# Kingbright

Part Number: DD-12SURKWB   Hyper Red

Features

- Suitable for level indicators.
- Low current operation.
- Wide viewing angle.
- Mechanically rugged.
- Different colors in one unit available.
- Black face, white segment.
- 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

12 NO PIN
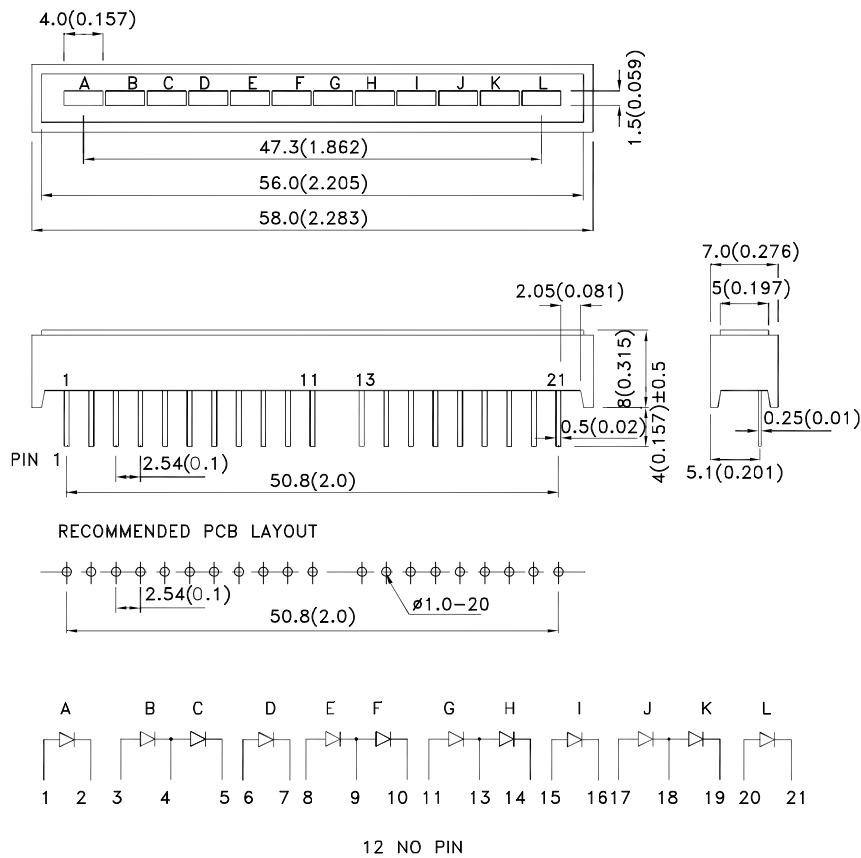
Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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Selection Guide

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	**Typ.**	
DD-12SURKWB	Hyper Red (AlGaInP)	White Diffused	52000	95000	12 Segments Bar graph-Display
			*14000	*30000	

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	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.
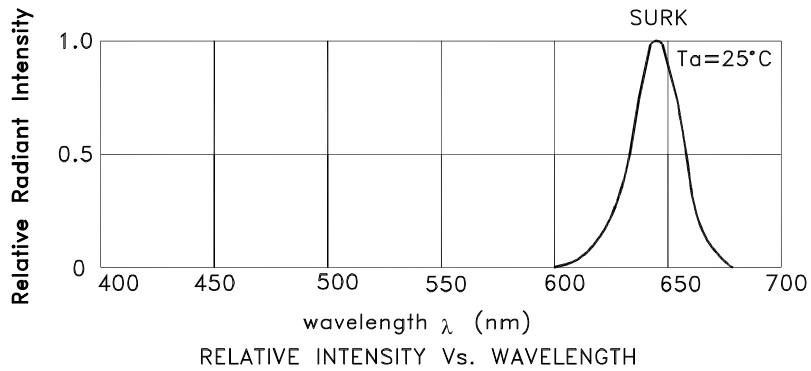* Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

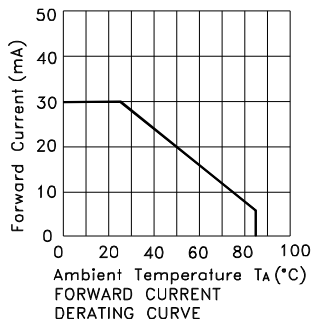| Parameter	Hyper Red	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	185	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

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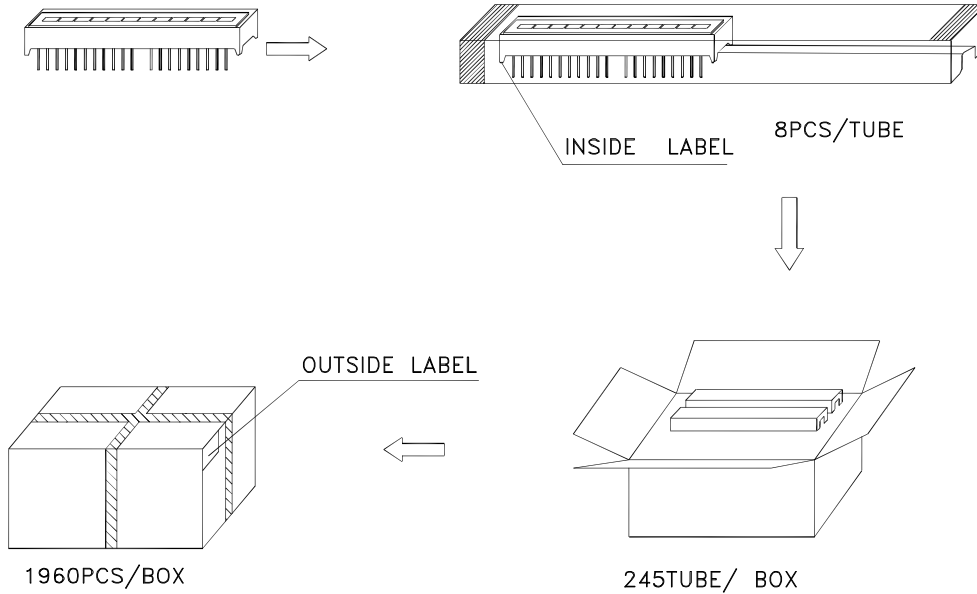1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
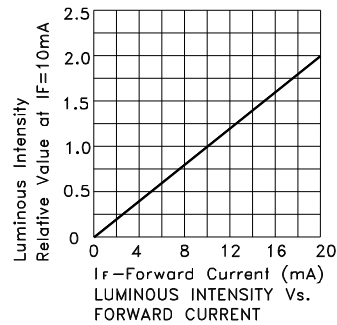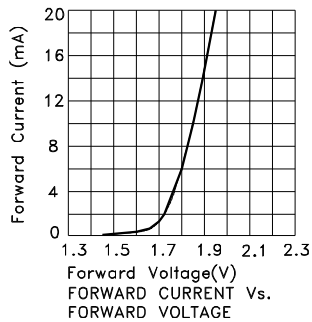
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RELATIVE INTENSITY Vs. WAVELENGTH

Hyper Red   **DD-12SURKWB**

FORWARD CURRENT Vs.
FORWARD VOLTAGE

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

FORWARD CURRENT
DERATING CURVE

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

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INSIDE LABEL   8PCS/TUBE

OUTSIDE LABEL

1960PCS/BOX   245TUBE/ BOX

Inside Label On IC−tube

Kingbright   TYPE: DD−xxx   Date
QTY: 8 PCS   CODE: xx   PASSED
           xx xx xx
           FQCx
       RoHS Compliant   Number OF FQC
xxxxxxxxx−xxxx

LOT NO.

Outside Label On Box

XXXXXX

DD−xxx   Bin Code   Number OF QA

1960 PCS   XX

          QAx   Date
          xx xx xx
          PASSED

RoHS Compliant

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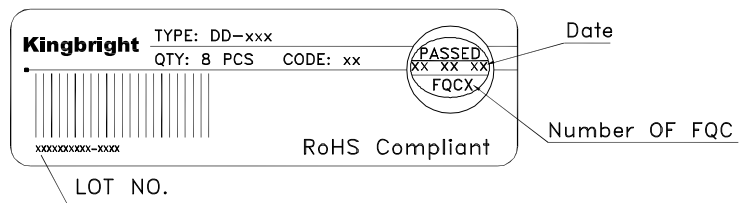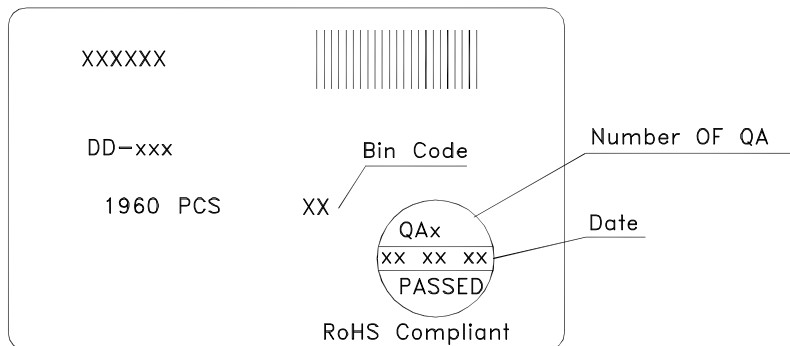
Lead Forming

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 → F(bending stress)

F(bending stress)

Not Recommended

Recommended
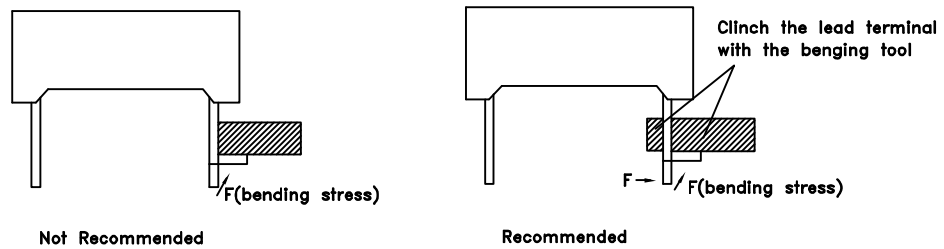
Installation

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.
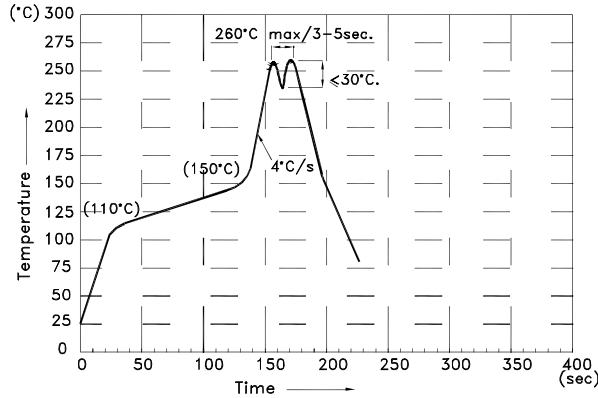
F   F

Not Recommended
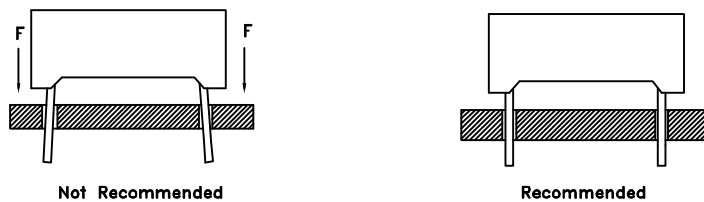
Recommended

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

Kingbright
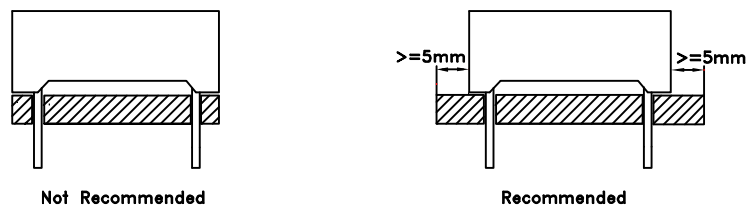
DISPLAY SOLDERING CONDITIONS

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.