



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APTB1612SYKWDF

Super Bright Yellow
White

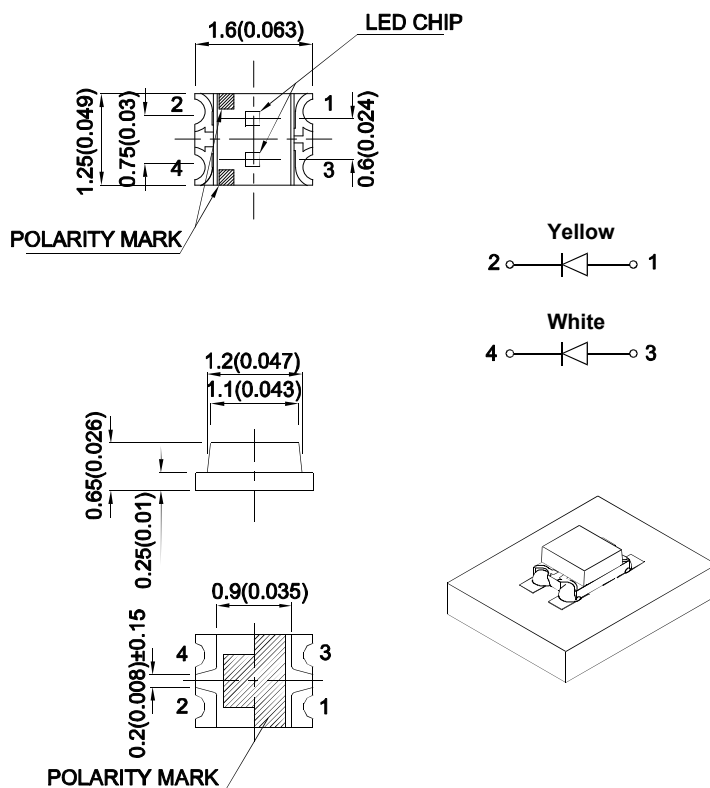
Features

- 1.6mmx1.25mm SMD LED, 0.65mm thickness.
- Bi-color, low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Descriptions

- The Super Bright Yellow device is made with AlGaInP (on GaAs substrate) light emitting diode chip.
- The source color devices are made with InGaN Light Emitting Diode.
- 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.

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.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APT B1612SYKQWDF	Super Bright Yellow (AlGaInP)	Yellow Fluorescent	80	120	160°
	White (InGaN)		120	250	

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: $\pm 15\%$.
3. Luminous intensity value is traceable to CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C [Yellow]

Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λ_{peak}	Peak Wavelength	Super Bright Yellow	590		nm	$I_F=20mA$
λ_D [1]	Dominant Wavelength	Super Bright Yellow	590		nm	$I_F=20mA$
$\Delta\lambda_{1/2}$	Spectral Line Half-width	Super Bright Yellow	20		nm	$I_F=20mA$
C	Capacitance	Super Bright Yellow	20		pF	$V_F=0V; f=1MHz$
V_F [2]	Forward Voltage	Super Bright Yellow	2	2.5	V	$I_F=20mA$
I_R	Reverse Current	Super Bright Yellow		10	uA	$V_R = 5V$

Notes:

1. Wavelength: $\pm 1nm$.
2. Forward Voltage: $\pm 0.1V$.
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.

Electrical / Optical Characteristics at TA=25°C [White]

Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
V_F [1]	Forward Voltage	White	3.3	4.0	V	$I_F=20mA$
I_R	Reverse Current	White		50	uA	$V_R = 5V$
X [2]	Chromaticity Coordinates	White	0.31			
Y [2]			0.31			
C	Capacitance	White	100		pF	$V_F=0V; f=1MHz$

Notes:

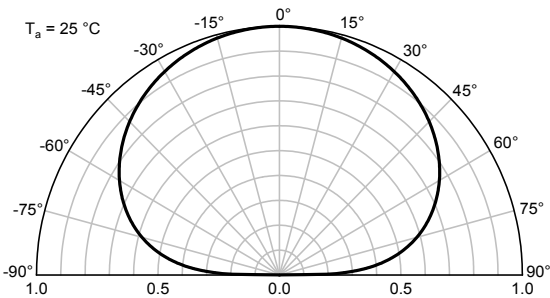
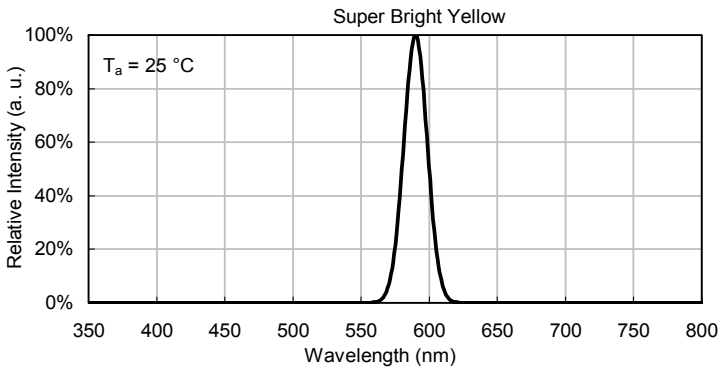
1. Forward Voltage: $\pm 0.1V$.
2. Measurement Tolerance Of The Chromaticity Coordinates Is ± 0.01 .
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Absolute Maximum Ratings at TA=25°C

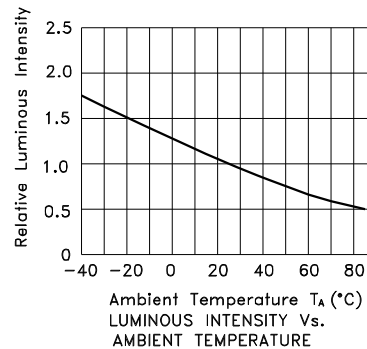
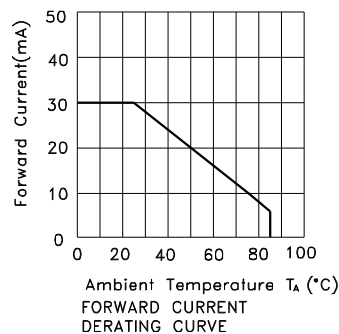
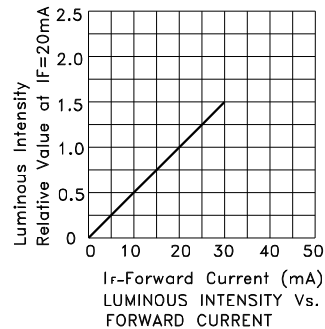
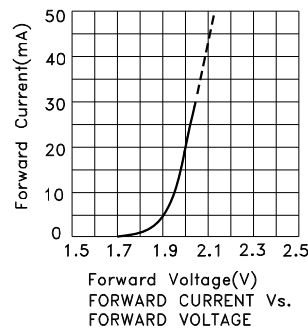
Parameter	Super Bright Yellow	White	Units
Power dissipation	75	120	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	175	150	mA
Electrostatic Discharge Threshold (HBM)	3000	250	V
Reverse Voltage	5		V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

Notes:

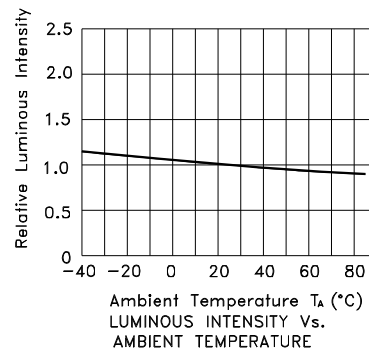
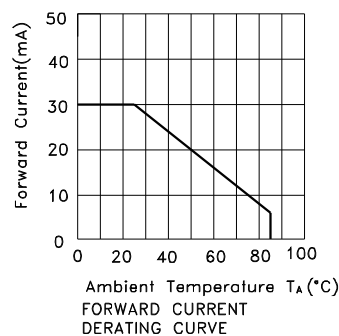
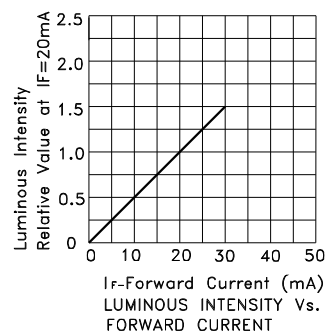
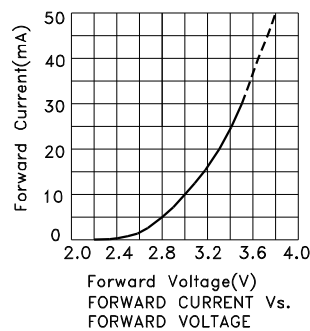
- 1. 1/10 Duty Cycle, 0.1ms Pulse Width.
- 2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.



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Super Bright Yellow

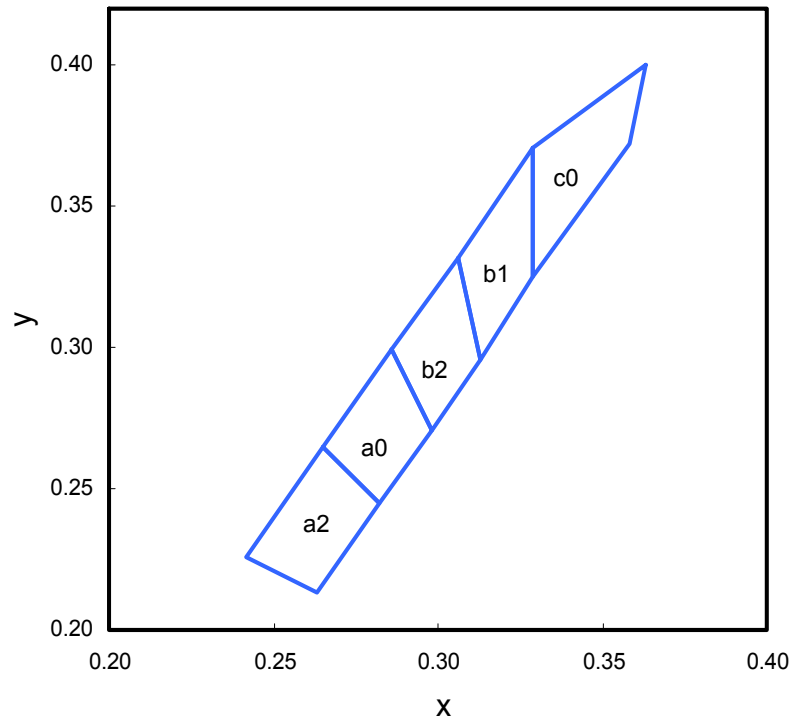


White



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White CIE



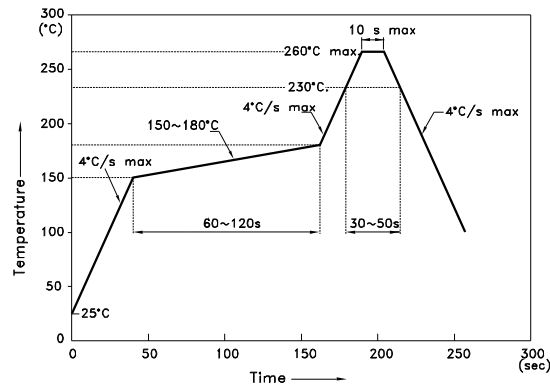
a2			a0			b2		
x	y		x	y		x	y	
0.263	0.213		0.282	0.245		0.298	0.271	
0.282	0.245		0.298	0.271		0.313	0.296	
0.265	0.265		0.286	0.299		0.306	0.332	
0.242	0.226		0.265	0.265		0.286	0.299	
b1			c0					
0.313	0.296		0.329	0.325				
0.329	0.325		0.358	0.372				
0.329	0.371		0.363	0.400				
0.306	0.332		0.329	0.371				

Notes:
Shipment may contain more than one chromaticity regions.
Orders for single chromaticity region are generally not accepted.
Measurement tolerance of the chromaticity coordinates is ±0.01.

APTB1612SYKQWDF

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.

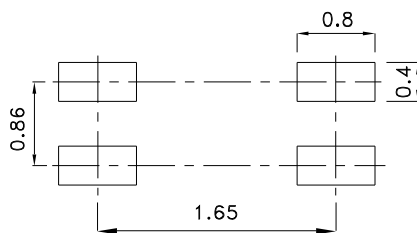
Reflow Soldering Profile For Lead-free SMT Process.



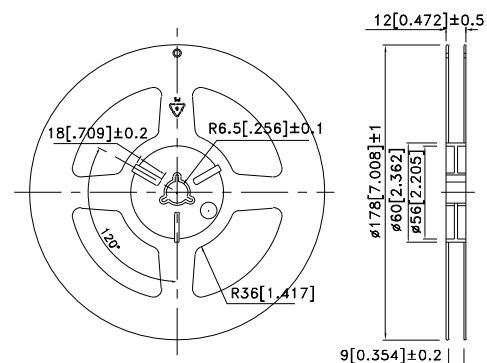
NOTES:

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.

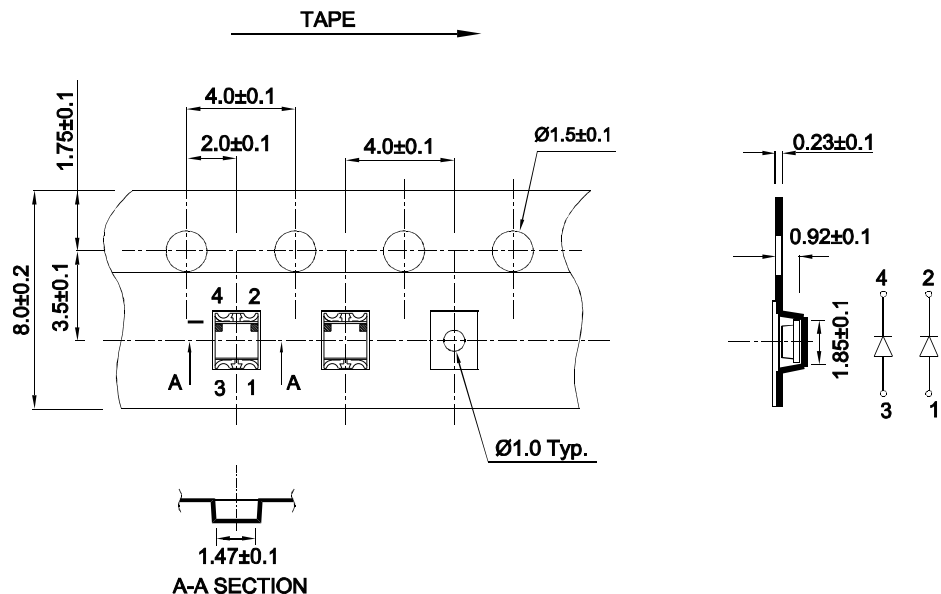
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension

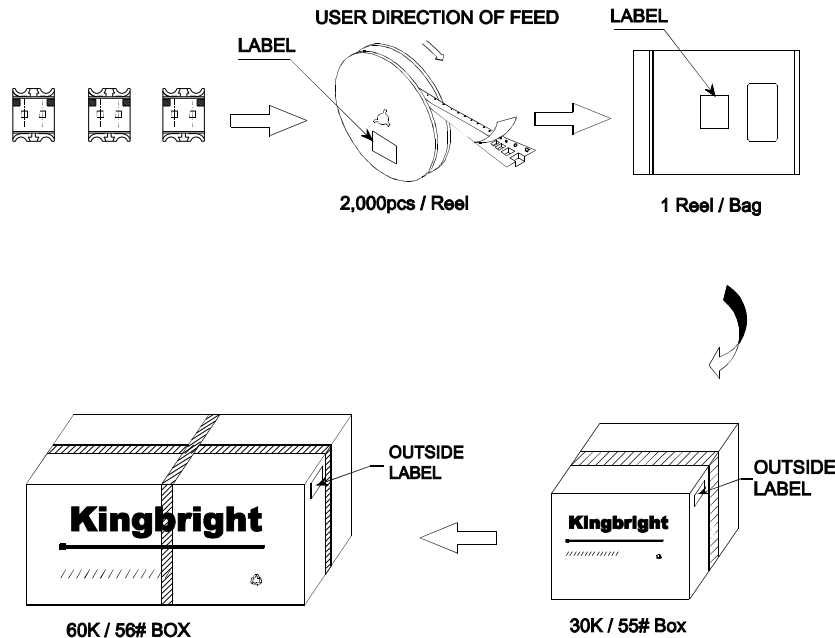


Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

APTB1612SYKQWDF



Kingbright		XXXXXXXXXX-XXXX
P/NO: XXXXXXXX		
QTY: XXXXpcs		
S/N: XXXX		
CODE: XXX		
COUNTRY: CN	QC DATE: XXX XX XXXX PASSED	
LOT NO:		
XXXXXXXXXX-XXXX		
1		RoHS Compliant

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