Kingbright

3.2mm x 1.6mm FULL-COLOR SURFACE MOUNT LED LAMP

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

KPTF-3216PBVGSURKC

BLUE
GREEN
HYPER RED

PRELIMINARY SPEC

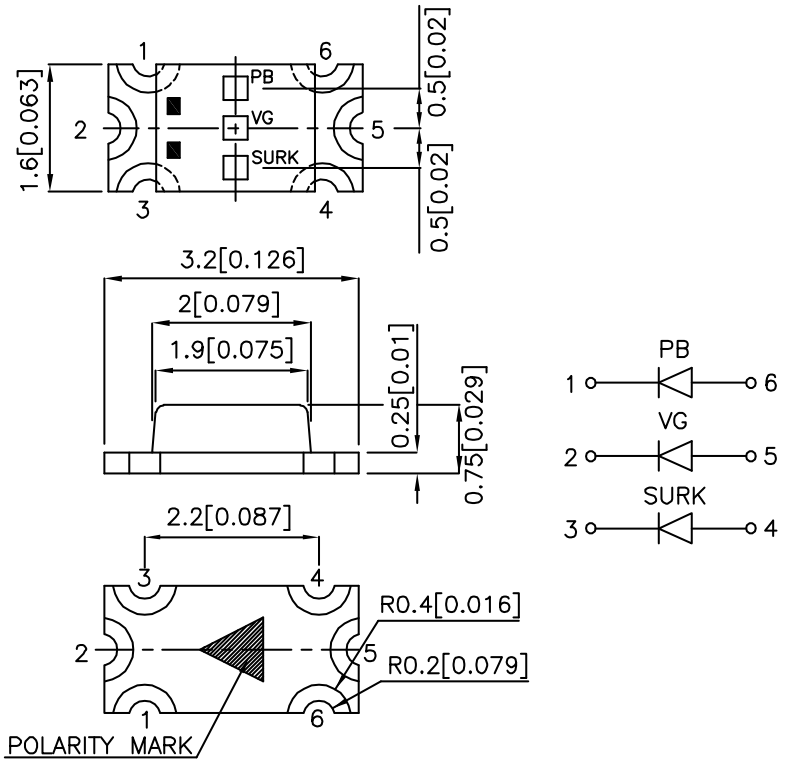
Features

- 3.2mmx1.6mm SMT LED, 0.75mm THICKNESS.
- LOW POWER CONSUMPTION.
- ONE BLUE, ONE GREEN AND ONE RED CHIPS IN ONE PACKAGE.
- CAN PRODUCE ANY COLOR IN VISIBLE SPECTRUM, INCLUDING WHITE LIGHT.
- PACKAGE : 2000PCS / REEL.
- RoHS COMPLIANT

Description

The Blue source color devices are made with InGaN on SiC Light Emitting Diode.
The Green source color devices are made with InGaN on SiC Light Emitting Diode.
The Hyper Red source color devices are made with DH 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 ±0.2(0.008") unless otherwise noted.
3. Specifications are subjected to change without notice.

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Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20mA		Viewing Angle
			Min.	Typ.	2θ1/2
KPTF-3216PBVGSURKC	BLUE (InGaN)	WATER CLEAR	50	100	120°
	GREEN (InGaN)		70	150	
	HYPER RED (InGaAlP)		70	150	

Note:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

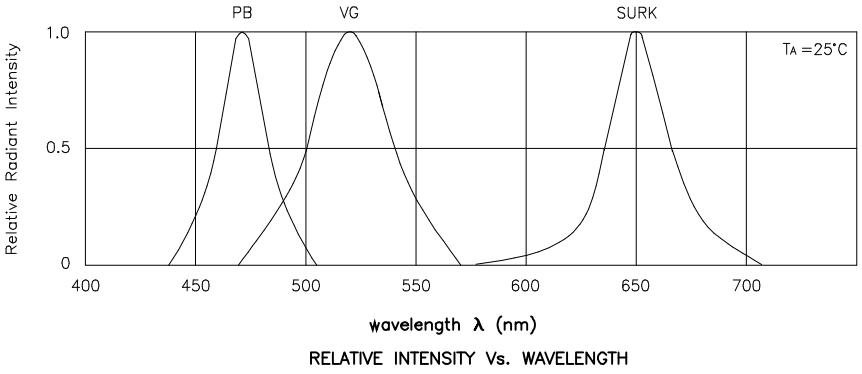
Electrical / Optical Characteristics at T_A=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Green Hyper Red	468 520 650		nm	I_F=20mA
λD	Dominant Wavelength	Blue Green Hyper Red	470 525 635		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Blue Green Hyper Red	25 38 28		nm	I_F=20mA
C	Capacitance	Blue Green Hyper Red	65 45 35		pF	V_F=0V;f=1MHz
V_F	Forward Voltage	Blue Green Hyper Red	3.65 3.5 1.95	4.2 4.5 2.5	V	I_F=20mA
I_R	Reverse Current	Blue Green Hyper Red		10 10 10	uA	V_R= 5V

Absolute Maximum Ratings at T_A=25°C

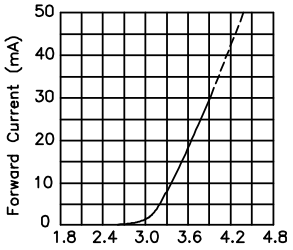
Parameter	Blue	Green	Hyper Red	Units
Power dissipation	102	105	170	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	160	150	185	mA
Reverse Voltage	5			V
Operating / Storage Temperature	-40°C TO +85°C			

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

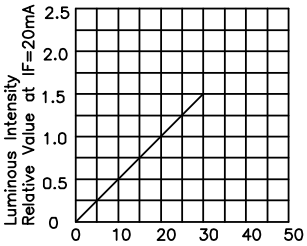


RELATIVE INTENSITY Vs. WAVELENGTH

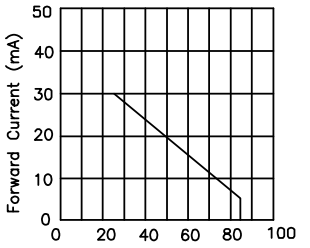
KPTF-3216PBVGSURKC
Blue



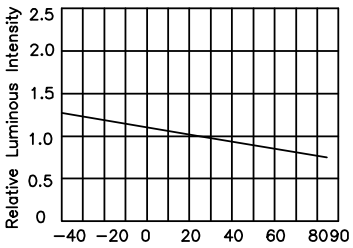
FORWARD CURRENT Vs.
FORWARD VOLTAGE



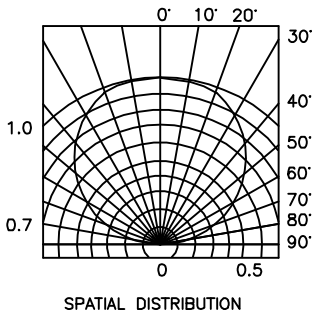
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

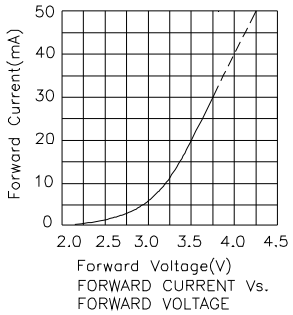


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

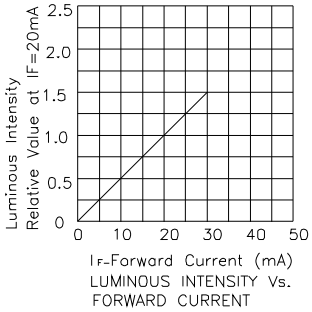


SPATIAL DISTRIBUTION

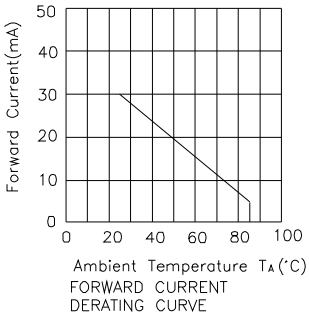
Green



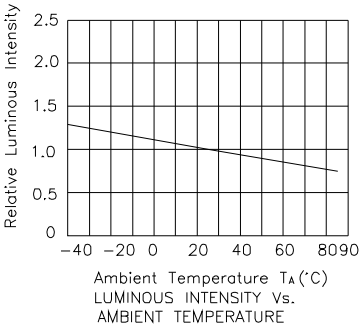
FORWARD CURRENT Vs.
FORWARD VOLTAGE



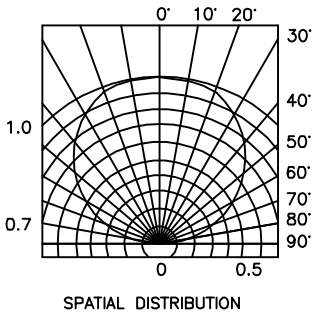
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

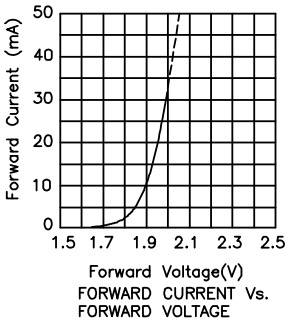


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

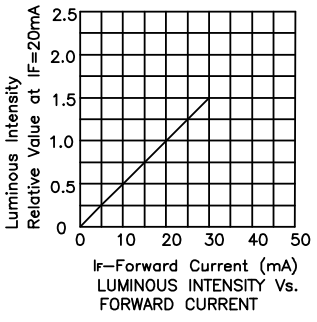


SPATIAL DISTRIBUTION

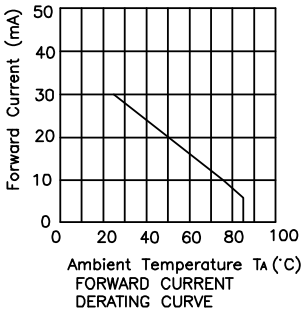
Hyper Red



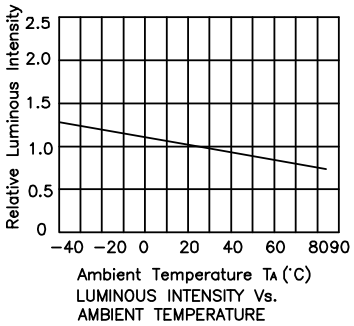
FORWARD CURRENT Vs.
FORWARD VOLTAGE



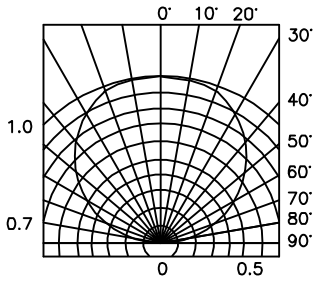
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

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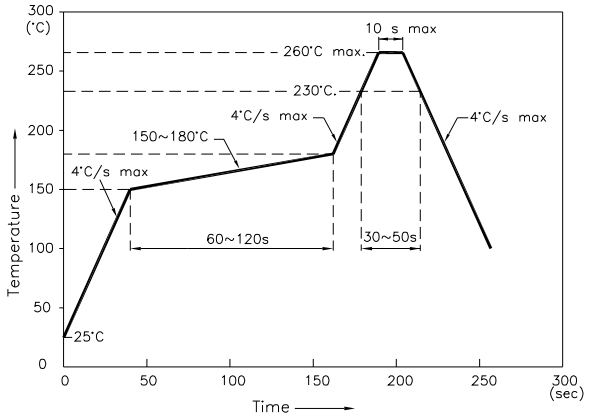
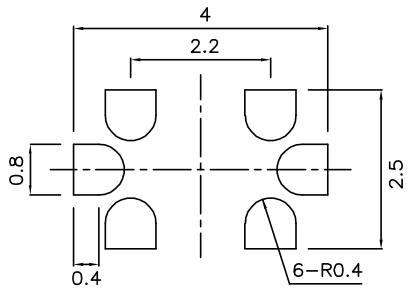
Reflow Soldering Profile For Lead-free SMT Process.



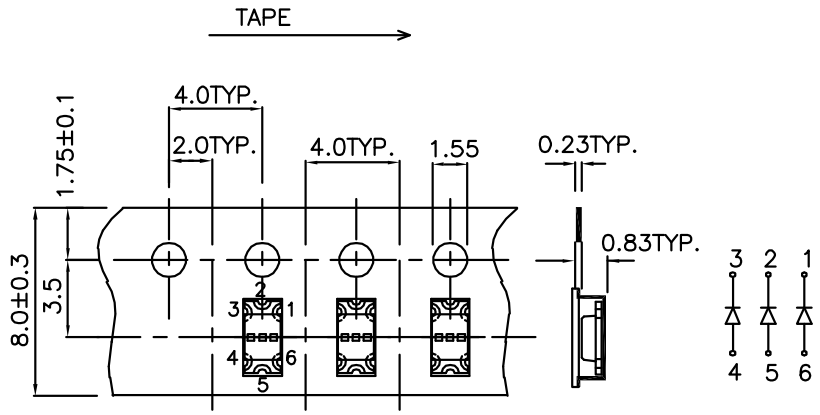
NOTES:

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.

RecommendedSoldering Pattern (Units : mm)



Tape Specifications (Units : mm)



Remarks:

If special sorting is required (e.g. binning based on forward voltage, Luminous intensity/ luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

1. Wavelength: +/-1nm
2. Luminous intensity/ luminous flux: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.