

Kingbright®

3x2.2mm SINGLE COLOR SURFACE MOUNT LED LAMPS

KA-3022-4.5SF

Features

- 3.0mm x 2.2mm SMT LED. 1.5mm THICKNESS.
- WHITE REFLECTOR TO MAXIMIZE REFLECTION OF LIGHT.
- ULTRA-COMPACT TYPE ASSURES SPACE -SAVING.
- HIGH EFFICIENCY & LOW POWER CONSUMPTION.

Description

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

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

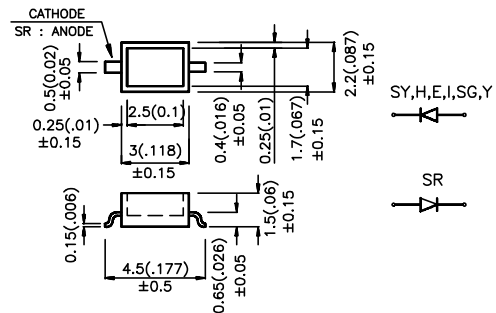
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

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.

The Super Bright Yellow source color devices are made with DH InGaAlP on GaAs substrate Light Emitting Diode.

Package Dimensions



Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20 mA		Viewing Angle 2 θ 1/2
			Min.	Max.	
KA-3022HT-4.5SF	BRIGHT RED (GaP)	RED TRANS.	1	4	90°
KA-3022HC-4.5SF		WATER CLEAR	1	4	90°
KA-3022IT-4.5SF	HIGH EFFICIENCY RED (GaAsP/GaP)	RED TRANS.	8	60	90°
KA-3022EC-4.5SF		WATER CLEAR	8	60	90°
KA-3022YT-4.5SF	YELLOW (GaAsP/GaP)	YELLOW TRANS.	8	40	90°
KA-3022YC-4.5SF		WATER CLEAR	8	40	90°
KA-3022SRT-4.5SF	SUPER BRIGHT RED (GaAlAs)	RED TRANS.	70	300	90°
KA-3022SRC-4.5SF		WATER CLEAR	70	300	90°
KA-3022SGT-4.5SF	SUPER BRIGHT GREEN (GaP)	GREEN TRANS.	8	40	90°
KA-3022SGC-4.5SF		WATER CLEAR	8	40	90°
KA-3022SYT-4.5SF	SUPER BRIGHT YELLOW (InGaAlP)	YELLOW TRANS.	100	200	90°
KA-3022SYC-4.5SF		WATER CLEAR	100	200	90°

Note:

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

Electrical / Optical Characteristics at T_A=25°C

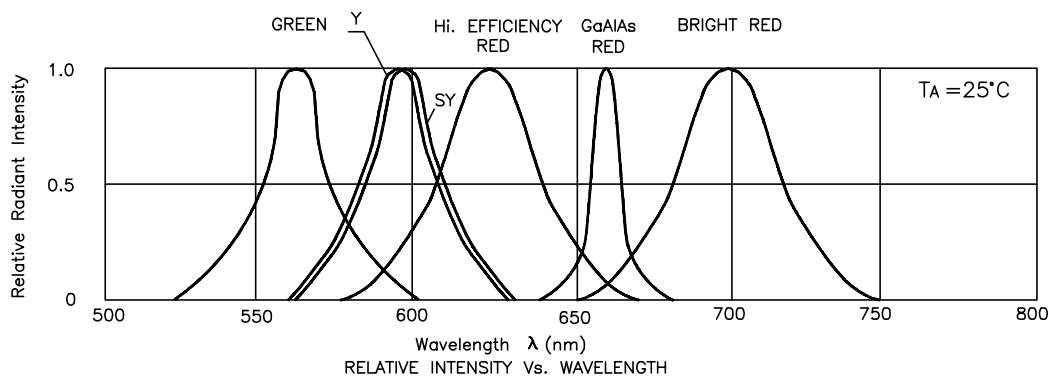
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ_{peak}	Peak Wavelength	Bright Red High Efficiency Red Yellow Super Bright Red Super Bright Green Super Bright Yellow	700 625 590 660 565 595		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Yellow Super Bright Red Super Bright Green Super Bright Yellow	45 45 35 20 30 20		nm	IF=20mA
C	Capacitance	Bright Red High Efficiency Red Yellow Super Bright Red Super Bright Green Super Bright Yellow	40 12 10 95 45 33		pF	VF=0V;f=1MHz
V _F	Forward Voltage	Bright Red High Efficiency Red Yellow Super Bright Red Super Bright Green Super Bright Yellow	2.0 2.0 2.1 1.85 2.2 2.0	2.5 2.5 2.5 2.5 2.5 2.4	V	IF=20mA
I _R	Reverse Current	All	10		uA	VR = 5V

Absolute Maximum Ratings at T_A=25°C

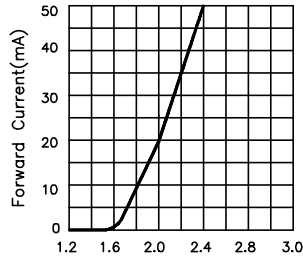
Parameter	Bright Red	High Efficiency Red	Yellow	Super Bright Red	Super Bright Green	Super Bright Yellow	Units
Power dissipation	105	105	105	100	105	125	mW
DC Forward Current	25	30	30	30	25	30	mA
Peak Forward Current [1]	150	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	5	V
Operating/Storage Temperature	-40 °C To +85 °C						

Note:

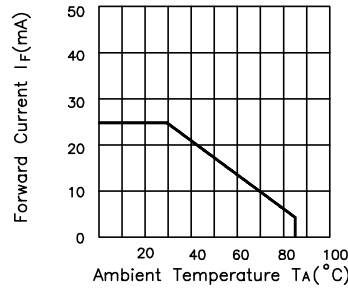
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



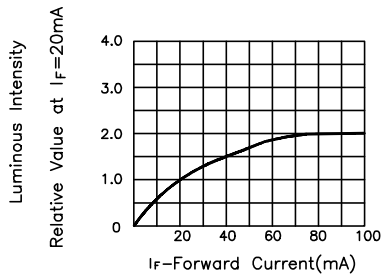
Bright Red KA-3022HT-4.5SF , KA-3022HC-4.5SF



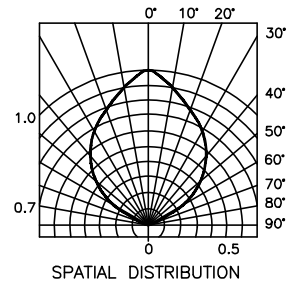
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

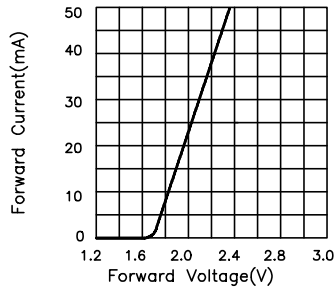


LUMINOUS INTENSITY Vs. FORWARD CURRENT

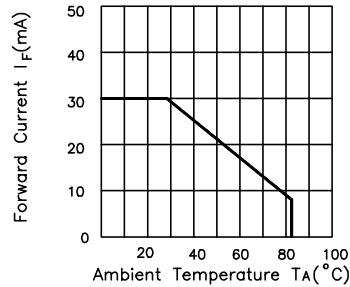


SPATIAL DISTRIBUTION

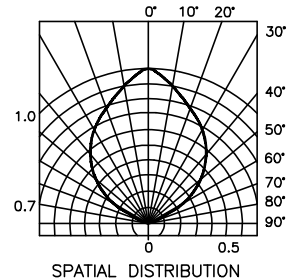
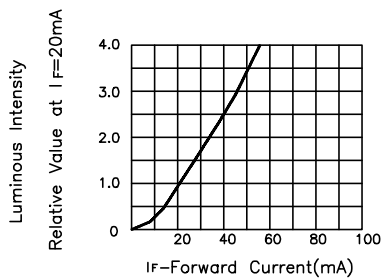
High Efficiency Red KA-3022IT-4.5SF , KA-3022EC-4.5SF



FORWARD CURRENT Vs. FORWARD VOLTAGE

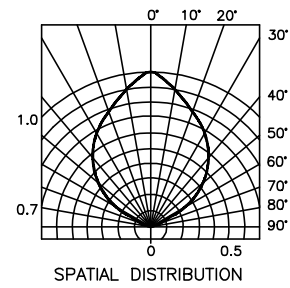
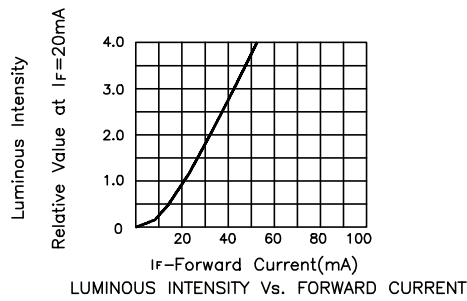
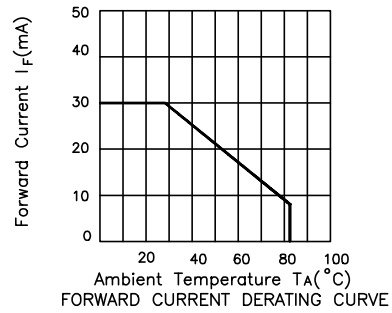
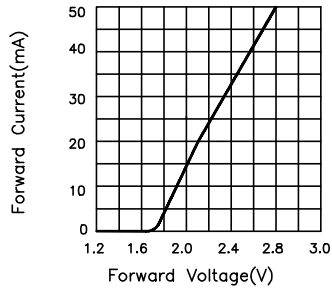


FORWARD CURRENT DERATING CURVE

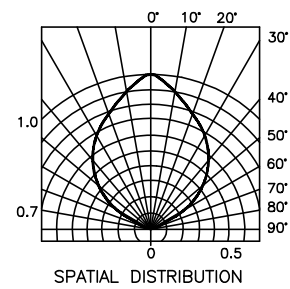
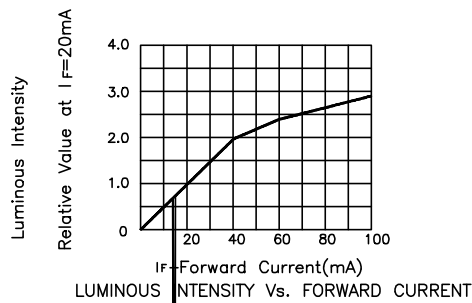
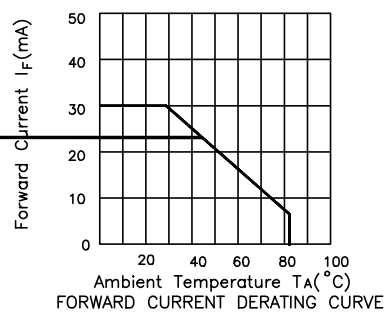
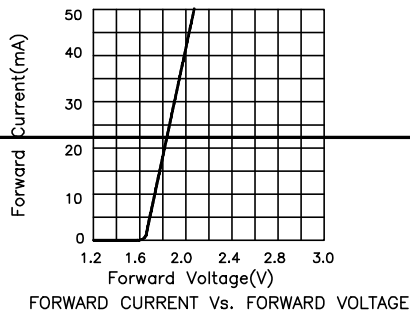


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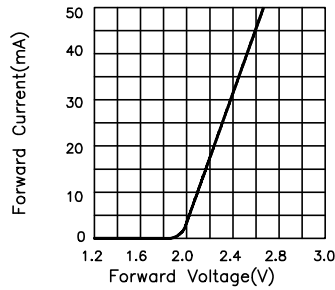
Yellow KA-3022YT-4.5SF , KA-3022YC-4.5SF



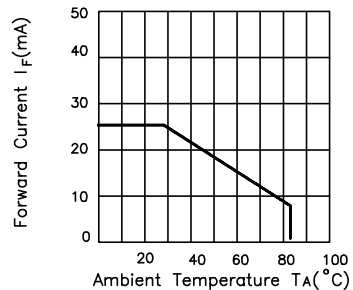
Super Bright Red KA-3022SRT-4.5SF , KA-3022SRC-4.5SF



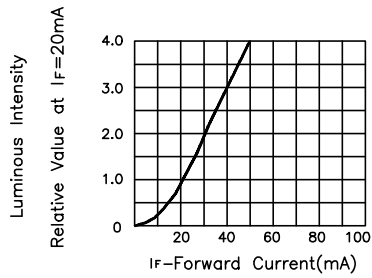
Super Bright Green KA-3022SGT-4.5SF , KA-3022SGC-4.5SF



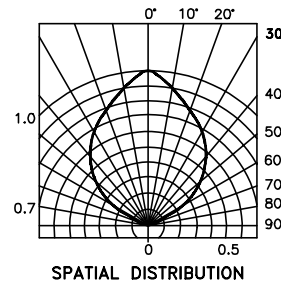
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

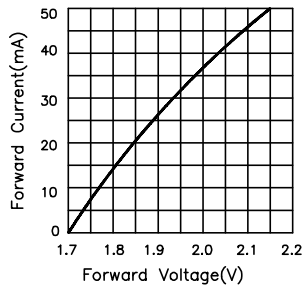


LUMINOUS INTENSITY Vs. FORWARD CURRENT

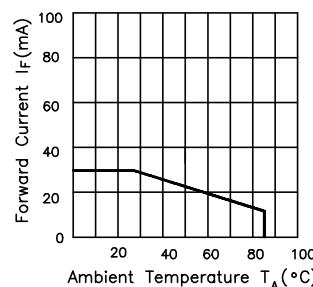


SPATIAL DISTRIBUTION

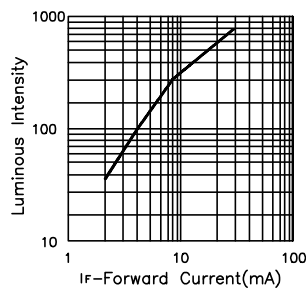
Super Bright Yellow KA-3022SYT-4.5SF , KA-3022SYC-4.5SF



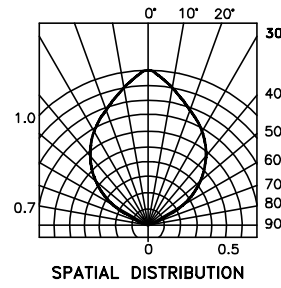
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

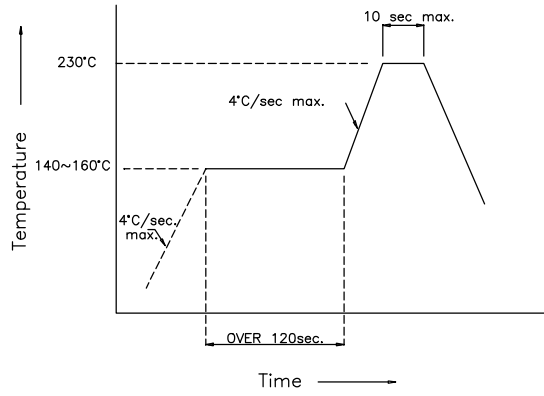


LUMINOUS INTENSITY Vs. FORWARD CURRENT

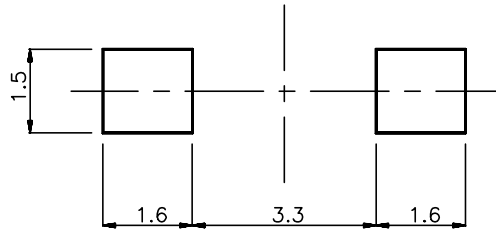


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KA-3022 Series SMT Reflow Soldering Instructions



KA-3022-4.5SF Series Recommended Soldering Pattern FOR REFLOW SOLDERING



(Units : mm)

KA-3022-4.5SF Series Tape Specifications

TAPE

