# - 规 格 书 -

产品型号：　SEA-0204

产品名称：　LED模组

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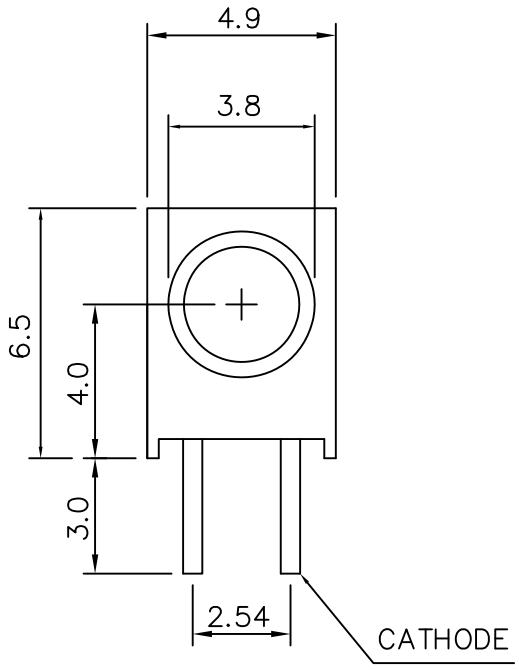
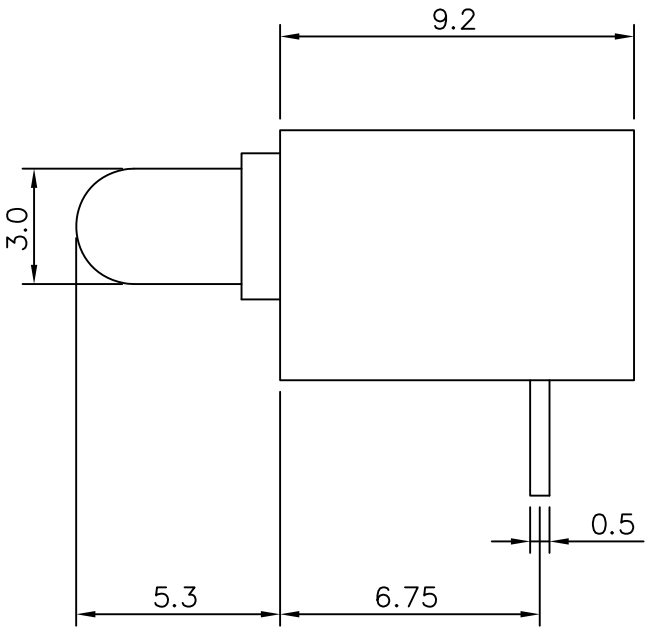
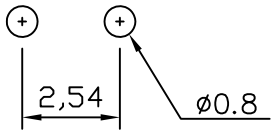



# P.C.B DIMENSION

SEA-0204

Green (LED Color)




NOTE: GENERAL TOLERANCE ±0.3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | APPD | CHKD | DSGD | MODEL: LED MODULE |
| | | | | WANG Y.D | KIM J.S | LEE H.S | PART NAME: SEA-0204 |
| DATA | | | | | | | SM SWITCH CO.,LTD |

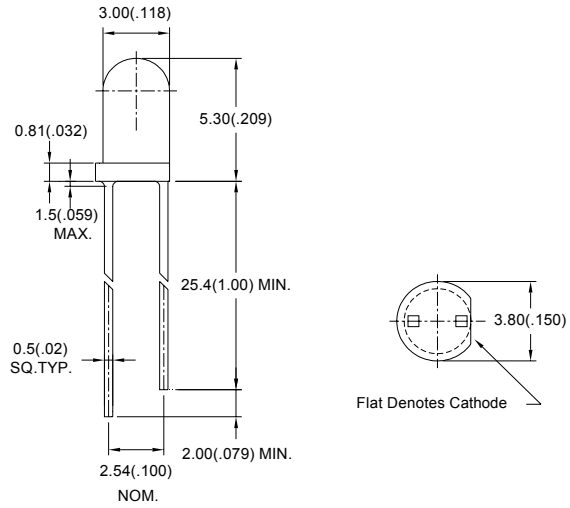
## ● Features:

1. Chip material: GaP/GaP
2. Emitted color : Green
3. Lens Appearance : Green Diffused
4. Low power consumption.
5. High efficiency.
6. Versatile mounting on P.C. Board or panel.
7. Low current requirement.
8. 3mm diameter package.
9. This product don't contained restriction substance, compliance ROHS standard.

## ● Applications:

1. TV set
2. Monitor
3. Telephone
4. Computer
5. Circuit board

## ● Package dimensions:




Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm (0.01") unless otherwise specified.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

## ● Absolute Maximum Ratings(Ta=25℃)

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Power Dissipation | Pd | 80 | mW |
| Forward Current | $I_F$ | 30 | mA |
| Peak Forward Current*[1] | $I_{FP}$ | 150 | mA |
| Reverse Voltage | $V_R$ | 5 | V |
| Operating Temperature | Topr | -40℃~85℃ | |
| Storage Temperature | Tstg | -40℃~100℃ | |
| Soldering Temperature | Tsol | 260℃max (for 5 seconds) | |
| Hand Soldering Temperature | Tsol | 350℃max(for 3 seconds ) | |

*[1]Condition for $I_{FP}$ is pulse of 1/10 duty and 0.1msec width.

## ● Electrical and optical characteristics(Ta=25℃)

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$=20mA | - | 2.2 | 2.6 | V |
| Luminous Intensity | Iv | $I_F$=20mA | - | 40 | - | mcd |
| Reverse Current | $I_R$ | $V_R$=5V | - | - | 100 | μA |
| Peak Wave Length | λp | $I_F$=20mA | - | 568 | - | nm |
| Dominant Wave Length | λd | $I_F$=20mA | 560 | - | 576 | nm |
| Spectral Line Half-width | Δλ | $I_F$=20mA | - | 30 | - | nm |
| Viewing Angle | $2\theta_{1/2}$ | $I_F$=20mA | - | 35 | - | deg |

## ● Typical electro-optical characteristics curves

Fig.1 Relative intensity vs. Wavelength

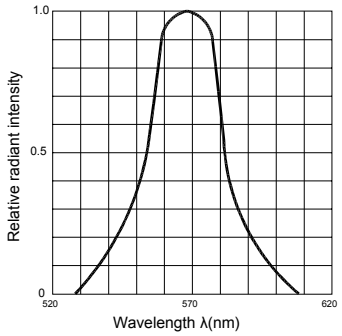



Fig.2 Forward current derating curve vs. Ambient temperature

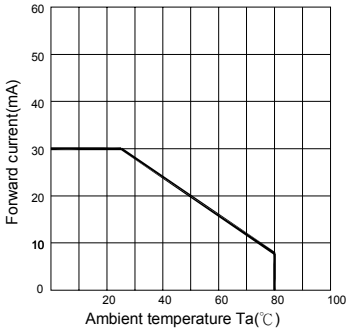



Fig.3 Forward current vs. Forward voltage

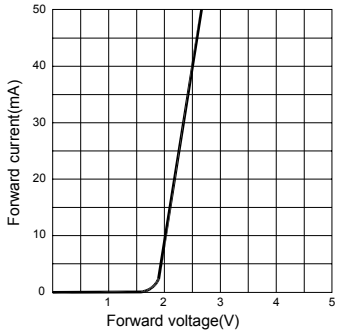



Fig.4 Relative luminous intensity vs. Ambient temperature

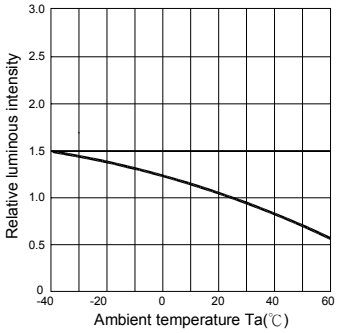



Fig.5 Relative luminous intensity vs. Forward current

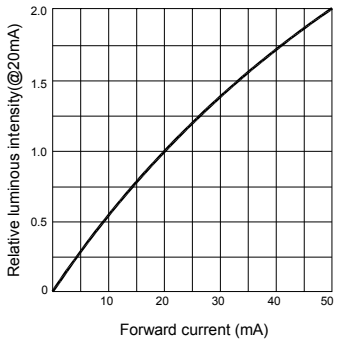
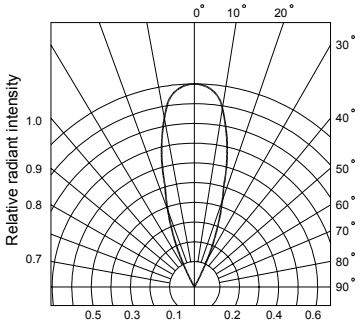



Fig.6 Radiation diagram



● **Bin Limits**

1. Intensity Bin Limits (At $I_F$= 20mA)

| Bin Code | Min. (mcd) | Max. (mcd) |
|---|---|---|
| K | 12.3 | 18.5 |
| L | 18.5 | 28 |
| M | 28 | 42 |
| N | 42 | 63 |
| P | 63 | 94 |

● Bin：x

Intensity Bin Code

NOTES:1.Tolerance of measurement of luminous intensity. :±15%

## ●JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

| Measuring items | Symbol | Measuring conditions | Judgement criteria for failure |
|---|---|---|---|
| **Forward voltage** | $V_F$ | If=20mA | Over Ux1.2 |
| **Reverse current** | Ir | Vr=5V | Over Ux2 |
| **Luminous intensity** | Iv | If=20mA | Below Sx0.5 |

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

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

## ● RELIABILITY TEST

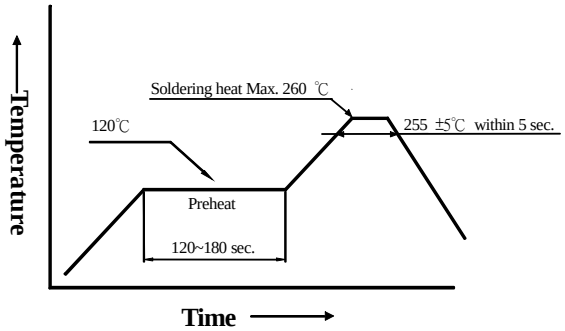
| O | Item | Test Condition | Test Hours/Cycles | Sample NO | Ac/Re |
|---|---|---|---|---|---|
| 1 | DC Operating Life | $I_F$:20mA | 1000HRS | 15PCS | 0/1 |
| 2 | High Temperature Storage | Temp:100℃ | 1000HRS | 15PCS | 0/1 |
| 3 | Low Temperature Storage | Temp: －40℃ | 1000HRS | 15PCS | 0/1 |
| 4 | High Temperature/High Humidity | 85℃/90%RH | 240HRS | 15PCS | 0/1 |
| 5 | Temperature Cycle | H:+85℃ 20min<br>l 5 min<br>L: -40℃ 20min | 10 CYCLES | 15PCS | 0/1 |

## ●Lead Frame Dipping

The LED Lead Frame are dipped by Sn in order to protect the rust. Also the dipping thickness is Max 5 *u*㎜. When soldering, leave 2.0mm of minimum clearance between the resin and the soldering point.

## ●DIP soldering (Wave Soldering)

Preheating : 120℃,within 120~180 sec.
Operation heating : 255℃±5℃ within 5 sec.260℃ (Max)
Gradual Cooling (Avoid quenching).



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