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DUAL COLOR LED LAMPS



Lead-Free Parts

**LEG45892/R1-PF**

# **DATA SHEET**

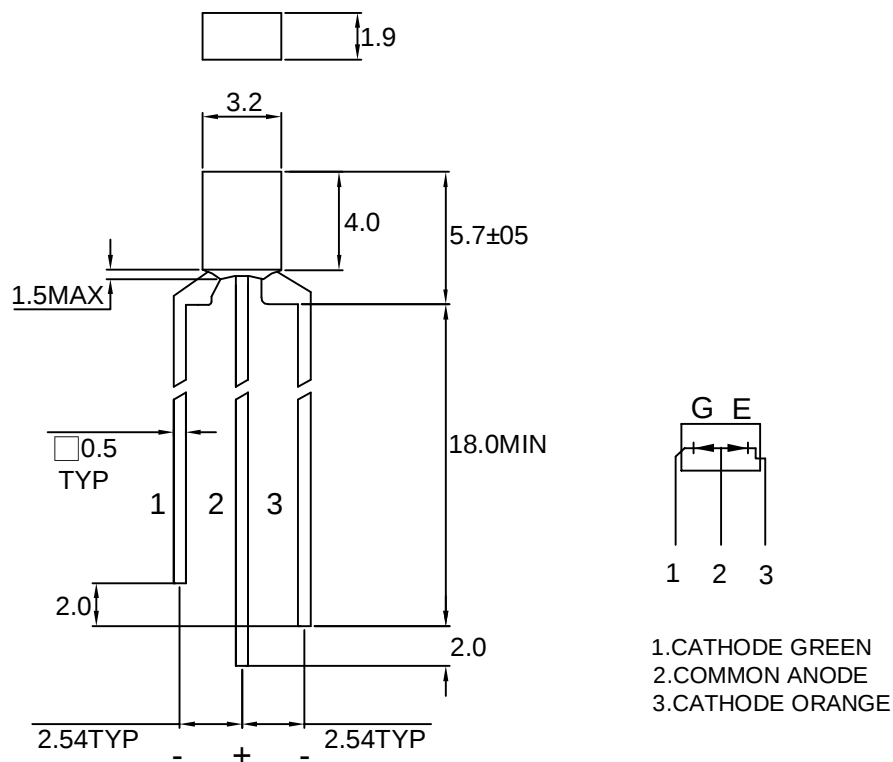
DOC. NO : QW0905-LEG45892/R1-PF

REV. : A

DATE : 16 - Aug. - 2007

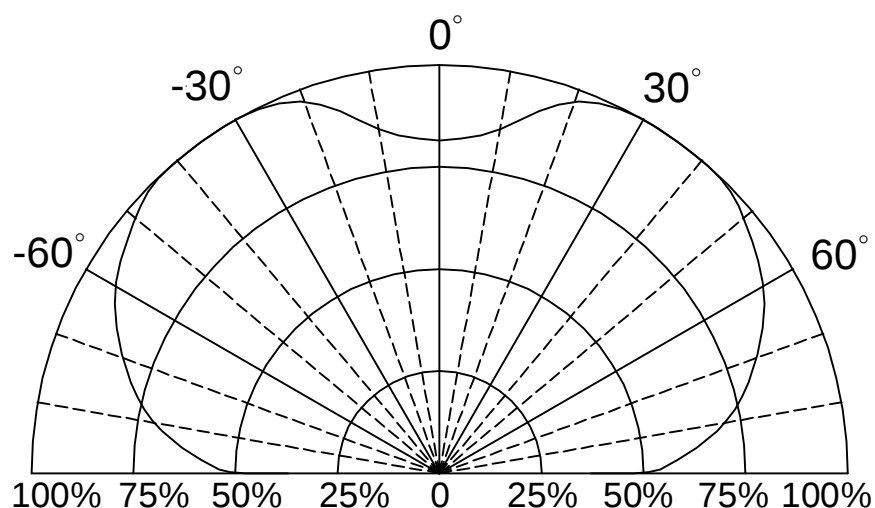


## Package Dimensions



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.  
2.Specifications are subject to change without notice.

## Directivity Radiation





## Absolute Maximum Ratings at Ta=25 °C

| Parameter                               | Symbol | Ratings    |     | UNIT |
|-----------------------------------------|--------|------------|-----|------|
|                                         |        | E          | G   |      |
| Forward Current                         | IF     | 30         | 30  | mA   |
| Peak Forward Current<br>Duty 1/10@10KHz | IFP    | 120        | 120 | mA   |
| Power Dissipation                       | PD     | 100        | 100 | mW   |
| Reverse Current @5V                     | Ir     | 10         |     | μ A  |
| Operating Temperature                   | Topr   | -40 ~ +85  |     | °C   |
| Storage Temperature                     | Tstg   | -40 ~ +100 |     | °C   |

## Typical Electrical &amp; Optical Characteristics (Ta=25 °C)

| PART NO        | MATERIAL  | COLOR   |                | Peak wave<br>length<br>λ Pnm | Spectral<br>halfwidth<br>Δ λ nm | Forward<br>voltage<br>@20mA(V) |      | Luminous<br>intensity<br>@10mA(mcd) |      | Viewing<br>angle<br>2θ 1/2<br>(deg) |
|----------------|-----------|---------|----------------|------------------------------|---------------------------------|--------------------------------|------|-------------------------------------|------|-------------------------------------|
|                |           | Emitted | Lens           |                              |                                 | Min.                           | Max. | Min.                                | Typ. |                                     |
| LEG45892/R1-PF | GaAsP/GaP | Orange  | White Diffused | 635                          | 45                              | 1.7                            | 2.6  | 1.2                                 | 3.0  | 180                                 |
|                | GaP       | Green   |                | 565                          | 30                              | 1.7                            | 2.6  | 1.8                                 | 4.5  | 180                                 |

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.

2. The luminous intensity data did not including ±15% testing tolerance.



## Typical Electro-Optical Characteristics Curve

### E CHIP

Fig.1 Forward current vs. Forward Voltage

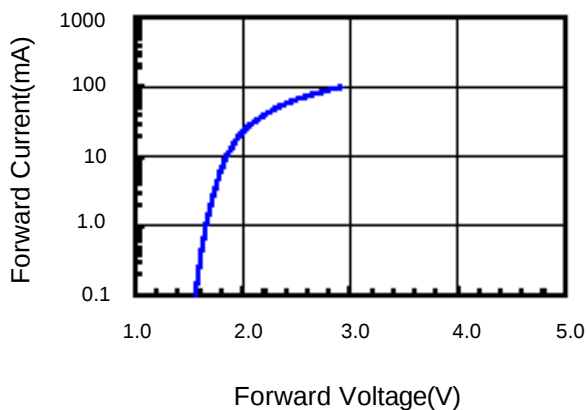


Fig.2 Relative Intensity vs. Forward Current

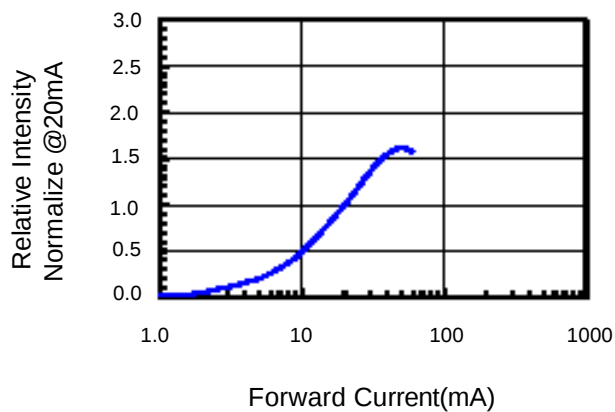


Fig.3 Forward Voltage vs. Temperature

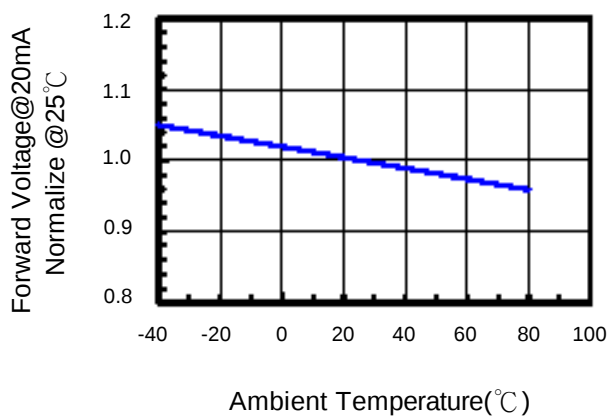


Fig.4 Relative Intensity vs. Temperature

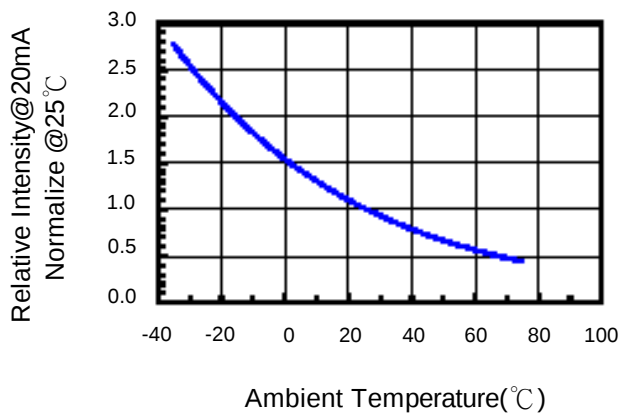
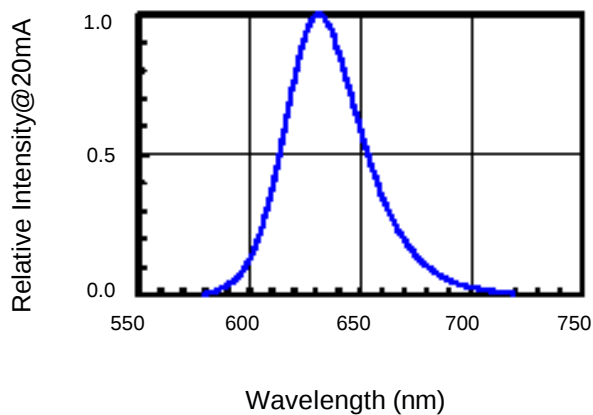


Fig.5 Relative Intensity vs. Wavelength





## Typical Electro-Optical Characteristics Curve

### G CHIP

Fig.1 Forward current vs. Forward Voltage

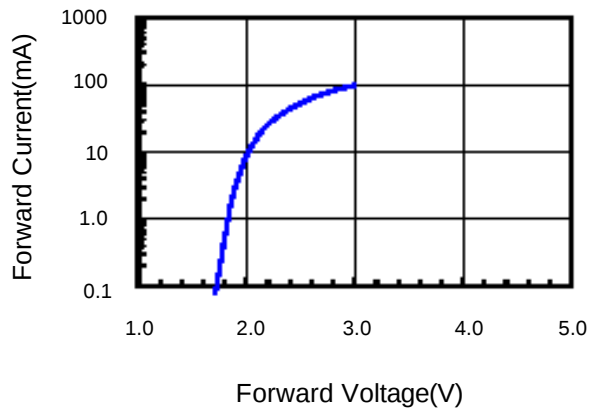


Fig.2 Relative Intensity vs. Forward Current

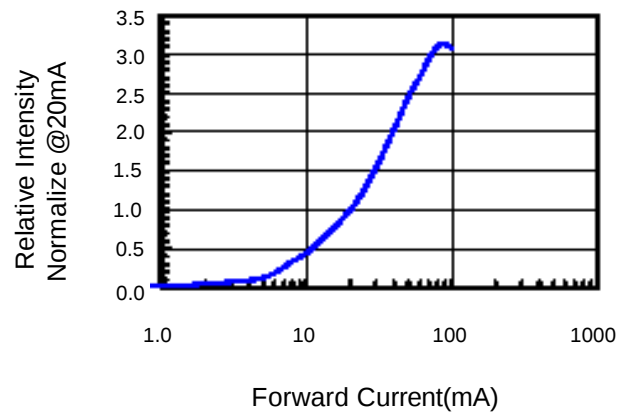


Fig.3 Forward Voltage vs. Temperature

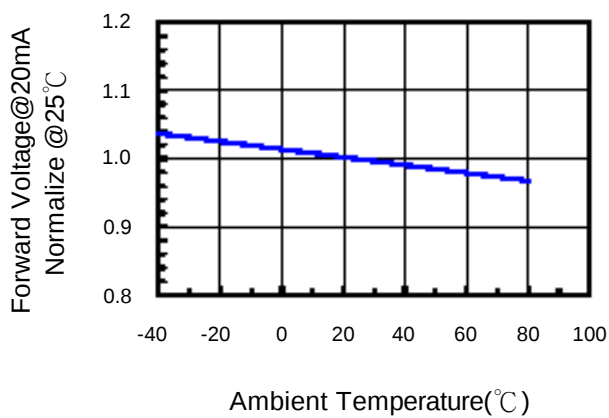


Fig.4 Relative Intensity vs. Temperature

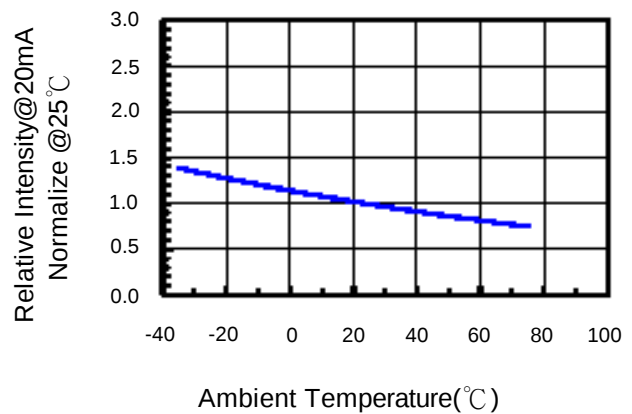
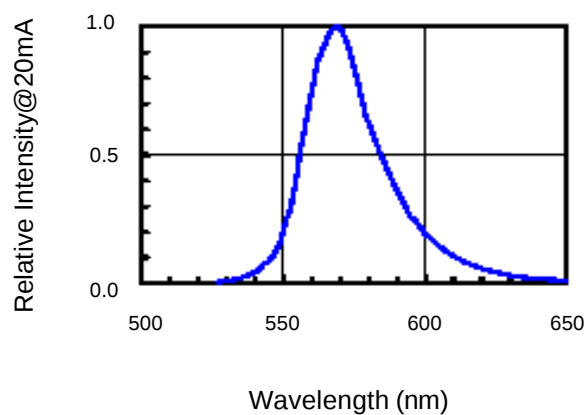


Fig.5 Relative Intensity vs. Wavelength





## Soldering Condition(Pb-Free)

### 1.Iron:

Soldering Iron:30W Max

Temperature 350°C Max

Soldering Time:3 Seconds Max(One time only)

Distance:2mm Min(From solder joint to body)

### 2.Wave Soldering Profile

Dip Soldering

Preheat: 120°C Max

Preheat time: 60seconds Max

Ramp-up

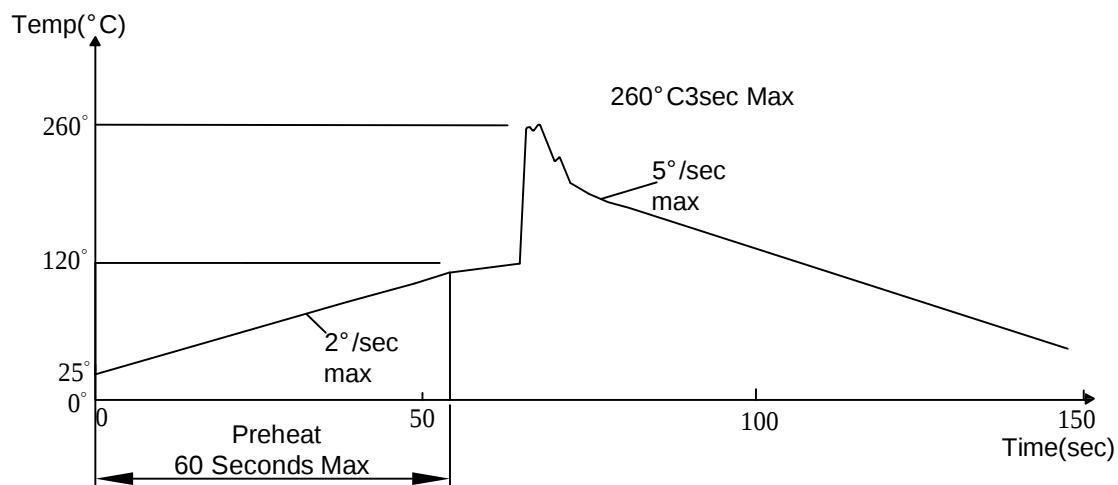
2° C/sec(max)

Ramp-Down:-5° C/sec(max)

Solder Bath:260°C Max

Dipping Time:3 seconds Max

Distance:2mm Min(From solder joint to body)



Note: 1.Wave solder should not be made more than one time.

2.You can just only select one of the soldering conditions as above.

**Reliability Test:**

| Test Item                           | Test Condition                                                         | Description                                                                                                                                                             | Reference Standard                                                             |
|-------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Operating Life Test                 | 1.Under Room Temperature<br>2.If=20mA<br>3.t=1000 hrs (-24hrs, +72hrs) | This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.                                                      | MIL-STD-750: 1026<br>MIL-STD-883: 1005<br>JIS C 7021: B-1                      |
| High Temperature Storage Test       | 1.Ta=105 °C±5°C<br>2.t=1000 hrs (-24hrs, +72hrs)                       | The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.                                                        | MIL-STD-883:1008<br>JIS C 7021: B-10                                           |
| Low Temperature Storage Test        | 1.Ta=-40 °C±5°C<br>2.t=1000 hrs (-24hrs, +72hrs)                       | The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.                                                         | JIS C 7021: B-12                                                               |
| High Temperature High Humidity Test | 1.Ta=65 °C±5°C<br>2.RH=90%~95%<br>3.t=240hrs ±2hrs                     | The purpose of this test is the resistance of the device under tropical for hours.                                                                                      | MIL-STD-202:103B<br>JIS C 7021: B-11                                           |
| Thermal Shock Test                  | 1.Ta=105 °C±5°C & -40 °C±5°C (10min) (10min)<br>2.total 10 cycles      | The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.                                                              | MIL-STD-202: 107D<br>MIL-STD-750: 1051<br>MIL-STD-883: 1011                    |
| Solder Resistance Test              | 1.T.Sol=260 °C±5°C<br>2.Dwell time= 10 ±1sec.                          | This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire. | MIL-STD-202: 210A<br>MIL-STD-750: 2031<br>JIS C 7021: A-1                      |
| Solderability Test                  | 1.T.Sol=230 °C±5°C<br>2.Dwell time=5 ±1sec                             | This test intended to see soldering well performed or not.                                                                                                              | MIL-STD-202: 208D<br>MIL-STD-750: 2026<br>MIL-STD-883: 2003<br>JIS C 7021: A-2 |