Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

Kingbright
KB2785SYKW

For any questions, you can email us directly:
sales@integrated-circuit.com

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8.89mmx19.05mm LED LIGHT BAR

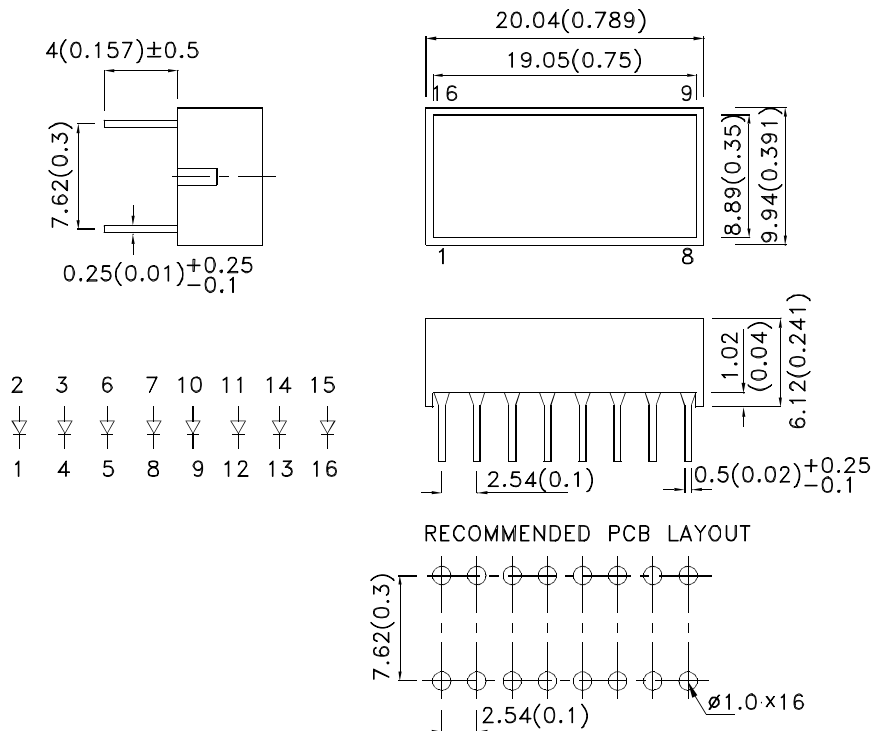Part Number: KB2785SYKW   Super Bright Yellow

Features

- Uniform light emitting area.
- Low current operation.
- Easily mounted on P.C. boards.
- Flush mountable.
- Excellent on/off contrast.
- Can be used with panels and legend mounts.
- RoHS compliant.

Description

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

Package Dimensions& Internal Circuit Diagram

4(0.157)±0.5

7.62(0.3)

0.25(0.01)$^{+0.25}_{-0.1}$

20.04(0.789)

19.05(0.75)

16   9

1   8

8.89(0.35)

9.94(0.391)

2   3   6   7   10   11   14   15

1   4   5   8   9   12   13   16

1.02(0.04)

6.12(0.241)

2.54(0.1)   0.5(0.02)$^{+0.25}_{-0.1}$

RECOMMENDED PCB LAYOUT

7.62(0.3)

2.54(0.1)   Ø1.0×16

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 (mcd) [1] @ 20mA	
			Min.	Typ.
KB2785SYKW	Super Bright Yellow (AlGaInP)	White Diffused	200	360
			*55	*96

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
$\lambda peak$	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.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or
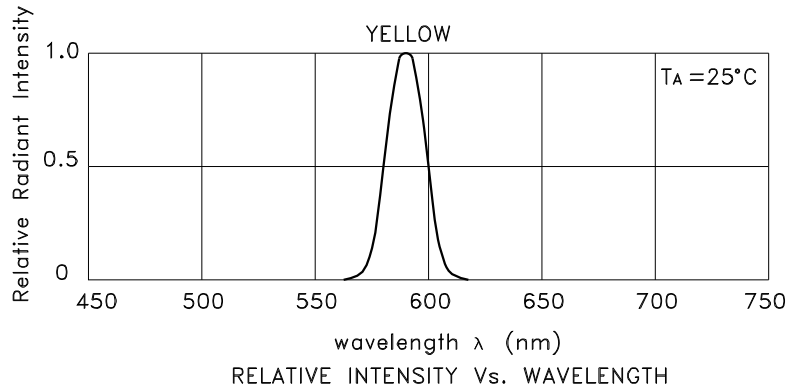   premature failure.

Absolute Maximum Ratings at TA=25°C

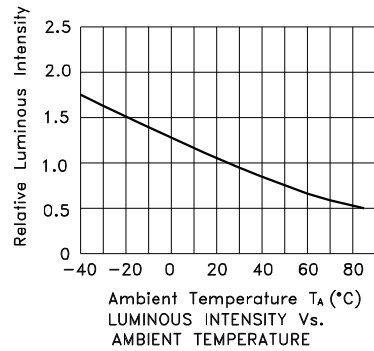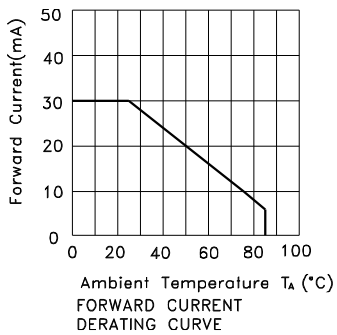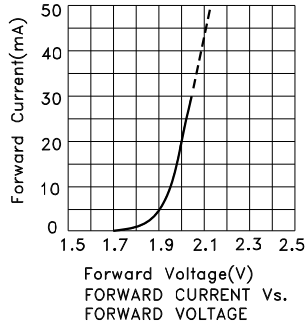| Parameter	Super Bright Yellow	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	175	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

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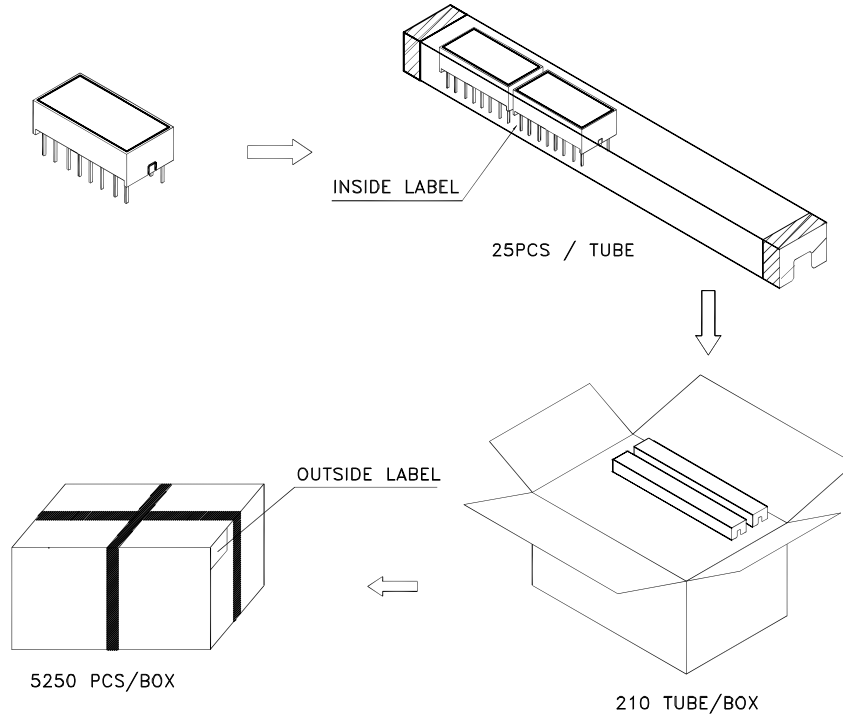2. 2mm below package base.

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RELATIVE INTENSITY Vs. WAVELENGTH

Super Bright Yellow   KB2785SYKW

FORWARD CURRENT Vs.
FORWARD VOLTAGE

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

FORWARD CURRENT
DERATING CURVE

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE
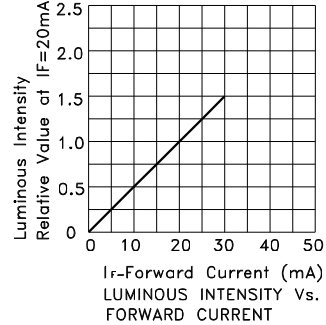
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PACKING & LABEL SPECIFICATIONS   KB2785SYKW

INSIDE LABEL

25PCS / TUBE

OUTSIDE LABEL

5250 PCS/BOX

210 TUBE/BOX

Inside Label On IC-tube

Kingbright   TYPE: KB2785xxx
                        QTY: 25 PCS CODE: xx   PASSED
                                                       xx xx xx   Date
                                                       FQCx

XXXXXXXXXX-XXXX   RoHS Compliant   Number OF FQC

LOT NO.

Outside Label On Box

XXXXXX

KB2785xxx   Bin Code   Number OF QA

5250   PCS   XX   QAx   Date
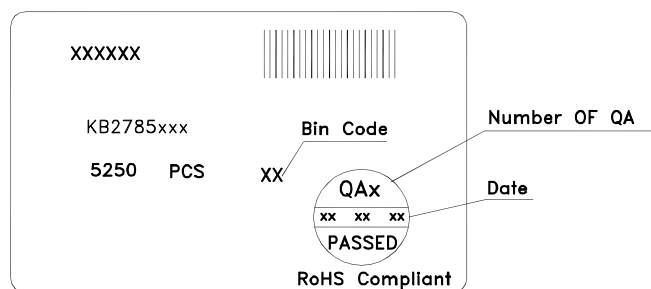   xx xx xx
                                  PASSED

          RoHS Compliant
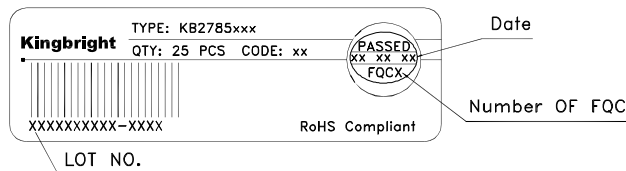
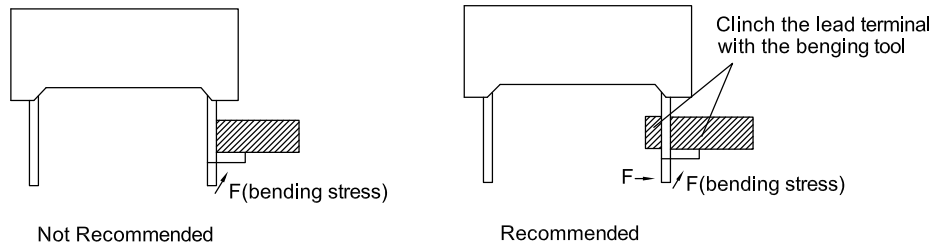## Terms and conditions for the usage of this document

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.

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

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## 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.
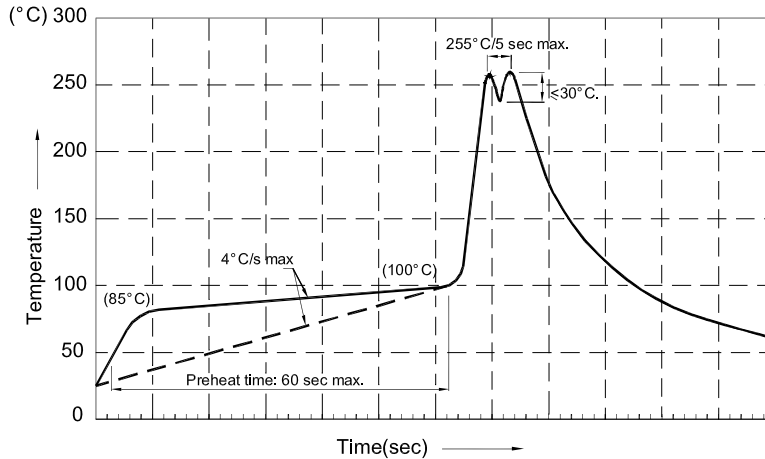

F   F

Not Recommended   Recommended
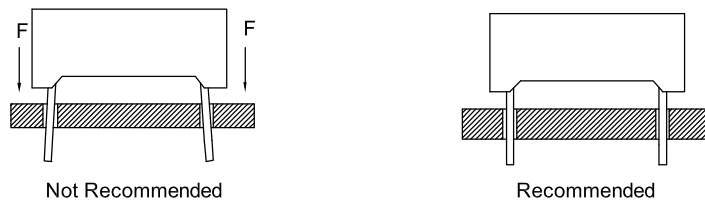
3. The component shall be placed at least 5mm from edge of PCB to avoid damage caused excessive heat during wave soldering.

>=5mm   >=5mm

Not Recommended   Recommended
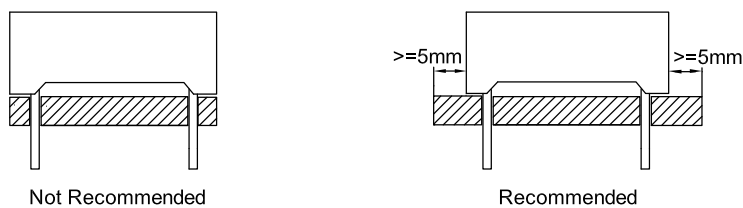
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Recommended Wave Soldering Profiles:

Notes:
1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.
7. During wave soldering, the PCB top-surface temperature should be kept below 105°C.

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 .
3. The cleaning process should take place at room temperature and the devices should not be washed for more than one minute.
4. When water is used in the cleaning process, immediately remove excess moisture from the component with forced-air drying afterwards.

CIRCUIT DESIGN NOTES
1. Protective current-limiting resistors may be necessary to operate the LEDs within the specified range.
2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.
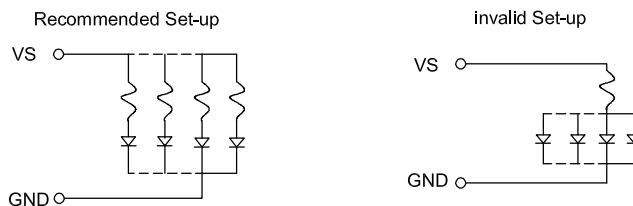
3. The driving circuit should be designed to protect the LED against reverse voltages and transient voltage spikes when the circuit is powered up or shut down.
4. The safe operating current should be chosen after considering the maximum ambient temperature of the operating environment.
5. Prolonged reverse bias should be avoided, as it could cause metal migration, leading to an increase in leakage current or causing a short circuit.