Kingbright

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

PRELIMINARY SPEC



ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

Part Number: APTF3216SURKCGKPBAC

Hyper Red
Green
Blue

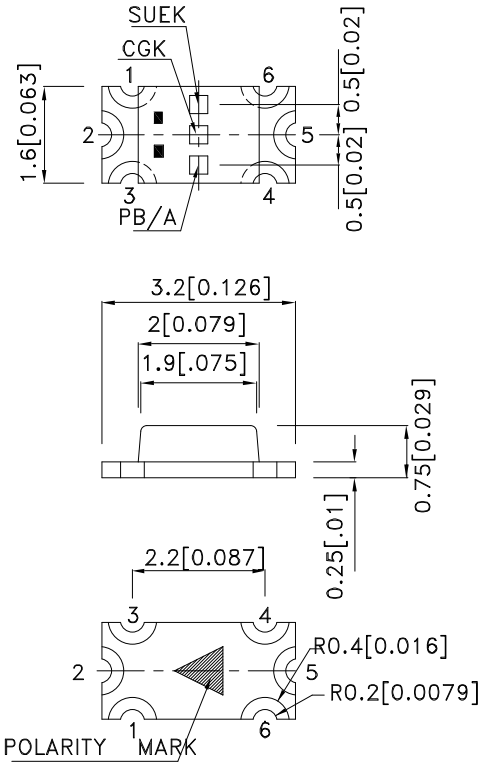
Features

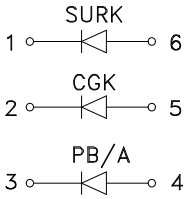
- 3.2mmx1.6mm SMT LED, 0.75mm THICKNESS.
- LOW POWER CONSUMPTION.
- ONE BLUE, ONE GREEN AND ONE RED CHIPS IN ONE PACKAGE.
- CAN PRODUCE ANY COLOR IN VISIBLE SPEC-TRUM, INCLUDING WHITE LIGHT.
- PACKAGE : 2000PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 3.
- RoHS COMPLIANT.

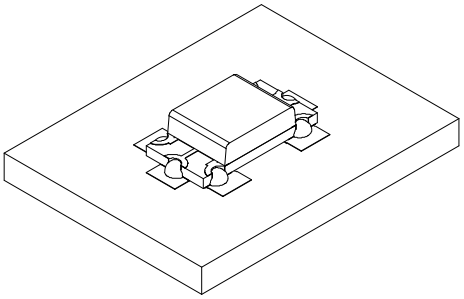
Description

The Hyper Red source color devices are made with In-GaAlP on GaAs substrate Light Emitting Diode.
The Green source color devices are made with InGaAlP on GaAs substrate Light Emitting Diode.
The Blue source color devices are made with InGaN on SiC 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.
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
APTF3216SURKCGKPBAC	Hyper Red (InGaAlP)	WATER CLEAR	70	150	120°
	Green (InGaAlP)		18	50	
	Blue (InGaN)		18	60	

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

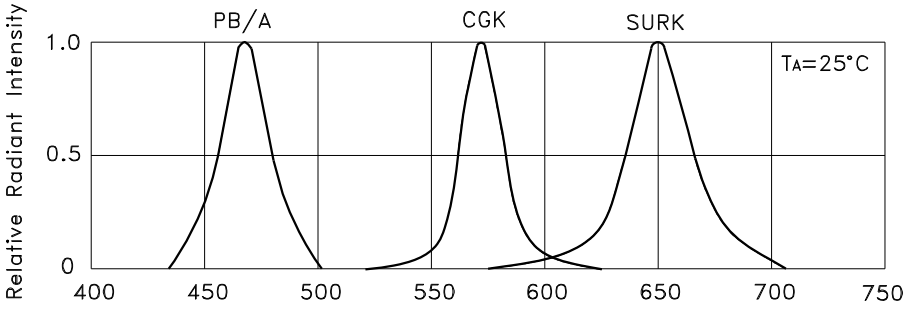
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red Green Blue	650 574 468		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Red Green Blue	635 570 470		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red Green Blue	28 20 21		nm	I_F=20mA
C	Capacitance	Hyper Red Green Blue	35 15 100		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red Green Blue	1.95 2.1 3.2	2.5 2.5 4	V	I_F=20mA
I_R	Reverse Current	Hyper Red Green Blue		10 10 10	uA	V_R=5V

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

Absolute Maximum Ratings at TA=25°C

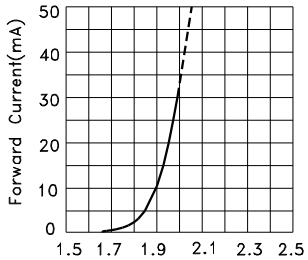
Parameter	Hyper Red	Green	Blue	Units
Power dissipation	75	75	120	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	185	150	100	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

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

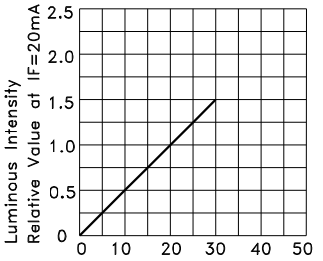


RELATIVE INTENSITY Vs. WAVELENGTH

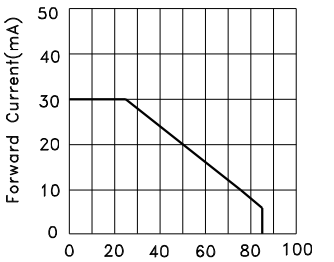
APTF3216SURKCGKPBAC
Hyper Red



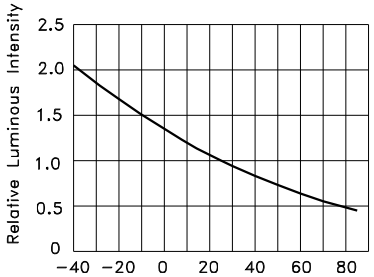
FORWARD CURRENT Vs.
FORWARD VOLTAGE



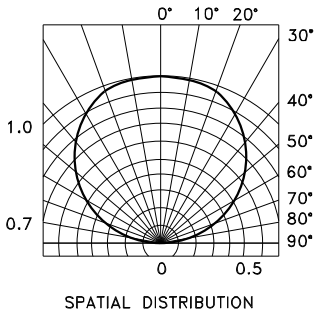
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

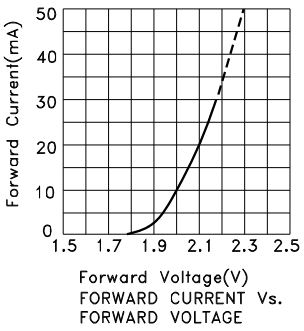


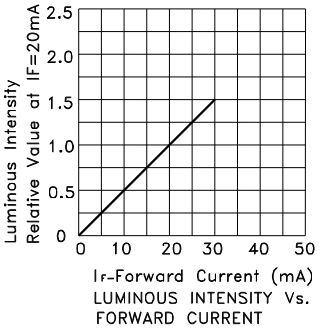
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

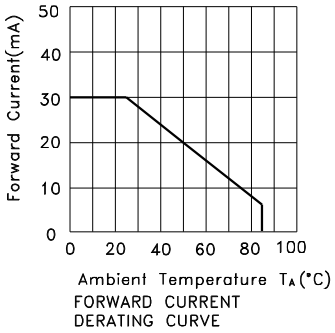


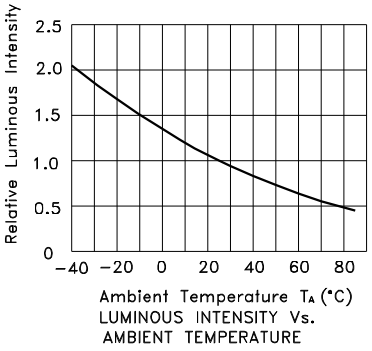
SPATIAL DISTRIBUTION

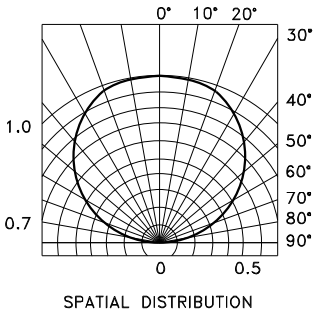
Green


Forward Current(mA)
50
40
30
20
10
0
1.5 1.7 1.9 2.1 2.3 2.5
Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE

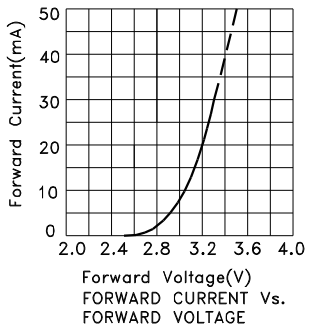

Luminous Intensity
Relative Value at IF=20mA
2.5
2.0
1.5
1.0
0.5
0
0 10 20 30 40 50
IF-Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT


Forward Current(mA)
50
40
30
20
10
0
0 20 40 60 80 100
Ambient Temperature TA(°C)
FORWARD CURRENT
DERATING CURVE

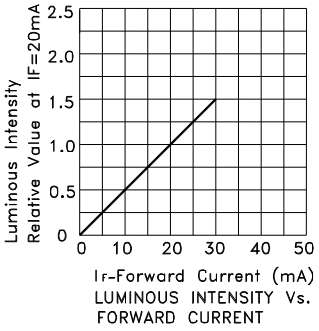

Relative Luminous Intensity
2.5
2.0
1.5
1.0
0.5
0
−40 −20 0 20 40 60 80
Ambient Temperature TA (°C)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE


0° 10° 20°
30°
40°
50°
60°
70°
80°
90°
1.0
0.7
0
0.5
SPATIAL DISTRIBUTION

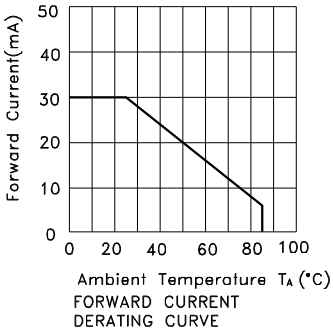
Blue



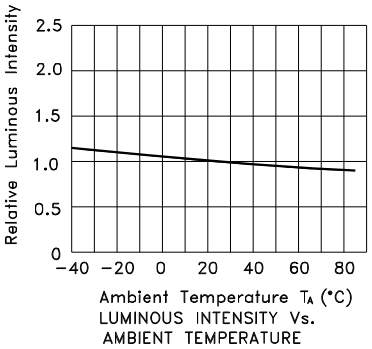
FORWARD CURRENT Vs.
FORWARD VOLTAGE



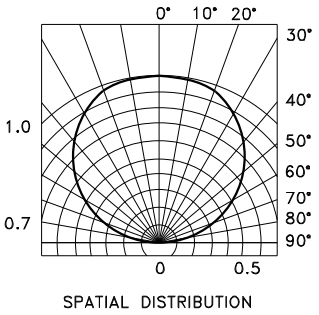
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



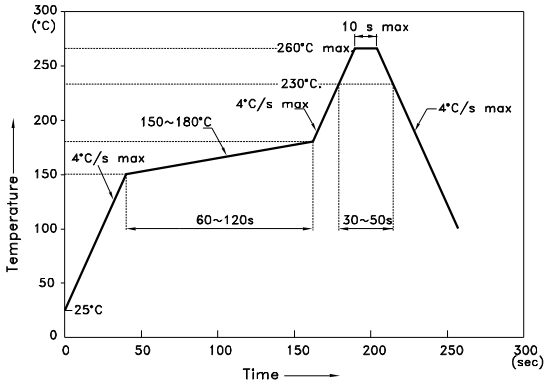
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

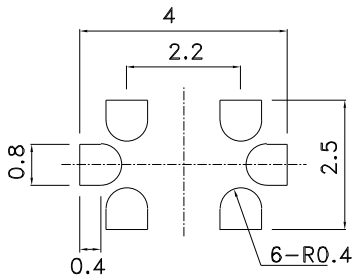
APTF3216SURKCGKPBAC

Reflow Soldering Profile For Lead-free SMT Process.

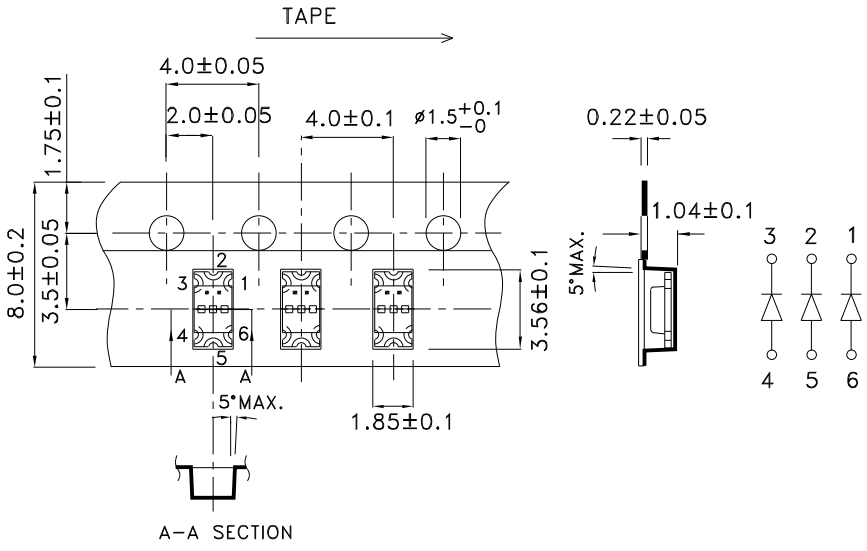


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

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



Tape Specifications
(Units : mm)



PACKING & LABEL SPECIFICATIONS **APTF3216SURKCGKPBAC**

