Data Sheet

Customer:

Part No: CL-BIT1608UHR-02

Sample No:

Description: 1608 SMD Red Color

Item No:

Customer			
Check	Inspection	Approval	Date

Features

_1.6mmX0.8mm SMT LED, 0.60mm THICKNESS.

_LOW POWER CONSUMPTION.

_WIDE VIEWING ANGLE.

_IDEAL FOR BACKLIGHT AND INDICATOR.

_VARIOUS COLORS AND LENS TYPES AVAILABLE.

_PACKAGE: 4000PCS / REEL.

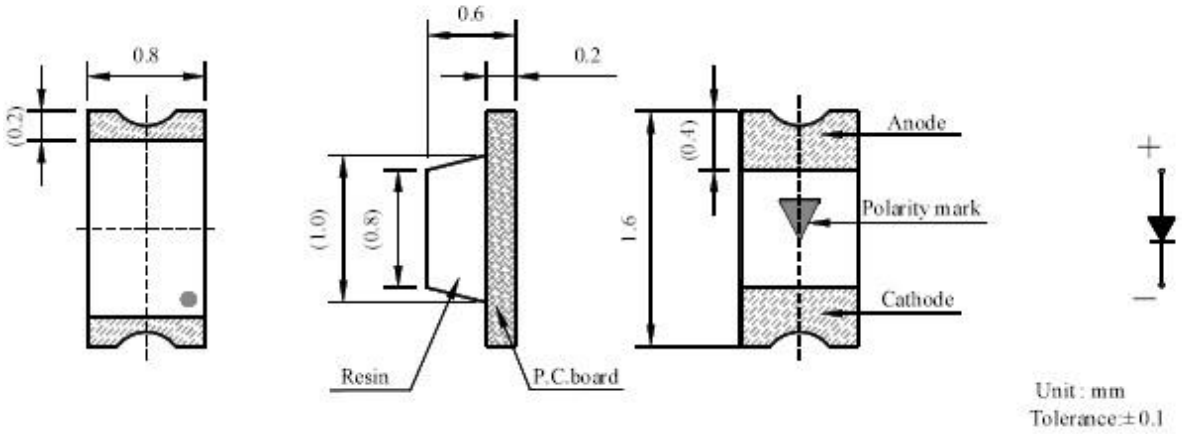
_RoHS COMPLIANT.

Description

The Hyper Red source color devices are made with DH InGaAlP on GaAs substrate Light Emitting Diode

Emitting Diode.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).

2. Tolerance is ±0.1(0.004") unless otherwise noted.

3.Specifications are subject to change without notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20mA		Viewing Angle
			Min.	Typ.	2 θ 1/2
CL-BIT1608UHR-02	RED	WATER CLEAR	73	130	120

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Electrical / Optical Characteristics at T_A=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λD	Dominant Wavelength	RED	617	625	nm	IF=20mA
Δλ1/2	Spectral Line Half-width	RED	25		nm	IF=20mA
C	Capacitance	RED	105		pF	VF=0V;f=1MHz
VF	Forward Voltage	RED	1.9	2.2	V	IF=20mA
IR	Reverse Curren	RED		2	uA	VR = 7V

Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or wavelength), the typical accuracy of the sorting process is as follows:

1. Wavelength: +/-1nm
2. Luminous Intensity: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters

Absolute Maximum Ratings at T_A=25°C

Parameter	RED	Units
Power dissipation	75	mW
DC Forward Current	30	mA
Peak Forward Current [1]	80	mA
Reverse Voltage	5	V
Operating/Storage Temperature	-40°C To +85°C	

Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

◆Luminous Intensity BIN Limits

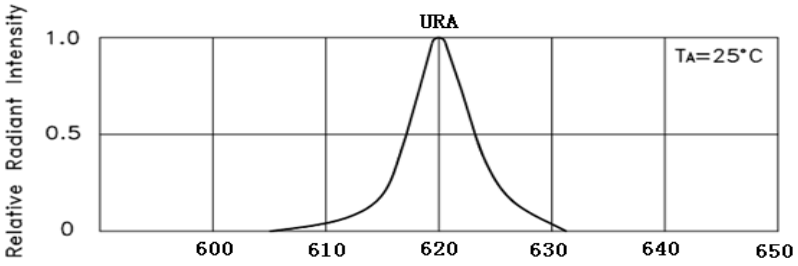
Test condition : @20mA		
BIN Code	I_{Vmin} (mcd)	I_{Vmax} (mcd)
K1	73	88
K2	88	105
L1	105	130

◆Dominant Wavelength BIN Limits

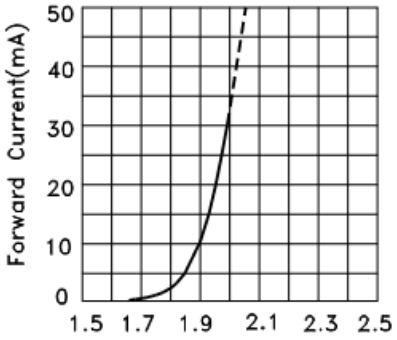
Test condition : @20mA		
BIN Code	λ_{Dmin} (nm)	λ_{Dmax} (nm)
1	617	620
2	620	623

◆Forward Voltage BIN Limits

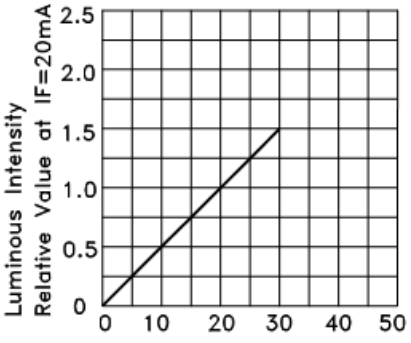
Test condition : @20mA		
BIN Code	V_{Fmin} (v)	V_{Fmax} (v)
3	1.9	2.0
4	2.0	2.1
5	2.1	2.2



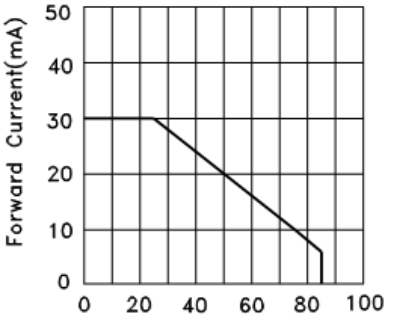
RELATIVE INTENSITY Vs. WAVELENGTH



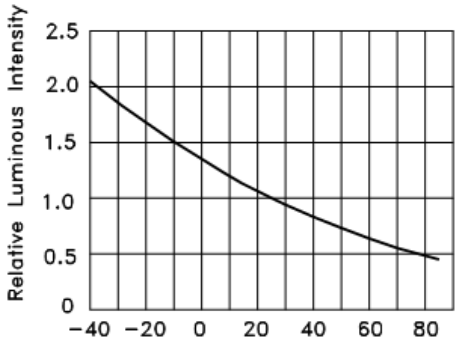
FORWARD CURRENT Vs.
FORWARD VOLTAGE



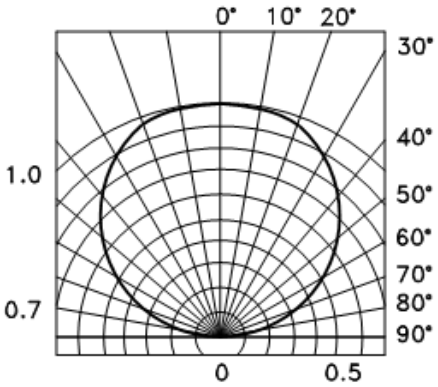
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

RELIABILITY

Test Items and Results

NO	Test item	Standard	Test Conditions	Hours/ Cycles	Sample	Number of Damaged
1	Temperature Cycle	JEITA ED-4701	-40℃～25℃～100℃～25℃ 30min 5min 30min 5min	100 Cycles	50	0/50
2	Thermal Shock	MIL-STD-202G	-40℃～100℃ 15 min 15 min	500 Cycles	50	0/50
3	High Temperature Storage	JEITA ED-4701 200 201	T_a=100℃	1000 hours	50	0/50
4	Low Temperature Storage	JEITA ED-4701 200 201	T_a=-40℃	1000 hours	50	0/50
5	Life Test		T_a=25±5℃ I_F=20mA	1000 hours	50	0/50
6	High Humidity Heat Life Test		T_a=60℃ RH=85% I_F=20mA	1000 hours	50	0/50
7	Solderability (reflow soldering)	JEITA ED-4701 300 303	T_{sol}=235℃±5℃,5 sec Use flux	Weld once, 5 seconds	10	0/10
8	Solder resistance (reflow soldering)	JEITA ED-4701 300 301	T_{sol}=260℃,10 sec Pretreatment: 35℃ 95%RH 96 hours	Weld twice, 10 seconds each time	10	0/10

If the above test items are different from the customer's test requirements or have special customer requirements, they can be trial-produced according to the actual situation and in accordance with the customer's requirements. If the customer does not require it, the trial-production should be carried out according to our company's test standards. Different products use different currents for testing.

5. Cautions

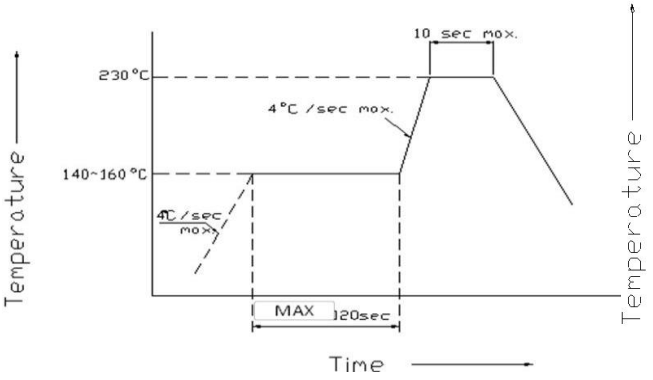
(1) Soldering Conditions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

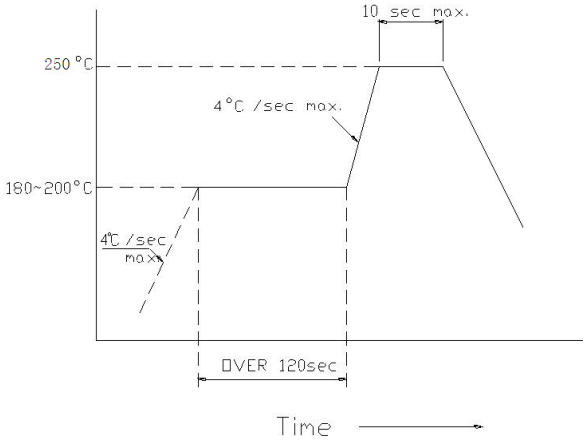
(Recommended soldering conditions)

回流焊接 Reflow Soldering			手工焊接	
	有铅 Lead Solder	无铅 Lead-free Solder	温度 Temperature	350° C Max.
预热温度 Pre-heat	140 ~ 160° C	180 ~ 200° C	焊接时间 Soldering time	3 sec. Max. (one time only)
预热时间 Pre-heat time	120 sec. Max.	120 sec. Max.		
峰值温度 Peak temperature	230° C Max.	250° C Max.		
焊接时间 Soldering time	10 sec. Max.	10 sec. Max.		
条件Condition	参考下图	参考下图		

（Lead Solder）

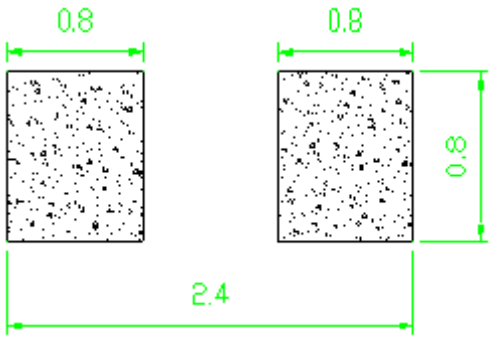


(Lead-Free Solder)



Recommended Soldering Pattern

(Units : mm)



(2) Static Electricity

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

All devices, equipment and machinery must be properly grounded.

Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : (VF > 2.0V at IF=0.5mA)

(3) Moisture Proof Package

It is recommended that moisture proof package be used .

(4)Cautions:

4.1.

Please check if there is air leak before opening the package, if so, please return the goods back to take drying process for later using.

4.2

Products can be used within 15days after packaging, after that, they must be:

4.2.1

Soldered within 24 hrs

4.2.2

Used in the condition: 30℃ within and 60%RH below

4.2.3

Stored in 30%RH for moisture below.

4.3

Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in 85℃/6H.

4.4.

Products not be used for or over 60days after being packaged please return back to take drying out and packaging process for forward using.

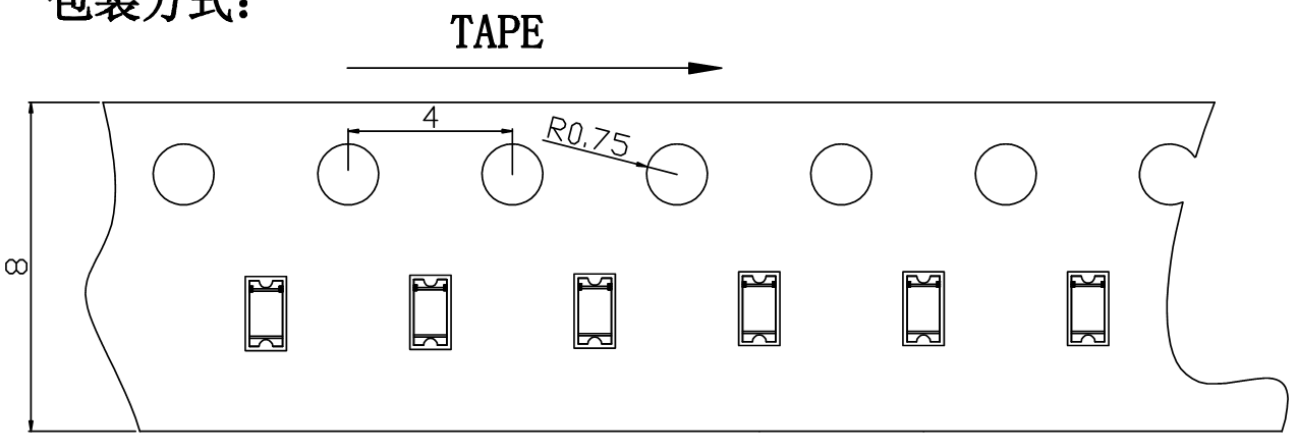
4.5.

Products not be used after opening the package need to be dried out for 85℃/6H

PACKAGING

The LEDs are packed in cardboard boxes after taping.

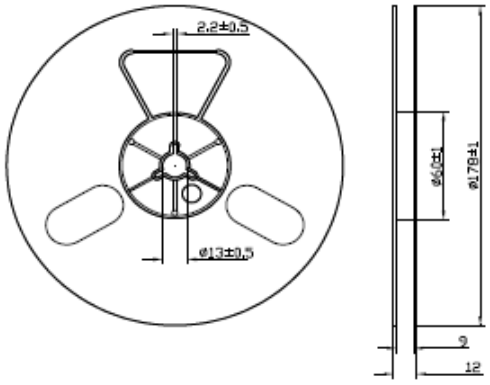
包装方式：



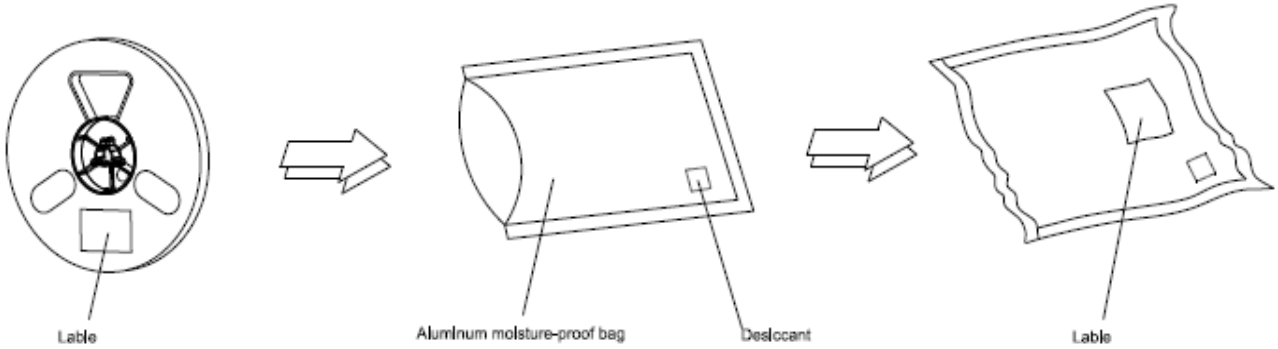
Package: 4000 pcs/reel

Reel Dimensions

.



Moisture Resistant Packaging



Note:The tolerances unless mentioned is ±0.1mm,Unit:mm