Kingbright

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

Part Number: APTF3216QBDZGSURKC

Blue
Green
Hyper Red

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

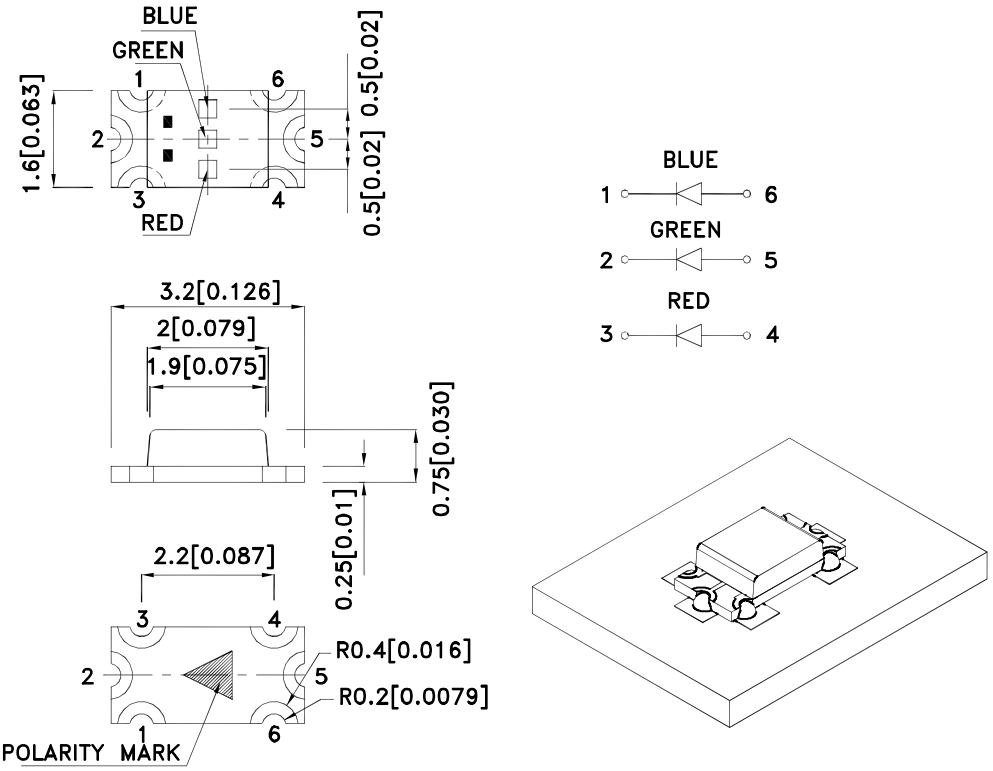
Features

- 3.2mmx1.6mm SMT LED, 0.75mm 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 Blue source color devices are made with InGaN on Sapphire Light Emitting Diode.
The Green 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.
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. 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
APTF3216QBDZGSURKC	Blue (InGaN)	WATER CLEAR	36	100	120°
	Green (InGaN)		110	300	
	Hyper Red (AlGaInP)		70	220	

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

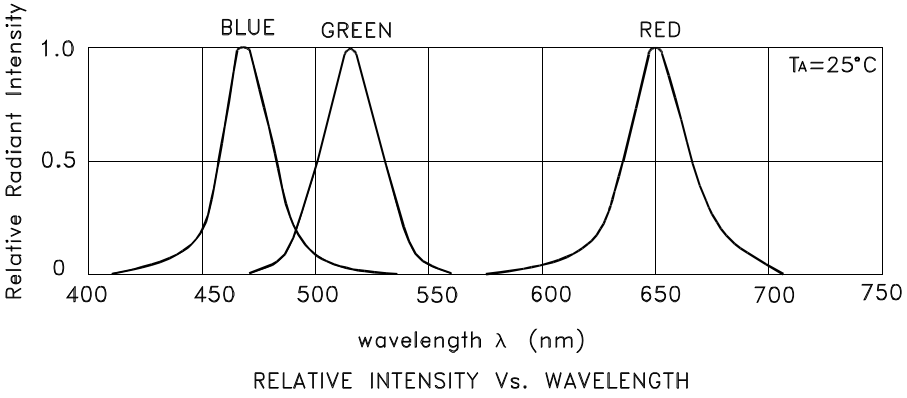
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Green Hyper Red	468 515 650		nm	I_F=20mA
λD [1]	Dominant Wavelength	Blue Green Hyper Red	470 525 630		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Blue Green Hyper Red	25 30 28		nm	I_F=20mA
C	Capacitance	Blue Green Hyper Red	100 45 35		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Blue Green Hyper Red	3.3 3.3 1.95	4 4.1 2.5	V	I_F=20mA
I_R	Reverse Current	Blue Green Hyper Red		10 10 10	uA	V_R=5V

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

Absolute Maximum Ratings at TA=25°C

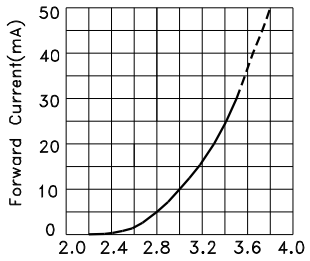
Parameter	Blue	Green	Hyper Red	Units
Power dissipation	120	102.5	75	mW
DC Forward Current	30	25	30	mA
Peak Forward Current [1]	150	150	185	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

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

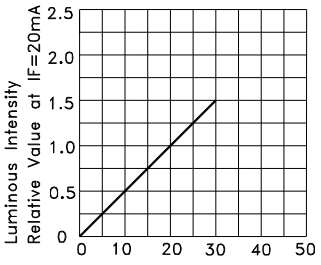


RELATIVE INTENSITY Vs. WAVELENGTH

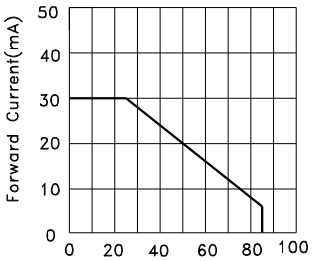
APTF3216QBDZGSURKC
Blue



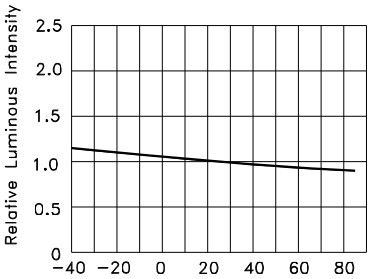
FORWARD CURRENT Vs.
FORWARD VOLTAGE



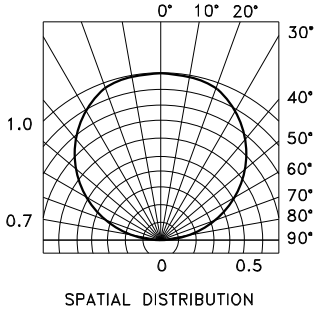
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

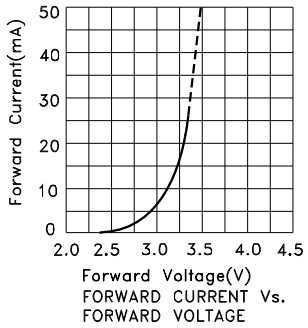


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

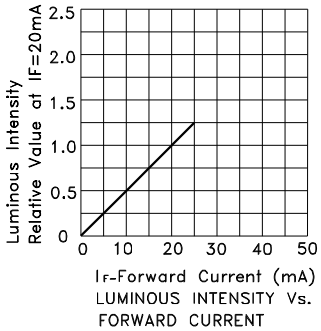


SPATIAL DISTRIBUTION

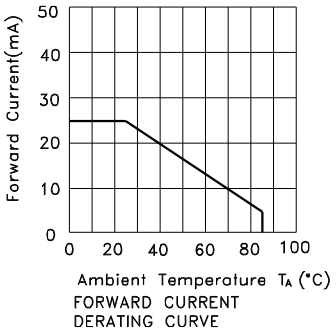
Green



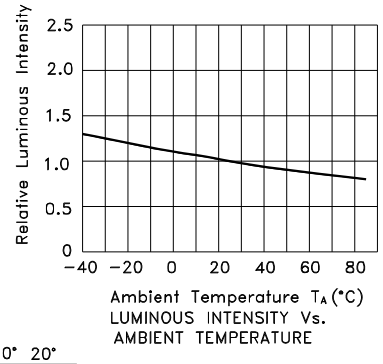
FORWARD CURRENT Vs.
FORWARD VOLTAGE



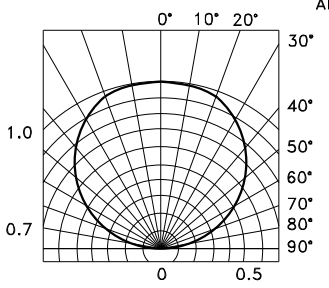
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

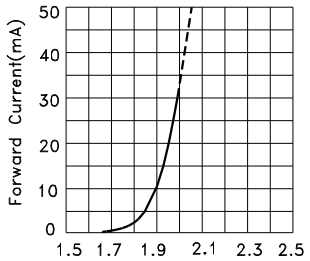


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

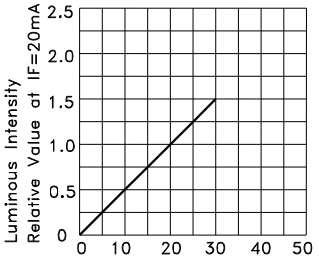


SPATIAL DISTRIBUTION

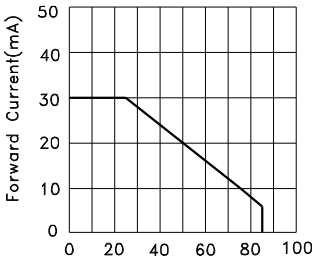
Hyper Red



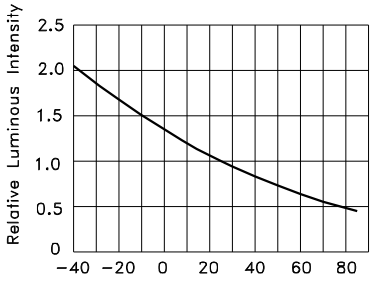
FORWARD CURRENT Vs.
FORWARD VOLTAGE



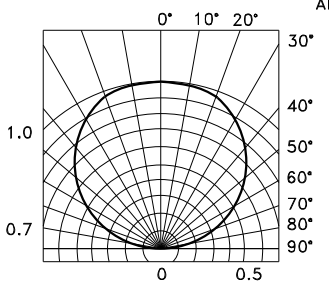
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

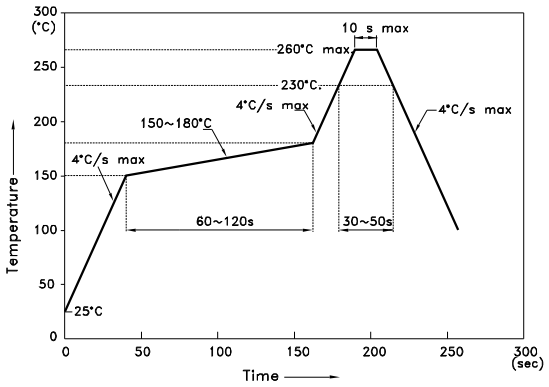


SPATIAL DISTRIBUTION

APTF3216QBDZGSURKC

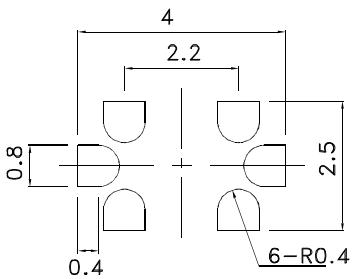
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

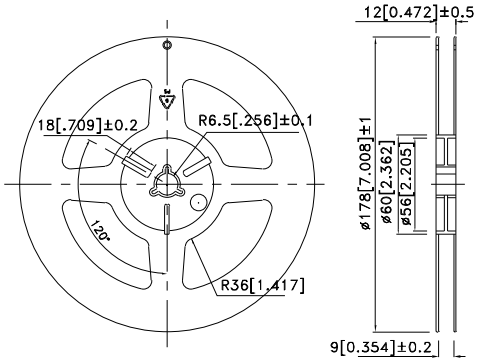


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

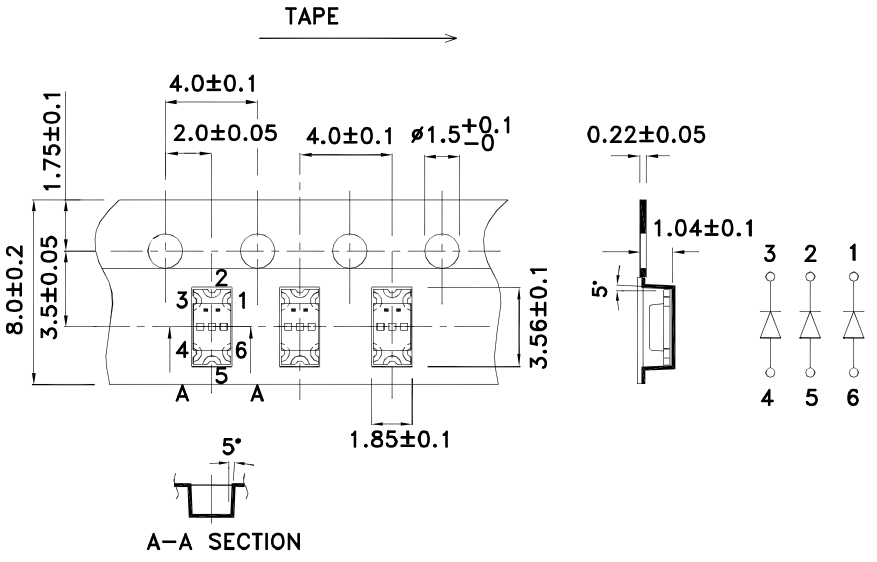
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



Tape Dimensions



PACKING & LABEL SPECIFICATIONS **APTF3216QBDZGSURKC**