Kingbright

APTBD3216SURKSYKC-01

3.2 x 1.6 mm SMD Chip LED Lamp

DESCRIPTIONS

- The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode
- The Super Bright Yellow device is made with AlGaInP (on GaAs substrate) light emitting diode chip
- 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, 1.8 mm thickness
- Low power consumption
- Ideal for backlight and indicator
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- RoHS compliant

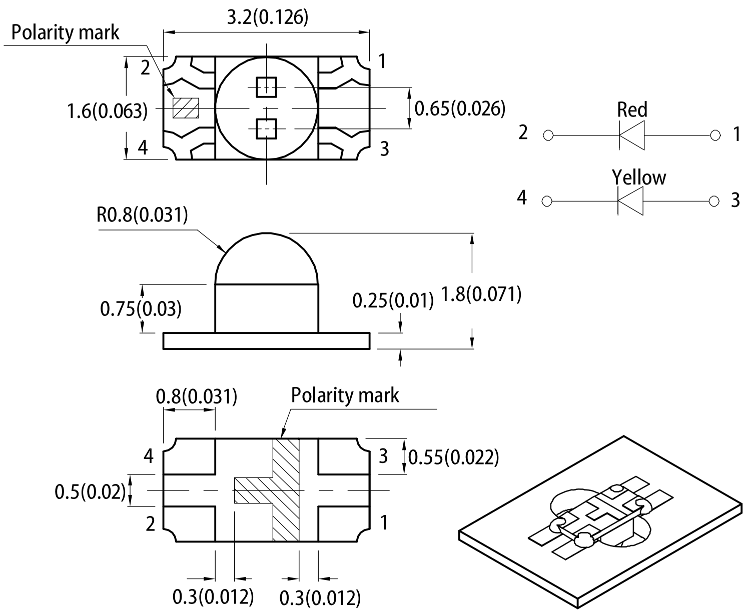
APPLICATIONS

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

ATTENTION

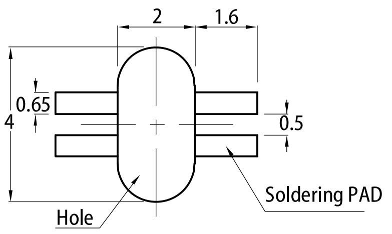
Observe precautions for handling electrostatic discharge sensitive devices

PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±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) @ 20mA [2]		Viewing Angle [1]
			Min.	Typ.	$2\theta_{1/2}$
APTBD3216SURKSYKC-01	🟥 Hyper Red (AlGaInP)	Water Clear	700	1500	30°
			*300	*600	
	🟨 Super Bright Yellow (AlGaInP)		200	450	
			*200	*450	

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: +/-15%.
** Luminous intensity value is traceable to CIE127-2007 standards.*

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I_F = 20mA	λ_{peak}	Hyper Red Super Bright Yellow	645 590	-	nm
Dominant Wavelength I_F = 20mA	λ_{dom} [1]	Hyper Red Super Bright Yellow	630 590	-	nm
Spectral Bandwidth at 50% Φ REL MAX I_F = 20mA	$\Delta\lambda$	Hyper Red Super Bright Yellow	28 20	-	nm
Capacitance	C	Hyper Red Super Bright Yellow	35 20	-	pF
Forward Voltage I_F = 20mA	V_F [2]	Hyper Red Super Bright Yellow	1.95 2	2.5 2.5	V
Reverse Current (V_R = 5V)	I_R	Hyper Red Super Bright Yellow	-	10 10	μA

Notes:
1. *The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±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.*

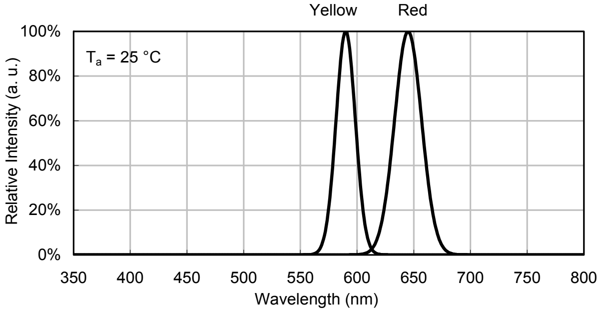
ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Parameter	Symbol	Value		Unit
		Hyper Red	Super Bright Yellow	
Power Dissipation	P_D	75	75	mW
Reverse Voltage	V_R	5	5	V
Junction Temperature	T_J	115	115	°C
Operating Temperature	T_{op}	-40 To +85		°C
Storage Temperature	T_{stg}	-40 To +85		°C
DC Forward Current	I_F	30	30	mA
Peak Forward Current	I_{FM} [1]	185	175	mA
Electrostatic Discharge Threshold (HBM)	-	3000	3000	V

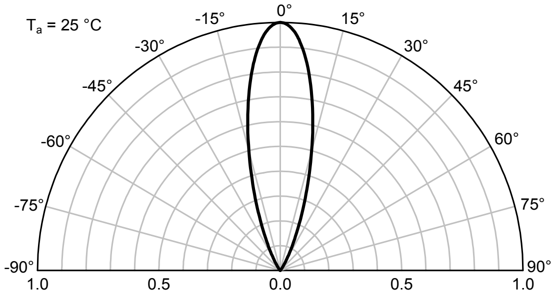
Notes:
1. *1/10 Duty Cycle, 0.1ms Pulse Width.*
2. *Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.*

TECHNICAL DATA

RELATIVE INTENSITY vs. WAVELENGTH

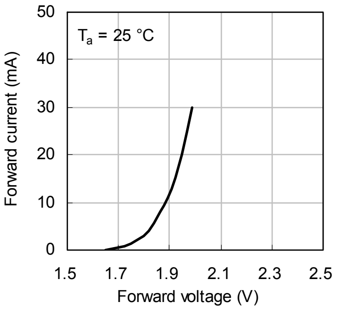


SPATIAL DISTRIBUTION

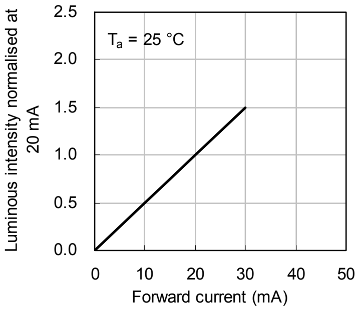


HYPER RED

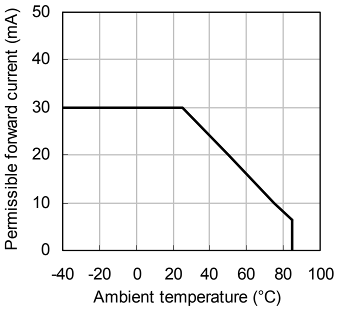
Forward Current vs. Forward Voltage



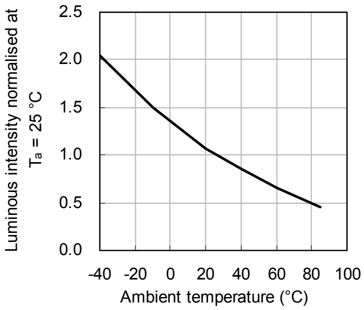
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

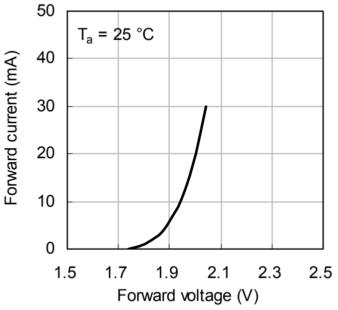


Luminous Intensity vs. Ambient Temperature

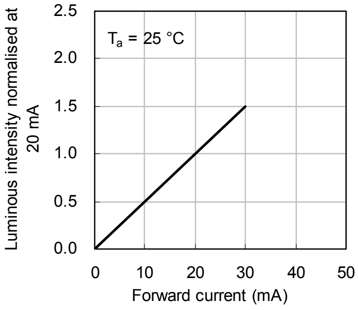


SUPER BRIGHT YELLOW

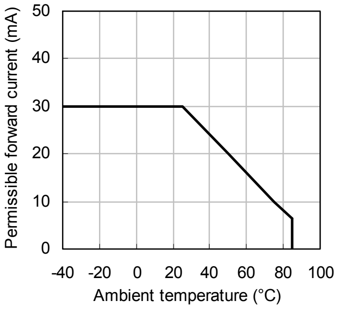
Forward Current vs. Forward Voltage



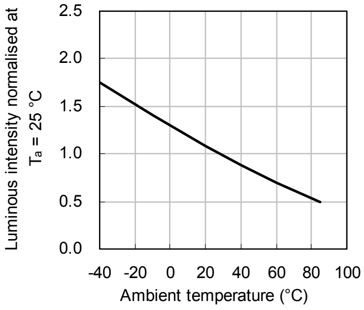
Luminous Intensity vs. Forward Current



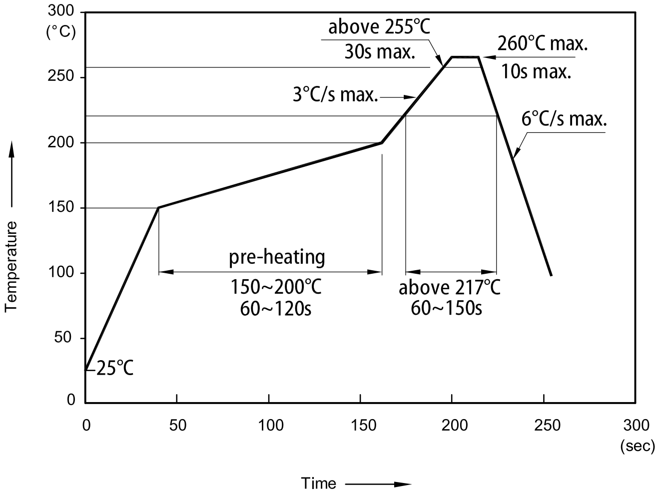
Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature

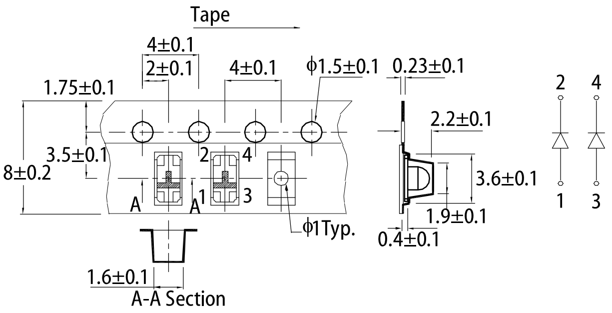


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

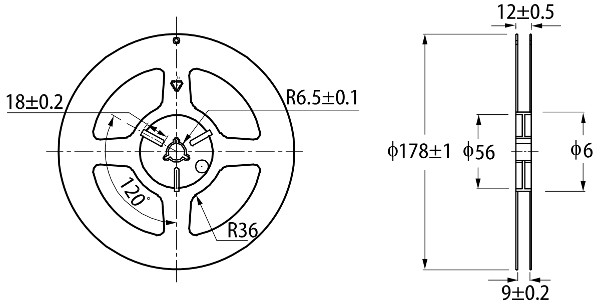


Notes:
1. *Don't cause stress to the LEDs while it is exposed to high temperature.*
2. *The maximum number of reflow soldering passes is 2 times.*
3. *Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.*

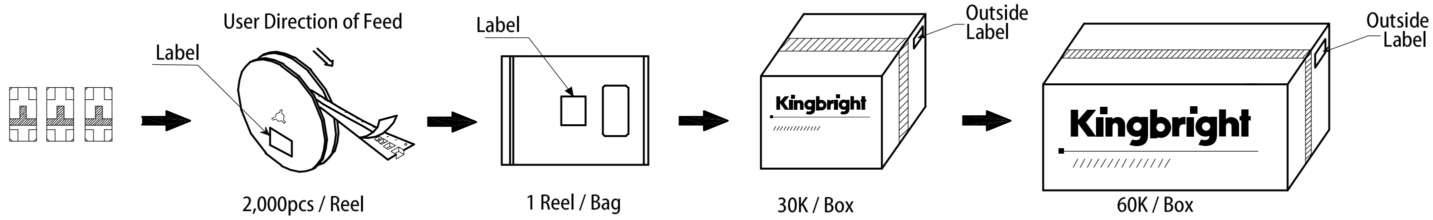
TAPE SPECIFICATIONS (units : mm)

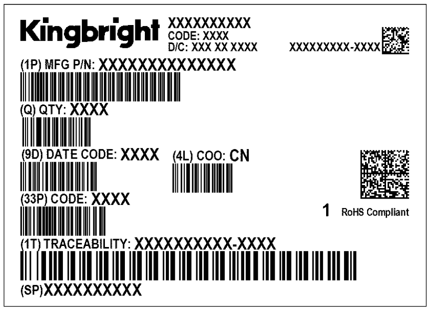


REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS





Kingbright XXXXXXXXXX
CODE: XXXX
D/C: XXX XX XXXX
XXXXXXXXX-XXXX
(1P) MFG P/N: XXXXXXXXXXXXX
(Q) QTY: XXXX
(9D) DATE CODE: XXXX (4L) COO: CN
(33P) CODE: XXXX
1 RoHS Compliant
(1T) TRACEABILITY: XXXXXXXXXX-XXXX
(SP)XXXXXXXXXX

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.
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