Kingbright

Part Number: KB-H100SURKW   Hyper Red

Features

● Uniform light emitting area.

● Low current operation.

● Easily mounted on P.C. boards.

● Flush mountable.

● Can be used with panels and legend mounts.

● RoHS compliant.

Description

The Hyper Red source color devices are made with Al-GaInP on GaAs substrate Light Emitting Diode.

Package Dimensions& Internal Circuit Diagram

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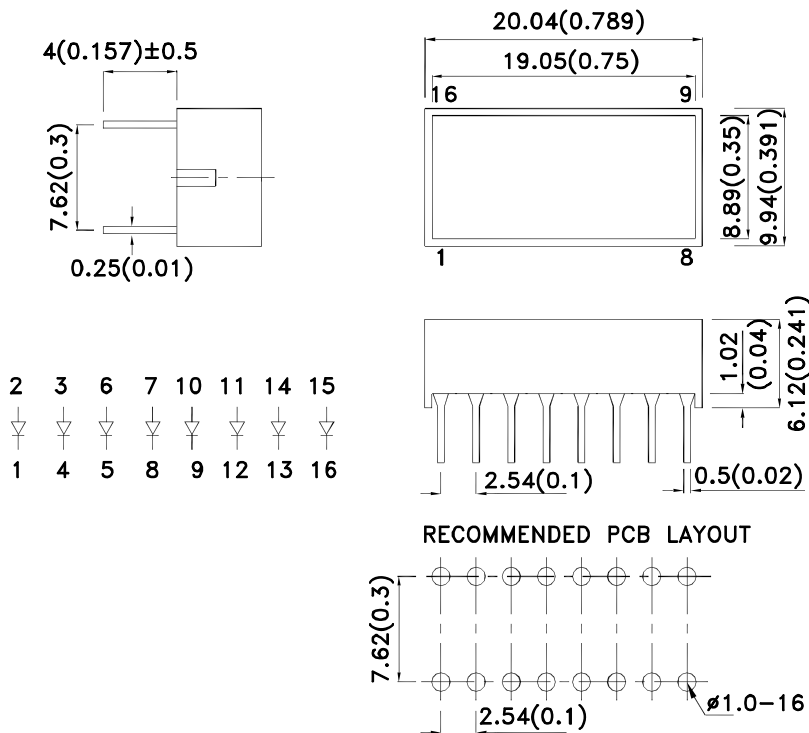
Notes:
1.All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2.The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

Kingbright

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [1] @ 20mA	
			Min.	Typ.
KB-H100SURKW	Hyper Red (AlGaInP)	White Diffused	120	230
			*40	*65

Note:
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	Hyper Red	650	*645		nm	I_F=20mA
λD [1]	Dominant Wavelength	Hyper Red	630	*630		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red	28			nm	I_F=20mA
C	Capacitance	Hyper Red	35			pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red	1.95		2.5	V	I_F=20mA
I_R	Reverse Current	Hyper Red			10	uA	V_R=5V

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
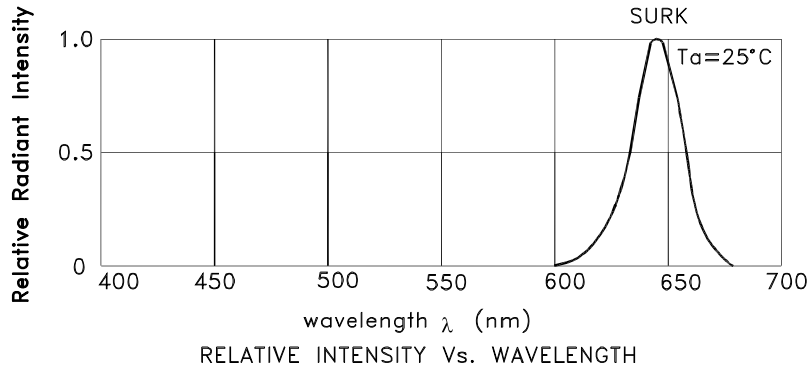* Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

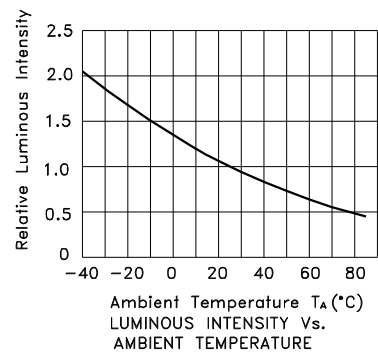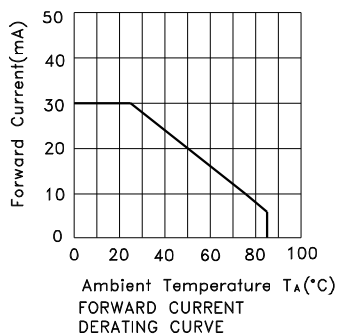| Parameter	Hyper Red	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	185	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

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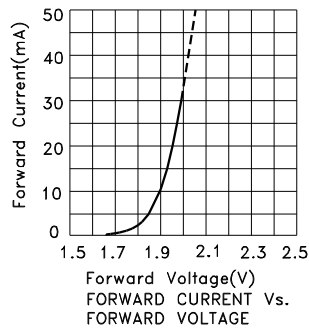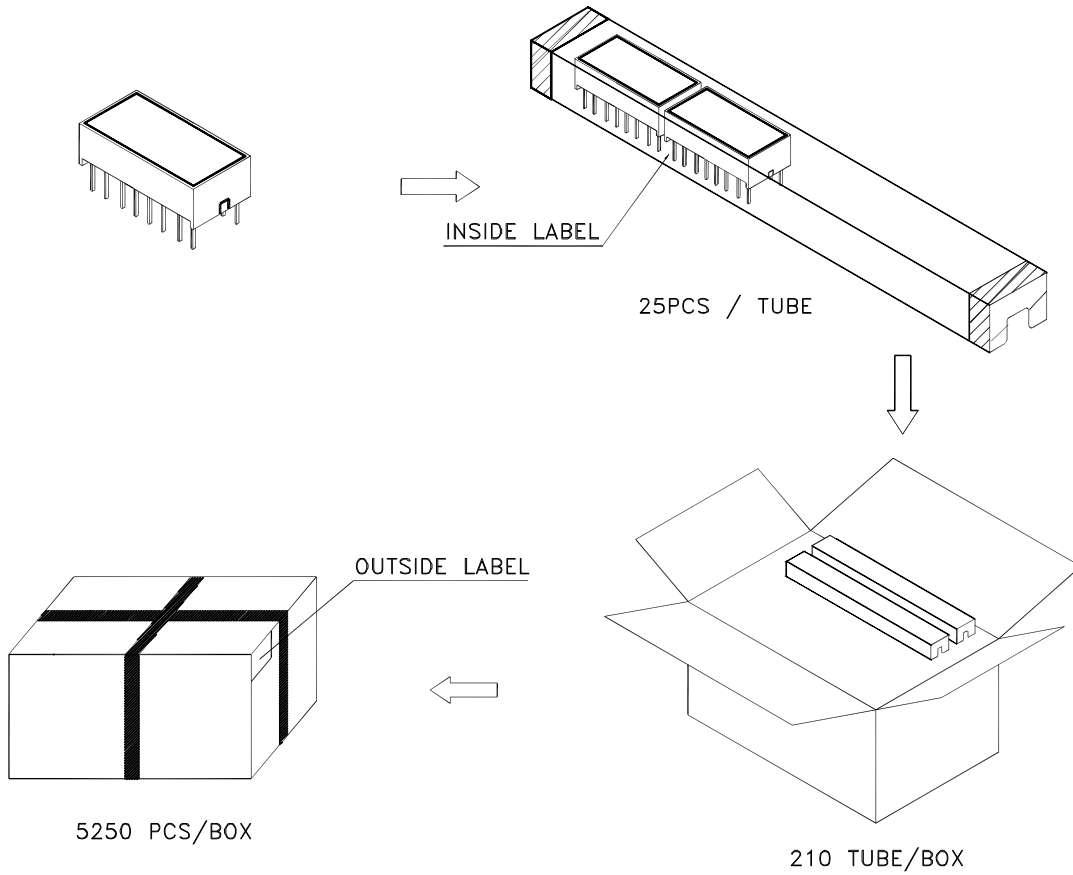1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.

Kingbright

Relative Radiant Intensity vs wavelength

SURK

Ta=25°C

1.0

0.5

0

400 450 500 550 600 650 700

wavelength λ (nm)

RELATIVE INTENSITY Vs. WAVELENGTH

Hyper Red   **KB-H100SURKW**

Forward Current(mA)

50
40
30
20
10
0

1.5 1.7 1.9 2.1 2.3 2.5

Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE

Luminous Intensity Relative Value at IF=20mA

2.5
2.0
1.5
1.0
0.5
0

0 10 20 30 40 50

I$_F$-Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT

Forward Current(mA)

50
40
30
20
10
0

0 20 40 60 80 100

Ambient Temperature T$_A$(°C)
FORWARD CURRENT
DERATING CURVE

Relative Luminous Intensity

2.5
2.0
1.5
1.0
0.5
0

−40 −20 0 20 40 60 80

Ambient Temperature T$_A$(°C)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

Kingbright

PACKING & LABEL SPECIFICATIONS   KB-H100SURKW

INSIDE LABEL

25PCS / TUBE

210 TUBE/BOX

OUTSIDE LABEL

5250 PCS/BOX

Inside Label On IC-tube

Kingbright

TYPE:KB-H100xxx

QTY: 25 PCS   CODE: xx

PASSED
xx xx xx
FQCX

Date

Number OF FQC

XXXXXXXXX-XXXX

RoHS Compliant

LOT NO.

Outside Label On Box

XXXXXX

KB-H100xxx

5250   PCS

Bin Code

XX
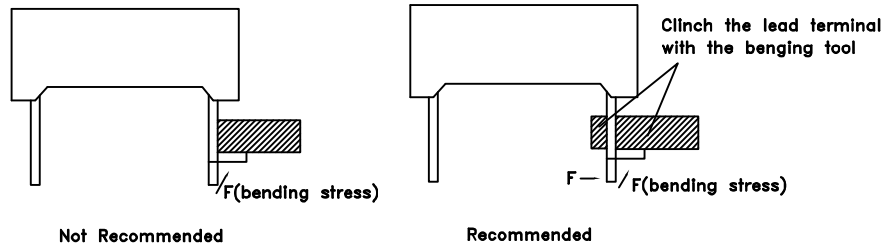
Number OF QA

QAx

xx xx xx

PASSED

Date

RoHS Compliant

Kingbright
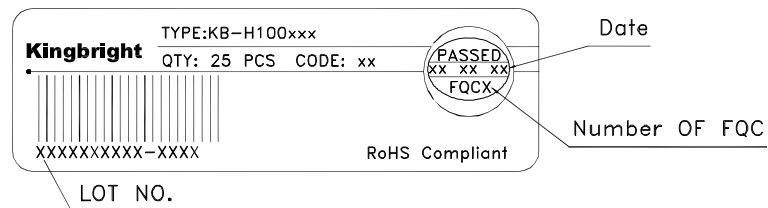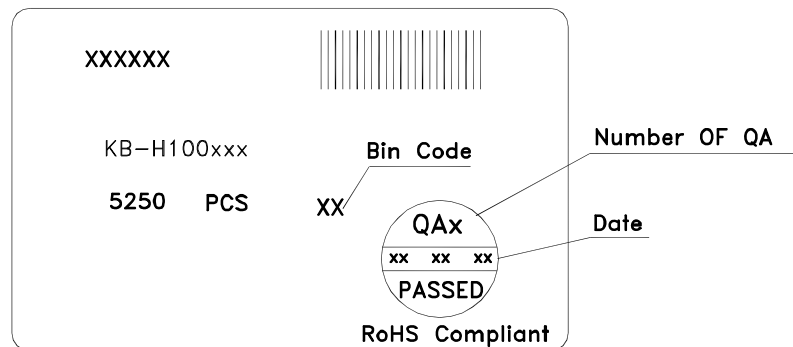
## THROUGH HOLE DISPLAY MOUNTING METHOD

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.


F(bending stress)

Not Recommended

Clinch the lead terminal with the benging tool

F— F(bending stress)

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
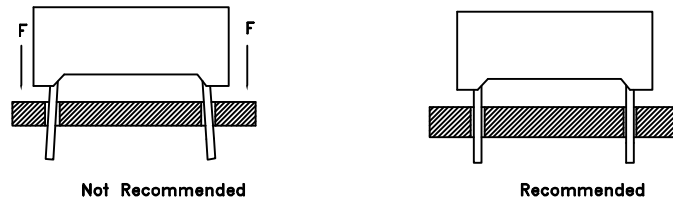
Recommended

DISPLAY SOLDERING CONDITIONS

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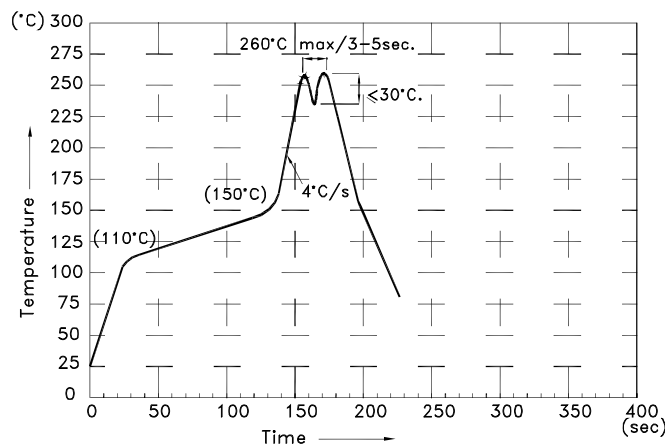
NOTES:
1. Recommend the wave temperature 245°C~260°C.The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. During wave soldering , the PCB top-surface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

Kingbright

Soldering General Notes:

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

b. 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

VS

GND

invalid Set-up

VS

GND