Kingbright

Part Number: CA04-41SYKWA

Super Bright Yellow

Features

- 0.4 inch digit height
- Low current operation.
- Excellent character appearance.
- Easy mounting on P.C. boards or sockets.
- Mechanically rugged.
- Standard:gray face, white segment.
- RoHS compliant.

Description

The Super Bright Yellow device is made with AlGaInP (on GaAs substrate) light emitting diode chip.

Package Dimensions& Internal Circuit Diagram
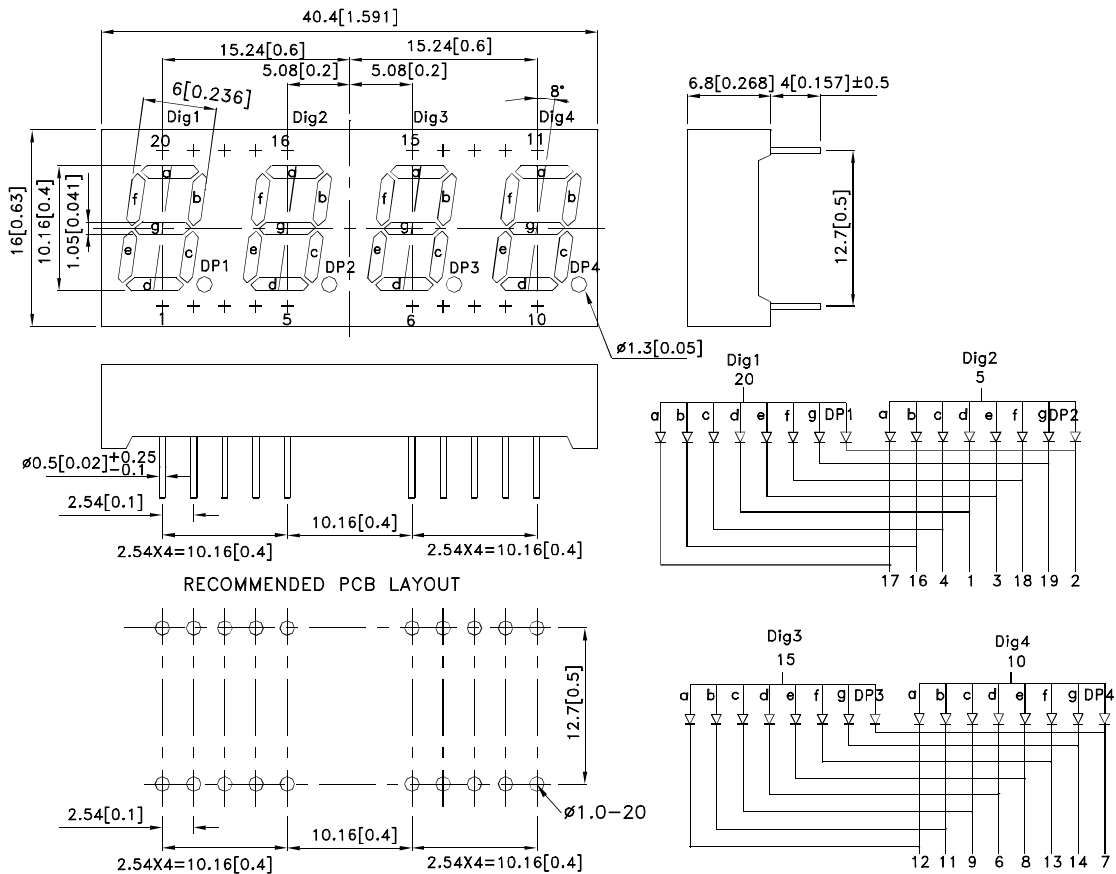
Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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Selection Guide

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	Typ.	
CA04-41SYKWA	Super Bright Yellow (AlGaInP)	White Diffused	52000	110000	Common Anode, Rt. Hand Decimal.
			*14000	*36000	

Notes:
1. 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	Super Bright Yellow	590		nm	I_F=20mA
λD [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	2.0	2.5	V	I_F=20mA
I_R	Reverse Current	Super Bright Yellow		10	uA	V_R=5V

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.
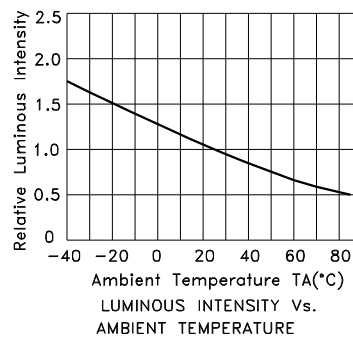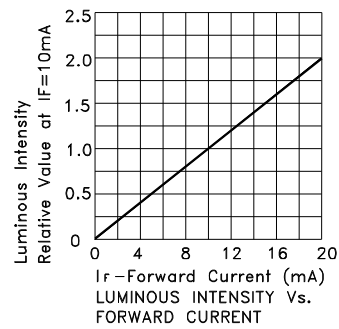
Absolute Maximum Ratings at TA=25°C

Parameter	Super Bright Yellow	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	175	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

Notes:
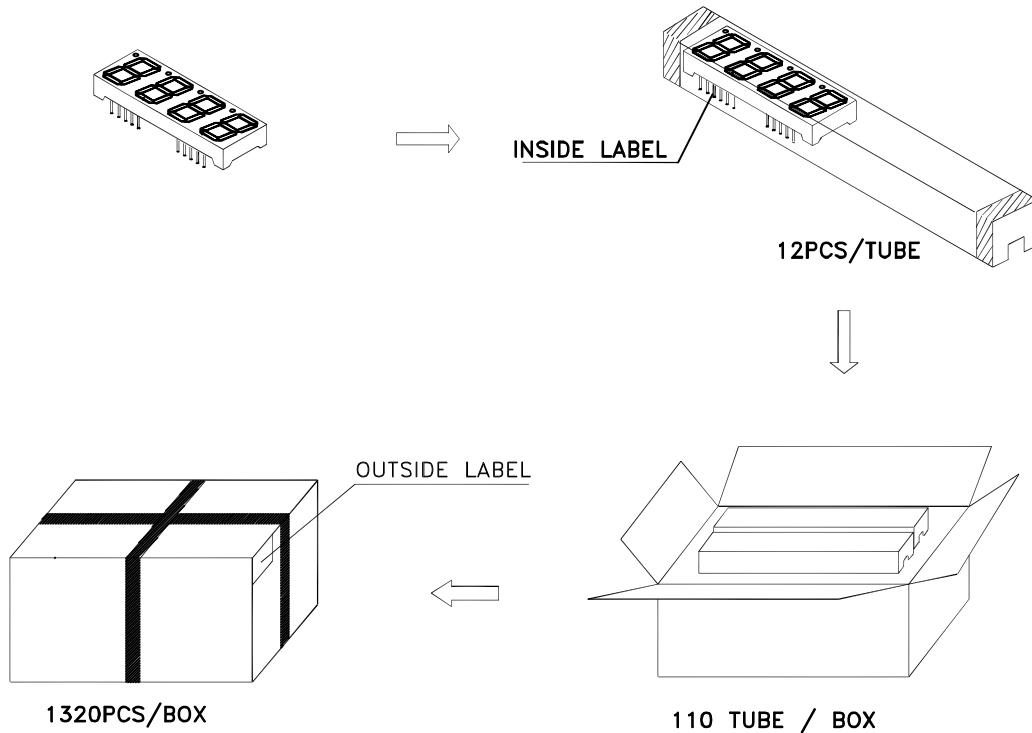1. 1/10 Duty Cycle, 0.1ms Pulse Width.
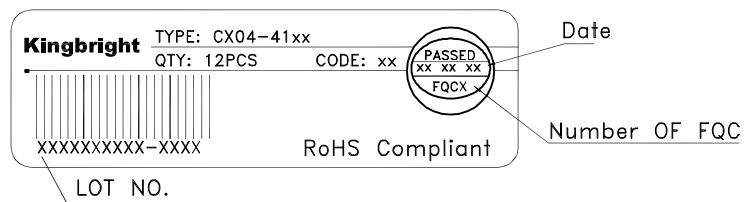2. 2mm below package base.

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RELATIVE INTENSITY Vs. WAVELENGTH

Super Bright Yellow   CA04-41SYKWA

FORWARD CURRENT Vs.
FORWARD VOLTAGE

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

FORWARD CURRENT
DERATING CURVE

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

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PACKING & LABEL SPECIFICATIONS   CA04-41SYKWA

INSIDE LABEL

12PCS/TUBE

OUTSIDE LABEL

1320PCS/BOX

110 TUBE / BOX

Inside Label On IC-tube

Kingbright TYPE: CX04-41xx
QTY: 12PCS   CODE: xx

PASSED
xx xx xx
FQCX

Date

Number OF FQC

XXXXXXXXX-XXXX   RoHS Compliant

LOT NO.

Outside Label On Box

XXXXXX

CX04-41xx   Bin Code

1320 PCS   XX
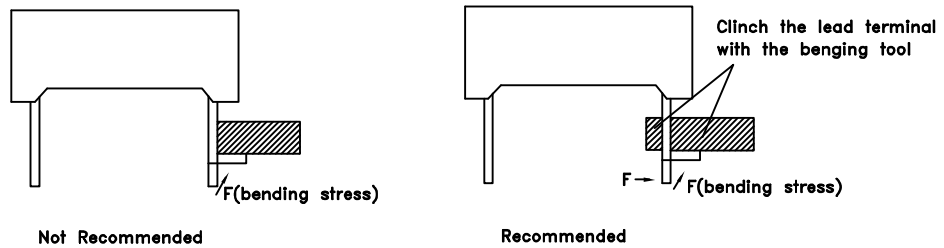
Number OF QA

QAx
xx xx xx
PASSED

Date

RoHS Compliant

# Kingbright
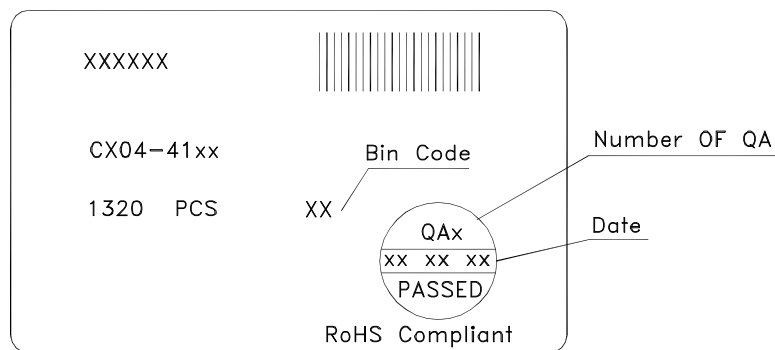
THROUGH HOLE DISPLAY MOUNTING METHOD

Lead Forming

Do not bend the component leads by hand without proper tools.
The leads should be bent by clinching the upper part of the lead
firmly such that the bending force is not exerted on the plastic body.

Clinch the lead terminal
with the benging tool

F(bending stress)

F→ F(bending stress)

Not Recommended

Recommended

Installation

1. The installation process should not apply stress to the lead terminals.
2. When inserting for assembly, ensure the terminal pitch matches the
   substrate board's hole pitch to prevent spreading or pinching the
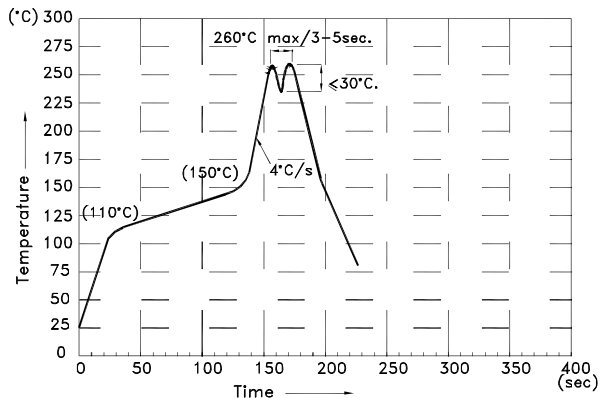   lead terminals.

F   F

Not Recommended
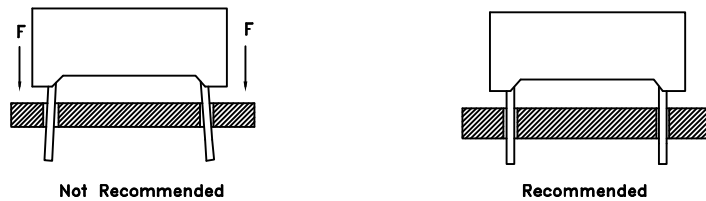
Recommended

3. The component shall be placed at least 5mm from edge of PCB
   to avoid damage caused excessive heat during wave soldering.

Not Recommended

>=5mm   >=5mm

Recommended

Kingbright
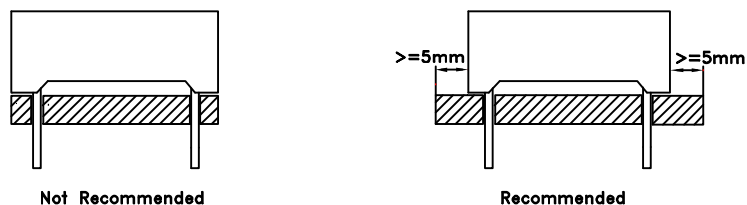
DISPLAY SOLDERING CONDITIONS

Wave Soldering Profile For Lead-free Through-hole LED.

NOTES:
1. Recommend the wave temperature 245°C~260°C.The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. During wave soldering , the PCB top-surface temperature should be kept below 105°C
5. No more than once.

Soldering General Notes:

1. Through-hole displays are incompatible with reflow soldering.

2. If components will undergo multiple soldering processes, or other processes where the components may be subjected to intense heat, please check with Kingbright for compatibility.

CLEANING

1. Mild "no-clean" fluxes are recommended for use in soldering.

2. If cleaning is required, Kingbright recommends to wash components with water only. Do not use harsh organic solvents for cleaning, because they may damage the plastic parts .And the devices should not be washed for more than one minute.

CIRCUIT DESIGN NOTES

1. Protective current-limiting resistors may be necessary to operate the Displays.

2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.

Recommended Set-up   invalid Set-up
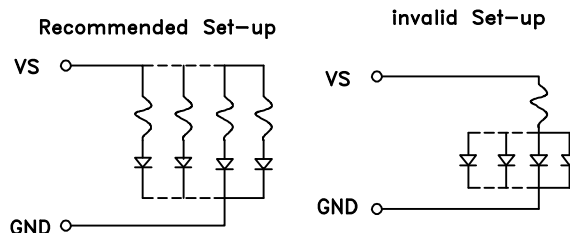
Detailed application notes are listed on our website.
http://www.kingbright.com/application_notes