Kingbright

Part Number: SA56-11HWA   Bright Red

Features

- 0.56 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 Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

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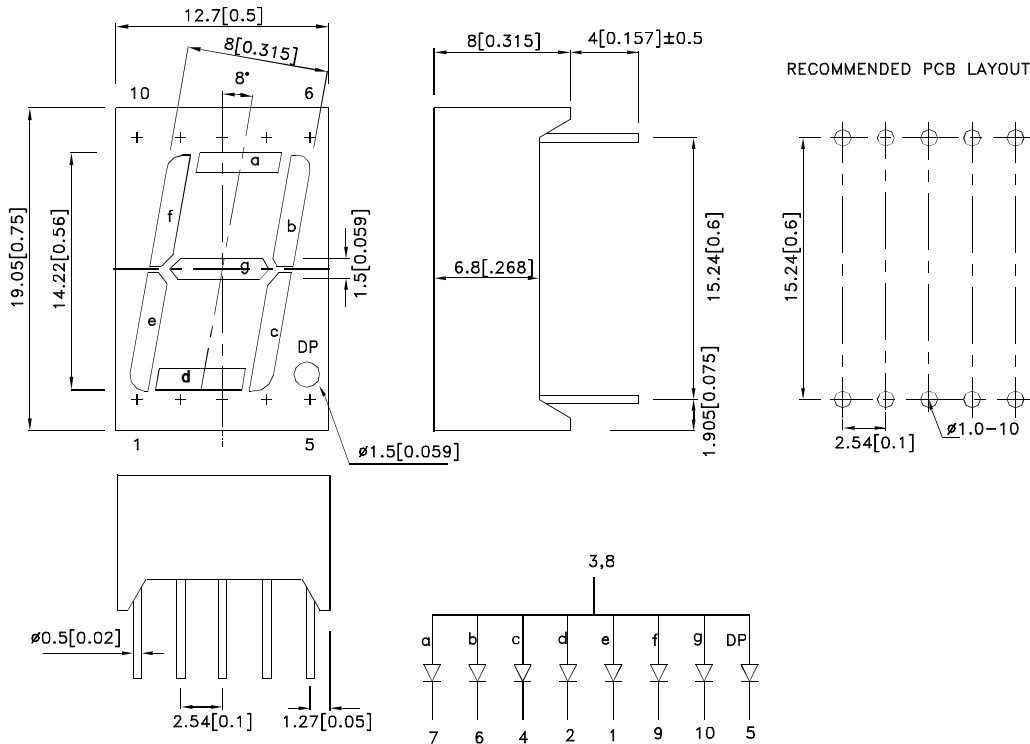
Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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Selection Guide

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA Min.	Iv (ucd) [1] @ 10mA Typ.	Description
SA56-11HWA	Bright Red (GaP)	White Diffused	900	1400	Common Anode, Rt. Hand Decimal.
			*360	*600	

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	Bright Red	700	*700		nm	I$_F$=20mA
λD [1]	Dominant Wavelength	Bright Red	660	*635		nm	I$_F$=20mA
Δλ1/2	Spectral Line Half-width	Bright Red	45			nm	I$_F$=20mA
C	Capacitance	Bright Red	40			pF	V$_F$=0V;f=1MHz
V$_F$ [2]	Forward Voltage	Bright Red	2.25		2.5	V	I$_F$=20mA
I$_R$	Reverse Current	Bright Red			10	uA	V$_R$=5V

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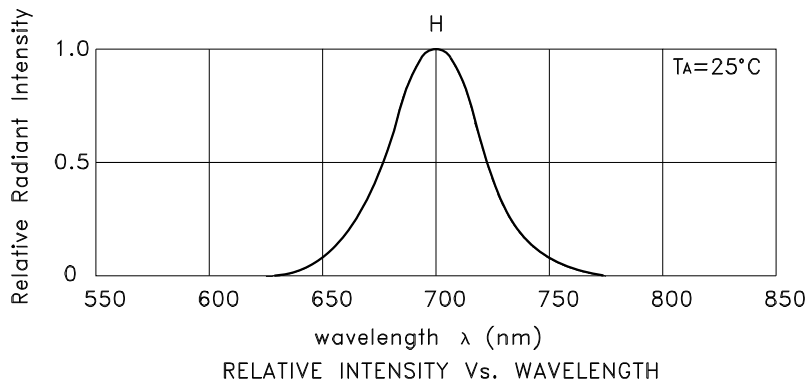 *Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

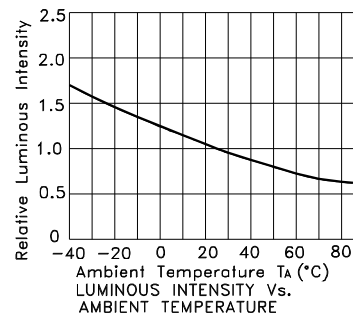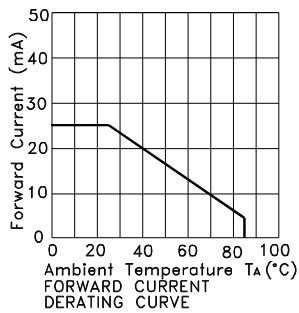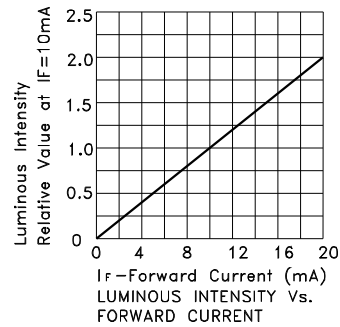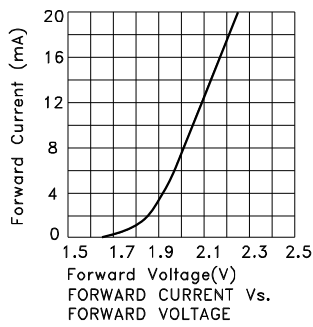| Parameter	Bright Red	Units
Power dissipation	62.5	mW
DC Forward Current	25	mA
Peak Forward Current [1]	130	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

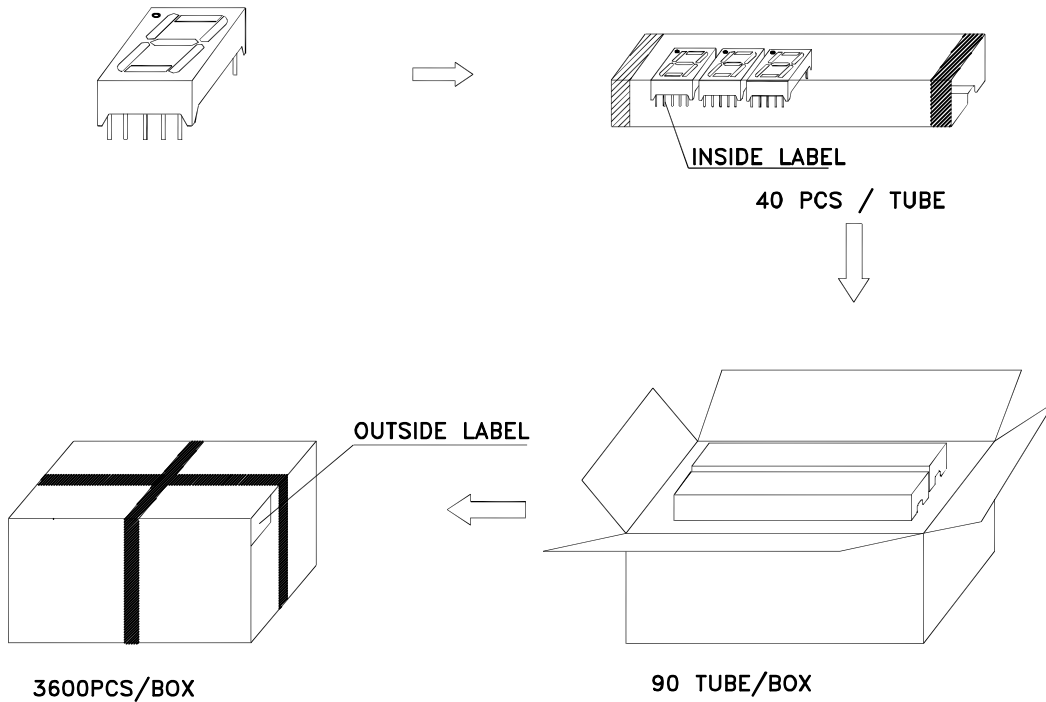Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.

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RELATIVE INTENSITY Vs. WAVELENGTH

Bright Red   **SA56-11HWA**

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   **SA56-11HWA**

INSIDE LABEL

40 PCS / TUBE

OUTSIDE LABEL

3600PCS/BOX

90 TUBE/BOX

Inside Label On IC-TUBE

Kingbright TYPE: SX56-11XXX
QTY: 40 PCS   CODE: xx

PASSED
xx xx xx
FQCX

Date

Number OF FQC

xxxxxxxxx-xxxx   RoHS Compliant

LOT NO.

Outside Label On Box

XXXXXX

SX56-11XXX   Bin Code

3600 PCS   XX

Number OF QA

QAx
xx xx xx
PASSED

Date

RoHS Compliant

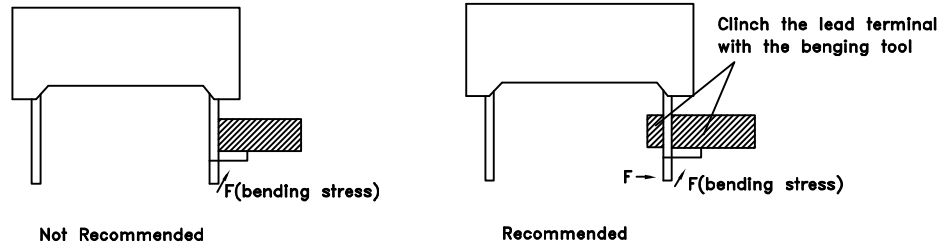# Kingbright
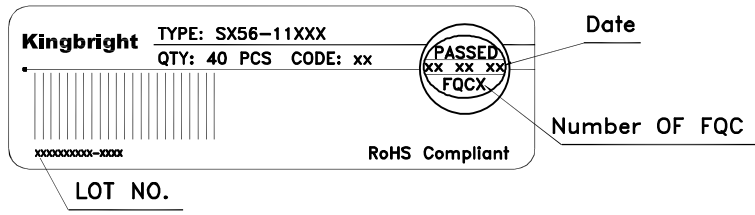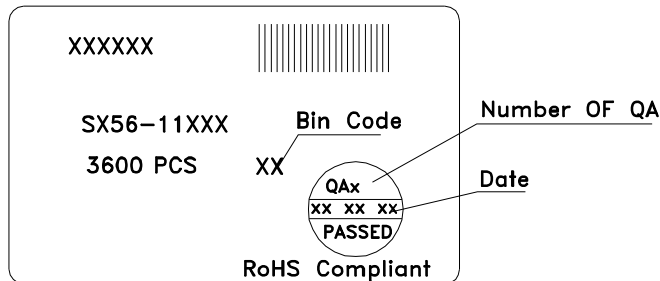
## THROUGH HOLE DISPLAY MOUNTING METHOD

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.
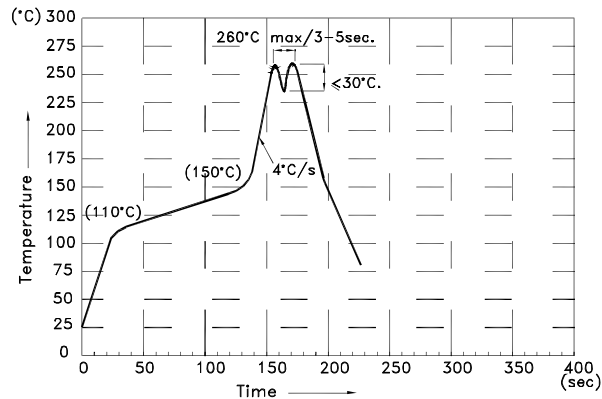
F   F

Not Recommended
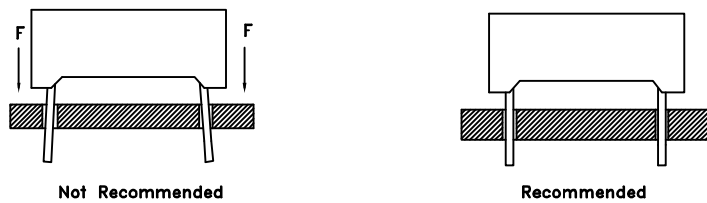
Recommended

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
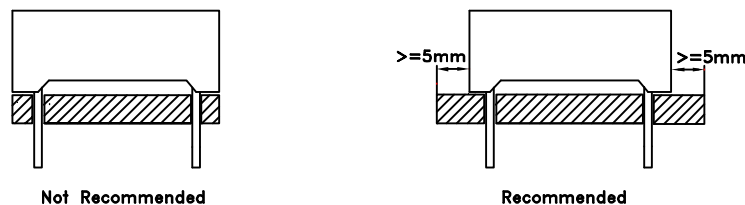
DISPLAY SOLDERING CONDITIONS

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.