# Kingbright

Part Number: DA56-51CGKWA   Green

Features

- 0.56 inch digit height.
- Low current operation.
- Excellent character appearance.
- Easy mounting on P.C. boards or sockets.
- Two digit package simplifies alignments & assembly.
- Mechanically rugged.
- Standard : gray face, white segment.
- RoHS compliant.

Description

The Green source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.

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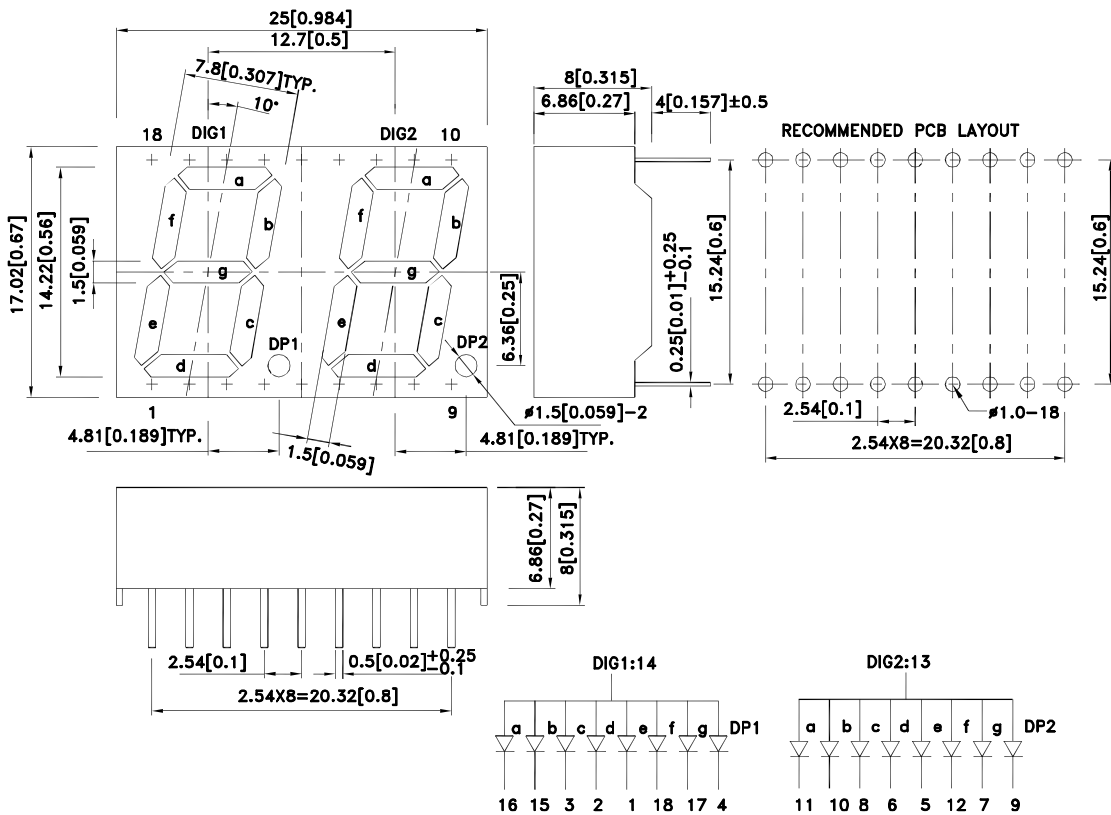
Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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Selection Guide

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	Typ.	
DA56-51CGKWA	Green (AlGaInP)	White Diffused	14000	23000	Common Anode, Rt. Hand Decimal.
			*3600	*7600	

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

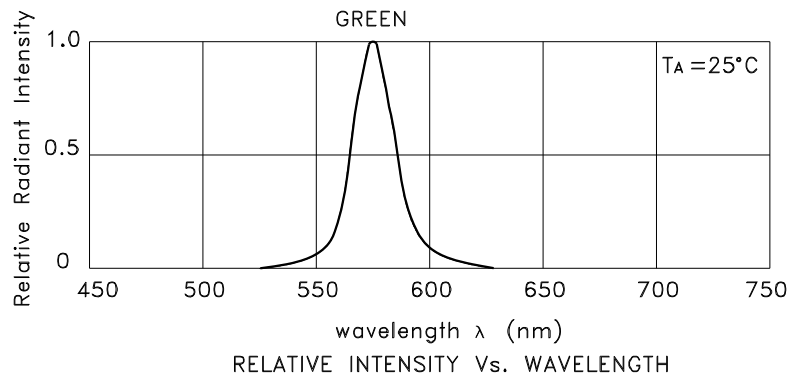| Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Green	574		nm	I_F=20mA
λD [1]	Dominant Wavelength	Green	570		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Green	20		nm	I_F=20mA
C	Capacitance	Green	15		pF	V_F=0V;f=1MHz
VF [2]	Forward Voltage	Green	2.1	2.5	V	I_F=20mA
IR	Reverse Current	Green		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

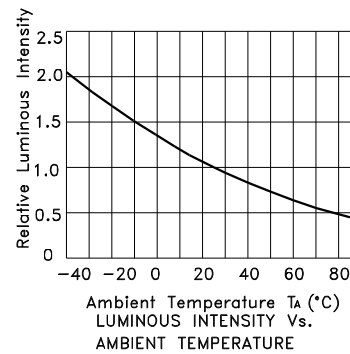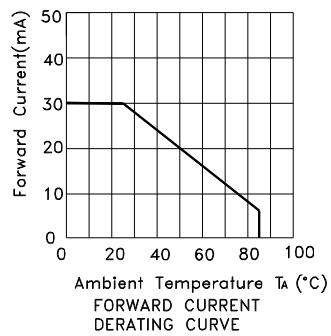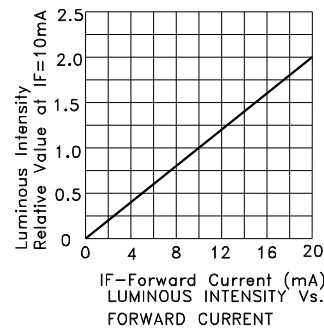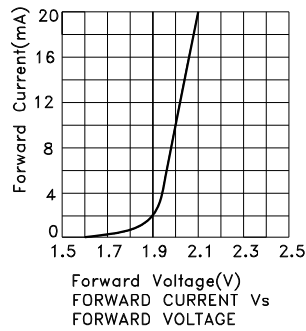| Parameter	Green	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	150	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

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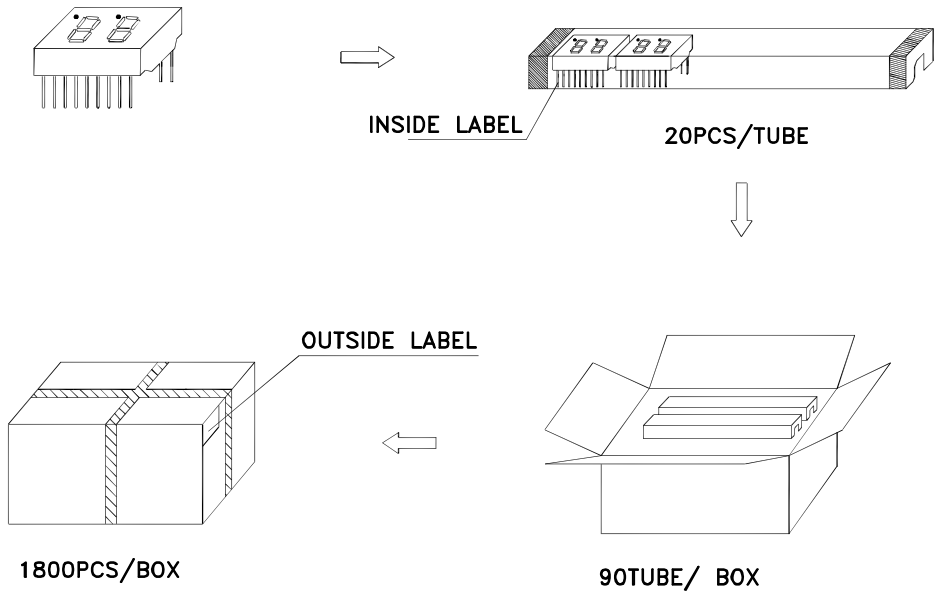1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.

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GREEN

RELATIVE INTENSITY Vs. WAVELENGTH

$T_A = 25°C$

Green **DA56-51CGKWA**

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   DA56-51CGKWA

INSIDE LABEL   20PCS/TUBE

OUTSIDE LABEL

1800PCS/BOX   90TUBE/ BOX

Inside Label On IC-tube

Kingbright TYPE: Dx56-51xxx   Date
QTY: 20 PCS   CODE: xx   PASSED
                                xx xx xx
                                FQCX

XXXXXXXXXX-XXXX   RoHS Compliant   Number OF FQC

LOT NO.

Outside Label   On Box

XXXXXX

Dx56-51xxx   Number OF QA

Bin Code
1800 PCS   XX   QAx   Date
                                  xx xx xx
                                PASSED
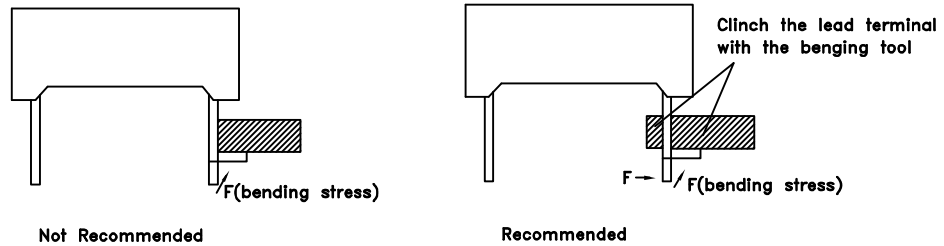
                                RoHS Compliant

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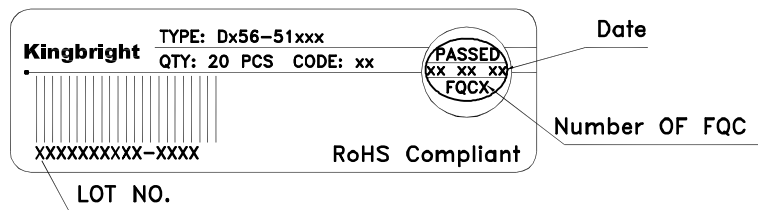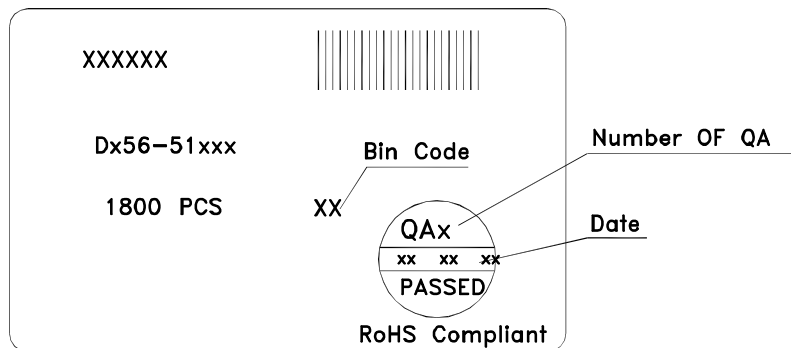
THROUGH HOLE DISPLAY MOUNTING METHOD

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.

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.
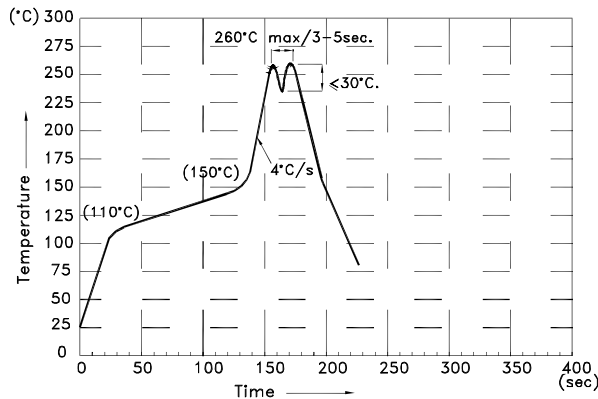
F   F

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

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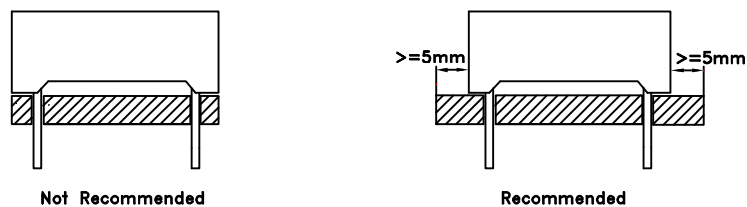
DISPLAY SOLDERING CONDITIONS

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.
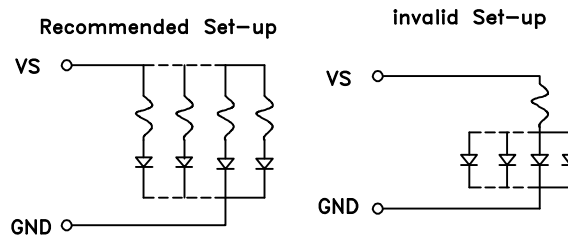
Soldering General Notes:

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

All design applications should refer to Kingbright application notes available at
http://www.KingbrightUSA.com/ApplicationNotes

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