

# KPA-2106

## SMD LED

- The Hyper Red source color devices are made with InGaAlP on GaAs substrate Light Emitting Diode.

## FEATURES

- 2.1 mm X 0.6 mm Right Angle SMT LED, 1.0mm thickness
- Low power consumption
- Wide viewing angle
- Ideal for backlight and indicator
- Various colors and lens types available
- Package: 2000pcs/ Reel
- Moisture sensitivity Level: Level 3
- RoHS compliant

## SELECTION GUIDE

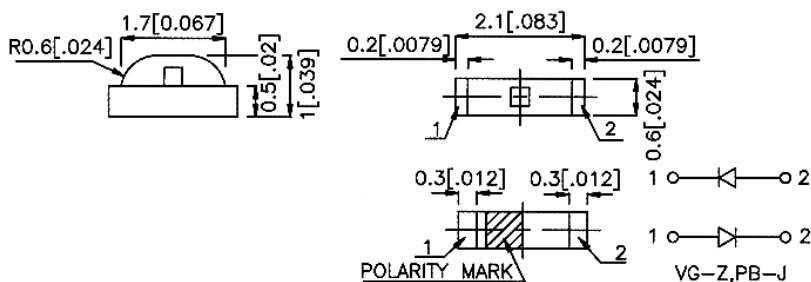
Part No.	Material	$\lambda_D$ (nm)	Lens Type	Iv (mcd)		Viewing Angle
				@20mA		
				Min.	Type.	2 $\theta$ 1/2
KPA-2106SURC	InGaAlP	628	water clear	110	300	120°
KPA-2106SURCK	InGaAlP	635	water clear	110	250	120°
KPA-2106SEC	InGaAlP	601	water clear	70	300	120°
KPA-2106SECK	InGaAlP	601	water clear	70	250	120°
KPA-2106SYC	InGaAlP	588	water clear	70	180	120°
KPA-2106SYCK	InGaAlP	590	water clear	50	150	120°
KPA-2106MGC	InGaAlP	568	water clear	36	80	120°
KPA-2106CGCK	InGaAlP	570	water clear	18	60	120°
KPA-2106ZGC	AlInGaN	525	water clear	70	250	120°
KPA-2106VGC-A	InGaN	525	water clear	70	180	120°
KPA-2106VGC-Z	InGaN	535	water clear	380	800	120°
KPA-2106QBC-D	AlInGaN	470	water clear	36	90	120°
KPA-2106PBC-A	InGaN	470	water clear	18	60	120°
KPA-2106PBC-J	InGaN	470	water clear	50	150	120°

Notes:

1.  $\theta$ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity / luminous Flux: +/- 15%

## DIMENSION

2.1mm x 0.6mm x 1.0 mm (0802 Right Angle)



### Features

- 3.0mmx1.0mm SMT LED, 2.0mm THICKNESS.
- LOW POWER CONSUMPTION.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.

KPA-3010 SERIES

### Package Dimensions

### Description

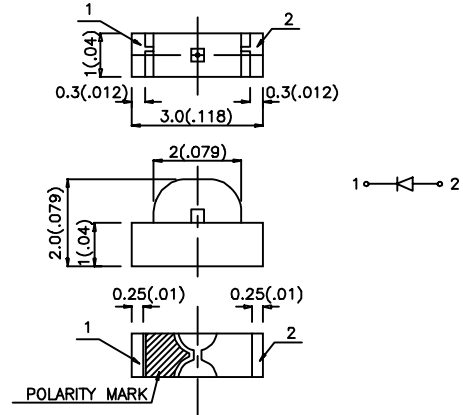
The Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.



### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.15$  (0.006") unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subjected to change without notice.

### Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20 mA		Viewing Angle
			Min.	Typ.	θ1/2
KPA-3010HD	BRIGHT RED (GaP)	RED DIFFUSED	0.8	1.2	120°
KPA-3010HC	BRIGHT RED (GaP)	WATER CLEAR	0.8	1.2	120°
KPA-3010ID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	5	12	120°
KPA-3010EC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	5	12	120°
KPA-3010SGD	SUPER BRIGHT GREEN (GaP)	GREEN DIFFUSED	3	12	120°
KPA-3010SGC	SUPER BRIGHT GREEN (GaP)	WATER CLEAR	3	12	120°
KPA-3010YD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	3	8	120°
KPA-3010YC	YELLOW (GaAsP/GaP)	WATER CLEAR	3	8	120°
KPA-3010SRD-PRV	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	40	70	120°
KPA-3010SRC-PRV	SUPER BRIGHT RED (GaAlAs)	WATER CLEAR	40	70	120°

### Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

## Electrical / Optical Characteristics at T<sub>A</sub>=25°C

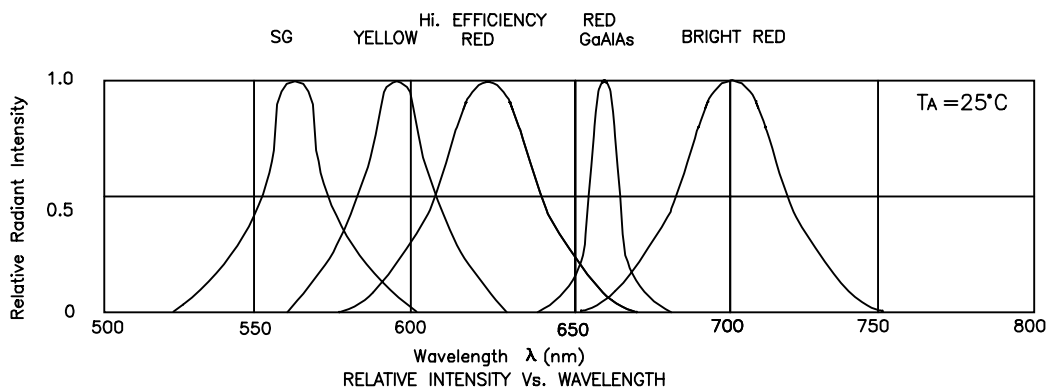
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	700 625 565 590 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	45 45 30 35 20		nm	IF=20mA
C	Capacitance	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	40 12 45 10 95		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	Bright Red High Efficiency Red Super Bright Green Yellow Super Bright Red	2.0 2.0 2.2 2.1 1.85	2.5 2.5 2.5 2.5 2.5	V	IF=20mA
I <sub>R</sub>	Reverse Current	All		10	uA	VR = 5V

## Absolute Maximum Ratings at T<sub>A</sub>=25°C

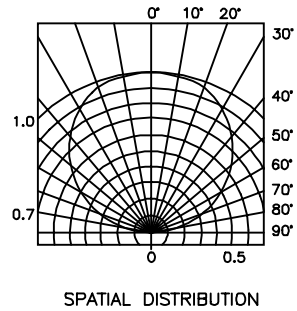
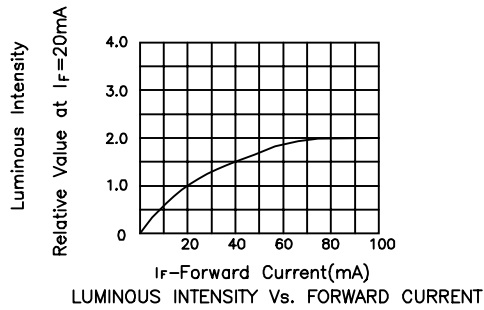
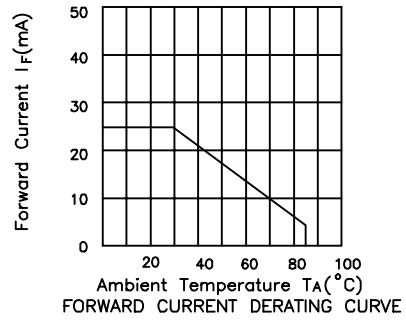
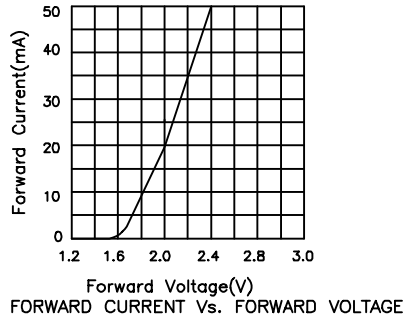
Parameter	Bright Red	High Efficiency Red	Super Bright Green	Yellow	Super Bright Red	Units
Power dissipation	120	105	105	105	100	mW
DC Forward Current	25	30	25	30	30	mA
Peak Forward Current [1]	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C					

Note:

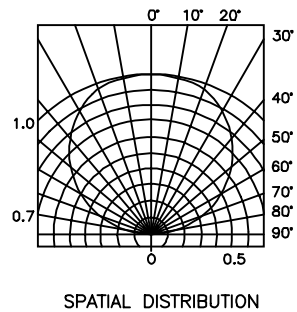
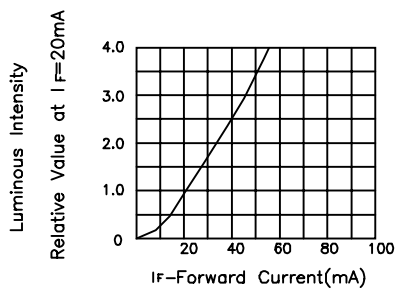
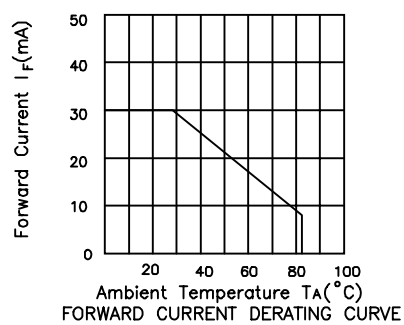
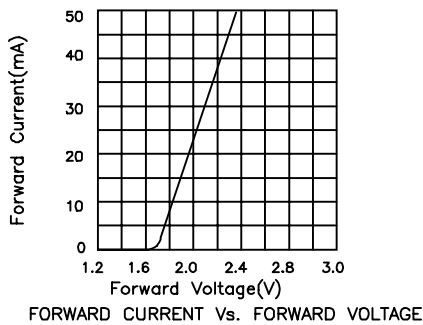
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



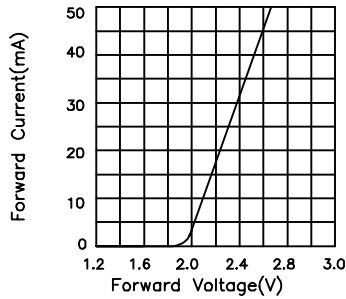
## Bright Red KPA-3010HD, KPA-3010HC



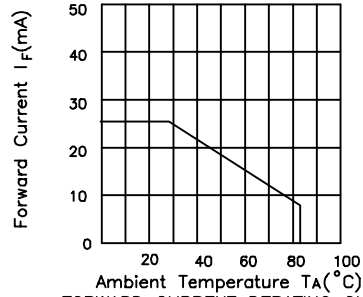
## High Efficiency Red KPA-3010ID, KPA-3010EC



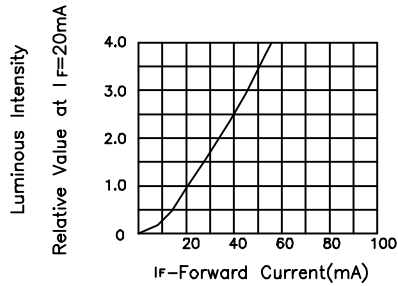
## Super Bright Green KPA-3010SGD, KPA-3010SGC



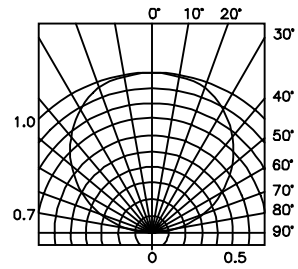
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

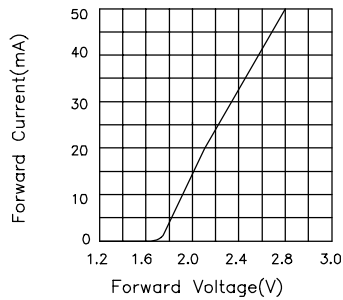


LUMINOUS INTENSITY Vs. FORWARD CURRENT

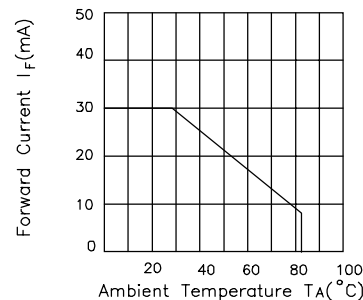


SPATIAL DISTRIBUTION

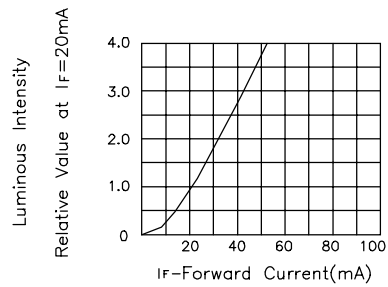
## Yellow KPA-3010YD, KPA-3010YC



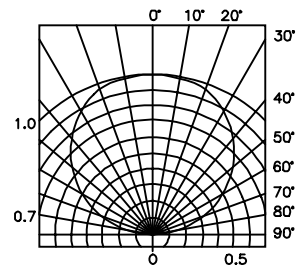
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

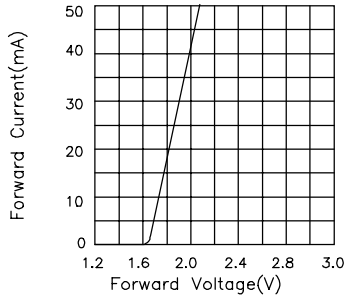


LUMINOUS INTENSITY Vs. FORWARD CURRENT

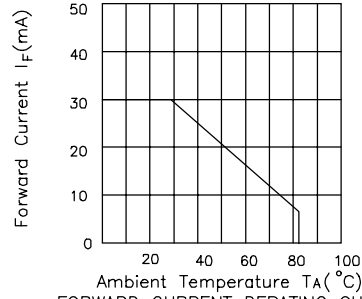


SPATIAL DISTRIBUTION

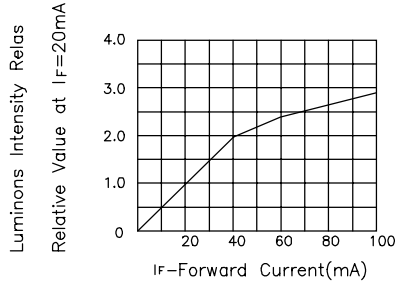
## Super Bright Red KPA-3010SRD-PRV, KPA-3010SRC-PRV



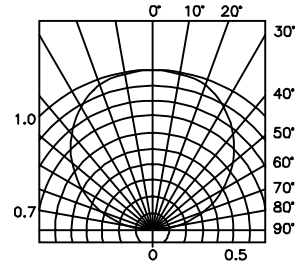
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

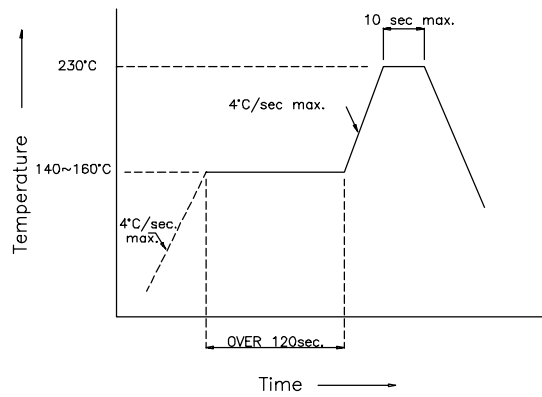


LUMINOUS INTENSITY Vs. FORWARD CURRENT



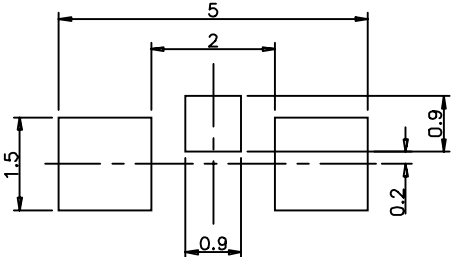
SPATIAL DISTRIBUTION

## KPA-3010 SERIES SMT Reflow Soldering Instructions



## KPA-3010 SERIES Recommended Soldering Pattern (Units : mm)

FOR REFLOW SOLDERING



## KPA-3010 SERIES Tape Specifications (Units : mm)

