Kingbright

1.6x1.6mm FULL-COLOR SURFACE MOUNT LED

PRELIMINARY SPEC

Part Number: APTF1616SEEVGAPBAC

Hyper Orange
Green
Blue

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

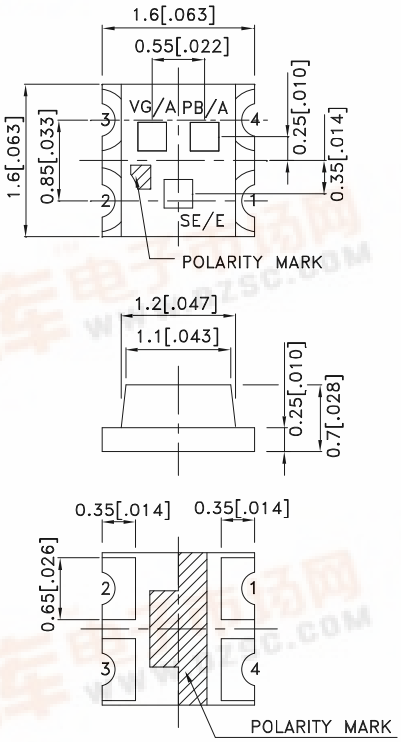
Features

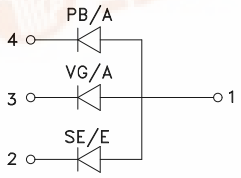
- 1.6mmX1.6mm SMT LED, 0.7mm THICKNESS
- LOW POWER CONSUMPTION
- ONE BLUE, ONE RED AND ONE GREEN CHIPS IN ONE PACKAGE
- CAN PRODUCE ANY COLOR IN VISIBLE SPECTRUM, INCLUDING WHITE LIGHT
- PACKAGE : 2000PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 3.
- RoHS COMPLIANT.

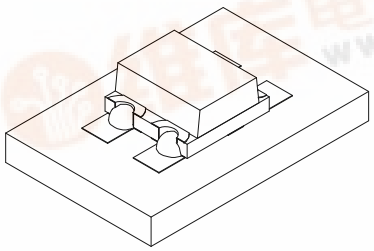
Description

The Hyper Orange source color devices are made with InGaAlP on GaAs substrate Light Emitting Diode.
The Green source color devices are made with InGaN on G-SiC 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.

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Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APTF1616SEEVGAPBAC	Hyper Orange (InGaAlP)	WATER CLEAR	180	400	120°
	Green (InGaN)		70	180	
	Blue (InGaN)		10	40	

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

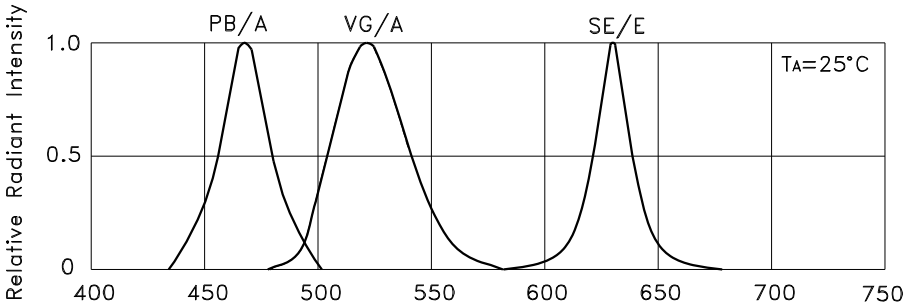
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Orange Green Blue	630 520 468		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Orange Green Blue	621 525 470		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Orange Green Blue	20 35 21		nm	I_F=20mA
C	Capacitance	Hyper Orange Green Blue	25 100 100		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Orange Green Blue	2 3.2 3.2	2.5 4 4	V	I_F=20mA
I_R	Reverse Current	Hyper Orange 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

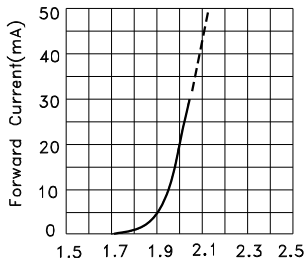
Parameter	Hyper Orange	Green	Blue	Units
Power dissipation	75	120	120	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	195	100	100	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

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

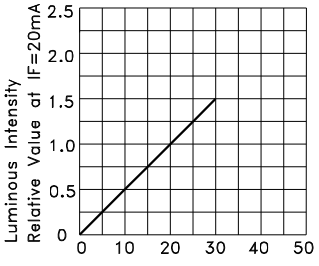


RELATIVE INTENSITY Vs. WAVELENGTH

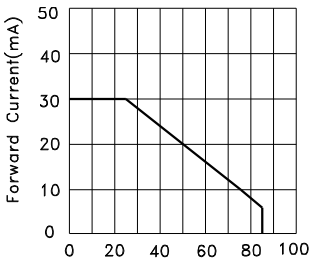
APTF1616SEEVGAPBAC
Hyper Orange



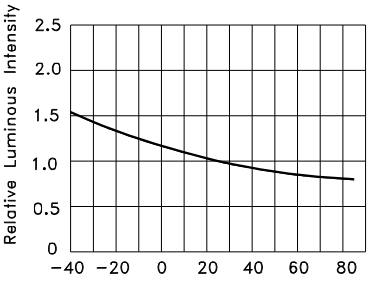
FORWARD CURRENT Vs.
FORWARD VOLTAGE



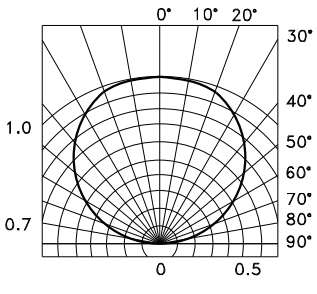
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

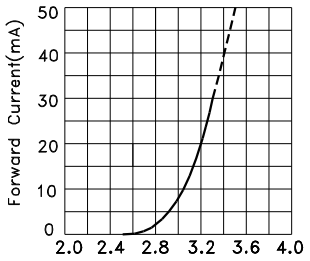


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

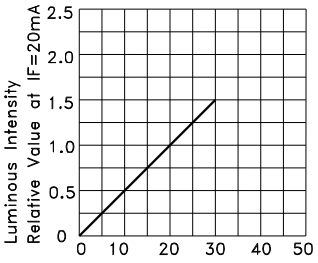


SPATIAL DISTRIBUTION

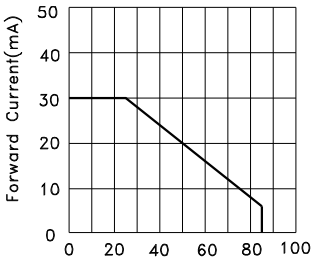
Green



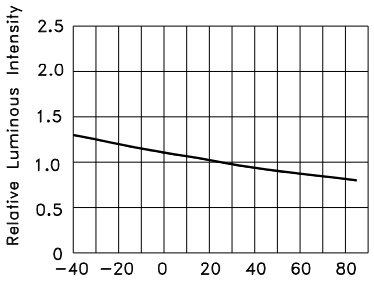
FORWARD CURRENT Vs.
FORWARD VOLTAGE



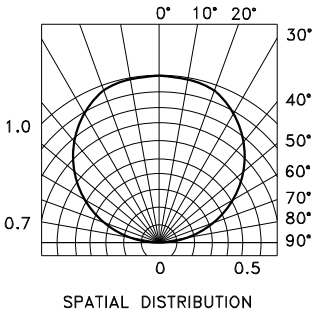
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

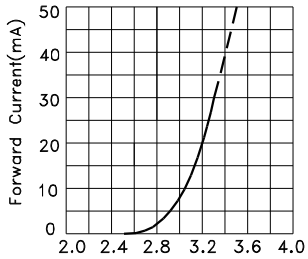


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

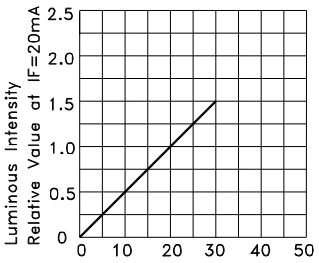


SPATIAL DISTRIBUTION

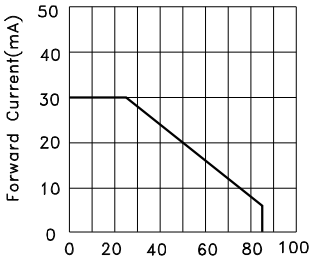
Blue



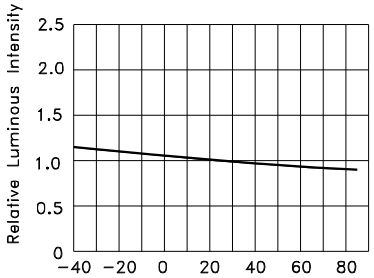
FORWARD CURRENT Vs.
FORWARD VOLTAGE



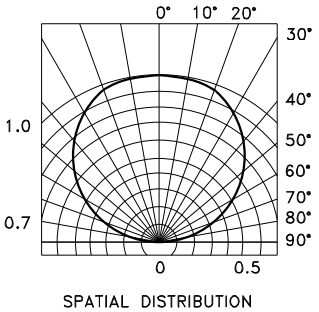
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



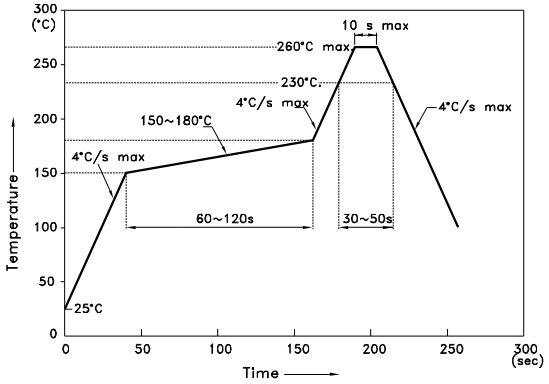
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

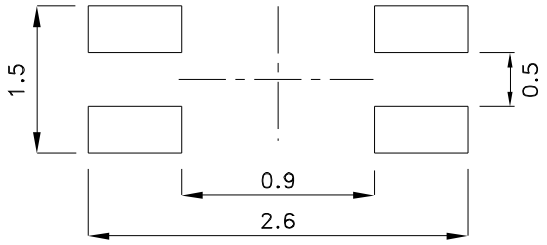
APTF1616SEEVGAPBAC

Reflow Soldering Profile For Lead-free SMT Process.

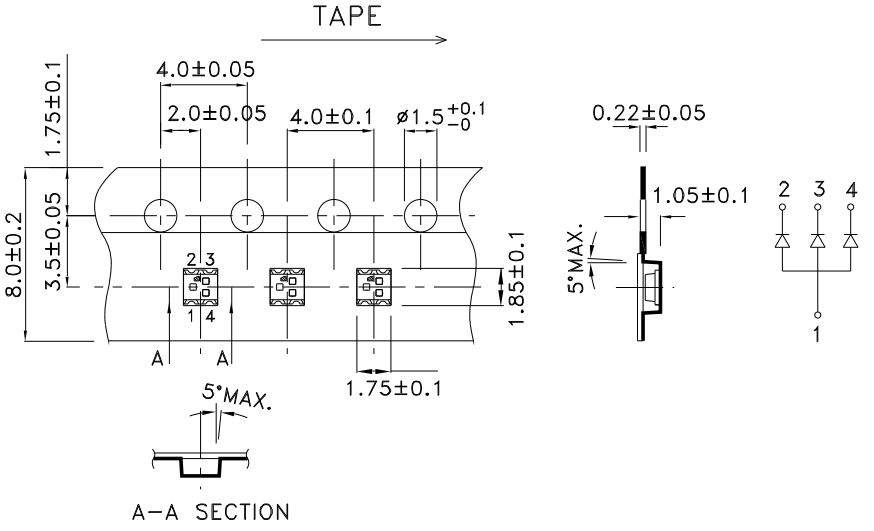


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

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



Tape Specifications
(Units : mm)



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PACKING & LABEL SPECIFICATIONS **APTF1616SEEVGAPBAC**