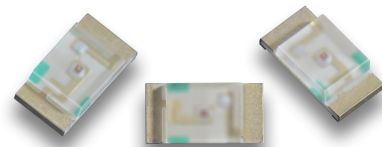


## APT3216LSECK/J3-PRV

3.2 mm x 1.6 mm SMD Chip LED Lamp



### DESCRIPTIONS

- The Hyper Red device is based on light emitting diode chip made from AlGaInP
- Electrostatic discharge and power surge could damage the LEDs
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs
- All devices, equipments and machineries must be electrically grounded

### FEATURES

- 3.2 mm x 1.6 mm SMD LED, 0.75 mm thickness
- Low power consumption
- Wide viewing angle
- Ideal for backlight and indicator
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- Halogen-free
- RoHS compliant

### APPLICATIONS

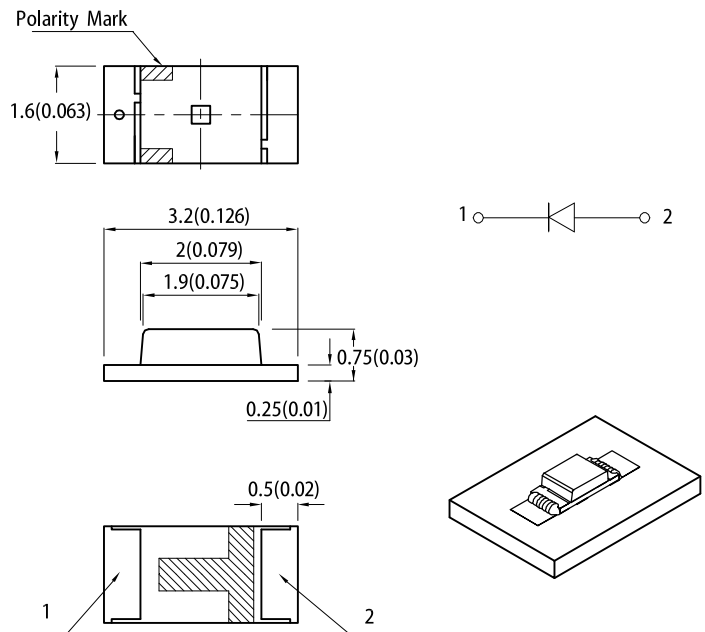
- Backlight
- Status indicator
- Home and smart appliances
- Wearable and portable devices
- Healthcare applications

### ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

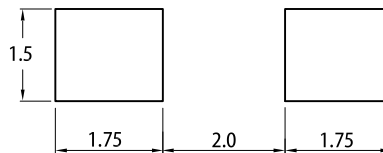


### PACKAGE DIMENSIONS



### RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance :  $\pm 0.1$ )



#### 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 Number	Emitting Color (Material)	Lens Type	Iv (mcd) @ 2mA <sup>[2]</sup>		Viewing Angle <sup>[1]</sup>
			Min.	Typ.	2θ1/2
APT3216LSECK/J3-PRV	■ Hyper Red (AlGaInP)	Water Clear	50	100	140°
			*20	*40	

#### Notes:

1.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.

2. Luminous intensity / luminous flux:  $\pm 15\%$ .

\* Luminous intensity value is traceable to CIE127-2007 standards.

**ELECTRICAL / OPTICAL CHARACTERISTICS at T<sub>A</sub>=25°C**

Parameter	Symbol	Emitting Color	Value			Unit
			Min.	Typ.	Max.	
Wavelength at Peak Emission I <sub>F</sub> = 2mA	$\lambda_{\text{peak}}$	Hyper Red	-	640	-	nm
Dominant Wavelength I <sub>F</sub> = 2mA	$\lambda_{\text{dom}}$ <sup>[1]</sup>	Hyper Red	-	625	-	nm
Spectral Bandwidth at 50% $\Phi$ REL MAX I <sub>F</sub> = 2mA	$\Delta\lambda$	Hyper Red	-	20	-	nm
Capacitance	C	Hyper Red	-	27	-	pF
Forward Voltage I <sub>F</sub> = 2mA	V <sub>F</sub> <sup>[2]</sup>	Hyper Red	1.5	1.8	2.1	V
Reverse Current (V <sub>R</sub> = 5V)	I <sub>R</sub>	Hyper Red	-	-	10	μA
Temperature Coefficient of $\lambda_{\text{peak}}$ I <sub>F</sub> = 2mA, -10°C ≤ T ≤ 85°C	TC <sub><math>\lambda_{\text{peak}}</math></sub>	Hyper Red	-	0.13	-	nm/°C
Temperature Coefficient of $\lambda_{\text{dom}}$ I <sub>F</sub> = 2mA, -10°C ≤ T ≤ 85°C	TC <sub><math>\lambda_{\text{dom}}</math></sub>	Hyper Red	-	0.06	-	nm/°C
Temperature Coefficient of V <sub>F</sub> I <sub>F</sub> = 2mA, -10°C ≤ T ≤ 85°C	TC <sub>V</sub>	Hyper Red	-	-2	-	mV/°C

**Notes:**

1. The dominant wavelength ( $\lambda_d$ ) above is the setup value of the sorting machine. (Tolerance  $\lambda_d$  : ±1nm. )
2. Forward voltage: ±0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

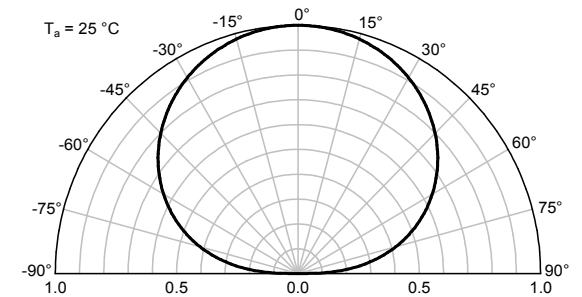
**ABSOLUTE MAXIMUM RATINGS at T<sub>A</sub>=25°C**

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	84	mW
Reverse Voltage	V <sub>R</sub>	5	V
Junction Temperature	T <sub>j</sub>	115	°C
Operating Temperature	T <sub>op</sub>	-40 to +85	°C
Storage Temperature	T <sub>stg</sub>	-40 to +85	°C
DC Forward Current	I <sub>F</sub>	30	mA
Peak Forward Current	I <sub>FM</sub> <sup>[1]</sup>	150	mA
Electrostatic Discharge Threshold (HBM)	-	3000	V
Thermal Resistance (Junction / Ambient)	R <sub>th JA</sub> <sup>[2]</sup>	600	°C/W
Thermal Resistance (Junction / Solder point)	R <sub>th JS</sub> <sup>[2]</sup>	450	°C/W

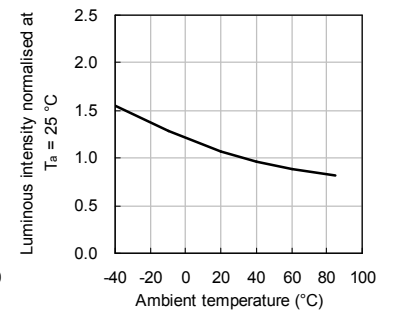
**Notes:**

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. R<sub>th JA</sub>, R<sub>th JS</sub> Results from mounting on PC board FR4 (pad size ≥ 16 mm<sup>2</sup> per pad).
3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

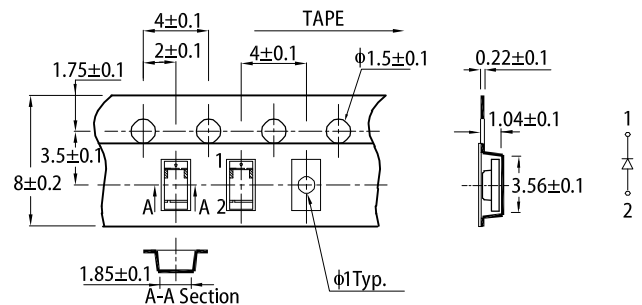
### RELATIVE INTENSITY vs. WAVELENGTH



### Luminous Intensity vs. Ambient Temperature



### TAPE SPECIFICATIONS (units : mm)



Technical drawing of a circular mechanical part, showing a top view and a side view.

**Top View Dimensions:**

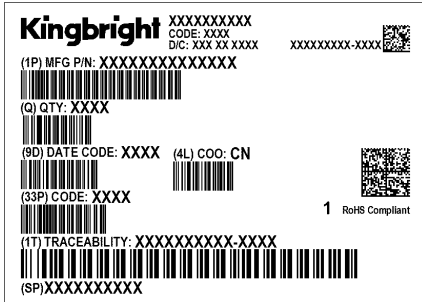
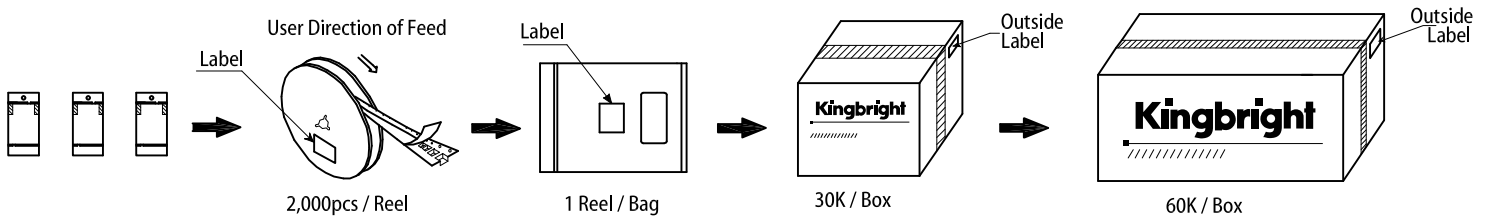
- Outer diameter:  $\phi 178 \pm 2$
- Inner diameter:  $\phi 60 \pm 2$
- Thickness:  $12 \pm 1$
- Fillet radius:  $R6.5 \pm 0.5$
- Angle between lobes:  $120^\circ$

**Side View Dimensions:**

- Outer diameter:  $\phi 178 \pm 2$
- Inner diameter:  $\phi 60 \pm 2$
- Thickness:  $12 \pm 1$

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## PACKING &amp; LABEL SPECIFICATIONS



## PRECAUTIONARY NOTES

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
4. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.
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