



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APTF1616SEJ3ZGGVBDC

Hyper Red
Green
Blue

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 device is based on light emitting diode chip made from AlGaInP.

The Green source color devices are made with InGaN Light Emitting Diode.

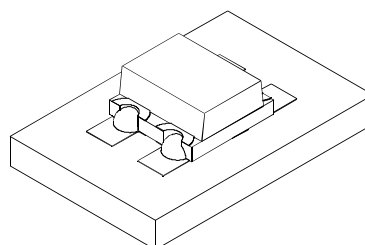
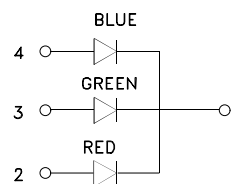
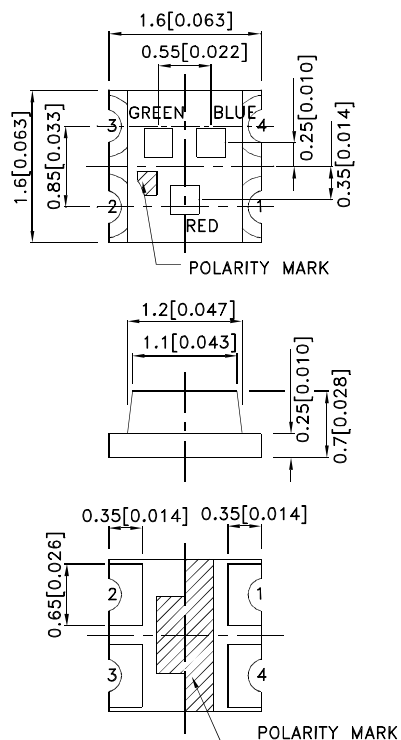
The Blue source color devices are made with InGaN Light Emitting Diode.

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. 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
APTF1616SEJ3ZGGVBDC	Hyper Red (AlGaInP)	Water Clear	200	360	120°
	Green (InGaN)		500	750	
	Blue (InGaN)		80	140	

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%.
3. 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 Blue	640 520 465		nm	IF=20mA
λD [1]	Dominant Wavelength	Hyper Red Green Blue	625 525 470		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red Green Blue	25 35 22		nm	IF=20mA
C	Capacitance	Hyper Red Green Blue	27 100 100		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Hyper Red Green Blue	2.2 3.2 3.3	2.8 4 4	V	IF=20mA
IR	Reverse Current	Hyper Red Green Blue		10 50 50	uA	VR=5V

Notes:

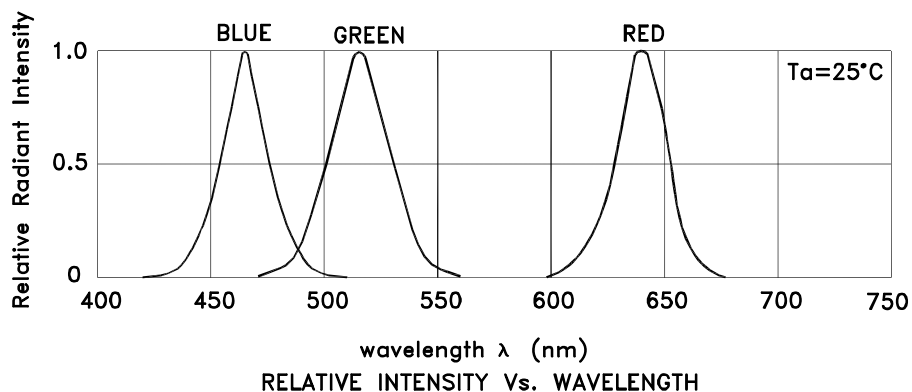
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

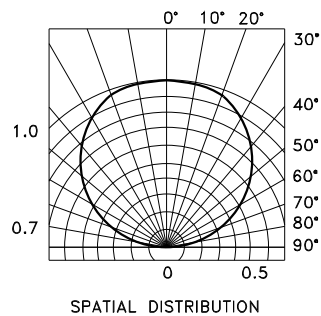
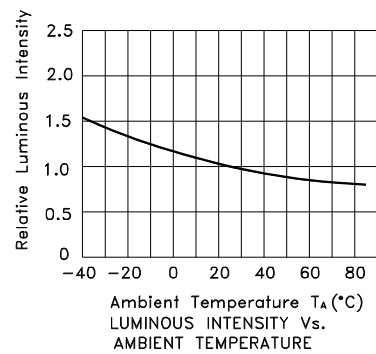
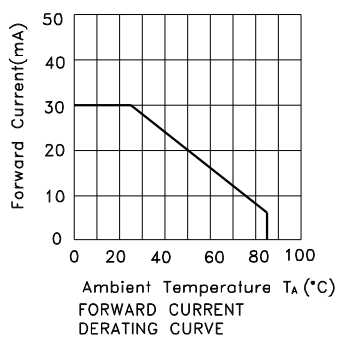
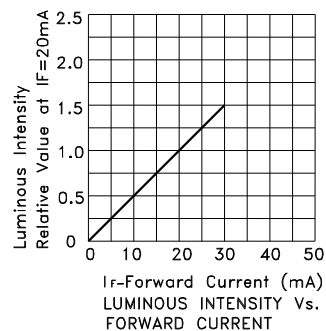
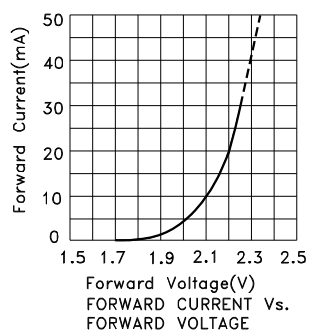
Parameter	Hyper Red	Green	Blue	Units
Power dissipation	84	120	120	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	150	100	100	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

Notes:

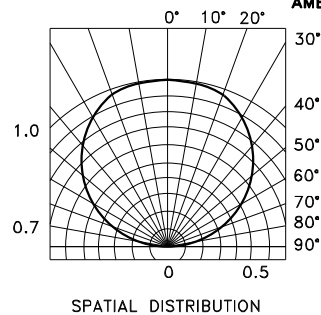
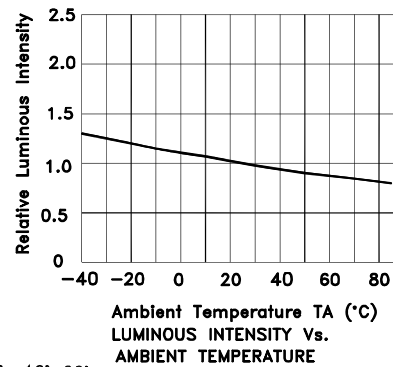
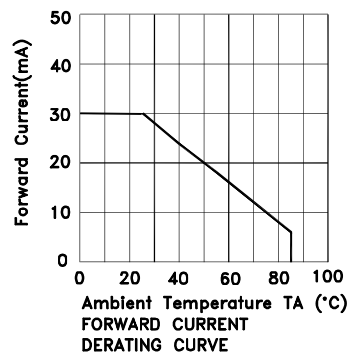
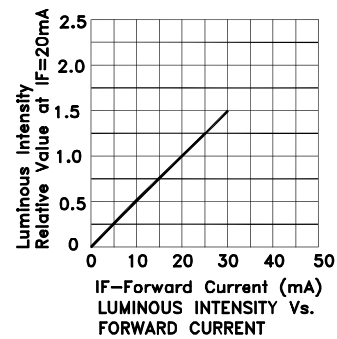
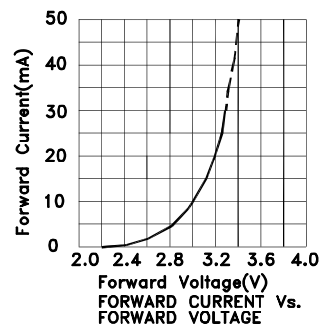
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



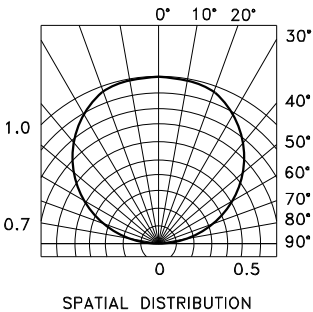
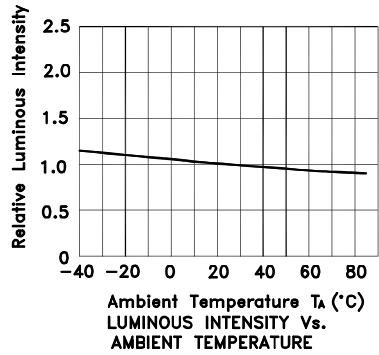
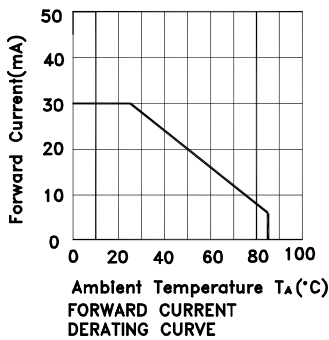
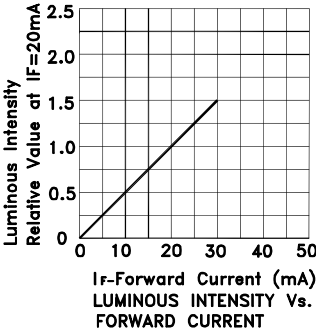
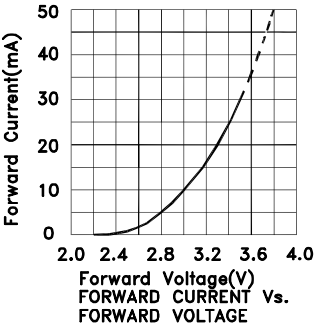
APTF1616SEJ3ZGGVBDC Hyper Red



Green



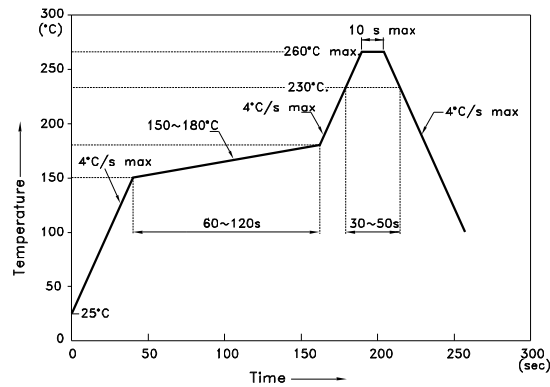
Blue



APTF1616SEJ3ZGGVBDC

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.

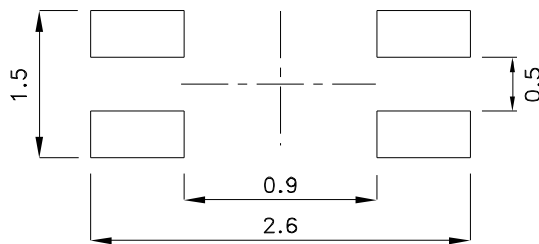
Reflow Soldering Profile For Lead-free SMT Process.



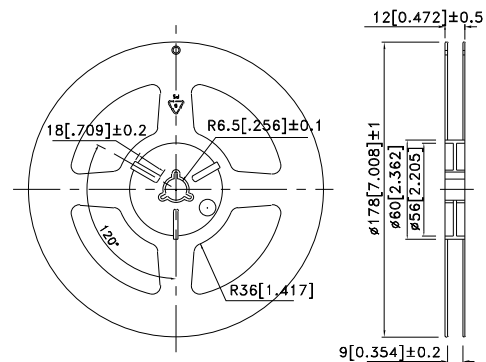
NOTES:

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.

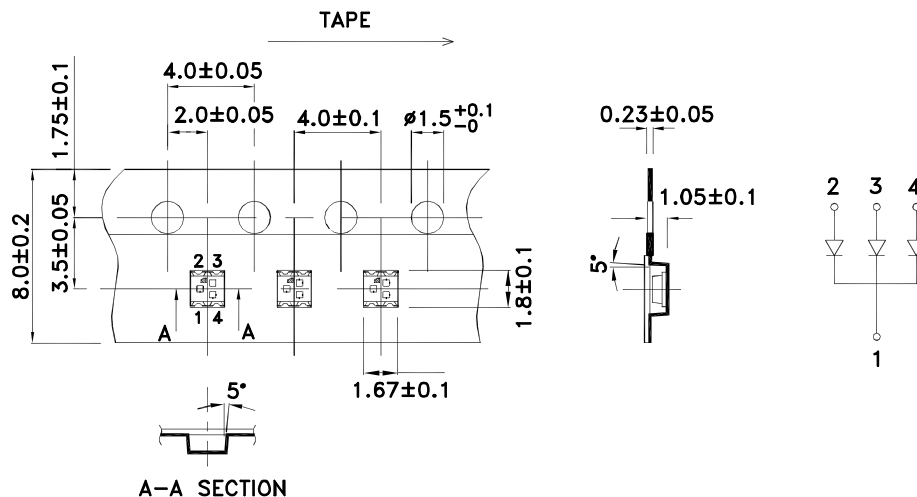
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension

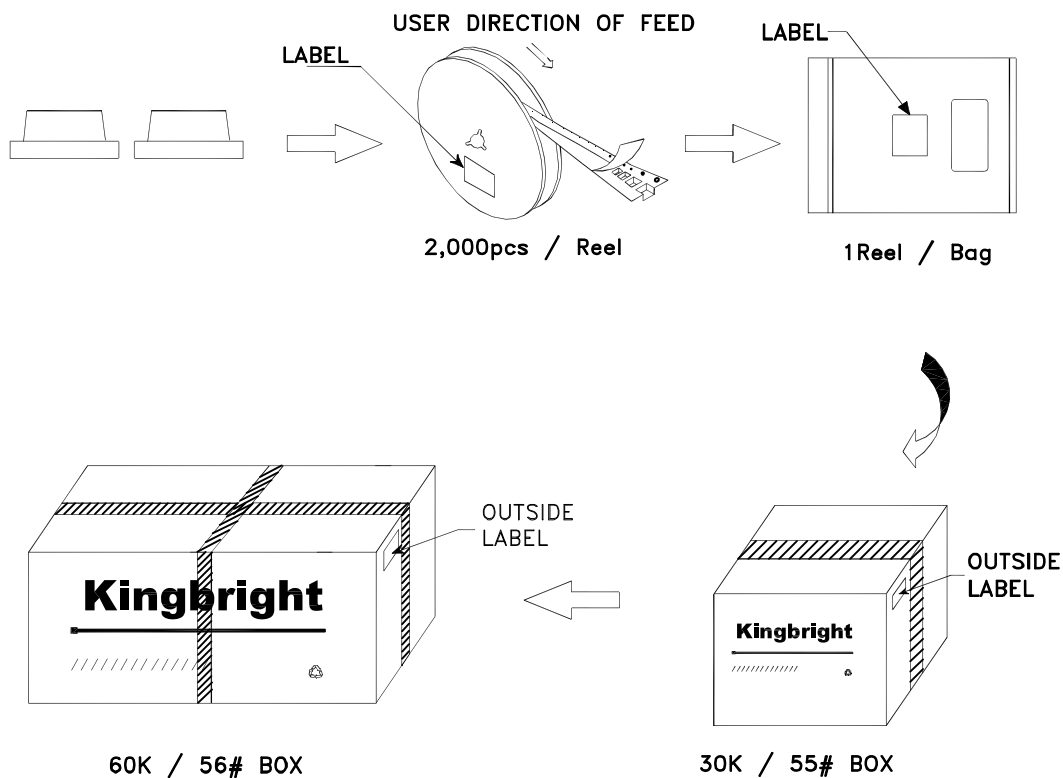



Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

APTF1616SEJ3ZGGVBDC



Kingbright	
P/NO: APTF1616xxx	
QTY: 2,000 pcs	Q.C. Q C XX-XX-XXXX PASSED
S/N: XXXX	
CODE: XXX	
LOT NO:	
 XXXXXXXXXXXXXXXXXXXX	
RoHS Compliant	

All design applications should refer to Kingbright application notes available at <http://www.KingbrightUSA.com/ApplicationNotes>