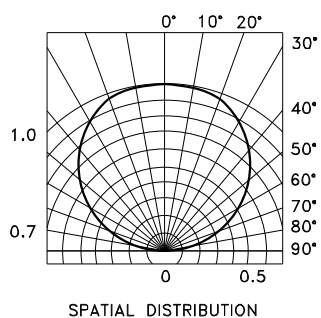
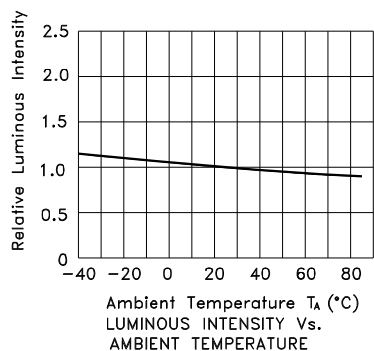
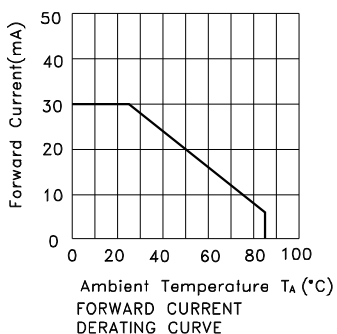
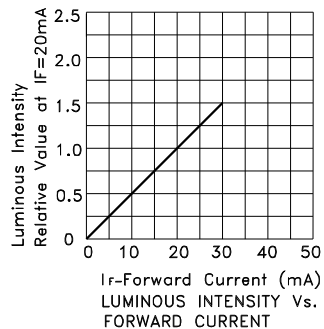
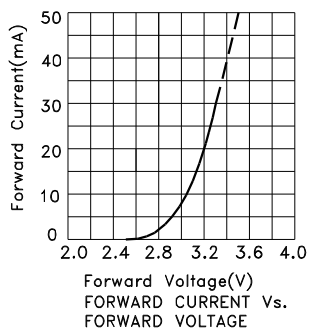
Notes:

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

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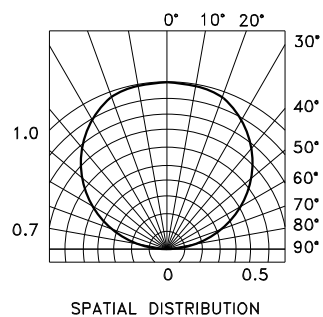
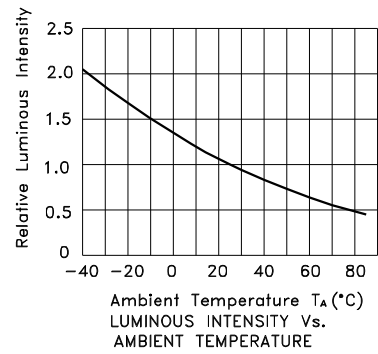
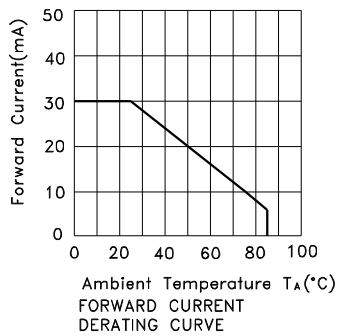
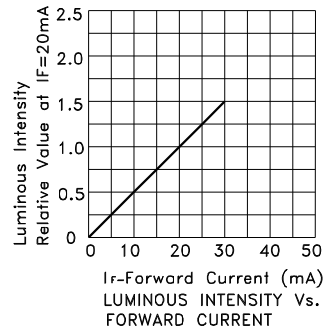
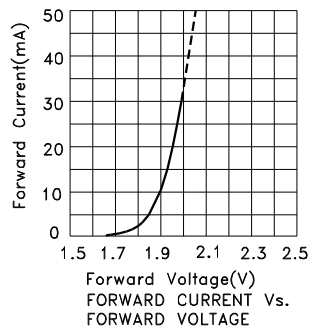


APTF1616PBASURKCGKC Blue



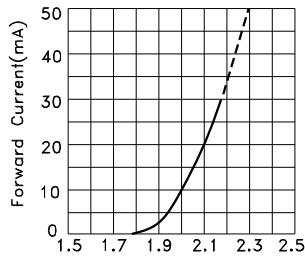
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Hyper Red

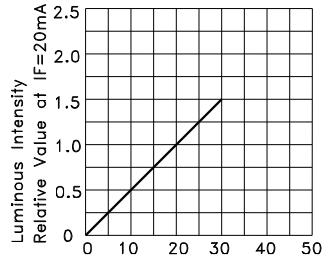


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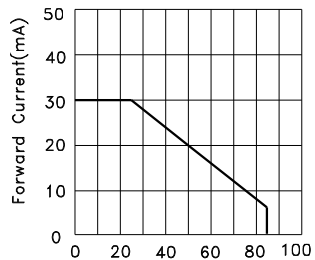
Green



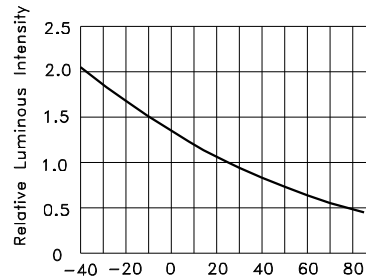
Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE



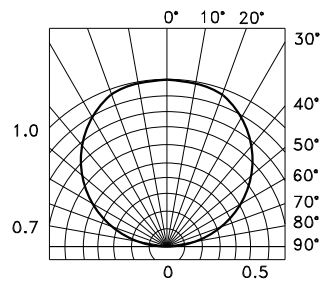
If-Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



Ambient Temperature T_A (°C)
FORWARD CURRENT
DERATING CURVE



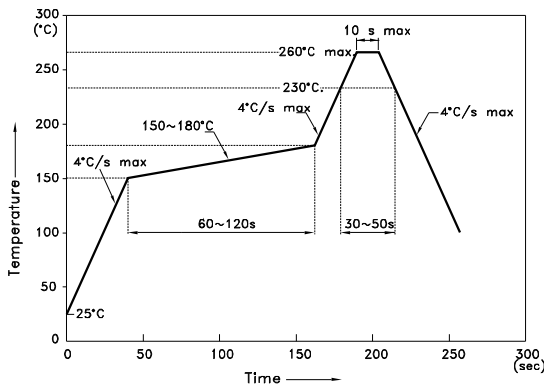
Ambient Temperature T_A (°C)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

APTF1616PBASURKCGKC

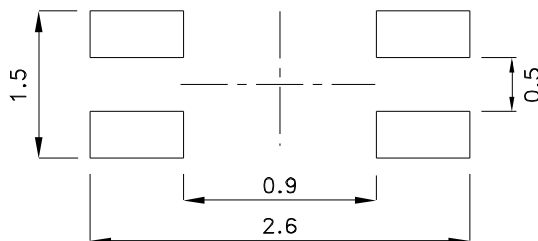
Reflow Soldering Profile For Lead-free SMT Process.



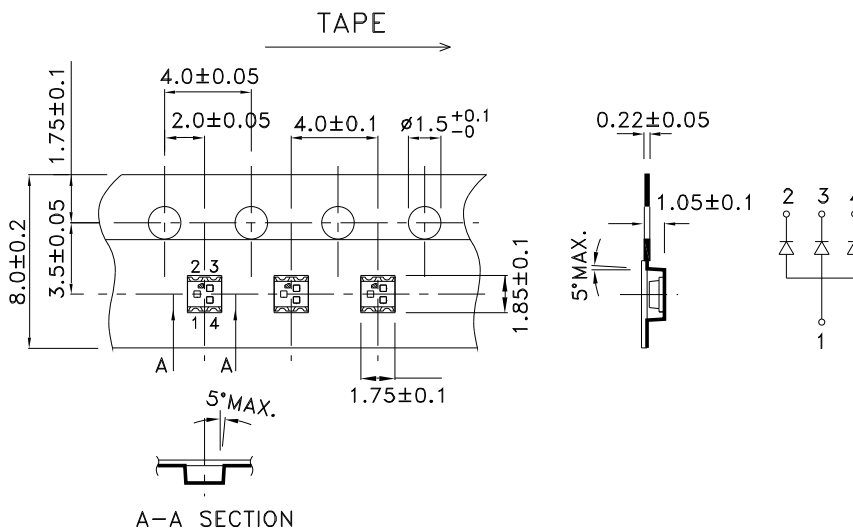
NOTES:

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)



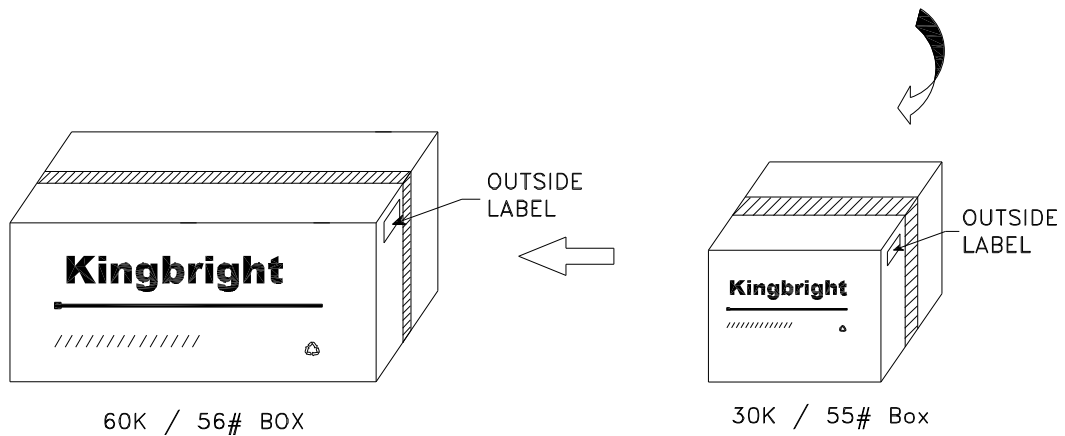
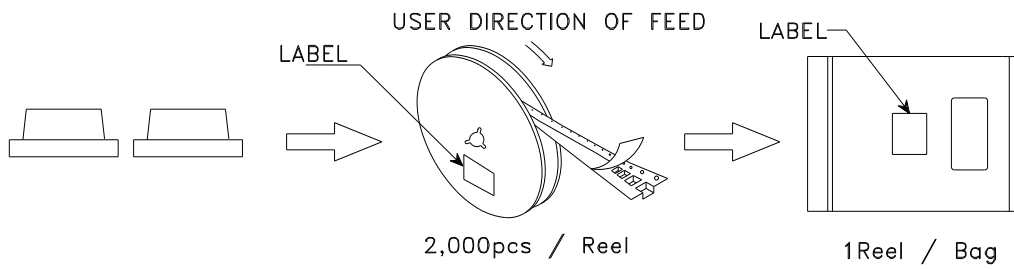
Tape Specifications (Units : mm)




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PACKING & LABEL SPECIFICATIONS

APTF1616PBASURKCGKC



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QC				
xxx xx. xxxx				
PASSED				
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QUANTITY : 2,000 pcs				
S/N : XXX	CODE: XXXX			
LOT NO :  xx-xxxxxx				
RoHS Compliant				