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DATA SHEET

PART NO. : CR07C-P1C54-EC000

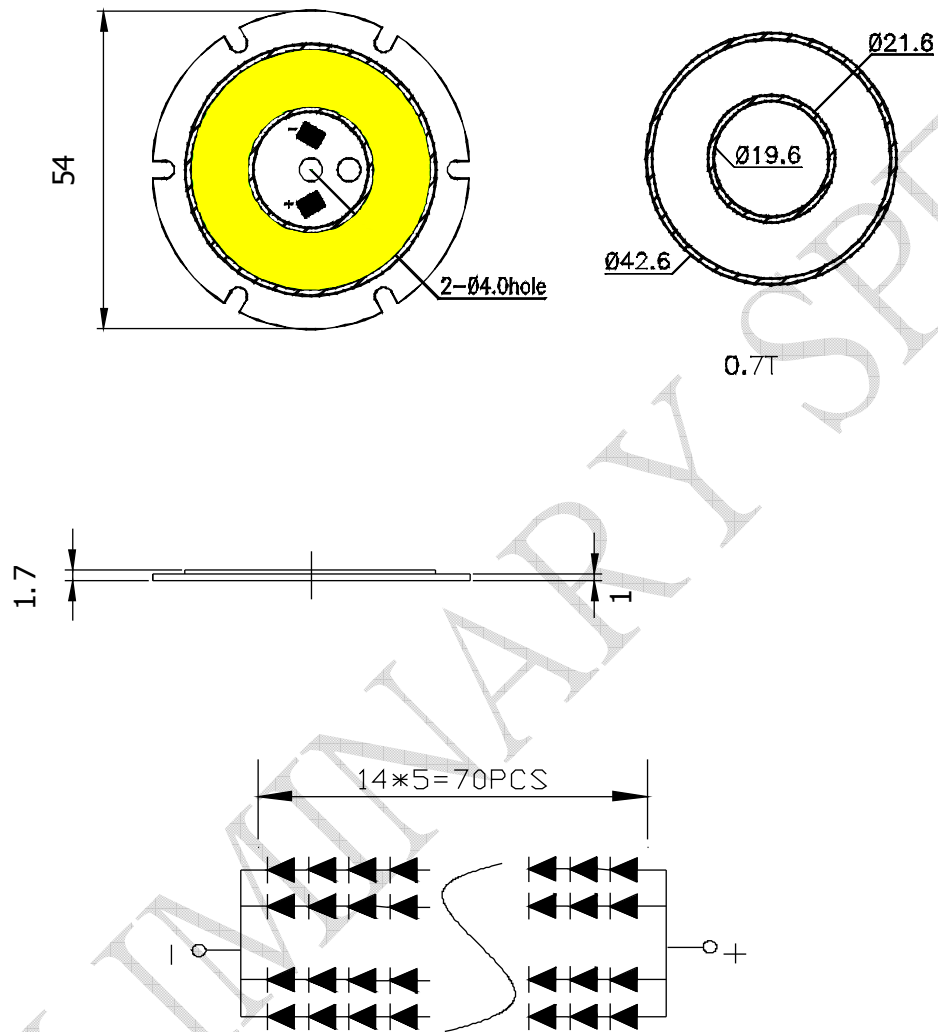
REV : A/0

PRELIMINARY SPEC

CUSTOMER'S APPROVAL : _____

DCC : _____

●Package Dimension



Note:

1. All dimensions are in millimeters.
2. Tolerance is $\pm 0.2\text{mm}$ (.010") unless otherwise noted

●Features

1. Uniform high quality illumination
2. Streamlined thermal path
3. Compact high flux density light source
4. Low voltage DC operated.
5. Instant light
6. RoHS Compliant.
7. The led can withstand the max static level when assembling or operation (HBM)



COB LED

CR07C-P1C54-EC000

REV:A/0

●Chip Material

1. Dice Material : InGaN
2. Light Color : White

●Absolute Maximum Rating(Ta=25℃)

| Symbol | Parameter | Rating | Unit |
|--------|---------------------------------------|------------|------|
| IF | DC Forward Current | 150 | mA |
| Tj | LED Junction Temperature(at IF=150mA) | 120 | ℃ |
| *Topr | Operating Temperature | -30 ~ +100 | ℃ |
| *Tstg | Storage Temperature | -40 ~ +100 | ℃ |
| ESD | ESD Sensitivity (Human Body Model) | 2000 | V |

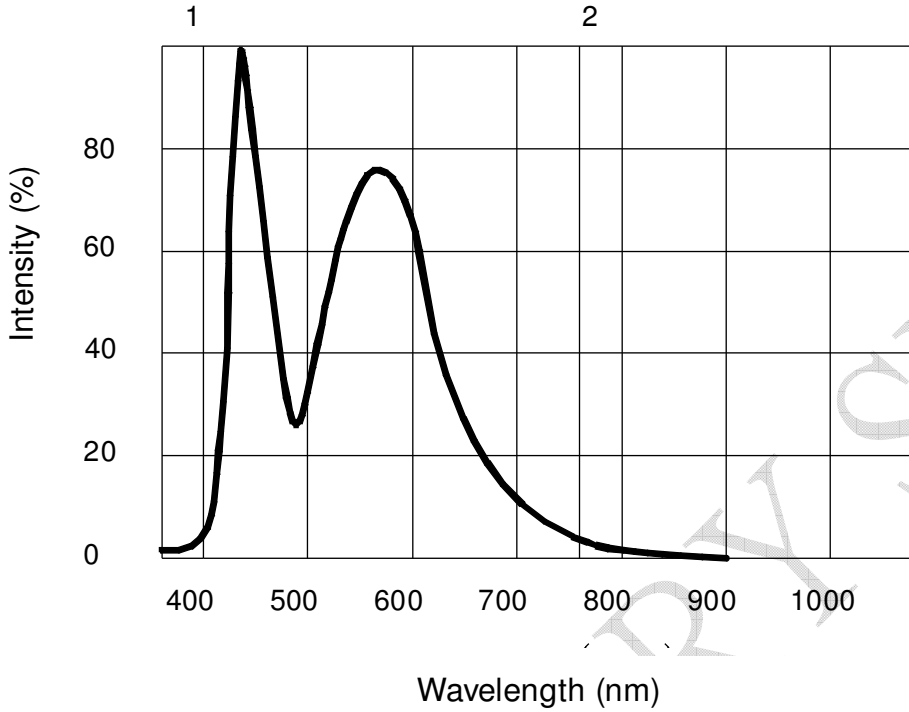
Note :

* : Temperature for using with aluminum board.

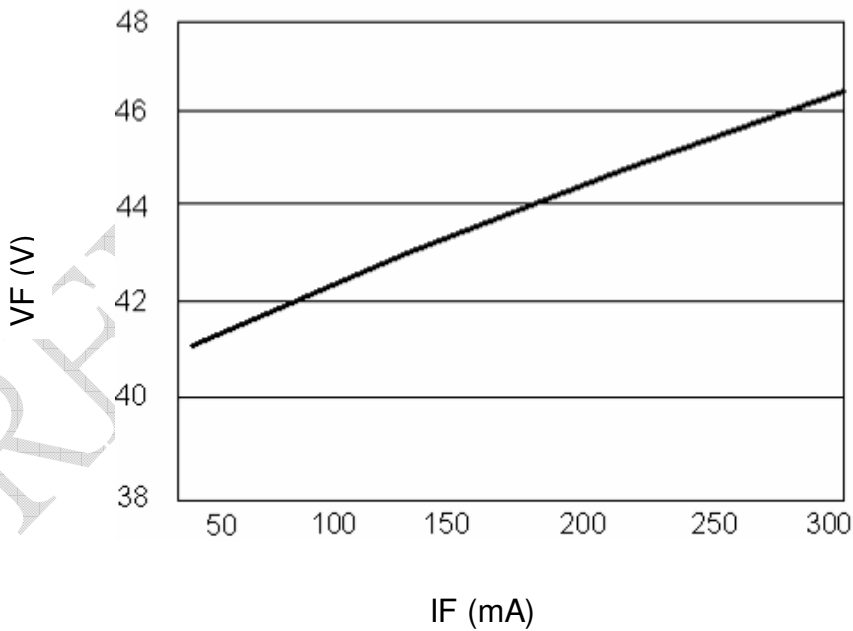
●Electro-Optical Characteristic(Ta=25℃)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|-------------------|----------------|------|------|------|------|----------------|
| Luminous Flux | Φ | | 650 | | lm | IF=150mA |
| Viewing Angle | 2 θ 1/2 | | 130 | | deg | |
| Color Temperature | CCT | | 6000 | | K | IF=150mA |
| Forward Voltage | VF | | 43 | 47 | V | IF =150mA |
| Power Dissipation | P | | 6.5 | | W | IF =150mA |
| Luminous efficacy | η | | 105 | | Lm/W | IF =150mA |

•Typical Optical and Electrical

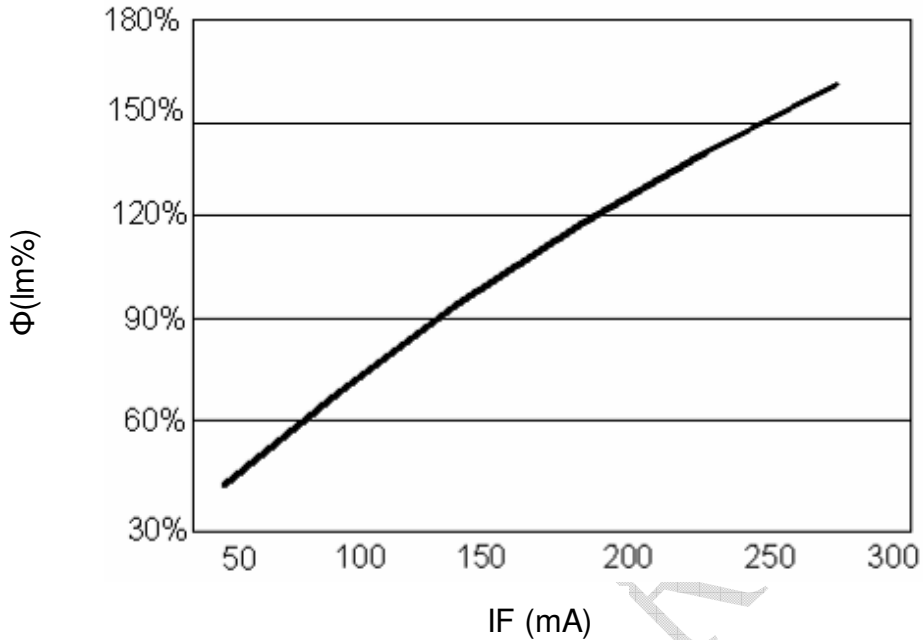


Relative Intensity VS Wavelength



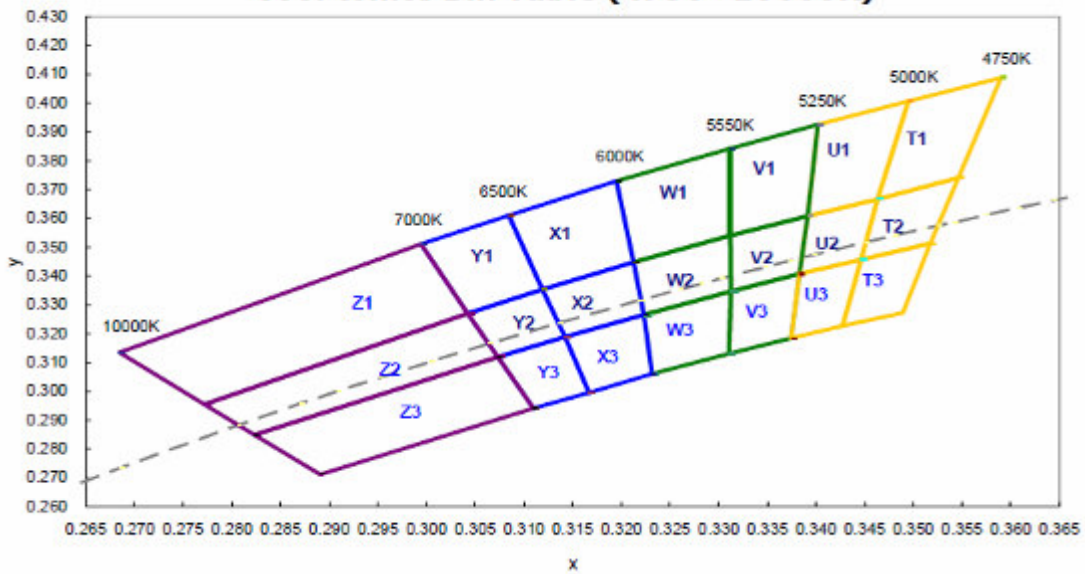
Forward Current VS Forward Voltage

•Typical Optical and Electrical



Forward Current VS Luminous Flux%

Cool White Bin Table (4750~10000K)



CIEX

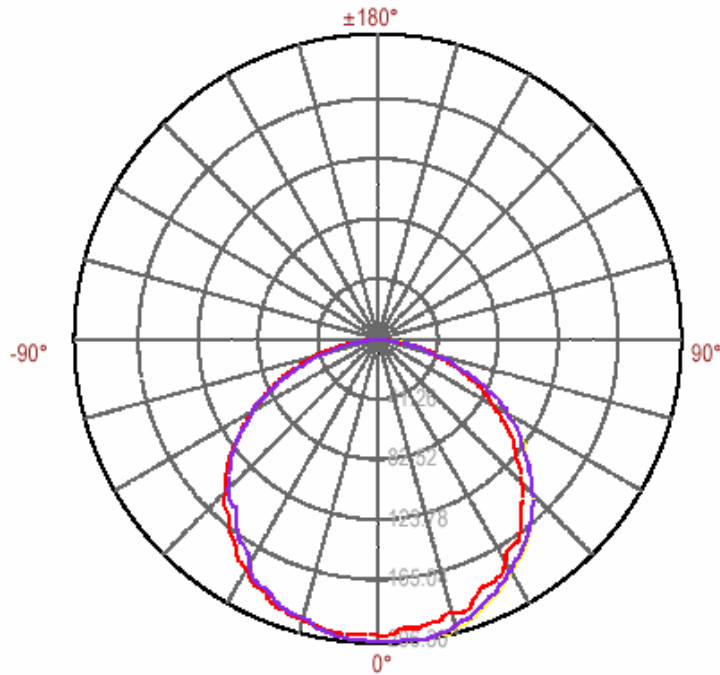
Cool—white Bin Structure

CROMATICITY COORDINATE (CIE1931_XY)

| BIN Code | Chromaticity Coordinate (CIE 1931-xy) | | | | | | | |
|----------|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| | x1 | y1 | x2 | y2 | x3 | y3 | x4 | y4 |
| T1 | 0.3590 | 0.4088 | 0.3546 | 0.3741 | 0.3463 | 0.3667 | 0.3495 | 0.4005 |
| T2 | 0.3546 | 0.3741 | 0.3518 | 0.3513 | 0.3446 | 0.3458 | 0.3463 | 0.3667 |
| T3 | 0.3518 | 0.3513 | 0.3490 | 0.3272 | 0.3428 | 0.3227 | 0.3446 | 0.3458 |
| U1 | 0.3495 | 0.4005 | 0.3463 | 0.3667 | 0.3392 | 0.3608 | 0.3403 | 0.3924 |
| U2 | 0.3463 | 0.3667 | 0.3446 | 0.3458 | 0.3383 | 0.3406 | 0.3392 | 0.3608 |
| U3 | 0.3446 | 0.3458 | 0.3428 | 0.3227 | 0.3374 | 0.3184 | 0.3383 | 0.3406 |
| V1 | 0.3403 | 0.3924 | 0.3392 | 0.3608 | 0.3313 | 0.3540 | 0.3313 | 0.3841 |
| V2 | 0.3392 | 0.3608 | 0.3383 | 0.3406 | 0.3313 | 0.3346 | 0.3313 | 0.3540 |
| V3 | 0.3383 | 0.3406 | 0.3374 | 0.3184 | 0.3311 | 0.3132 | 0.3313 | 0.3346 |
| W1 | 0.3313 | 0.3841 | 0.3312 | 0.3540 | 0.3213 | 0.3448 | 0.3195 | 0.3730 |
| W2 | 0.3313 | 0.3540 | 0.3313 | 0.3346 | 0.3223 | 0.3266 | 0.3213 | 0.3448 |
| W3 | 0.3313 | 0.3346 | 0.3311 | 0.3132 | 0.3232 | 0.3061 | 0.3223 | 0.3266 |
| X1 | 0.3195 | 0.3730 | 0.3213 | 0.3448 | 0.3119 | 0.3354 | 0.3085 | 0.3610 |
| X2 | 0.3213 | 0.3448 | 0.3223 | 0.3266 | 0.3142 | 0.3188 | 0.3119 | 0.3354 |
| X3 | 0.3223 | 0.3266 | 0.3232 | 0.3061 | 0.3167 | 0.2997 | 0.3142 | 0.3188 |
| Y1 | 0.3085 | 0.3610 | 0.3119 | 0.3354 | 0.3042 | 0.3270 | 0.2995 | 0.3510 |
| Y2 | 0.3119 | 0.3354 | 0.3142 | 0.3188 | 0.3073 | 0.3120 | 0.3042 | 0.3270 |
| Y3 | 0.3142 | 0.3188 | 0.3167 | 0.2997 | 0.3110 | 0.2941 | 0.3073 | 0.3120 |
| Z1 | 0.2995 | 0.3510 | 0.3042 | 0.3270 | 0.2772 | 0.2955 | 0.2685 | 0.3135 |
| Z2 | 0.3042 | 0.3270 | 0.3073 | 0.3120 | 0.2824 | 0.2850 | 0.2772 | 0.2955 |
| Z3 | 0.3073 | 0.3120 | 0.3110 | 0.2941 | 0.2892 | 0.2713 | 0.2824 | 0.2850 |

Typical Optical and Electrical

Typical polar radiation pattern for lambertion



●Bin Code List

| Luminous Flux (Φ),(Unit: lm ,IF=150mA) | | |
|---|-----|------|
| Bin Code | Min | Max |
| H | 490 | 640 |
| J | 640 | 835 |
| K | 835 | 1090 |

Including test tolerance $\pm 10\%$

| Forward Voltage(VF),(Unit: V, IF=150mA) | | |
|---|-----|-----|
| Bin Code | Min | Max |
| VH | 35 | 40 |
| VI | 40 | 45 |
| VJ | 45 | 50 |

Including test tolerance $\pm 0.1V$

●Label Explanation

P/N: _____ CR07C-P1C54-EC000 _____
 QTY: _____ XXXX _____ PCS
 LOT NO.: _____ LC1111001 _____
 BIN NO.: _____ J/Y2/6000/VI _____

PART NO: CR07C-P1C54-EC000

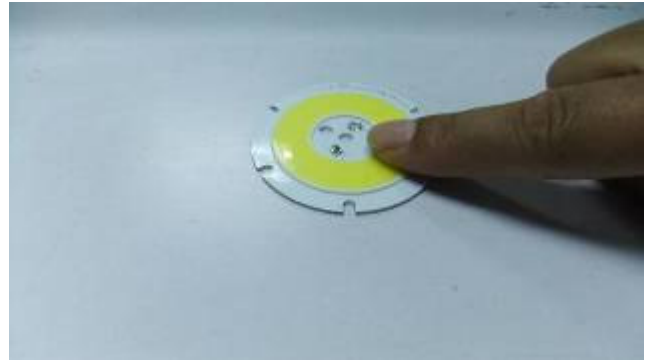
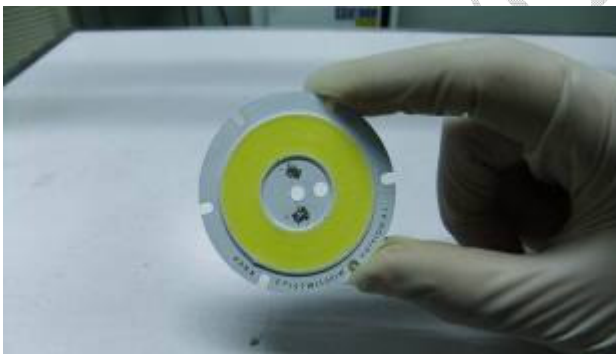
LOT NO: L C 11 11 001
 A B C D E

- A---L: Local
- B---C:COB
- C--- Year
- D---Month
- E--- For series number

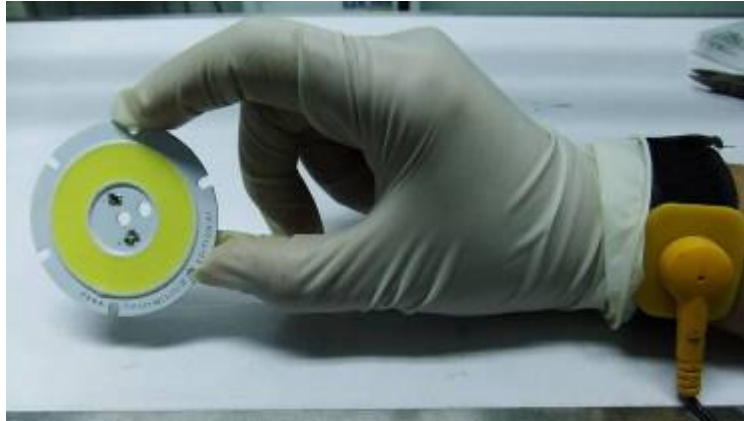
BIN NO: Bin Code

●Caution

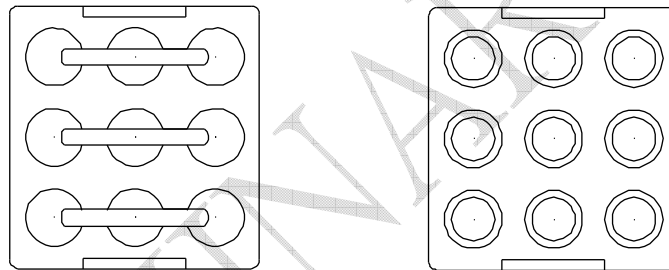
(1).Handling note: Do not touch LED's surface.



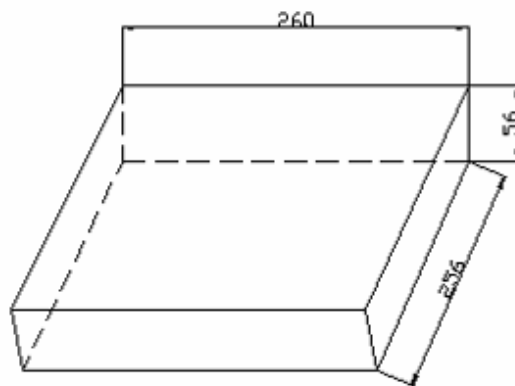
(2) Please wear anti-static wrist strap and gloves to prevent ESD damage when handling.



● Packing Specification



Carton A (1 pcs × 9 = 9 pcs)



Carton B (9 pcs × 2 = 18 pcs)

Note:

1. All dimensions are in millimeters.
2. Normal packing Quantity: 9 pcs.
3. The carton B contains 2 cartons A at maximum.

●Storage

1. Do not open the moisture proof bag before the devices are ready to use.
2. Before the package is opened, LED should be stored at temperatures less than 30°C and humidity less than 50%.
3. LED may be stored for 6 months. When the storage time has reached more than 6 months, LED should be stored in a sealed container filled with Nitrogen gas.
4. After the package is opened, LED should be stored at temperatures less than 30°C and humidity less than 30%.
5. LED should be used within 168 hours (7 days) after the package is opened.

●E-Power Operating Procedure

1. E-power 07W series products should be operated at 150 mA for ideal performance, but not more than 200mA.
2. E-power 07W series products are sensitive to static. Operators must wear static wristband (wireless static wristband is prohibited) and be well grounded while working in the environment with an ionizing air blower. Anti-static requirement should be under ESD 2000V.
3. Sufficient thermal management must be applied. Large LED forward current will cause high junction temperature and reduce LED life.
4. Recommended Assembly Method is shown in Figure 1, E-power 07W series products must be used in conjunction with heat-sinking devices and a thin layer of thermal grease should be applied to the bottom surface of the LED source

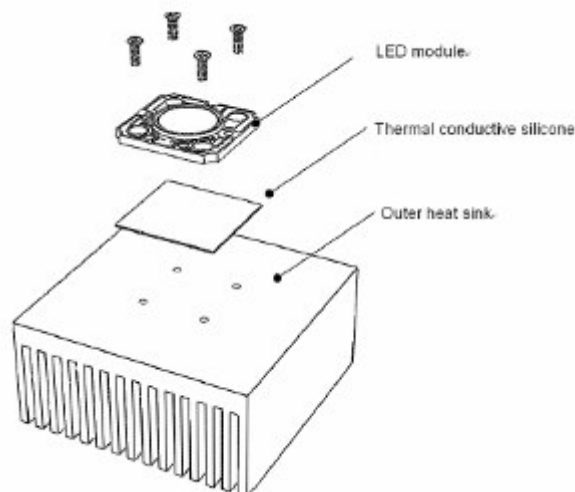


Figure 1



COB LED

CR07C-P1C54-EC000

REV:A/0

●Reliability Test

| Test Item | number | Test Condition | Stress duration | result |
|--|--------|--|-----------------|--------|
| High Temperature Storage Test | 20pcs | 100°C | 1000hours | Pass |
| Low Temperature Storage Test | 20pcs | -40°C | 1000 hours | Pass |
| Room Temperature Operation | 20pcs | Ta= 25°C IF =150mA | 1000hours | Pass |
| Temperature Cycle | 20pcs | H:+100°C 30mins L: -20°C 15mins | 200 Cycles | Pass |
| High Temperature High Humidity Operation | 20pcs | Ta=60°C RH= 85% IF=150mA | 500 hours | Pass |

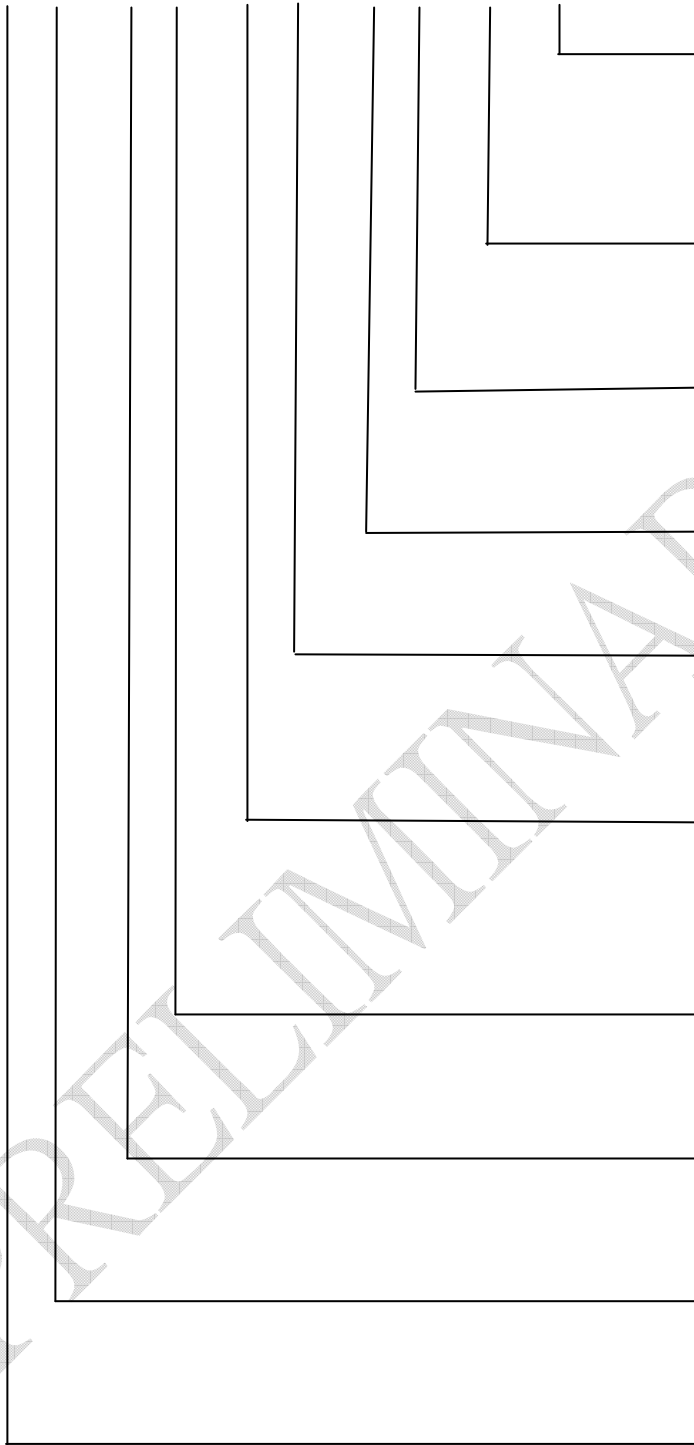
With heat sink, in a good thermal-exchange surrounding.

Failure Criteria:

1. No catastrophic(LED fail)
2. Lumen maintenance > 85%,
3. Change in Vf < 10%.

● Part NO. System of E-Power LED

C R 07 C -P1 C 54- E C0 00



Special code : 00, Regular code 01 , 02...Special photoelectric code

Ra: B0: 60-70 ;C0: 70-80;
D0: 80-90

Luminous efficacy:
A: 60-70lm/w ; B: 70-80lm/w;
C: 80-90lm/W; D: 90-100lm/W

Size code

Glue sealing method:
C: Coating; L: Lens

Substrate:
P1: Aluminum ;P2: Copper ;
P3: Ceramic; P4: Others

Color: Cool White ;
N: Netural White;W: Warm White

Power: 20: 20W ;07: 7W...

Shape: S: Square ;R: Round ;
L: Line

C: COB