



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KPFA-3011BZ1RGZ1C-K13/F

Blue
Hyper Red
Green

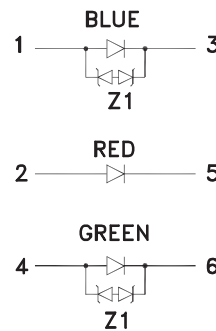
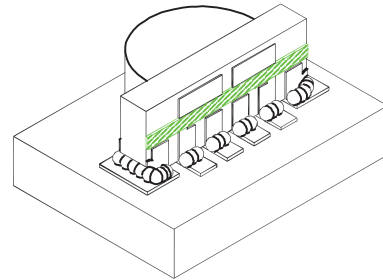
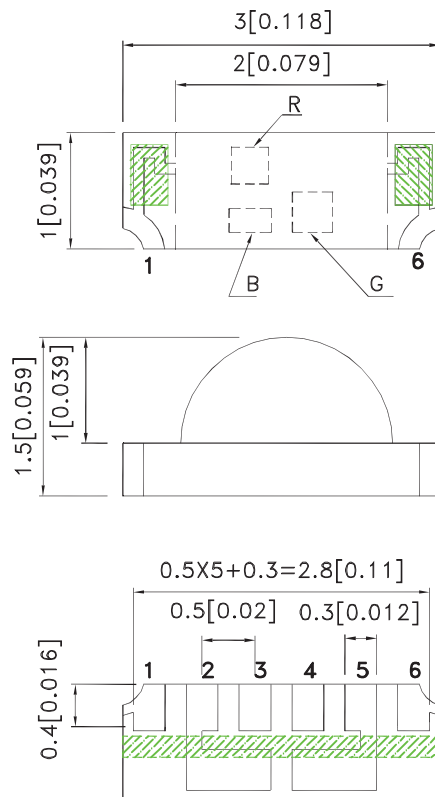
Features

- 3.0x1.5x1.0mm right angle SMD LED, 1.0mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Descriptions

- The Blue source color devices are made with InGaN Light Emitting Diode.
- 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.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries 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.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 20mA		Iv (mcd) [2] @B:R:G=20mA:16.6mA:17.9mA	Dice Chromaticity Coordinates		Viewing Angle [1]
			Min.	Typ.	Typ.	X (Typ.)	Y (Typ.)	2θ1/2
KPFA-3011BZ1RGZ1C-K13/F	Blue (InGaN)	Water Clear	55	110	1180	0.3	0.3	155°
	Hyper Red (AlGaInP)		200	410				145°
	Green (InGaN)		500	780				150°

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 T_A=25°C

Parameter	Condition	Symbol	Value			Unit
			B	R	G	
Wavelength at Peak emission	I _F =20mA	λ peak	465	640	520	nm
Dominant Wavelength [1]	I _F =20mA	λ dom	470	625	525	nm
Spectral bandwidth at 50%Φ _{REL MAX}	I _F =20mA	Δλ	22	20	35	nm
Forward Voltage [2]	I _F =20mA	V _F [typ.]	3.3	2.2	3.2	V
		V _F [max.]	4.0	2.8	4.0	
Reverse Current	V _R =5V	I _R [max.]	10	10	10	μA

Notes:

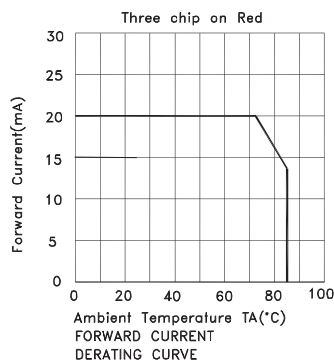
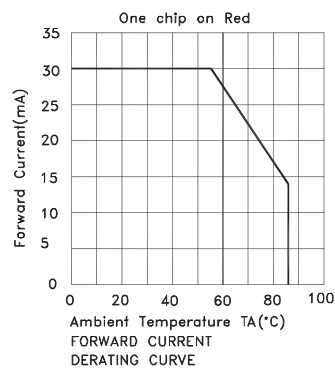
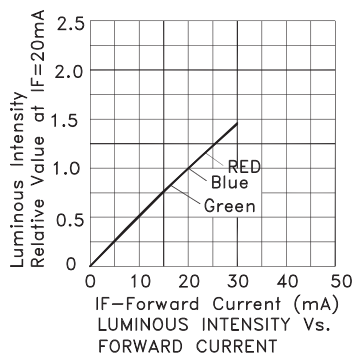
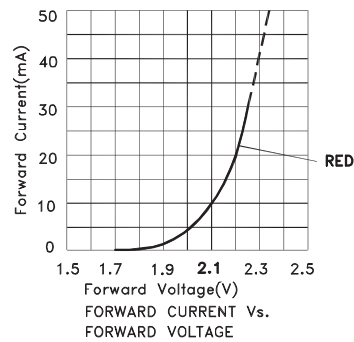
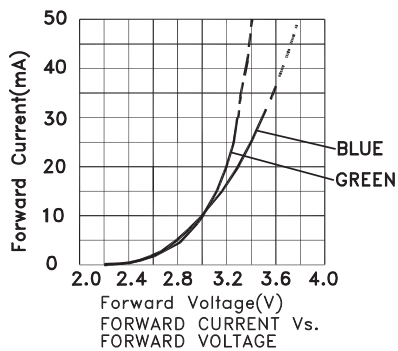
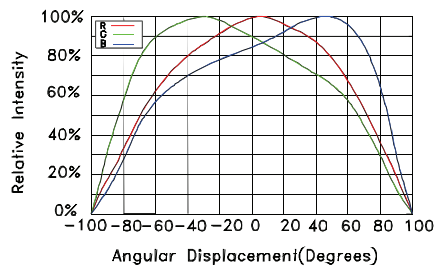
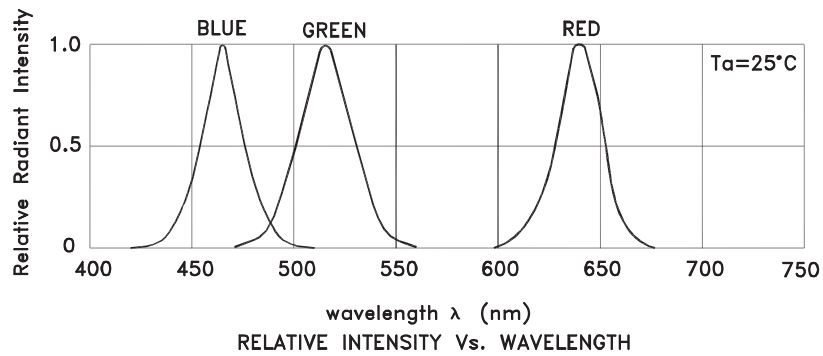
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.
4. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

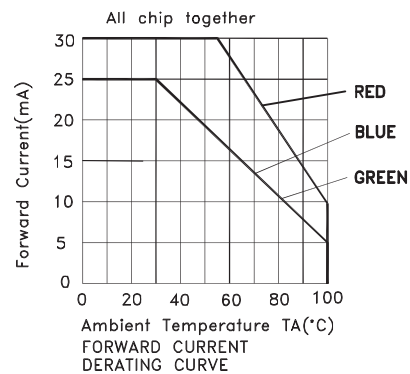
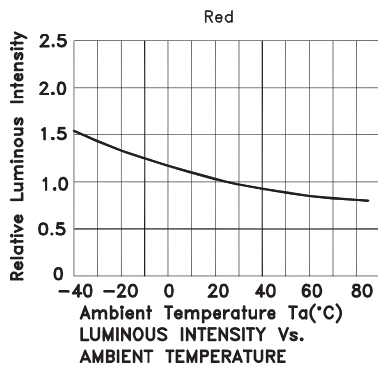
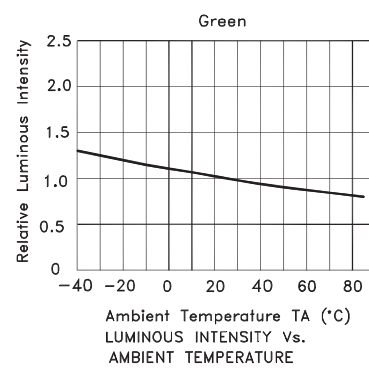
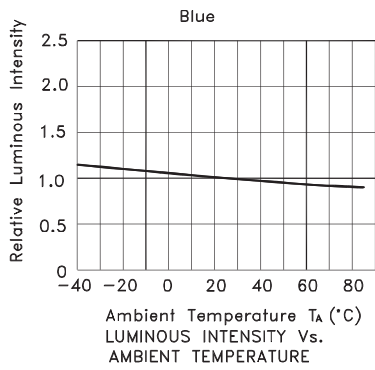
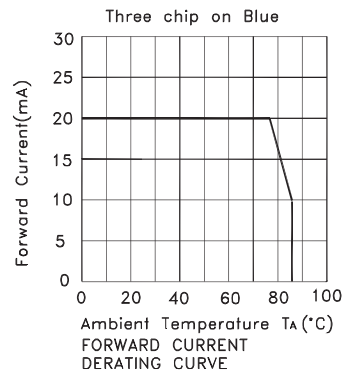
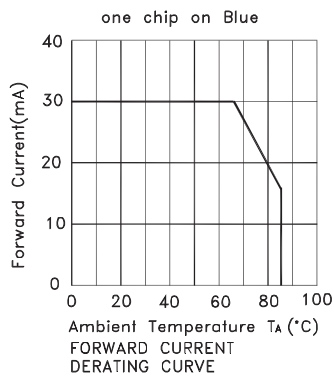
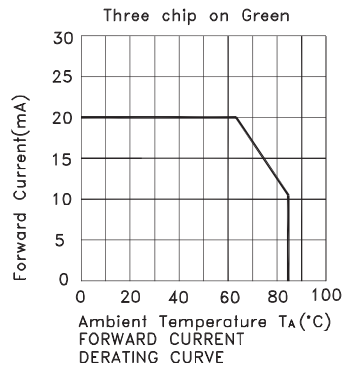
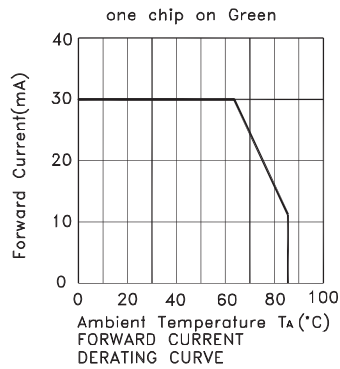
Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Value			Unit
		B	R	G	
Operating Temperature	Top	-40 To +85			°C
Storage Temperature	Tstg	-40 To +85			°C
Junction Temperature	T _J	110	110	110	°C
Power dissipation	P _D	120	84	120	mW
DC Forward Current [1]	I _F	30	30	30	mA
Peak Forward Current [2]	I _{FM}	100	150	100	mA
Electrostatic Discharge Threshold (HBM)		8000	3000	8000	V
Reverse Voltage	V _R	5	5	5	V
Junction/ambient 1 chip on	R _{thj-a}	400	290	400	°C/W
Junction/ambient 3 chip on	R _{thj-a}	610	630	590	°C/W

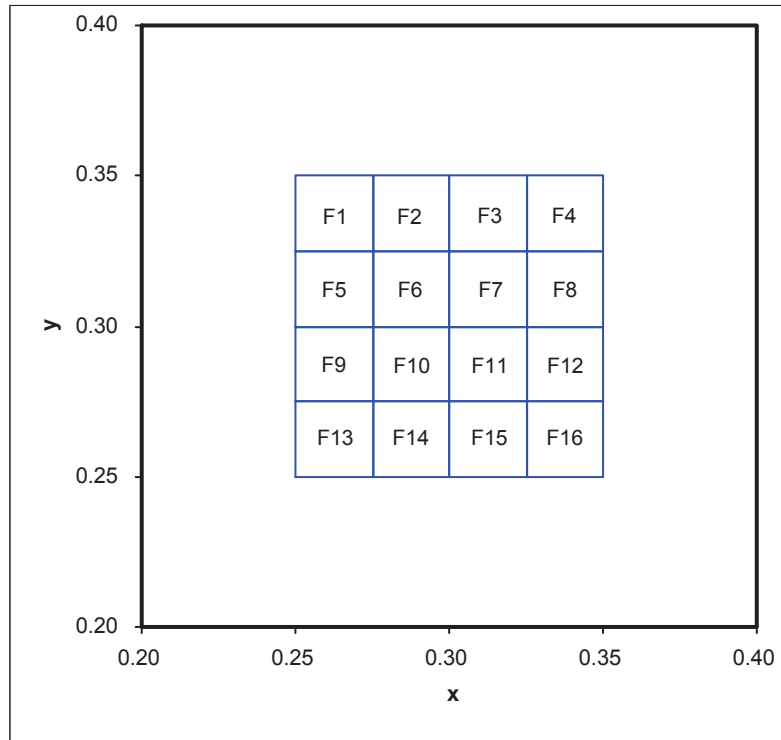
Notes:

1. Single-color light
2. 1/10 Duty Cycle, 0.1ms Pulse Width.
3. Value for total power dissipation when two and more chips are lit simultaneously.





Full color (White Rank)



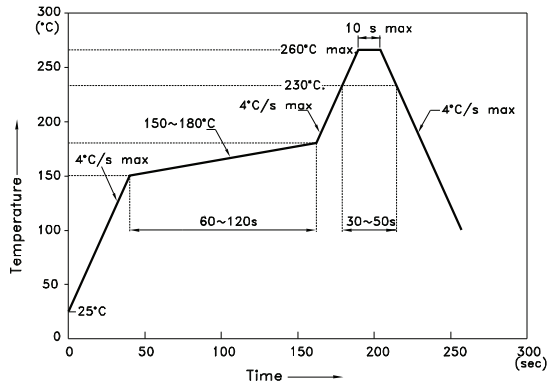
F1		F2		F3		F4	
x	y	x	y	x	y	x	y
0.250	0.325	0.275	0.325	0.300	0.325	0.325	0.325
0.275	0.325	0.300	0.325	0.325	0.325	0.350	0.325
0.275	0.350	0.300	0.350	0.325	0.350	0.350	0.350
0.250	0.350	0.275	0.350	0.300	0.350	0.325	0.350
F5		F6		F7		F8	
x	y	x	y	x	y	x	y
0.250	0.300	0.275	0.300	0.300	0.300	0.325	0.300
0.275	0.300	0.300	0.300	0.325	0.300	0.350	0.300
0.275	0.325	0.300	0.325	0.325	0.325	0.350	0.325
0.250	0.325	0.275	0.325	0.300	0.325	0.325	0.325
F9		F10		F11		F12	
x	y	x	y	x	y	x	y
0.250	0.275	0.275	0.275	0.300	0.275	0.325	0.275
0.275	0.275	0.300	0.275	0.325	0.275	0.350	0.275
0.275	0.300	0.300	0.300	0.325	0.300	0.350	0.300
0.250	0.300	0.275	0.300	0.300	0.300	0.325	0.300
F13		F14		F15		F16	
x	y	x	y	x	y	x	y
0.250	0.250	0.275	0.250	0.300	0.250	0.325	0.250
0.275	0.250	0.300	0.250	0.325	0.250	0.350	0.250
0.275	0.275	0.300	0.275	0.325	0.275	0.350	0.275
0.250	0.275	0.275	0.275	0.300	0.275	0.325	0.275

Notes:
 Shipment may contain more than one chromaticity regions.
 Orders for single chromaticity region are generally not accepted.
 Measurement tolerance of the chromaticity coordinates is ± 0.01 .

KPFA-3011BZ1RGZ1C-K13/F

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.

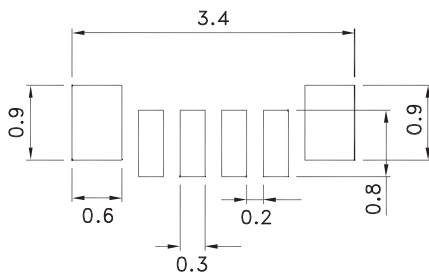
Reflow Soldering Profile For Lead-free SMT Process.



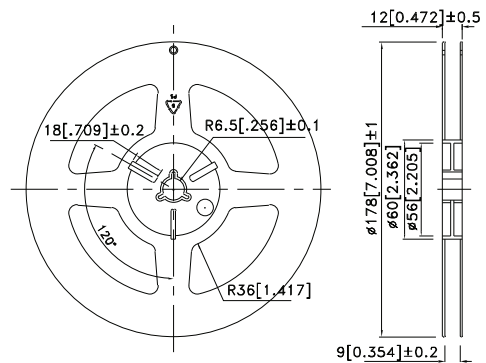
NOTES:

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.

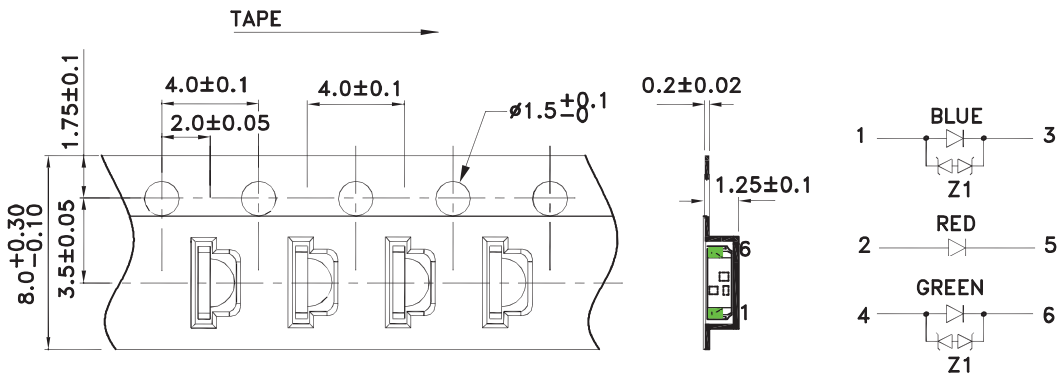
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension

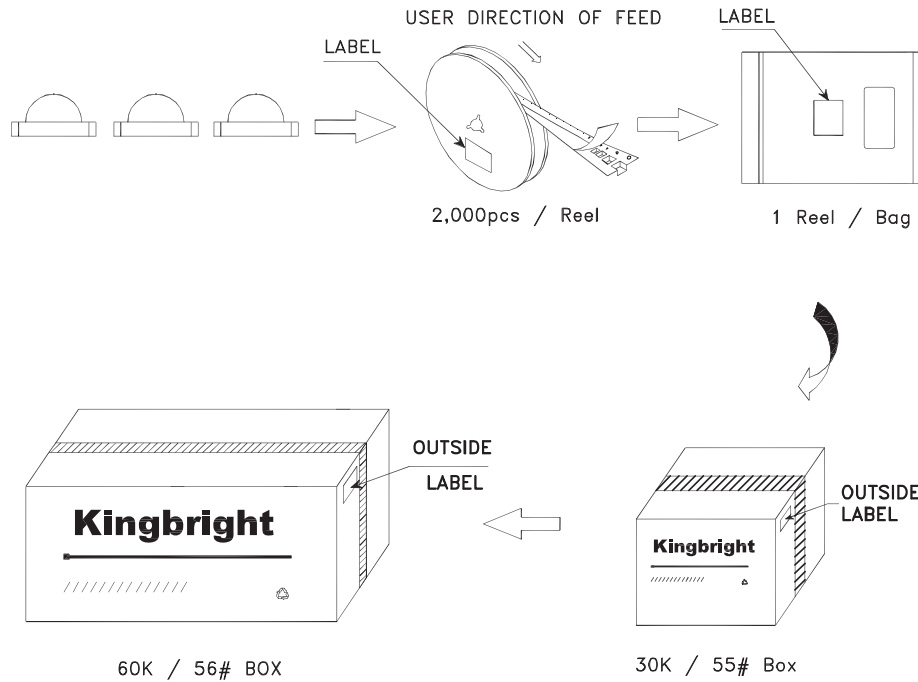



Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

KPFA-3011BZ1RGZ1C-K13/F



Kingbright	
P/NO: KPFA-3011xxx	
QTY: 2,000 pcs	Q.C. Q C xx xx xxxx PASSED
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	

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