

|            |                     |
|------------|---------------------|
| APK3020EC  | HIGH EFFICIENCY RED |
| APK3020SGC | SUPER BRIGHT GREEN  |
| APK3020YC  | YELLOW              |

### Features

- 3.0mmX2.0mm SMT LED, 1.3mm THICKNESS.
- LOW POWER CONSUMPTION.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.
- PACKAGE: 2000PCS/REEL

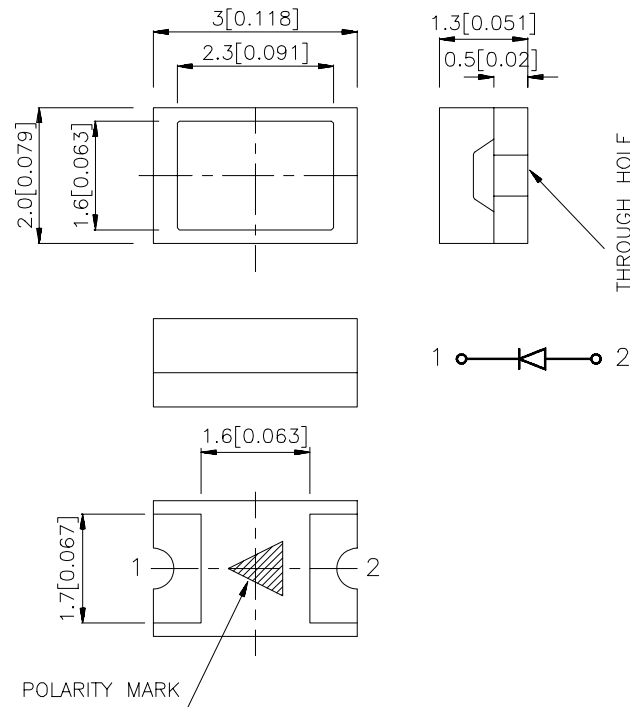
### Description

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.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.2$  (0.0079") unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subject to change without notice.

## Selection Guide

| Part No.   | Dice                           | Lens Type   | Iv (mcd)<br>@ 20 mA |      | Viewing<br>Angle |
|------------|--------------------------------|-------------|---------------------|------|------------------|
|            |                                |             | Min.                | Typ. | θ1/2             |
| APK3020EC  | HIGH EFFICIENCY RED(GaAsP/GaP) | WATER CLEAR | 8                   | 30   | 120°             |
| APK3020SGC | SUPER BRIGHT GREEN (GaP)       | WATER CLEAR | 8                   | 30   | 120°             |
| APK3020YC  | YELLOW (GaAsP/GaP)             | WATER CLEAR | 4                   | 15   | 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

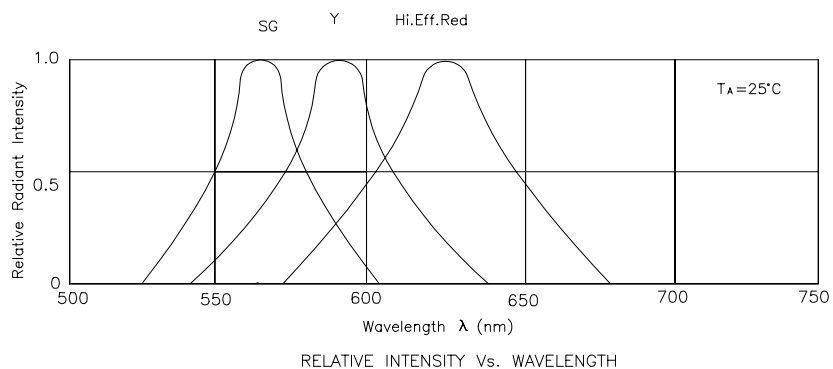
| Symbol            | Parameter               | Device                                              | Typ.              | Max.              | Units | Test Conditions |
|-------------------|-------------------------|-----------------------------------------------------|-------------------|-------------------|-------|-----------------|
| λ <sub>peak</sub> | Peak Wavelength         | High Efficiency Red<br>Super Bright Green<br>Yellow | 627<br>565<br>590 |                   | nm    | IF=20mA         |
| λ <sub>D</sub>    | Dominate Wavelength     | High Efficiency Red<br>Super Bright Green<br>Yellow | 625<br>568<br>588 |                   | nm    | IF=20mA         |
| Δλ <sub>1/2</sub> | Spectral Line Halfwidth | High Efficiency Red<br>Super Bright Green<br>Yellow | 45<br>30<br>35    |                   | nm    | IF=20mA         |
| C                 | Capacitance             | High Efficiency Red<br>Super Bright Green<br>Yellow | 15<br>15<br>20    |                   | pF    | VF=0V;f=1MHz    |
| V <sub>F</sub>    | Forward Voltage         | High Efficiency Red<br>Super Bright Green<br>Yellow | 2.0<br>2.2<br>2.1 | 2.5<br>2.5<br>2.5 | V     | IF=20mA         |
| I <sub>R</sub>    | Reverse Current         | High Efficiency Red<br>Super Bright Green<br>Yellow |                   | 10                | uA    | VR = 5V         |

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

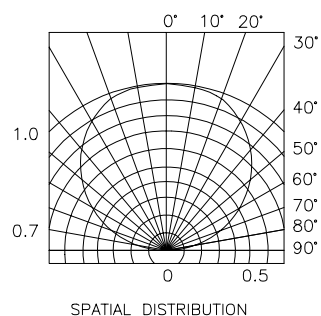
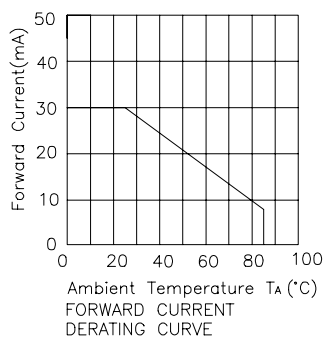
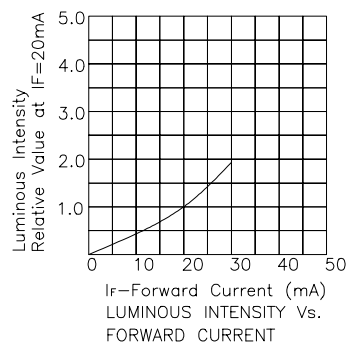
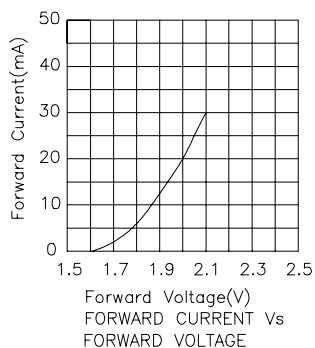
| Parameter                | High Efficiency red | Super Bright Green | Yellow | Units |
|--------------------------|---------------------|--------------------|--------|-------|
| Power dissipation        | 105                 | 105                | 105    | mW    |
| DC Forward Current       | 30                  | 25                 | 30     | mA    |
| Peak Forward Current [1] | 160                 | 140                | 140    | mA    |
| Reverse Voltage          | 5                   | 5                  | 5      | V     |
| Operating Temperature    | -40°C To +85°C      |                    |        |       |
| Storage Temperature      | -40°C To +85°C      |                    |        |       |

Note:

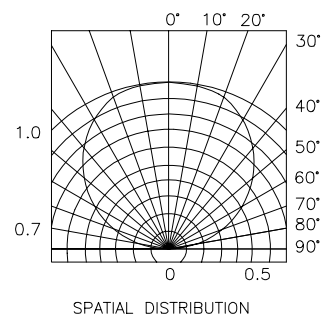
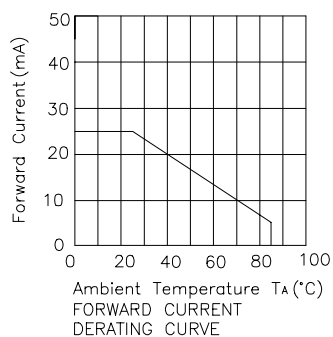
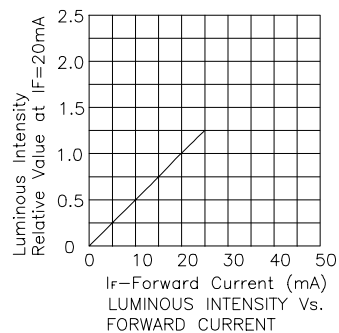
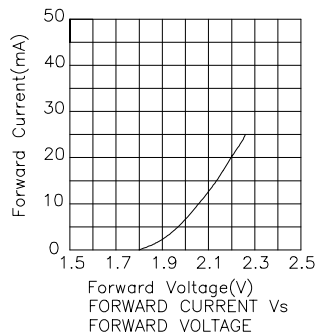
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



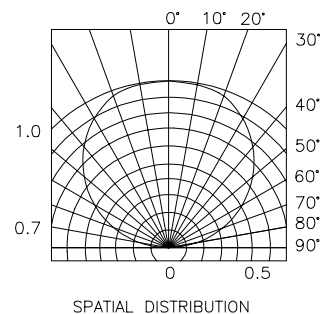
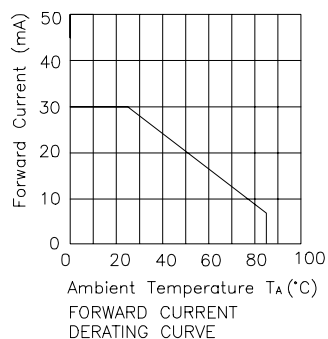
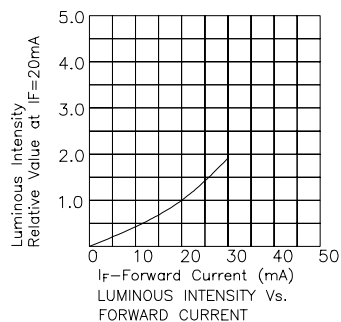
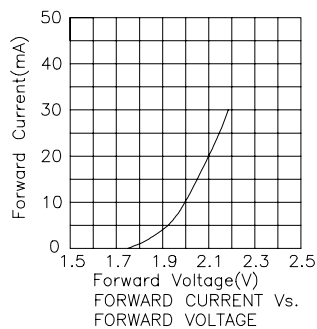
## High Efficiency Red APK3020EC



## Super Bright Green APK3020SGC

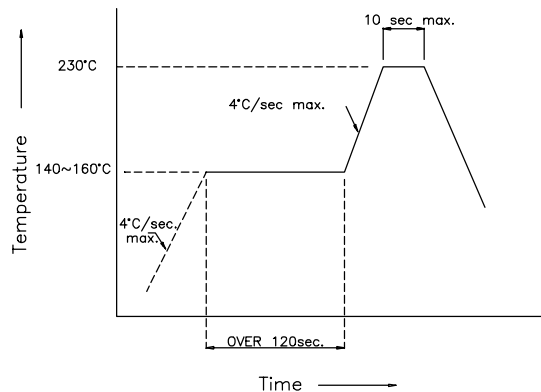


## Yellow APK3020YC

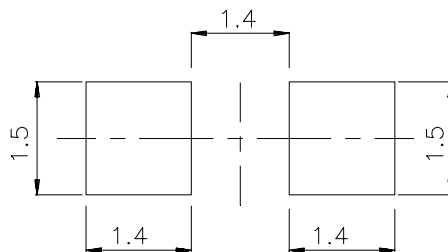


## APK3020 SMT Reflow Soldering Instructions

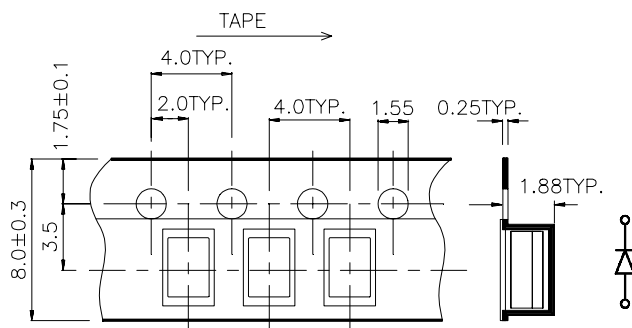
Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and second soldering process.



## Recommended Soldering Pattern (Units : mm)



## Tape Specifications (Units : mm)



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