

Kingbright®

3.2x1.6mm SMD CHIP LED LAMPS

AP3216

Features

- 3.2mmx1.6mm SMT LED. 1.1mm THICKNESS.
- LOW POWER CONSUMPTION.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.

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.

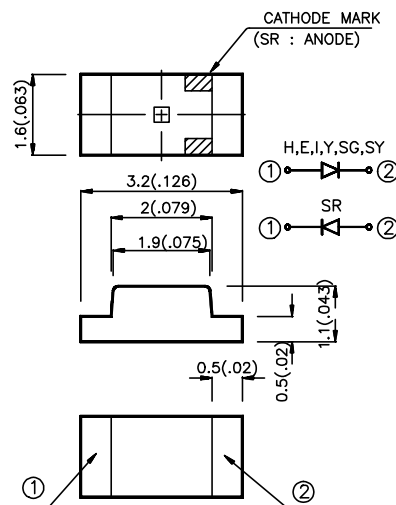
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

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 Diodes.

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

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.1(0.004)$ 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 2ϕ1/2
			Min.	Typ.	
AP3216HD	BRIGHT RED (GaP)	RED DIFFUSED	0.8	1.25	120°
AP3216HC	BRIGHT RED (GaP)	WATER CLEAR	0.8	1.25	120°
AP3216HT	BRIGHT RED (GaP)	RED TRNS.	0.8	1.25	120°
AP3216ID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	5	12.5	120°
AP3216EC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	5	12.5	120°
AP3216IT	HIGH EFFICIENCY RED (GaAsP/GaP)	RED TRNS.	5	12.5	120°
AP3216YD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	3.2	8	120°
AP3216YC	YELLOW (GaAsP/GaP)	WATER CLEAR	3.2	8	120°
AP3216YT	YELLOW (GaAsP/GaP)	YELLOW TRNS.	3.2	8	120°
AP3216SRD	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	40	70	120°
AP3216SRC	SUPER BRIGHT RED (GaAlAs)	WATER CLEAR	40	70	120°
AP3216SRT	SUPER BRIGHT RED (GaAlAs)	RED TRNS.	40	70	120°
AP3216SGD	SUPER BRIGHT GREEN (GaP)	GREEN DIFFUSED	3.2	12.5	120°
AP3216SGC	SUPER BRIGHT GREEN (GaP)	WATER CLEAR	3.2	12.5	120°
AP3216SGT	SUPER BRIGHT GREEN (GaP)	GREEN TRNS.	3.2	12.5	120°
AP32162SYD	SUPER BRIGHT YELLOW (InGaAlP)	YELLOW DIFFUSED	40	60	120°
AP32162SYC	SUPER BRIGHT YELLOW (InGaAlP)	WATER CLEAR	40	60	120°
AP32162SYT	SUPER BRIGHT YELLOW (InGaAlP)	YELLOW TRNS.	40	60	120°

Note:

1. $\phi 1/2$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

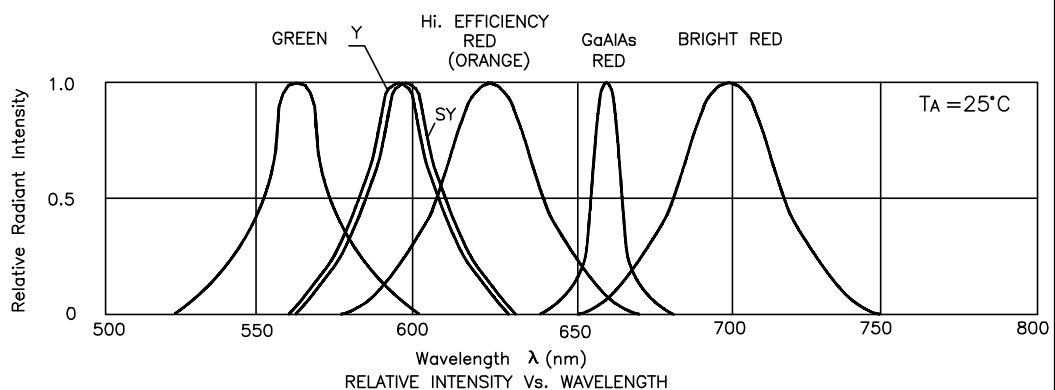
Electrical / Optical Characteristics at T_A=25°C

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

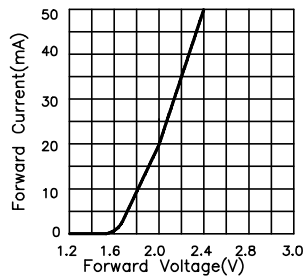
Absolute Maximum Ratings at T_A=25°C

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						

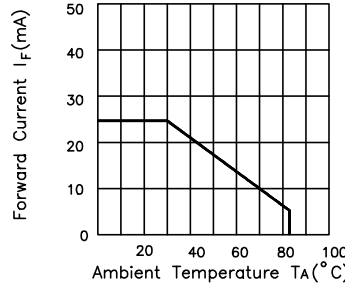
Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



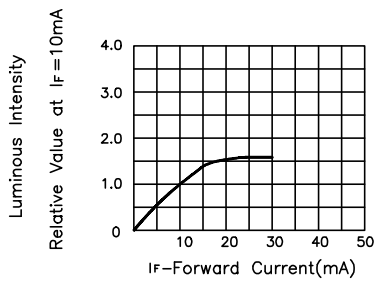
Bright Red AP3216HD, AP3216HC, AP3216HT



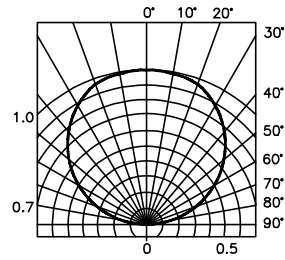
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

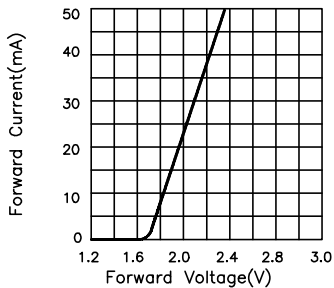


LUMINOUS INTENSITY Vs. FORWARD CURRENT

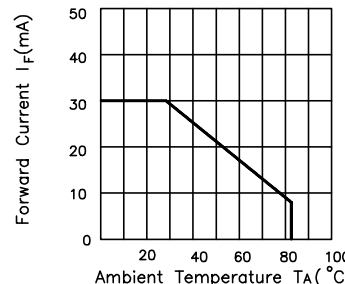


SPATIAL DISTRIBUTION

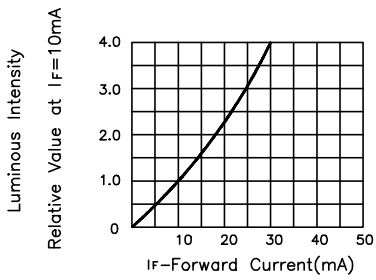
High Efficiency Red AP3216ID, AP3216EC, AP3216IT



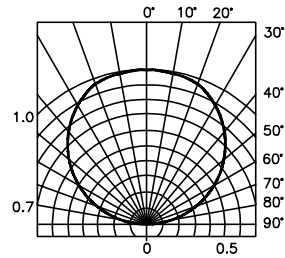
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

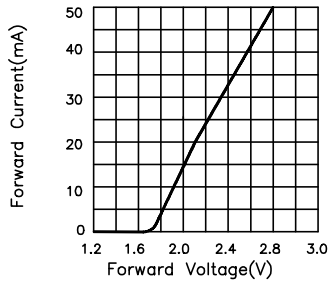


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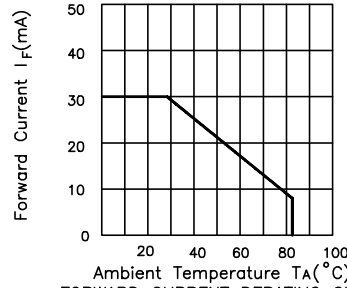


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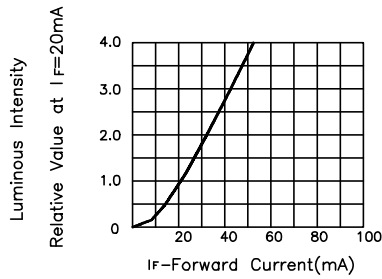
Yellow AP3216YD, AP3216YC, AP3216YT



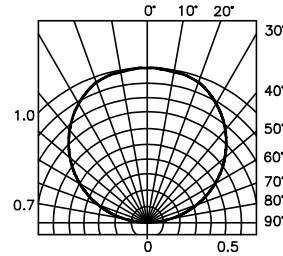
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

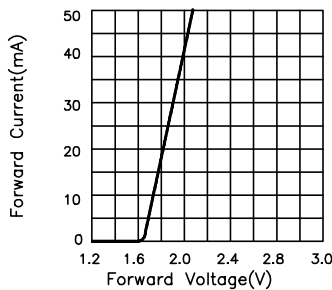


Luminous Intensity
Relative Value at $I_F=20mA$

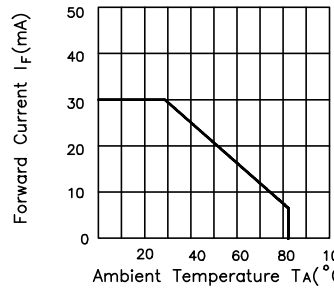


SPATIAL DISTRIBUTION

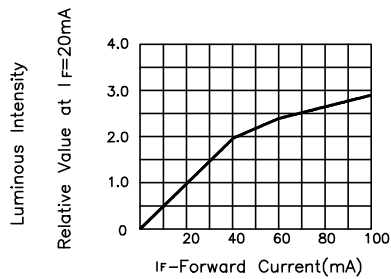
Super Bright Red AP3216SRD, AP3216SRC, AP3216SRT



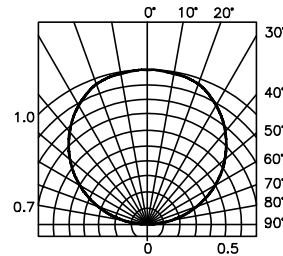
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

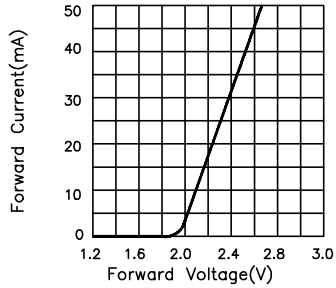


Luminous Intensity
Relative Value at $I_F=20mA$

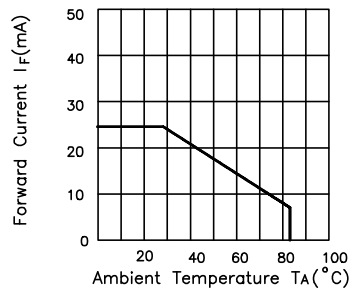


SPATIAL DISTRIBUTION

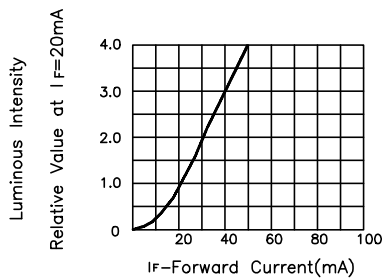
Super Bright Green AP326SGD, AP3216SGC, AP3216SGT



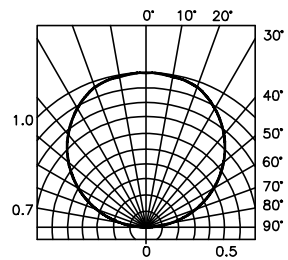
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

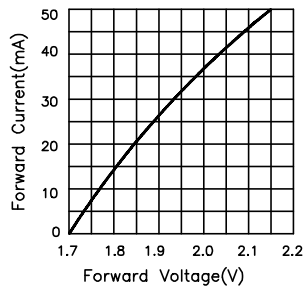


LUMINOUS INTENSITY Vs. FORWARD CURRENT

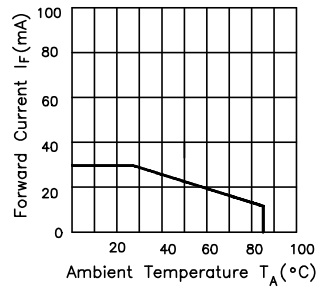


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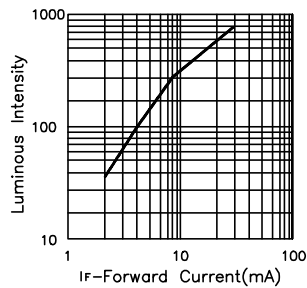
Super Bright Yellow AP3216SYD, AP3216SYC, AP3216SYT



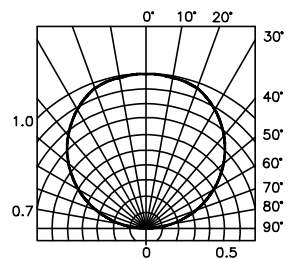
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

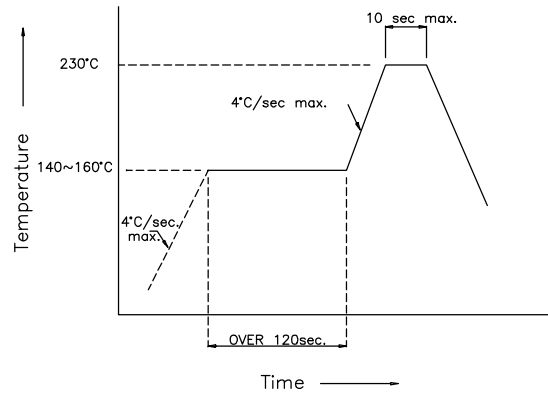


LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION

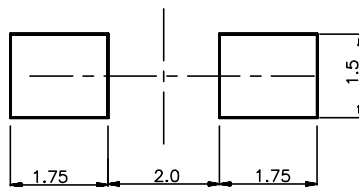
AP3216 Series SMT Reflow Soldering Instructions



AP3216 Series Recommended Soldering Pattern

FOR REFLOW SOLDERING

(Units : mm)



AP3216 Series Tape Specifications

