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DATA SHEET

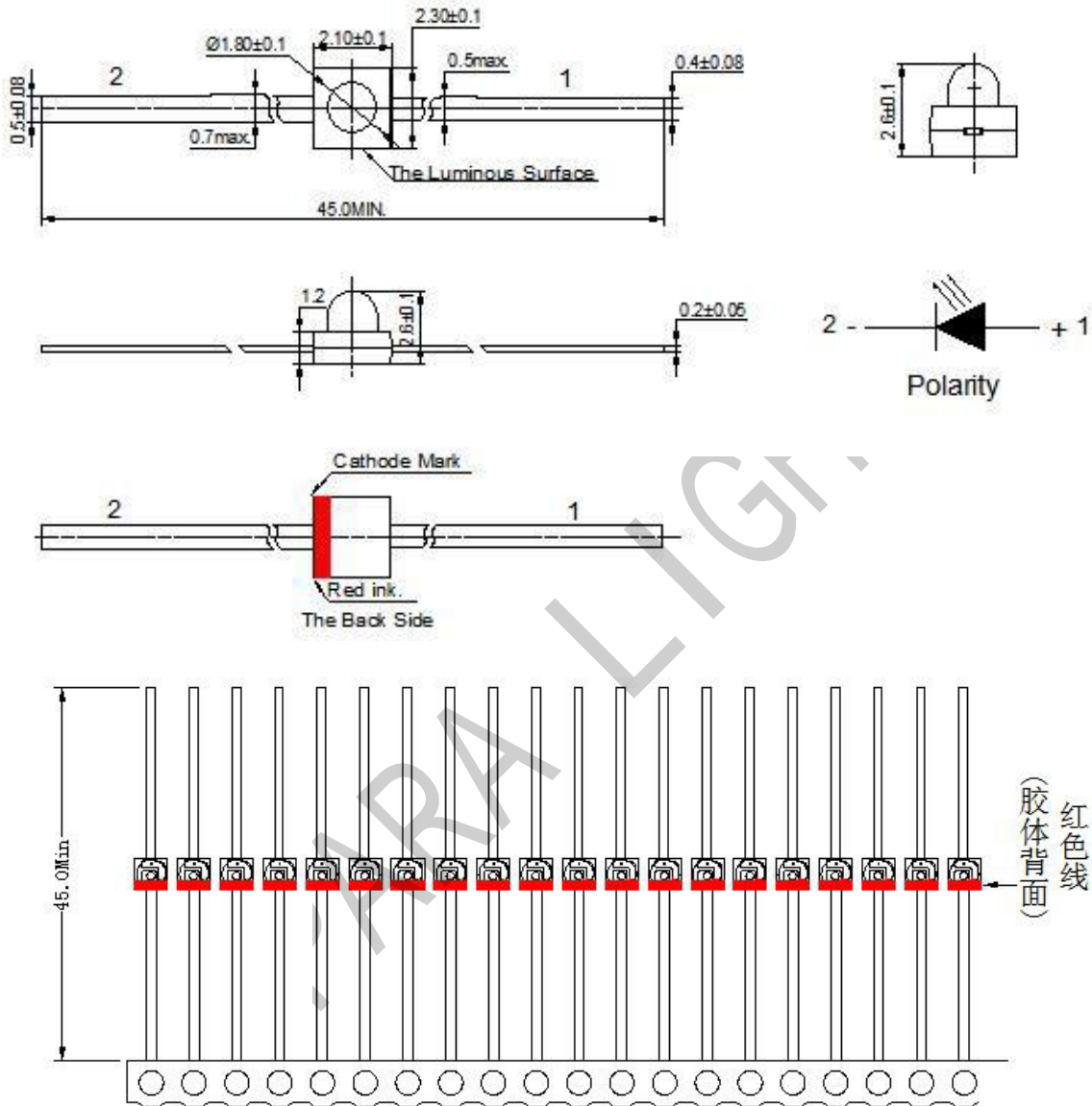
PART NO. : L180QRCT-20A-BKR

REV : A/3

CUSTOMER'S APPROVAL : _____

DCC : _____

PACKAGE DIMENSIONS



Whole row (40 pieces / row) shipment
defective products can be reduced

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are ± 0.254 mm (0.01inch) unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change with notice.
5. The colors of the lines are specified in the specification unless otherwise specified.

CHIP MATERIALS

- * Dice Material : AlGaInP
- * Light Color : Red
- * Lens Color : Water Clear

ABSOLUTE MAXIMUM RATING : (Ta = 25°C)

Parameter	Symbol	Value	Unit
Forward current	If	25	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	75	mW
Operating temperature range	Topr	-40 ~+85	°C
Storage temperature range	Tstg	-40 ~+100	°C
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	Ifp	80	Ma
Soldering Condition	Tsol	Reflow soldering : 260°C For 5 Seconds Hand soldering: 300°C For 3 Seconds	

ELECTRO-OPTICAL CHARACTERISTICS : (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Wavelength at peak emission	λ_{peak}	--	630	--	nm	IF=20mA
Spectral half bandwidth	$\Delta\lambda$	--	20	--	nm	IF=20mA
Dominant wavelength	λ_{dom}	620	625	630	nm	IF=20mA
Forward voltage	Vf	1.7	---	2.6	V	IF=20mA
Luminous intensity	Iv	2000	---	4000	mcd	IF=20mA
Viewing angle at 50% Iv	$2\theta_{1/2}$	--	15	--	Deg	IF=20mA
Reverse current	Ir	--	--	10	μ A	Vr=5V

Typical Electro-Optical Characteristics Curves

Fig.1 Relative Intensity vs. Wavelength

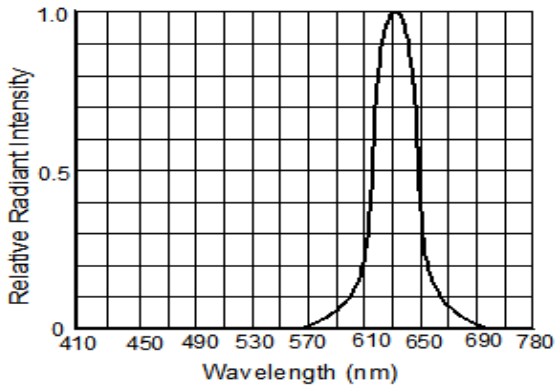


Fig.2 Forward Current vs. Ambient Temperature

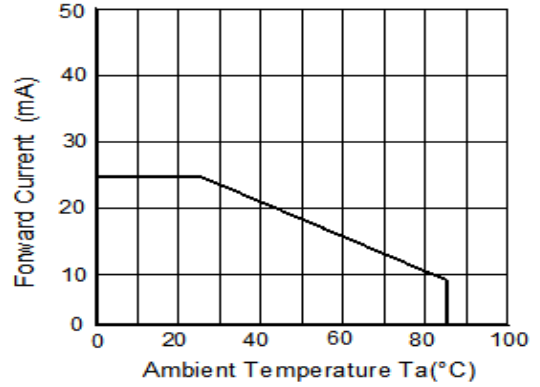


Fig.3 Forward Current vs. Forward Voltage

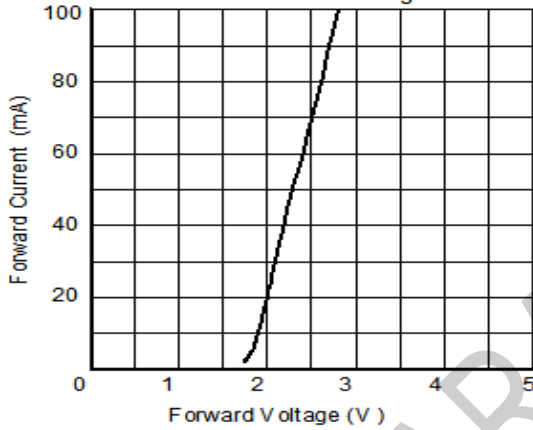


Fig.4 Relative Luminous Intensity vs. Ambient Temperature

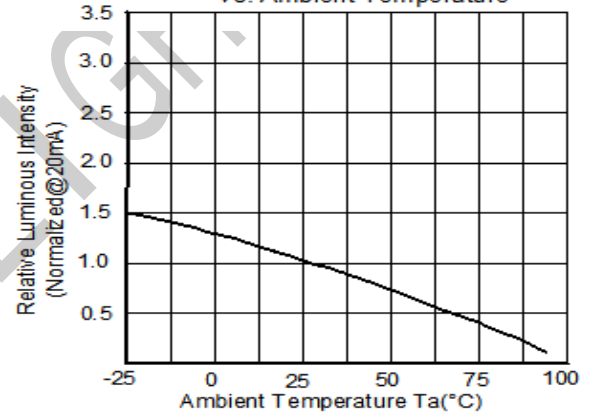


Fig.5 Relative Luminous Intensity vs. Forward Current

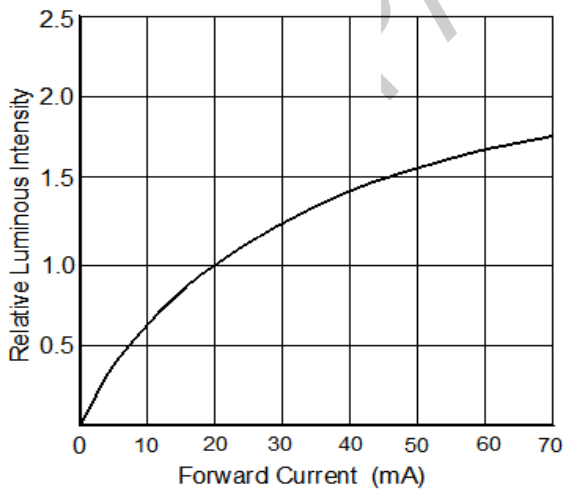
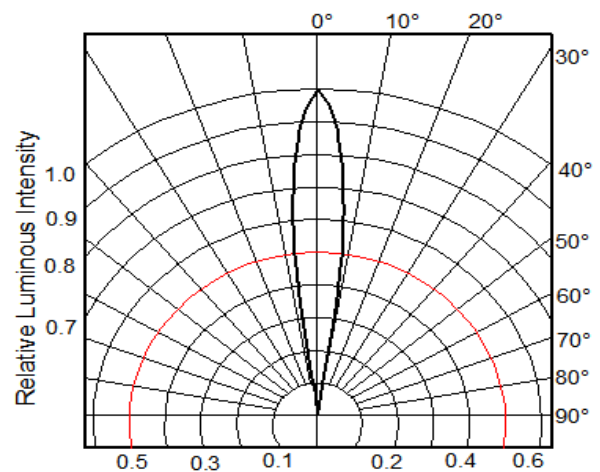


Fig.6 Radiation diagram (Ta=25°C)



Testitems and results of reliability

Items	Test Condition	Test Hours/Cycles	Quantity	Ac/Re
Reflow Soldering	Temp. : 260°C±5°C Min. 5sec.	3times	22 PCS	0/1
Temperature Cycle	H : +85°C 30min.~ 5 min~ L : -40°C 30min.	300 Cycles	22PCS	0/1
Thermal Shock	H : +100°C 10min.~10 sec~ L : -40°C 10min.	100Cycles	22PCS	0/1
High Temperature Storage	Temp. : 100°C	1000Hrs	22PCS	0/1
Low Temperature Storage	Temp. : -40°C	1000Hrs	22PCS	0/1
Dc Life	IF =20mA	1000Hrs	22PCS	0/1
High Temperature / High Humidity	85°C/ 85%RH	500Hrs	22PCS	0/1

Failure Criteria

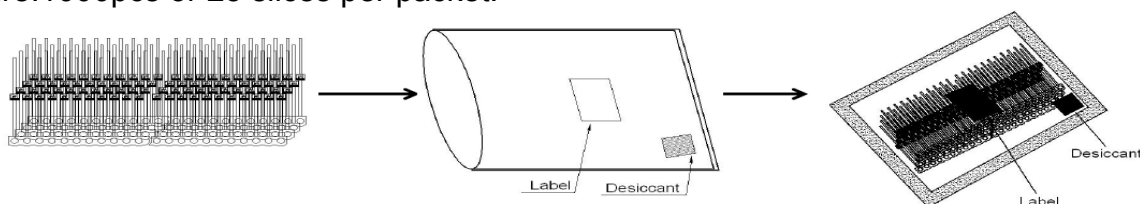
Test Items	Symbol	Test condition	Failure Criteria	
			Min.	Max.
Forward Voltage	VF	IF=20mA	---	(U.S.L*)×1.1
Reverse Current	IR	VR=5V	---	(U.S.L*)×2.0
Luminous Intensity	Iv	IF=20mA	(L.S.L*)×0.7	---

Notes:1.U.S.L means the upper limit of specified characteristics.

2.Measurment shall be taken between 2 hours and after the test pieces have been returned normal ambient conditions after completion of each test.

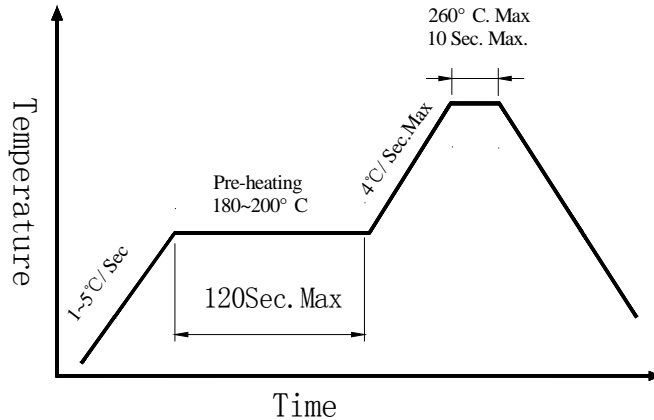
Packaging

The LED's are packed in cardboard boxes after packaging in anti-electrostatic bags or plastic bags or taping. According to the total delivery amount, cardboard boxes will be used to protect the LED's from mechanical shocks during transportation. The label on the minimum packing unit bag shows. The boxes are not water resistant and therefore must be kept away from water and moisture.1000pcs or 25 slices per packet.

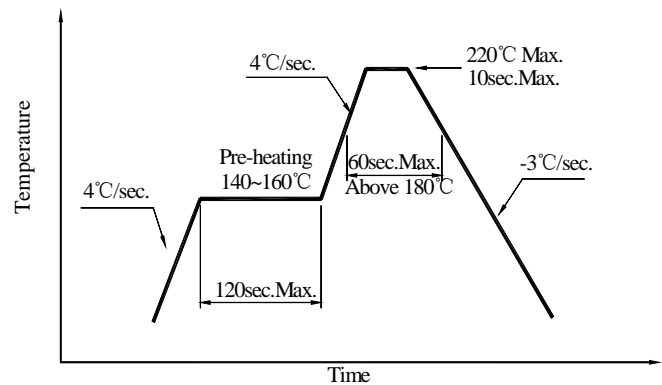


Reflow Soldering Instructions

<Pb-free solder>



<Lead solder>



- 1.Reflow soldering should not be done more than two times
- 2.When soldering,do not put stress on the LEDs during heating

Soldering Iron

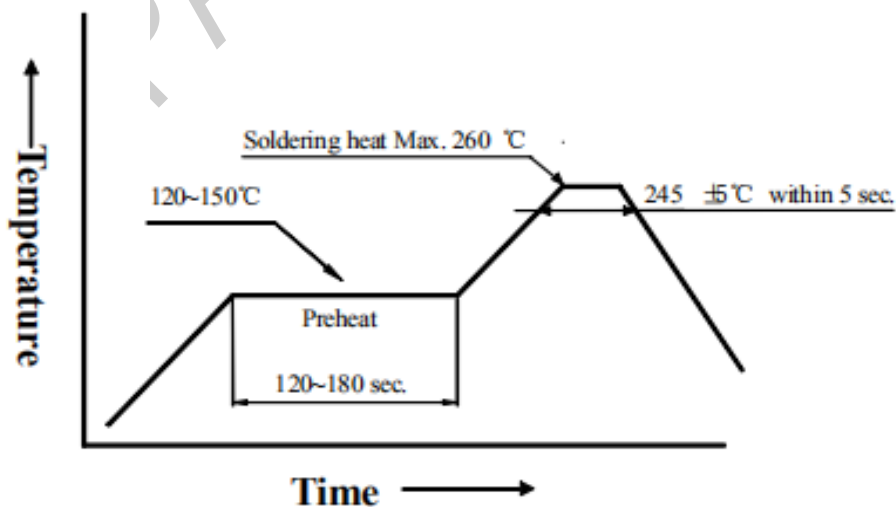
- 1.When hand soldering,keep the temperature of iron below less 300°C less than 3 seconds.
- 2.The hand solder should be done only one time.
- 3.During soldering,take care not to press the trip of iron against the lead.
- 4.To prevent heat from being transferred directly to the lead,hold the lead with a pair of tweezers while soldering.

DIP Soldering(Wave Soldering)

Preheating:120°C~150°C ,within 120~180 sec.

Operation heating:245°C ±5°C within 5 sec. ;260°C (Max.)

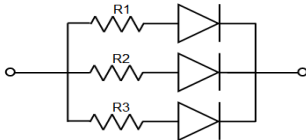
Gradual Cooling(Avoid quenching).



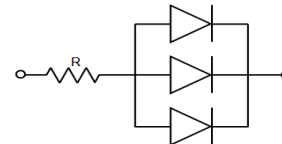
Cautions

Application

1. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended to use individual resistor separately, as shown in Circuit A below. The brightness of each LED shown in Circuit B might appear difference due to the differences in the I-V characteristics of those LEDs.



Circuit model A



Circuit model B

2. High temperature may reduce LEDs' intensity and other performances, so keeping it away from heat source to get good performance is necessary.

Storage

1. Before opening original package, it is recommended to store them in the following environment: Temperature: 5°C~30°C/ Humidity: 60%RH max.
2. After opening original package, the storage ambient for the LEDs should be in 5~30°C temperature and 60% or less relative humidity.
3. In order to avoid moisture absorption, it is recommended that the LEDs that out of the original package should be stored in a sealed container with appropriate desiccant, or in desiccators with nitrogen ambient.
4. The LEDs should be used within 168hrs (7 days) after opening the package. Once been mounted, soldering should be quick.
5. If the moisture absorbent material (silica gel) has faded away or the LEDs stored out of original package for more than 168hrs (7 days), baking treatment should be performed using the conditions: 60°C at least 24 hours.

ESD (Electrostatic Discharge)-Protection

A LED (especially the Blue 、 White and Green product) is an ESD sensitive component, and static electricity or power surge will damage the LED. ESD-damaged LEDs will exhibit abnormal characteristics such as high reverse leakage current, low forward voltage, or “no light-up” at low currents, etc.

Some advice as below should be noticed:

1. A conductive wrist strap or anti-electrostatic glove should be worn when handling these LEDs.
2. All devices, equipment, machinery, work tables and storage racks, etc. must be properly grounded.

3. Use anti-static package or boxes to carry and storage LEDs. And ordinary plastic package or boxes is forbidden to use.
4. Use ionizer to neutralize the static charge during handling or operating.
5. All surfaces and objects within 1 ft close to LEDs measure less than 100V.

Cleaning

Use alcohol-based cleaning solvents such as IPA (isopropyl alcohol) to clean LEDs if necessary.

Others

- 1.The light output from the high luminous intensity LEDs may cause injury to human eyes when viewed directly.
2. The appearance and specifications of the product may be modified for improvement without prior notice.

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