Kingbright

1.6x1.6mm FULL-COLOR SURFACE MOUNT LED

Part Number: APTF1616SURKCGKSYKC

Hyper Red
Green
Super Bright Yellow

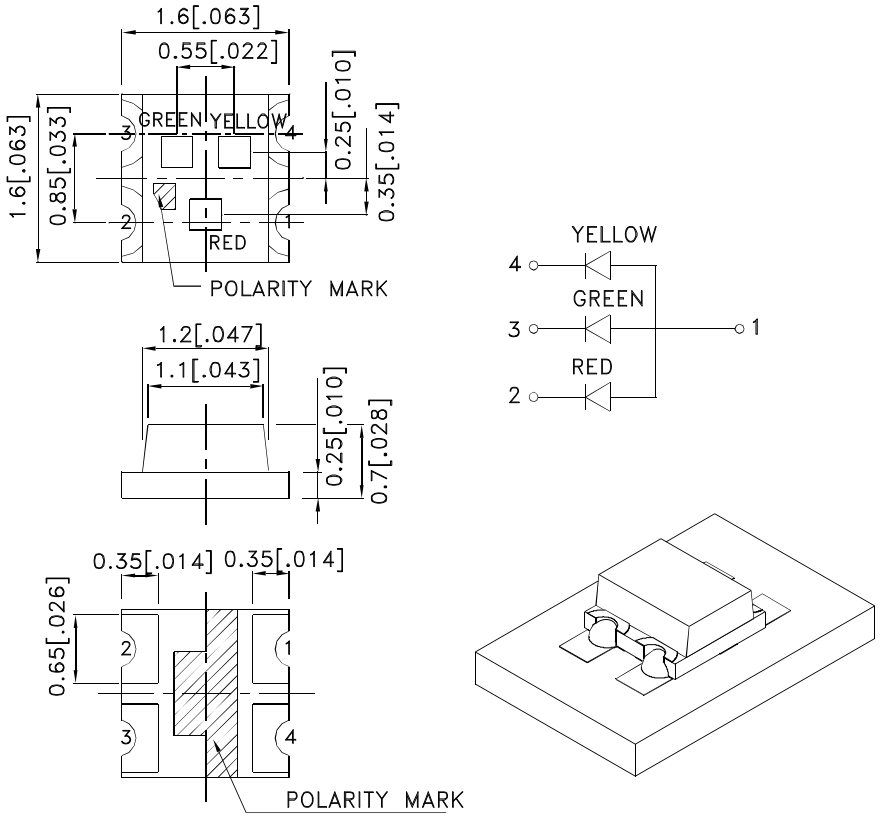
Features

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

Description

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

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.	Dice	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APTF1616SURKCGKSYKC	Hyper Red (AlGaInP)	Water Clear	120	250	120°
			*40	*80	
	Green (AlGaInP)		30	55	
			*20	*50	
	Super Bright Yellow (AlGaInP)		80	120	
			*80	*120	

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

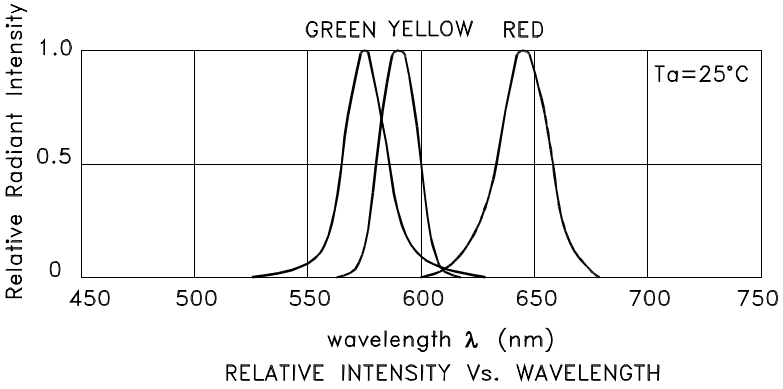
Symbol	Parameter	Device	Typ.		Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red Green Super Bright Yellow	650 574 590	*645 *574 *590		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Red Green Super Bright Yellow	630 570 590	*630 *570 *590		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red Green Super Bright Yellow	28 20 20			nm	I_F=20mA
C	Capacitance	Hyper Red Green Super Bright Yellow	35 15 20			pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red Green Super Bright Yellow	1.95 2.1 2		2.5 2.5 2.5	V	I_F=20mA
I_R	Reverse Current	Hyper Red Green Super Bright Yellow			10 10 10	uA	V_R=5V

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

Absolute Maximum Ratings at TA=25°C

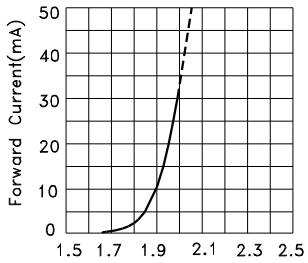
Parameter	Hyper Red	Green	Super Bright Yellow	Units
Power dissipation	75	75	75	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	185	150	175	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

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

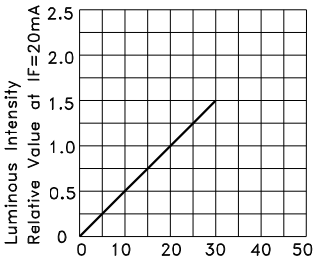


RELATIVE INTENSITY Vs. WAVELENGTH

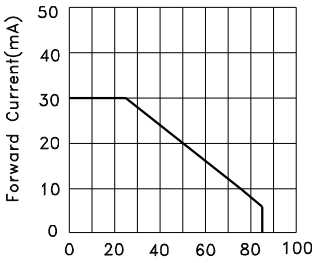
APTF1616SURKCGKSYKC
Hyper Red



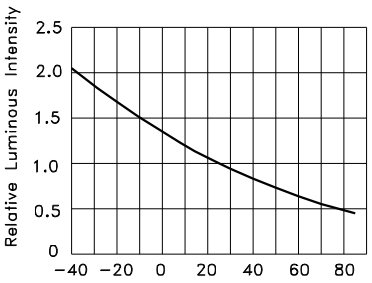
FORWARD CURRENT Vs.
FORWARD VOLTAGE



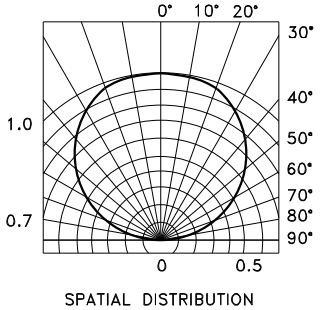
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

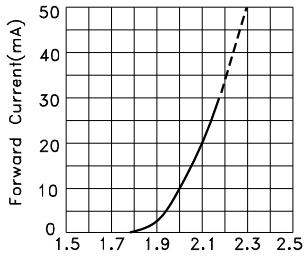


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

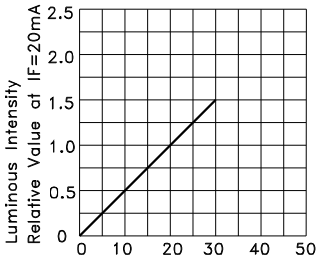


SPATIAL DISTRIBUTION

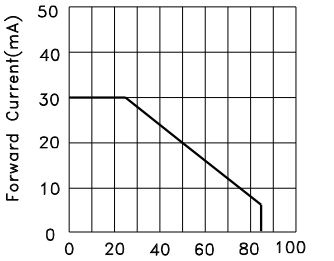
Green



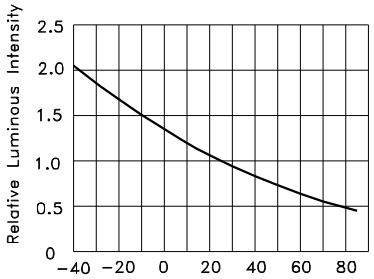
FORWARD CURRENT Vs.
FORWARD VOLTAGE



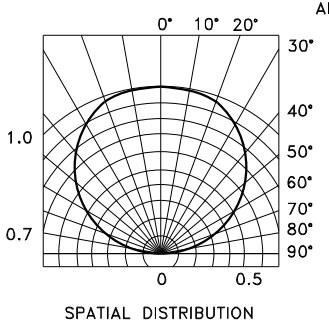
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

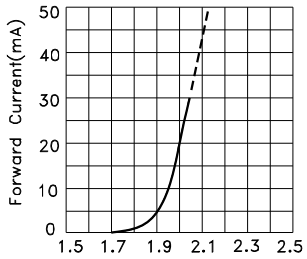


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

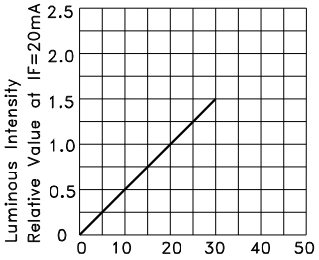


SPATIAL DISTRIBUTION

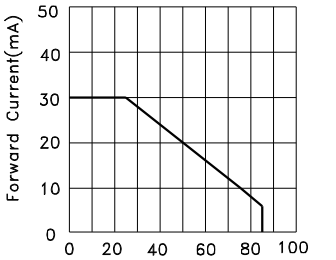
Super Bright Yellow



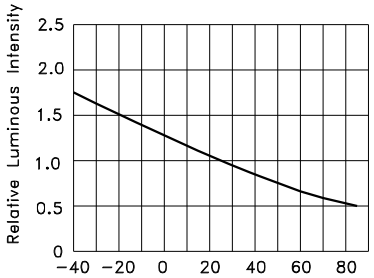
FORWARD CURRENT Vs.
FORWARD VOLTAGE



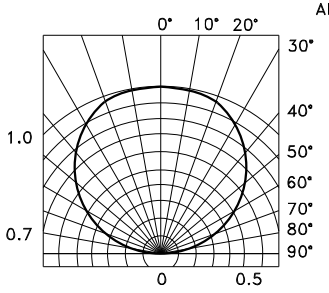
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

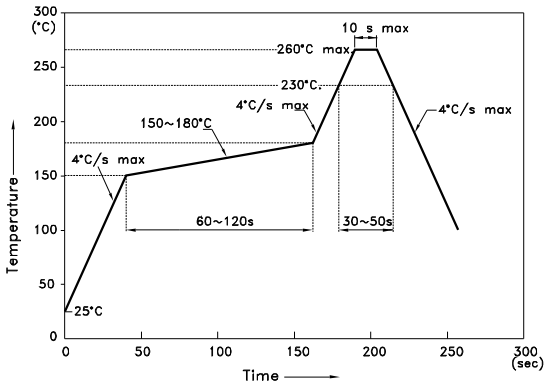


SPATIAL DISTRIBUTION

APTF1616SURKCGKSYKC

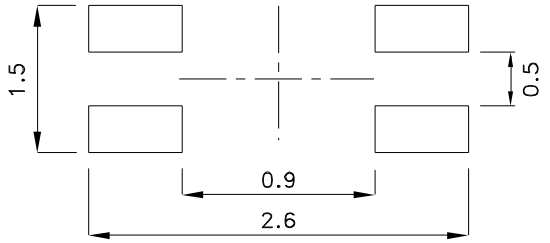
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

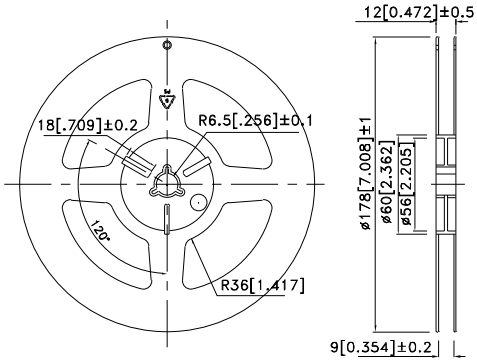


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

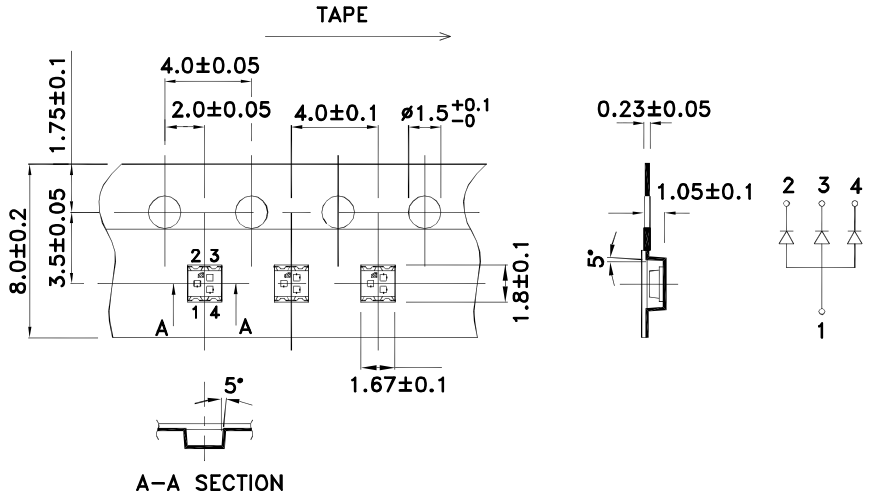
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS **APTF1616SURKCGKSYKC**