

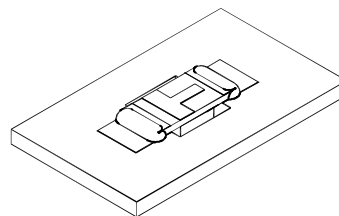
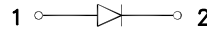
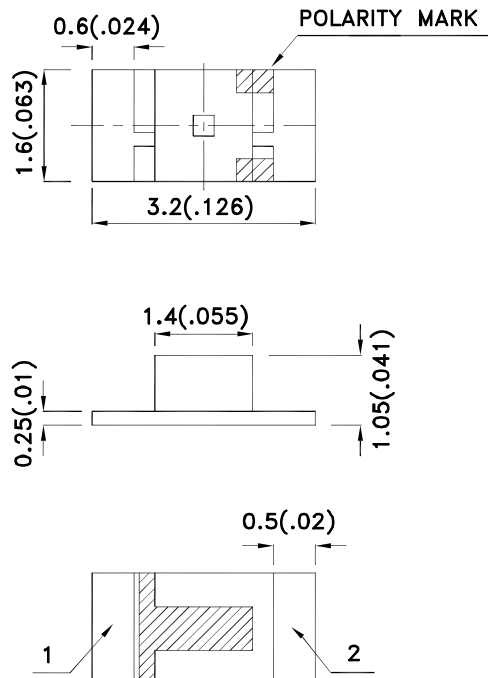
### Features

- 3.2mmx1.6mm SMT LED, 1.05mm 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.

### Description

The Hyper Red source color devices are made with Al-GaN/P on GaAs substrate Light Emitting Diode.

### 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.      | Dice                | Lens Type   | Iv (mcd) [2]<br>@ 20mA |      | Viewing<br>Angle [1] |
|---------------|---------------------|-------------|------------------------|------|----------------------|
|               |                     |             | Min.                   | Typ. | 2θ1/2                |
| APTR3216SURCK | Hyper Red (AlGaInP) | Water Clear | 120                    | 230  | 120°                 |
|               |                     |             | *40                    | *80  |                      |

### 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%.
- \*Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

## Electrical / Optical Characteristics at TA=25°C

| Symbol | Parameter                | Device    | Typ. | Max. | Units | Test Conditions |
|--------|--------------------------|-----------|------|------|-------|-----------------|
| λpeak  | Peak Wavelength          | Hyper Red | 645  |      | nm    | IF=20mA         |
| λD [1] | Dominant Wavelength      | Hyper Red | 630  |      | nm    | IF=20mA         |
| Δλ1/2  | Spectral Line Half-width | Hyper Red | 28   |      | nm    | IF=20mA         |
| C      | Capacitance              | Hyper Red | 35   |      | pF    | VF=0V;f=1MHz    |
| VF [2] | Forward Voltage          | Hyper Red | 1.95 | 2.5  | V     | IF=20mA         |
| IR     | Reverse Current          | Hyper Red |      | 10   | uA    | VR=5V           |

### Notes:

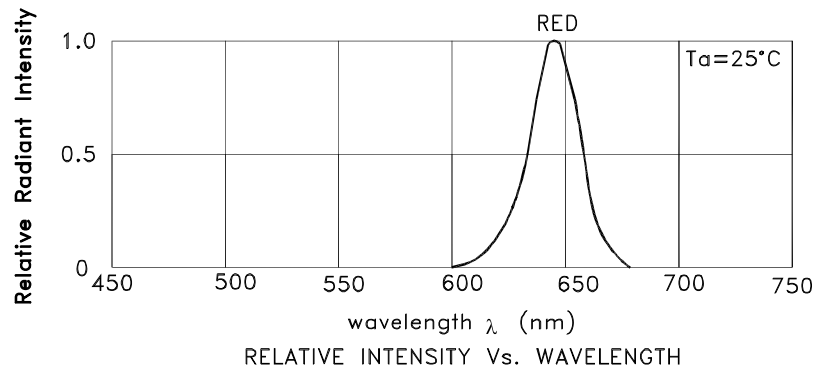
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

## Absolute Maximum Ratings at TA=25°C

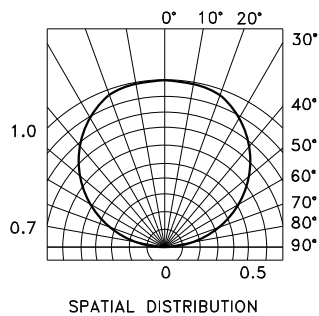
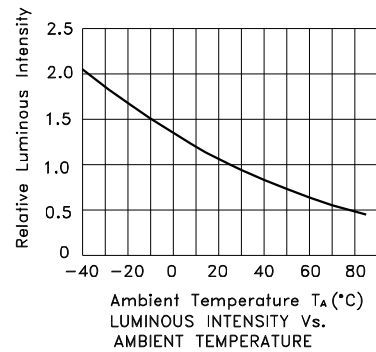
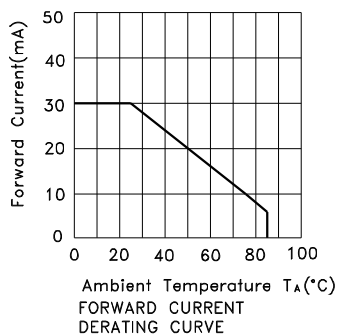
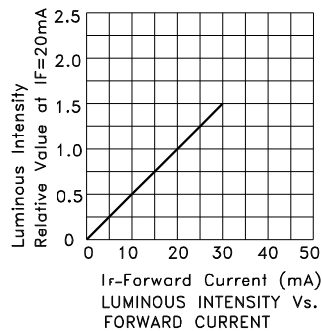
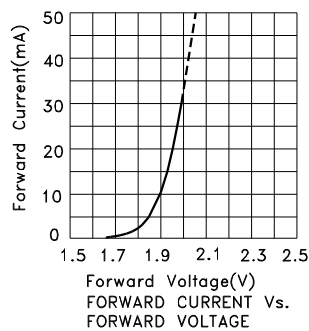
| Parameter                | Hyper Red      | Units |
|--------------------------|----------------|-------|
| Power dissipation        | 75             | mW    |
| DC Forward Current       | 30             | mA    |
| Peak Forward Current [1] | 185            | mA    |
| Reverse Voltage          | 5              | 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.



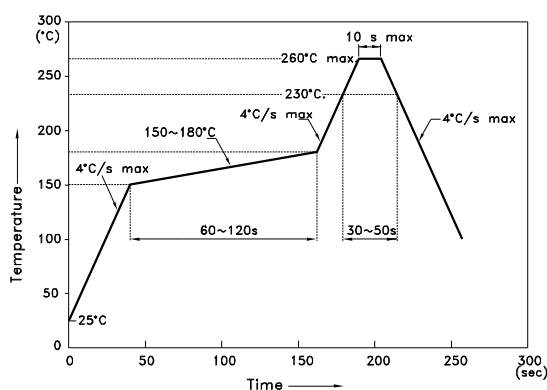
Hyper Red                      APTR3216SURCK



APTR3216SURCK

**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.**

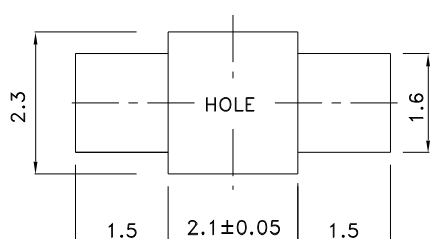
### Reflow Soldering Profile For Lead-free SMT Process.



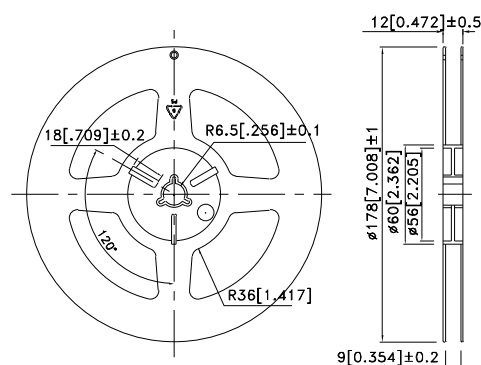
NOTES:

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.

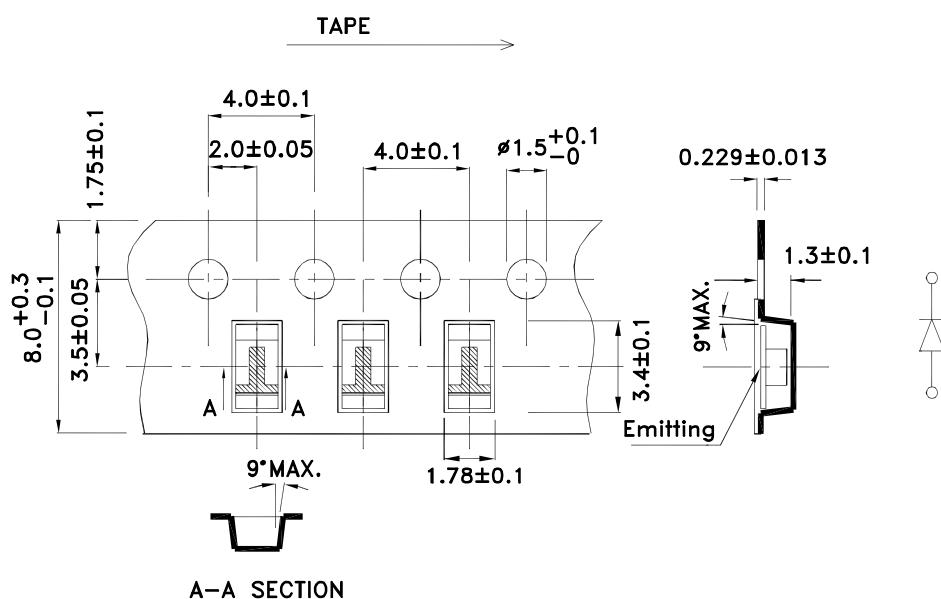
**Recommended Soldering Pattern**  
(Units : mm; Tolerance:  $\pm 0.1$ )



## Reel Dimension

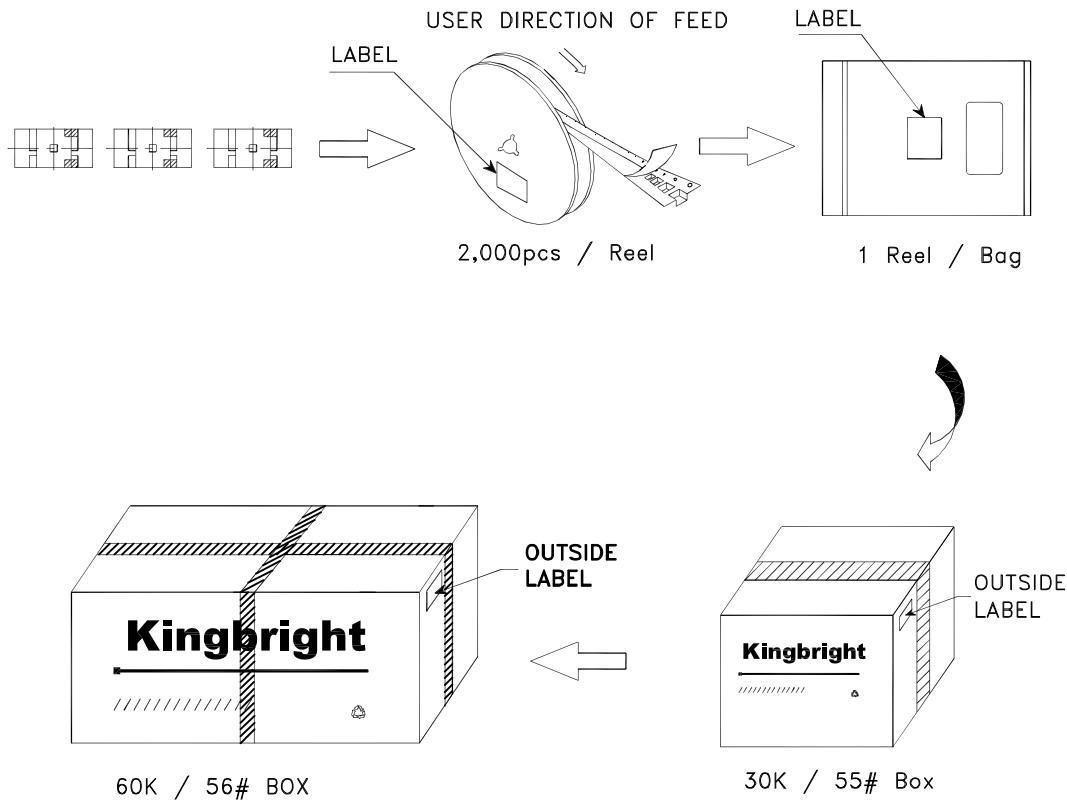



### Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

APTR3216SURCK



|  |      |                      |
|--|------|----------------------|
| <b>Kingbright</b>  |      |                      |
| P/NO: APTR3216xxx  |      |                      |
| QTY: 2,000 pcs   | Q.C. | Q C                  |
| S/N: XXXX  |      | XX XX XXXX<br>PASSED |
| CODE: XXX  |      |                      |
| LOT NO:  |      |                      |
|  |      |                      |
| XXXXXXXXXXXXXXXXXXXXXXX  |      |                      |
| RoHS Compliant   |      |                      |

All design applications should refer to Kingbright application notes available at <http://www.KingbrightUSA.com/ApplicationNotes>