Kingbright

Part Number: PSA08-12EWA   High Efficiency Red

Features

● 0.8 inch character height.

● Low current operation.

● High contrast and light output.

● Common cathode and common anode available.

● Easy mounting on P.C. boards or sockets.

● Mechanically rugged.

● Standard : gray face, white segment.

● RoHS compliant.

Description

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

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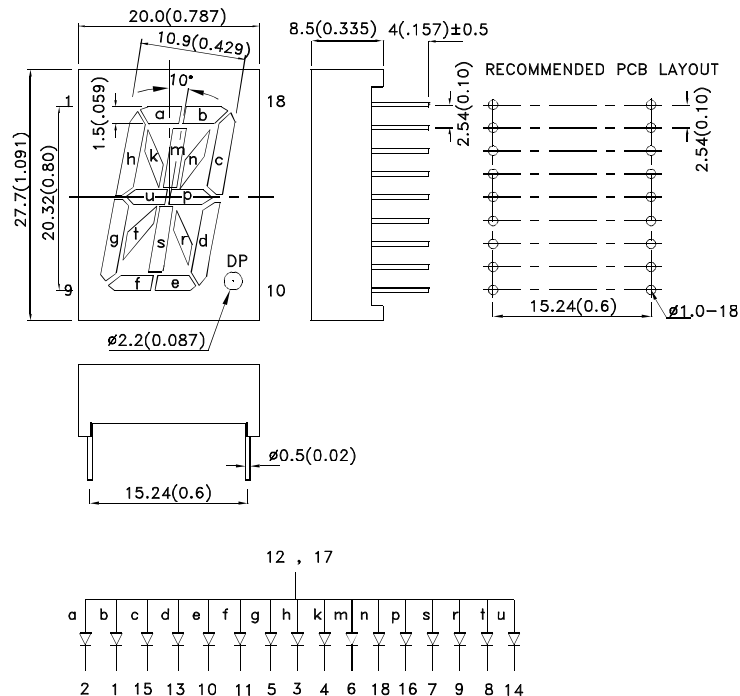
Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

Kingbright

Selection Guide

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA Min.	Iv (ucd) [1] @ 10mA Typ.	Description
PSA08-12EWA	High Efficiency Red (GaAsP/GaP)	White Diffused	3600	7700	Common Anode

Note:
1. Luminous intensity/ luminous Flux: +/-15%.

Electrical / Optical Characteristics at TA=25°C

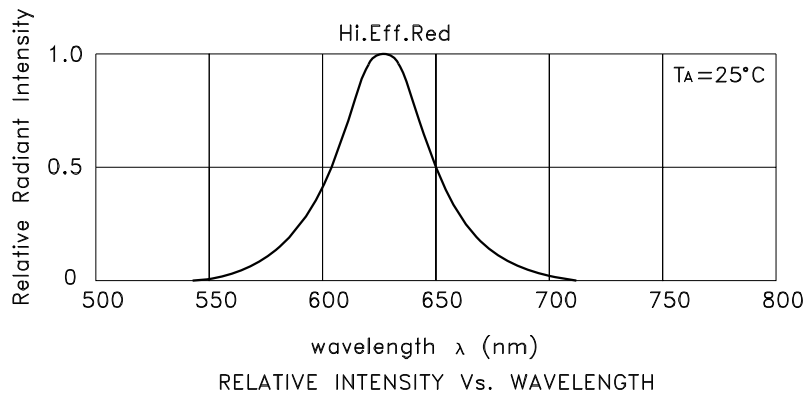| Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda peak$	Peak Wavelength	High Efficiency Red	627		nm	I_F=20mA
λD [1]	Dominant Wavelength	High Efficiency Red	625		nm	I_F=20mA
$\Delta\lambda 1/2$	Spectral Line Half-width	High Efficiency Red	45		nm	I_F=20mA
C	Capacitance	High Efficiency Red	15		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	High Efficiency Red	2.0	2.5	V	I_F=20mA
I_R	Reverse Current	High Efficiency Red		10	uA	V_R=5V

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
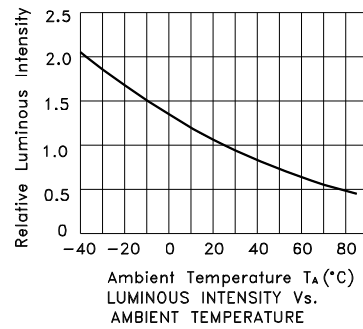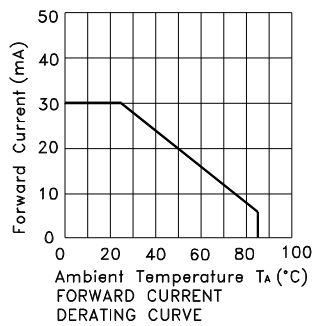
Absolute Maximum Ratings at TA=25°C
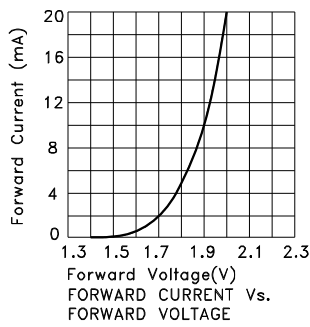
Parameter	High Efficiency Red	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	160	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

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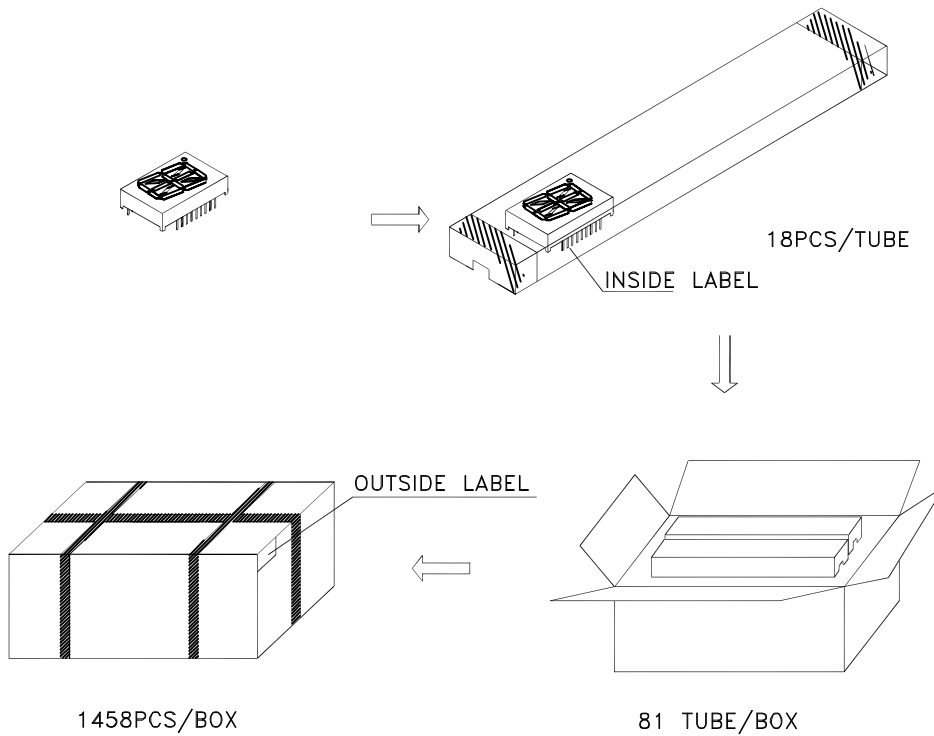1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.

Kingbright

Hi.Eff.Red

Relative Radiant Intensity vs wavelength λ (nm)

$T_A = 25°C$

RELATIVE INTENSITY Vs. WAVELENGTH

High Efficiency Red   PSA08-12EWA

Forward Current (mA) vs Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE

Luminous Intensity Relative Value at IF=10mA vs I_F—Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT

Forward Current (mA) vs Ambient Temperature T_A (°C)
FORWARD CURRENT
DERATING CURVE

Relative Luminous Intensity vs Ambient Temperature T_A (°C)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

Kingbright

PACKING & LABEL SPECIFICATIONS **PSA08-12EWA**

18PCS/TUBE

INSIDE LABEL

OUTSIDE LABEL

1458PCS/BOX

81 TUBE/BOX

Inside Label On IC-tube

Kingbright TYPE: PSx08-12xxx QTY: 18 PCS CODE: xx
PASSED
xx xx xx
FQCx

Date

Number OF FQC

XXXXXXXXX-XXXX RoHs Compliant

LOT NO.

Outside Label On Box

XXXXXX

PSx08-12xxx Bin Code

1458 PCS XX

Number OF QA

QAx
xx xx xx
PASSED

Date

RoHS Compliant

Kingbright
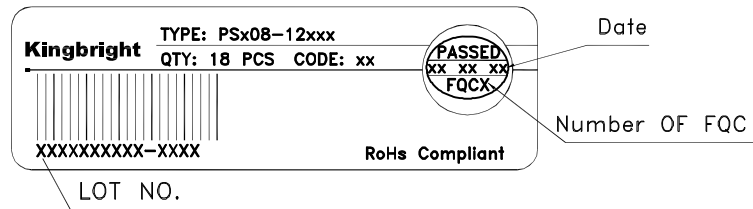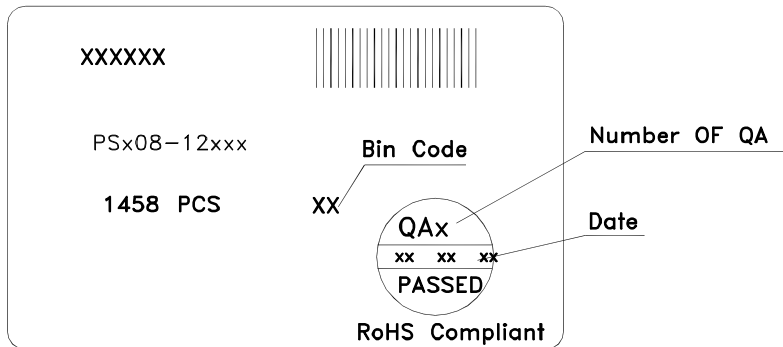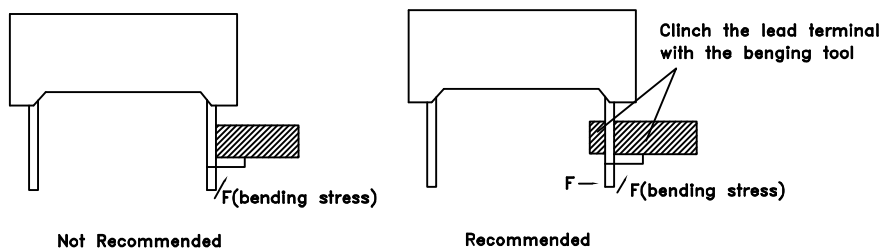
## THROUGH HOLE DISPLAY MOUNTING METHOD

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(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.

Not Recommended
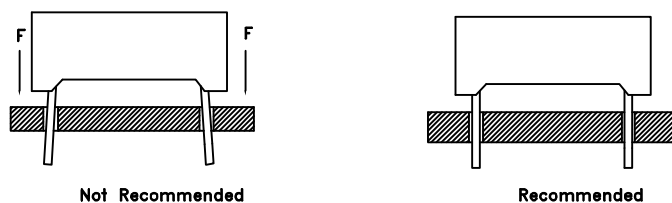
Recommended

DISPLAY SOLDERING CONDITIONS

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

260°C max/3-5sec.

<30°C.

(150°C)   4°C/s

(110°C)
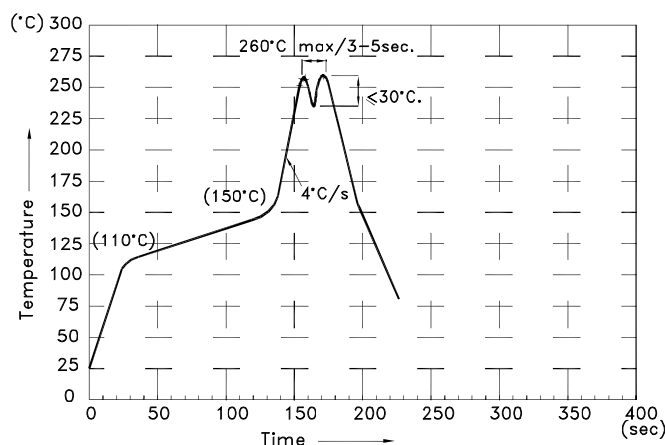
NOTES:
1. Recommend the wave temperature 245°C~260°C.The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. During wave soldering , the PCB top-surface 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   Invalid Set-up

VS   VS

GND   GND