# 規　格　書

# SPECIFICATION

品名：
PART NAME　**LED LAMP**

料號：
PART NO：　**MT-3N4P(HTG)**

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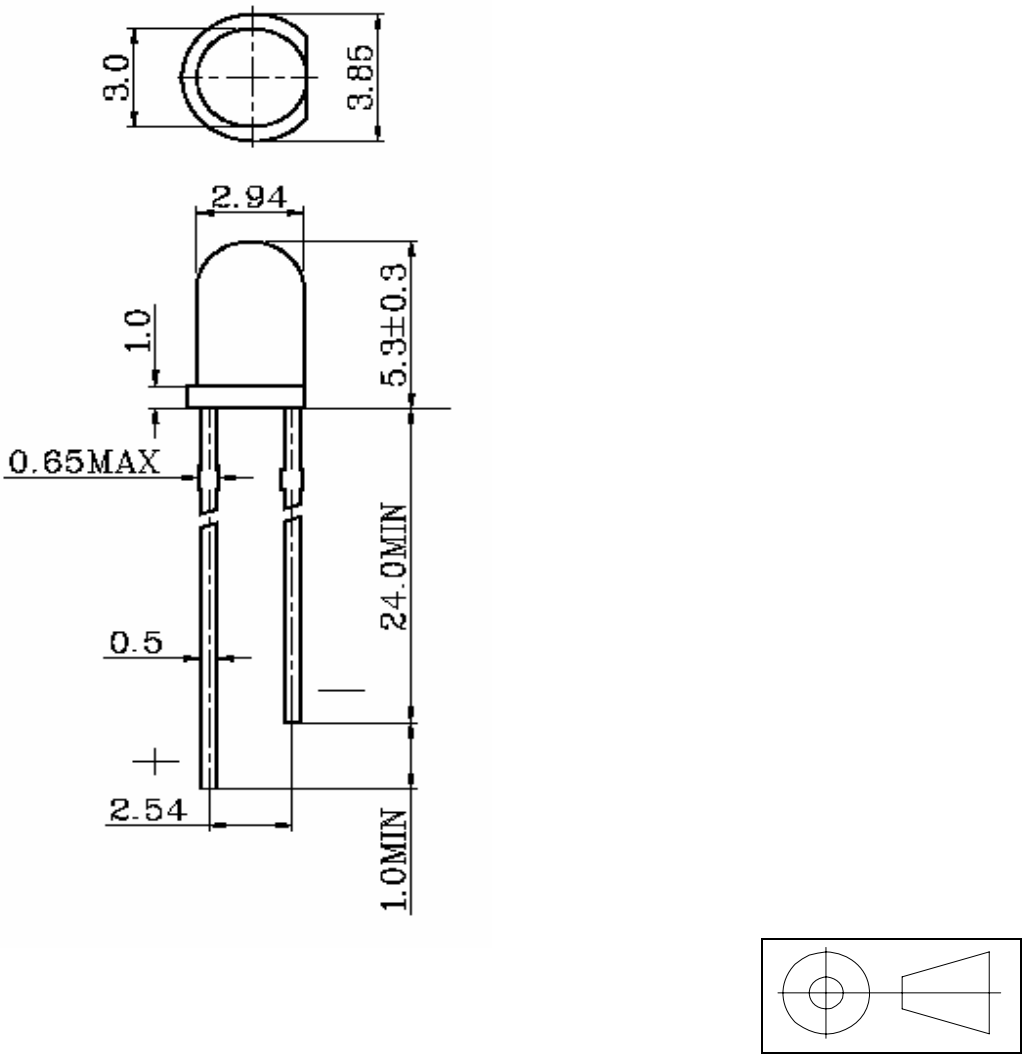
■ Package Dimension:




| Part Number | Chip | | Lens Color |
|---|---|---|---|
| MT-3N4P(HTG) | Material | Emitting Color | |
| | GaP | RED | Red Diffused |

■ Material List:

| Item | Part No. |
|---|---|
| Lead Frame | 2004 |
| Chip | 101RD |
| Gold Wire | 0.9mil |
| Silver Epoxy | T-3007-20 |
| Epoxy | 6671D/H592 |

■ NOTES:

1.All dimension are millimeters.

2.Tolerance is ±0.25mm unless otherwise noted.

1.SPECIFICATIONS (RED)

(1) Absolute Maximum Rating (Ta=25℃)

| Item | Symbol | Absolute Maximum Rating | Unit |
|---|---|---|---|
| Forward Current | If | 20 | mA |
| Peak Forward Current | Ifp | 50 | mA |
| Reverse Voltage | Vr | 5 | V |
| Power Dissipation | Pd | 45 | mW |
| Electrostatic Discharge（HBM） | / | / | V |
| Operating Temperature | Top | -40℃~80℃ | ℃ |
| Storage Temperature | Tstg | -40℃~100℃ | ℃ |
| Lead Soldering Temperature | Tsol | 260℃ FOR 5 SECONDS | |

IFP Conditions: Pulse Width≤0.1msec.and duty≤1/10

(2) Initial Electrical/Optical Characteristics (Ta=25℃)

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage | Vf | If=20(mA) | 1.7 | 2.1 | 2.8 | V |
| Reverse Current | Ir | Vr=5(V) | / | / | 10 | μA |
| Viewing Angle | $2\theta 1/2$ | If=20(mA) | / | 35 | / | deg |
| Luminous Intensity | Iv | If=20(mA) | 1.0 | 3 | / | mcd |
| Peak Wavelength | $\lambda p$ | If=20(mA) | 695 | 700 | 705 | nm |
| Dominant Wavelength | $\lambda d$ | If=20(mA) | 615 | 620 | 625 | nm |
| Recommend Forward Current | IF(Rec) | / | / | 5-10 | / | mA |

2.TYPICAL INITIAL OPICAL/ELECTRICAL CHARACTERISTICS

Please refer to Figures : in Page 3

3.OUTLINE DIMENSIONS AND MATERIALS

Please refer to drawing: in Page 2

Material as follows: Resin :Epoxy

Lead frame:Ag plating Copper ally

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## 3. Typical Electro-Optical Characteristic Curves:

Fig1.Forward Current vs.Forward Voltage

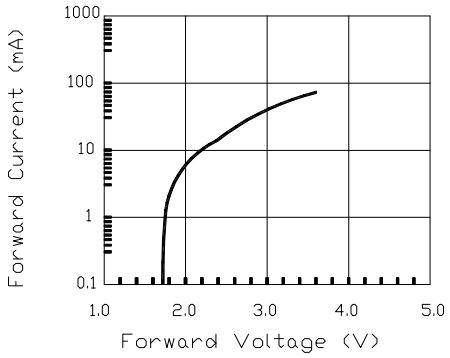



Fig2.Relative Intensity vs. Forward Current

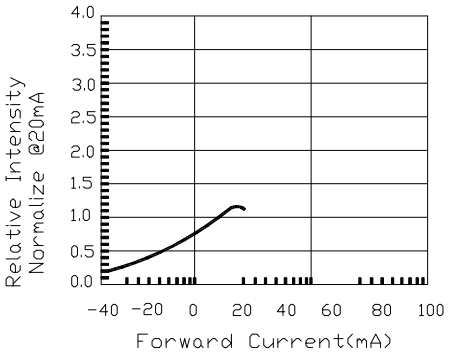



Fig3.Forward Voltage vs. Temperature

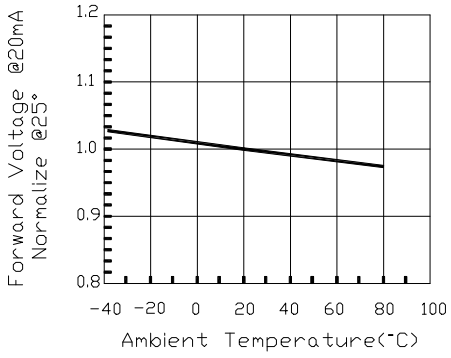



Fig4.Relative Intensity vs. Temperature

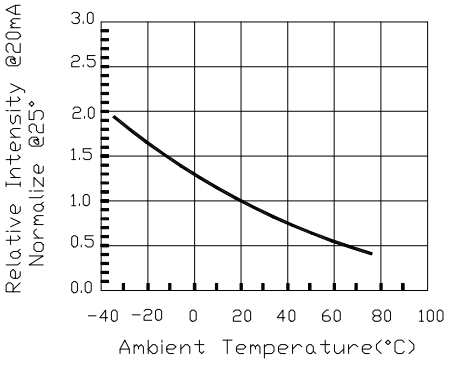
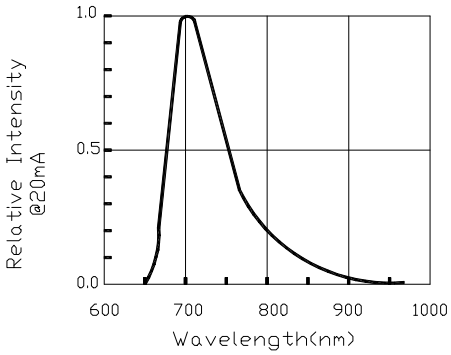
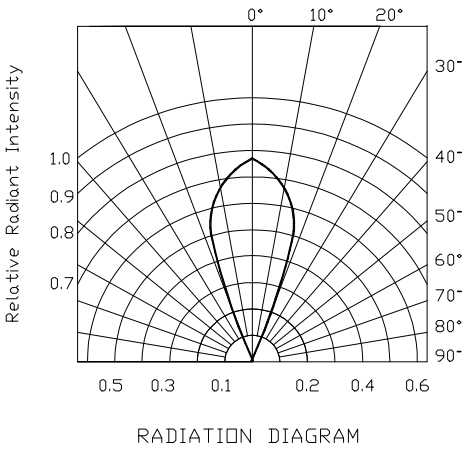



Fig5.Relative Intensity vs. Wavelength




Rodiation Diagram Ta=25°C




RADIATION DIAGRAM

4.Rreliability Performance

(1)Reliability test item and condition

| NO | Item | Test Conditions | Test Hours/Cycle | Sample Size | Ac/Re |
|---|---|---|---|---|---|
| 1 | Solder Heat | TEMP:260±5℃ | 5 SEC | 76pcs | 0/1 |
| 2 | Temperature Cycle | H:+85℃ 30min<br>δ 5min<br>L:-40℃ 30min | 50CYCLE | 76pcs | 0/1 |
| 3 | Thermal Shock | H:+100℃ 5min<br>δ 10sec<br>L:-10℃ 5min | 50CYCLE | 76pcs | 0/1 |
| 4 | High Temperature Storage | TEMP:100℃ | 1000HRS | 76pcs | 0/1 |
| 5 | Low Temperature Storage | TEMP:-40℃ | 1000HRS | 76pcs | 0/1 |
| 6 | DC Operating Life | If=20mA | 1000HRS | 76pcs | 0/1 |
| 7 | High Temperature High Humidity | 85℃/85%RH | 1000HRS | 76pcs | 0/1 |

(2)CRITERIA FOR JUDGING THE DAMAGE

| | | Test Conditions | Criteria for judgement | |
|---|---|---|---|---|
| | | | Min | Max |
| Voltage(Forward) | VF | IF=20mA | - | U.S.L*)×1.1 |
| Current(Reverse) | IR | VR=5V | - | U.S.L*)×2.0 |
| Luminous Intensity | IV | IF=20mA | L.S.L**)×0.7 | - |

*)U.S.L.: Upper Standard Level. **)L.S.L.:Lower Standard Level.