Kingbright

12 SEGMENT BAR GRAPH ARRAY

Part Number: DD-12CGKWB Green

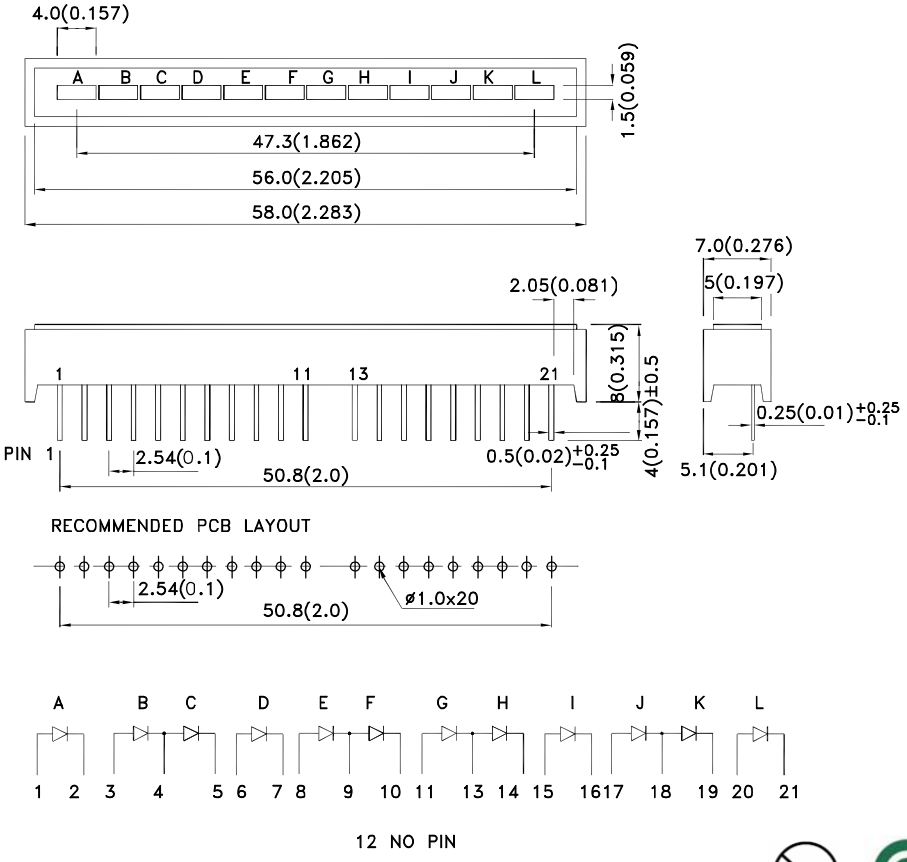
Features

- 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 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.

Selection Guide

Part No.	Emitting Color (Material)	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	Typ.	
DD-12CGKWB	Green (AlGaInP)	White Diffused	21000	35000	12 Segments Bar graph-Display
			*5600	*11000	

Notes:
1. Luminous intensity / luminous Flux: +/-15%.
 * Luminous intensity value is traceable to CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

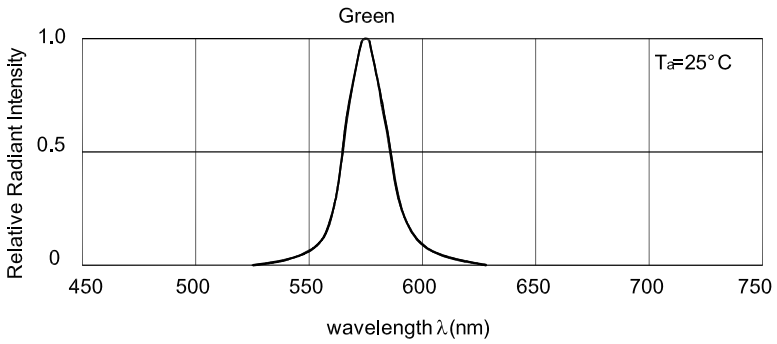
Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Green	574		nm	I_F=10mA
λD [1]	Dominant Wavelength	Green	570		nm	I_F=10mA
Δλ1/2	Spectral Line Half-width	Green	20		nm	I_F=10mA
C	Capacitance	Green	15		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Green	2	2.5	V	I_F=10mA
I_R	Reverse Current	Green		10	uA	V_R=5V

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Absolute Maximum Ratings at TA=25°C

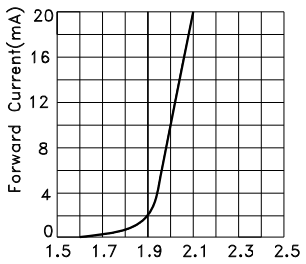
Parameter	Values	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	150	mA
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	
Lead Solder Temperature[2]	260°C For 3-5 Seconds	

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

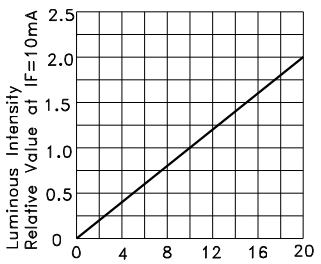


Relative Intensity Vs. Wavelength

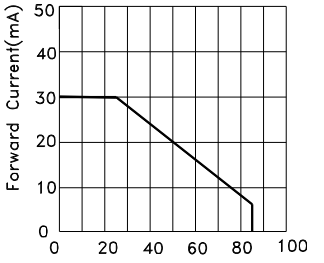
Green **DD-12CGKWB**



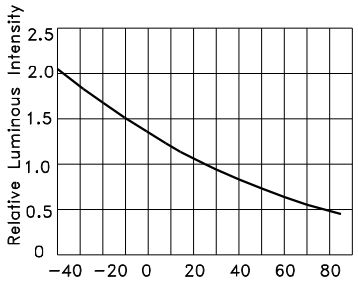
FORWARD CURRENT Vs FORWARD VOLTAGE



LUMINOUS INTENSITY Vs. FORWARD CURRENT

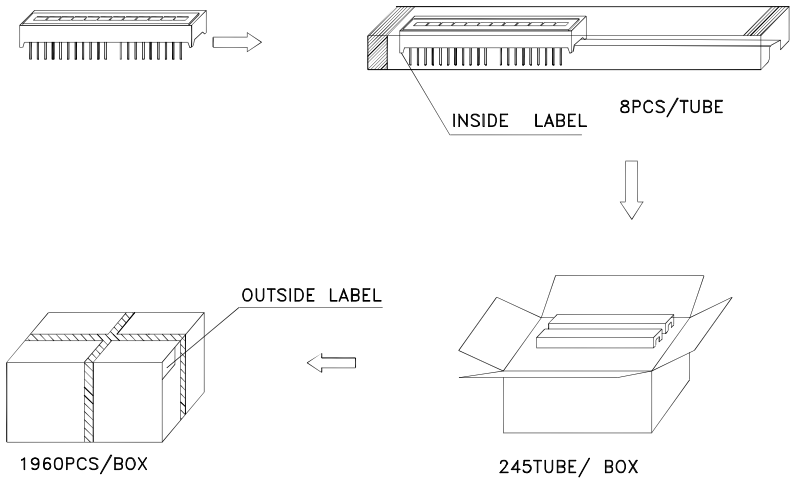


FORWARD CURRENT DERATING CURVE

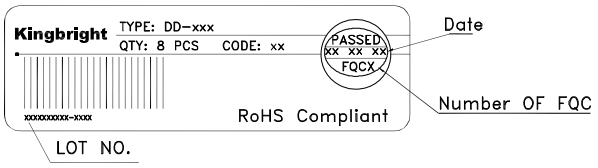


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

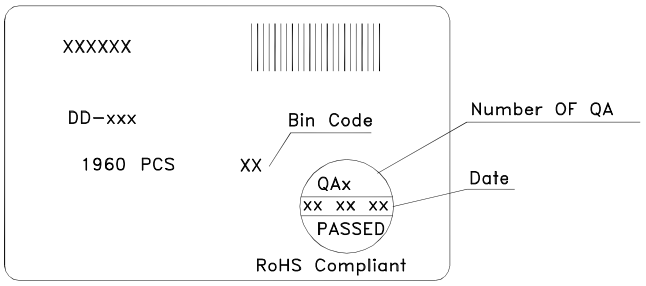
PACKING & LABEL SPECIFICATIONS DD-12CGKWB



Inside Label On IC-tube



Outside Label On Box



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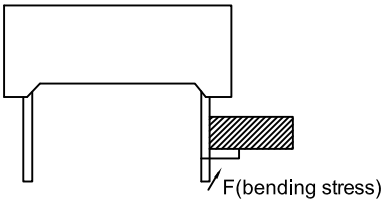
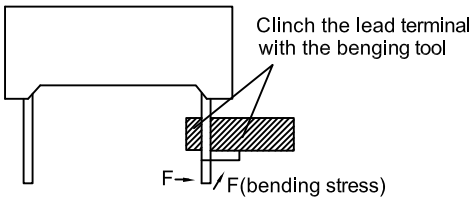
Through Hole Display Mounting Method

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.



Not Recommended

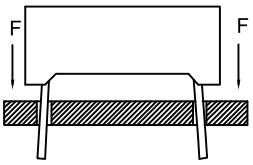


Recommended

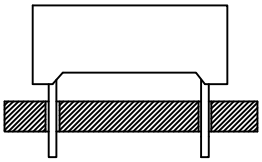
Installation

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.

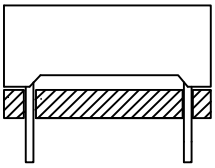


Not Recommended

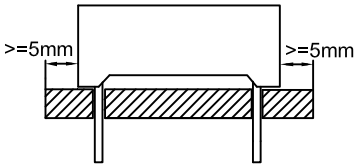


Recommended

3.The component shall be placed at least 5mm from edge of PCB to avoid damage caused excessive heat during wave soldering.

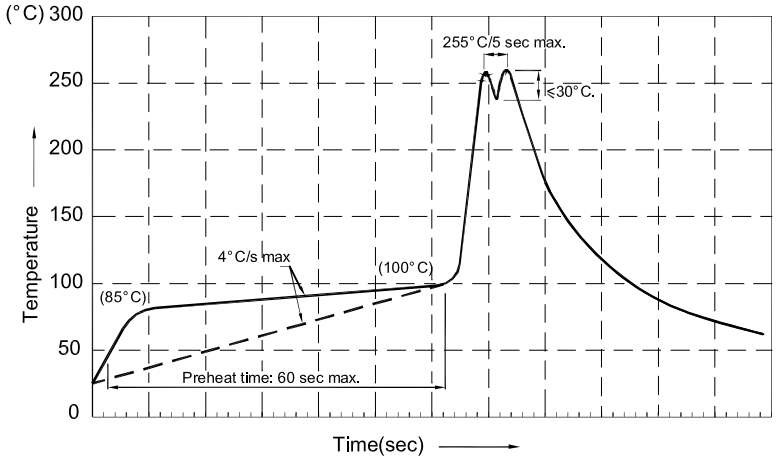


Not Recommended



Recommended

Recommended Wave Soldering Profiles:



Notes:

1.Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C

2.Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).

3.Do not apply stress to the epoxy resin while the temperature is above 85°C.

4.Fixtures should not incur stress on the component when mounting and during soldering process.

5.SAC 305 solder alloy is recommended.

6.No more than one wave soldering pass.

7.During wave soldering, the PCB top-surface temperature should be kept below 105°C.

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 .

3.The cleaning process should take place at room temperature and the devices should not be washed for more than one minute.

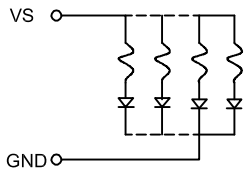
4.When water is used in the cleaning process, immediately remove excess moisture from the component with forced-air drying afterwards.

Circuit Design Notes

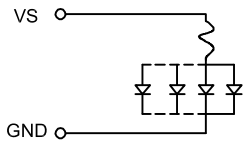
1.Protective current-limiting resistors may be necessary to operate the LEDs within the specified range.

2.LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.

Recommended Set-up



Invalid Set-up



3. The driving circuit should be designed to protect the LED against reverse voltages and transient voltage spikes when the circuit is powered up or shut down.

4. The safe operating current should be chosen after considering the maximum ambient temperature of the operating environment.

5. Prolonged reverse bias should be avoided, as it could cause metal migration, leading to an increase in leakage current or causing a short circuit.