Kingbright

Part Number: TC07-11SEKWA

Super Bright Orange

Features

● 0.7 inch matrix height.

● Dot size 2mm.

● Low current operation.

● Compatible with ASCII and EBCDIC codes.

● Stackable vertically and horizontally.

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

● Mechanically rugged.

● Standard: gray face, white dot.

● RoHS compliant.

Description

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

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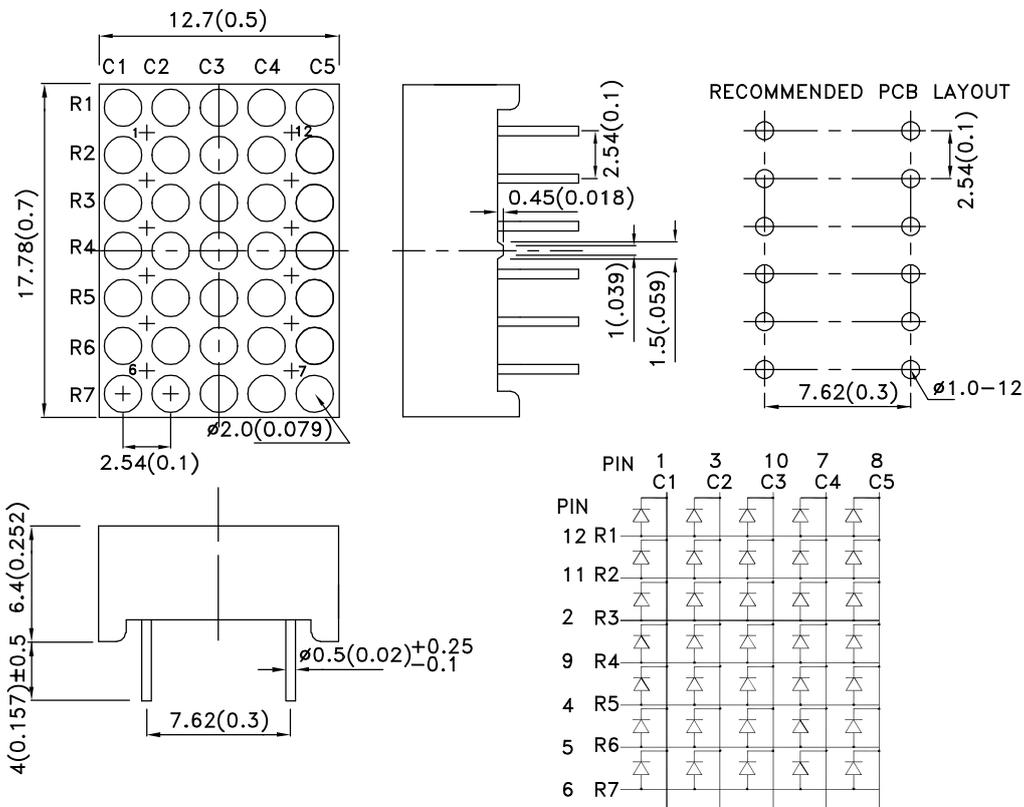
Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

SPEC NO: DSAF4454   REV NO: V.10A   DATE: MAY/16/2013   PAGE: 1 OF 6

APPROVED: WYNEC   CHECKED: Joe Lee   DRAWN: Q.M..CHEN   ERP: 1332001240

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Selection Guide

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	Typ.	
TC07-11SEKWA	Super Bright Orange (AlGaInP)	White Diffused	52000	120000	Column Cathode
			*21000	*42000	

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	Super Bright Orange	610		nm	I$_F$=20mA
λD [1]	Dominant Wavelength	Super Bright Orange	601		nm	I$_F$=20mA
Δλ1/2	Spectral Line Half-width	Super Bright Orange	29		nm	I$_F$=20mA
C	Capacitance	Super Bright Orange	15		pF	V$_F$=0V;f=1MHz
V$_F$ [2]	Forward Voltage	Super Bright Orange	2.1	2.5	V	I$_F$=20mA
I$_R$	Reverse Current	Super Bright Orange		10	uA	V$_R$=5V

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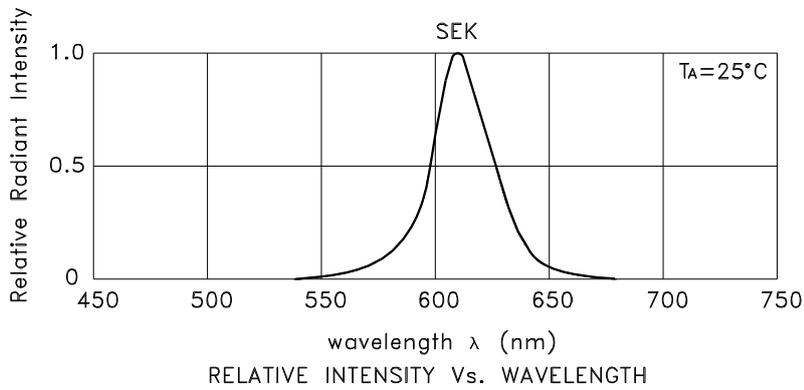3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

Parameter	Super Bright Orange	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	195	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

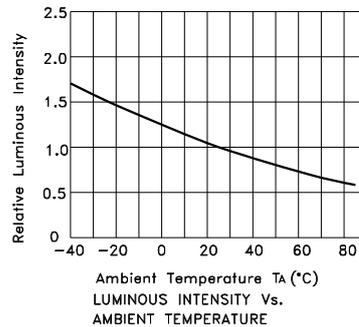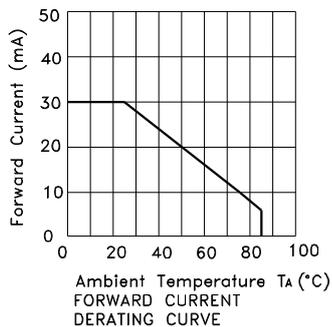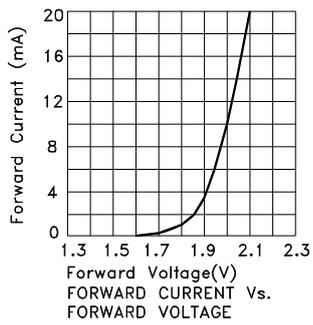Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.

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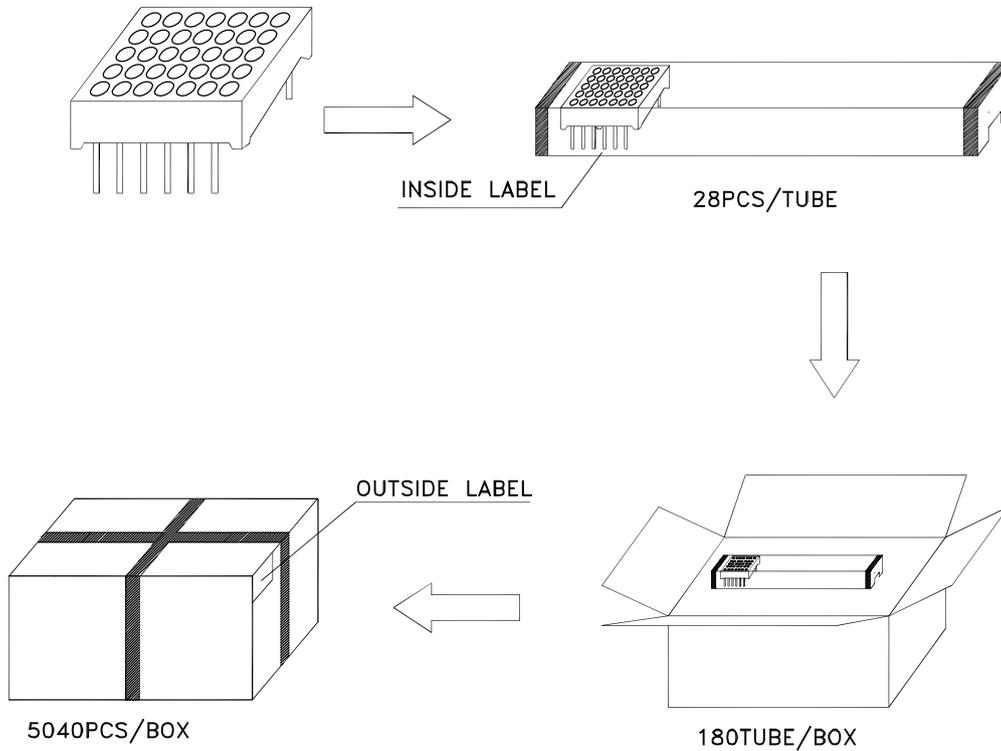
$T_A = 25°C$

Relative Radiant Intensity

1.0

0.5

0

450   500   550   600   650   700   750

wavelength λ (nm)

RELATIVE INTENSITY Vs. WAVELENGTH

Super Bright Orange   TC07-11SEKWA

Forward Current (mA)

20
16
12
8
4
0

1.3 1.5 1.7 1.9 2.1 2.3

Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE

Luminous Intensity
Relative Value at IF=10mA

2.5
2.0
1.5
1.0
0.5
0

0   4   8   12   16   20

IF—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 TA (°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 TA (°C)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

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PACKING & LABEL SPECIFICATIONS   **TC07-11SEKWA**

INSIDE LABEL

28PCS/TUBE

OUTSIDE LABEL

5040PCS/BOX

180TUBE/BOX

Inside Label On IC-TUBE

Kingbright   TYPE: Tx07-11xxx
             QTY: 28 PCS   CODE: xx

PASSED
XX XX XX
FQCX

Date

XXXXXXXXXX-XXXX   RoHS Compliant

Number OF FQC

LOT NO.

Outside Label On Box

XXXXXX

Tx07-11xxx

5040   PCS   XX

Bin Code

Number OF QA

QAx
xx xx xx
PASSED

Date

RoHS Compliant

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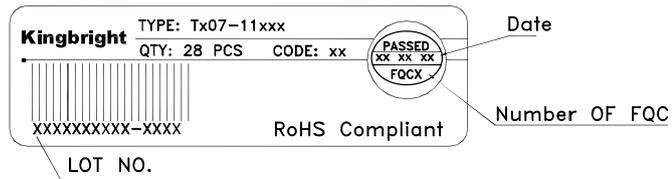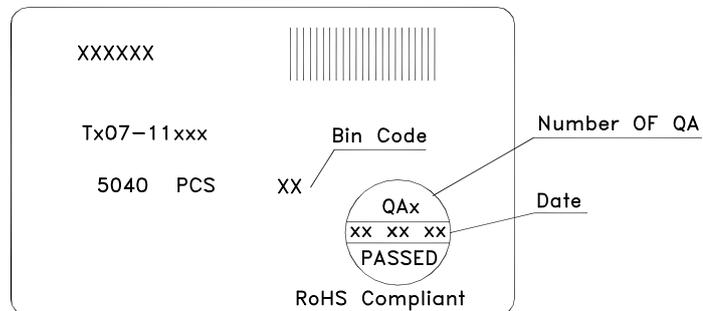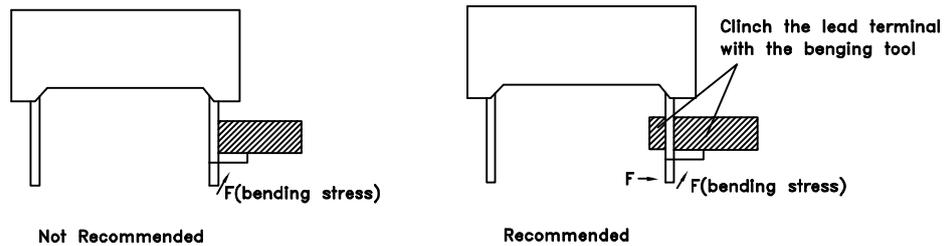
THROUGH HOLE DISPLAY MOUNTING METHOD

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.

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

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

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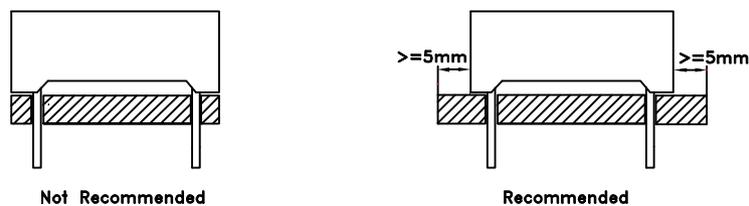
DISPLAY SOLDERING CONDITIONS

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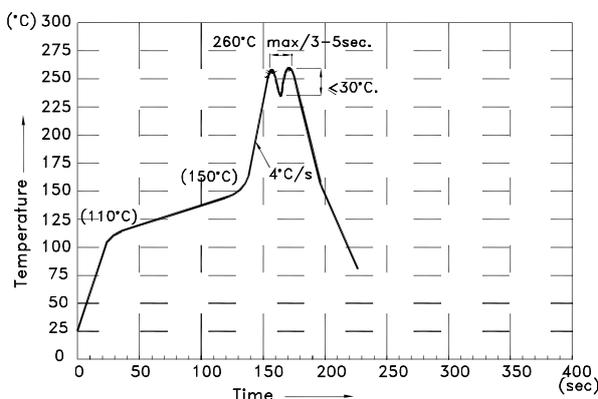
NOTES:
1. Recommend the wave temperature 245°C~260°C. The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. During wave soldering , the PCB top-surface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

Recommended Set-up   invalid Set-up
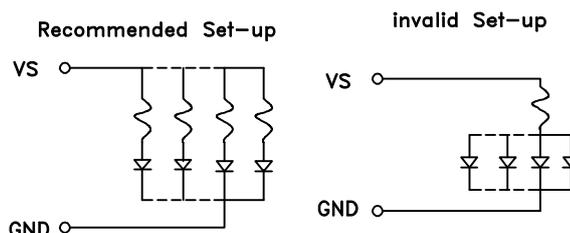
Detailed application notes are listed on our website.
http://www.kingbright.com/application_notes