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DUAL COLOR LED LAMPS



Lead-Free Parts

**LSEG85292/S1-PF**

**DATA SHEET**

DOC. NO : QW0905-LSEG85292/S1-PF-0808

REV. : A

DATE : 14 - Aug. - 2007



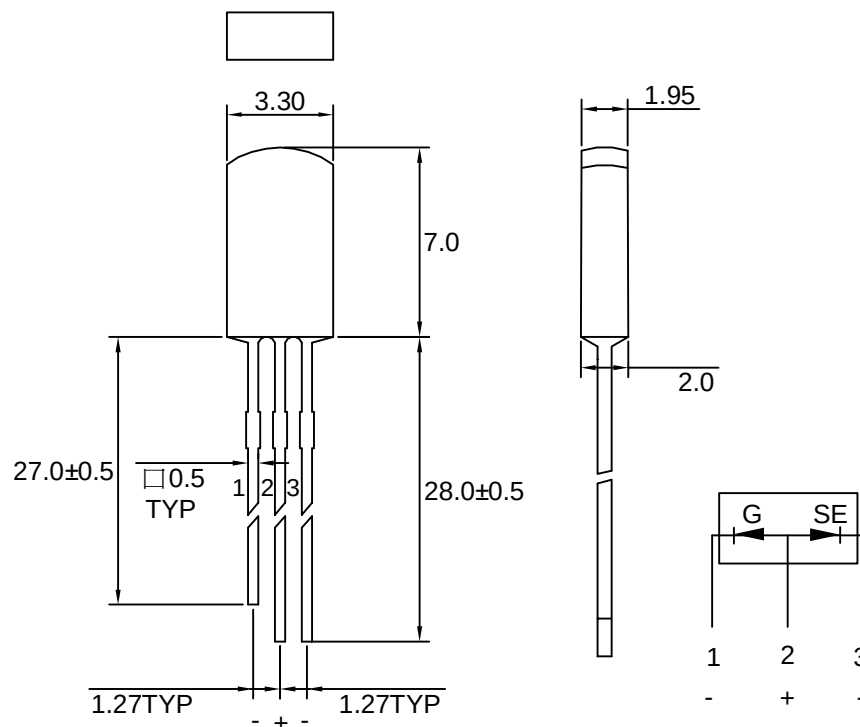
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PART NO. LSEG85292/S1-PF

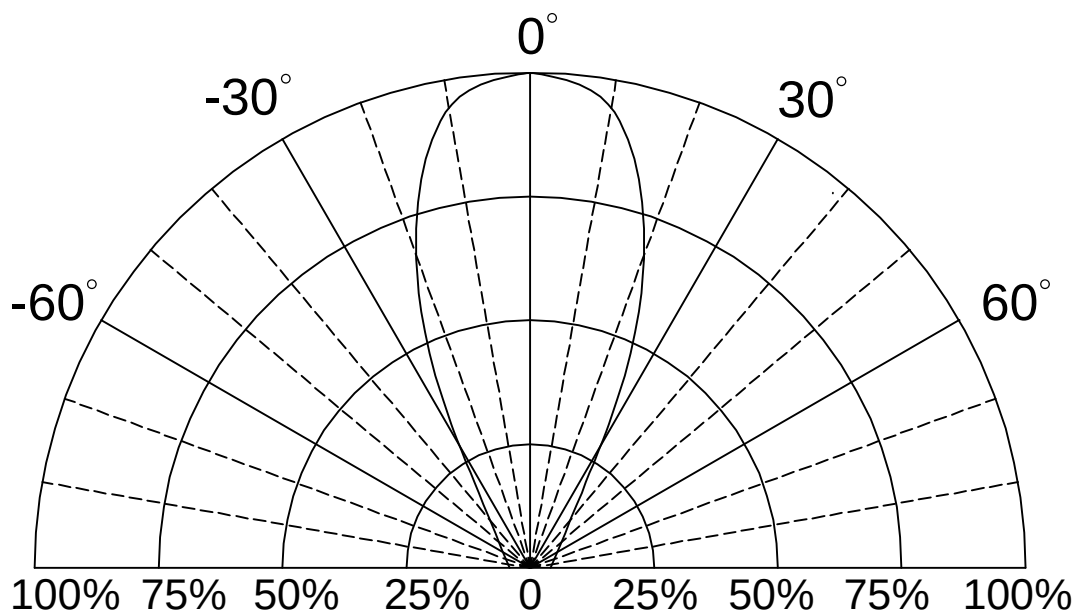
Page 1/6

## Package Dimensions



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.25$ 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    |
|-----------------------------------------|--------|------------|-------|---------|
|                                         |        | Orange     | Green |         |
| Forward Current                         | IF     | 15         | 15    | mA      |
| Peak Forward Current<br>Duty 1/10@10KHz | IFP    | 80         | 80    | mA      |
| Power Dissipation                       | PD     | 40         | 50    | mW      |
| Reverse Current @5V                     | Ir     | 10         |       | $\mu$ 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 length<br>$\lambda$ Pnm | Spectral halfwidth<br>$\triangle \lambda$ nm | Forward voltage<br>@20mA(V) |      |      | Luminous intensity<br>@10mA(mcd) |      | Viewing angle<br>2 $\theta$ 1/2 (deg) |
|-----------------|-----------|---------|----------------|-----------------------------------|----------------------------------------------|-----------------------------|------|------|----------------------------------|------|---------------------------------------|
|                 |           | Emitted | Lens           |                                   |                                              | Min.                        | Typ. | Max. | Min.                             | Typ. |                                       |
| LSEG85292/S1-PF | GaAsP/GaP | Orange  | White Diffused | 609                               | 45                                           | 1.7                         | ---  | 2.6  | 1.2                              | 1.8  | 50                                    |
|                 | GaP       | Green   |                | 565                               | 30                                           | Forward voltage<br>@10mA(V) |      |      |                                  |      |                                       |
|                 |           |         | 1.7            |                                   |                                              | 2.1                         | ---  | 1.2  | 1.8                              | 50   |                                       |

Note : 1. The forward voltage data did not including  $\pm 0.1V$  testing tolerance.  
2. The luminous intensity data did not including  $\pm 15\%$  testing tolerance.



## Typical Electro-Optical Characteristics Curve

### SE CHIP

Fig.1 Forward current vs. Forward Voltage

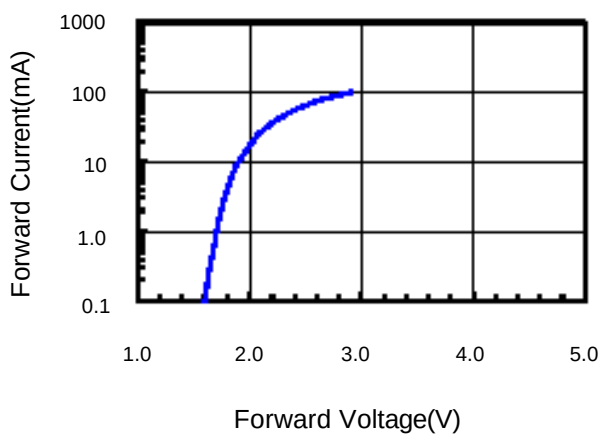


Fig.2 Relative Intensity vs. Forward Current

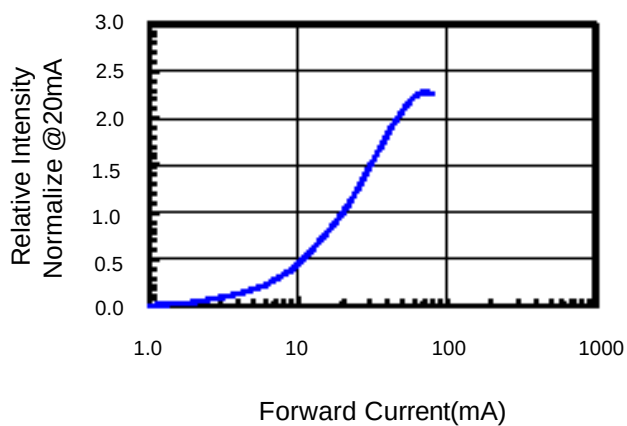


Fig.3 Forward Voltage vs. Temperature

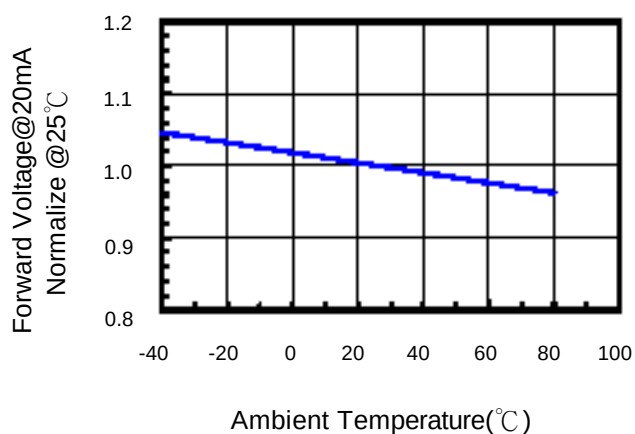


Fig.4 Relative Intensity vs. Temperature

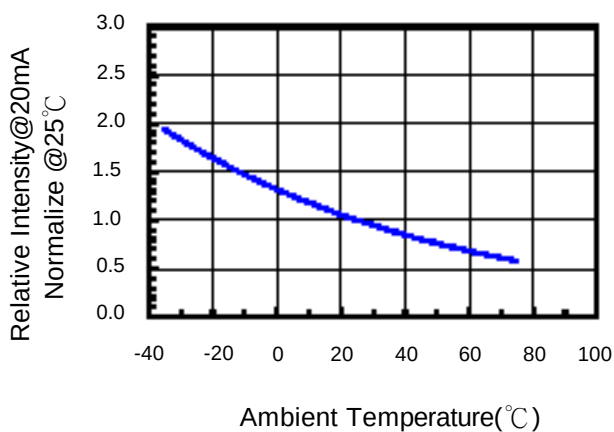
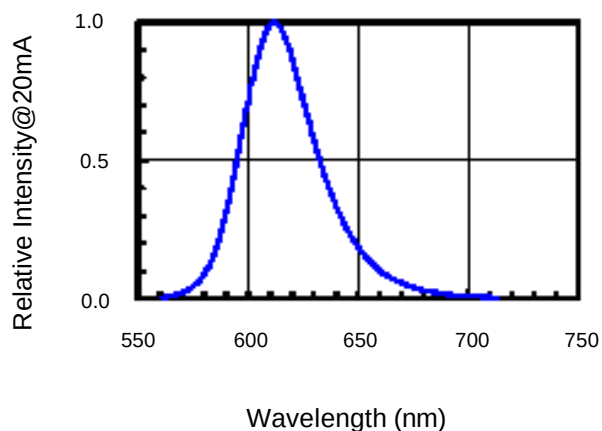


Fig.5 Relative Intensity vs. Wavelength





## Typical Electro-Optical Characteristics Curve

### G CHIP

Fig.1 Forward current vs. Forward Voltage

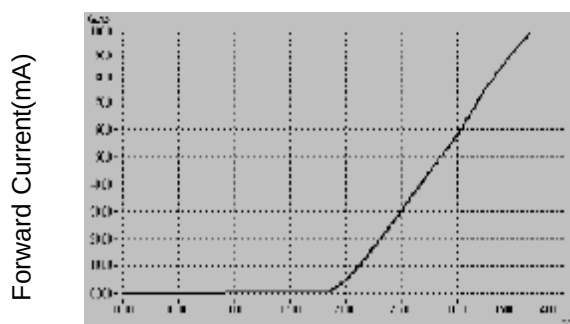


Fig.2 Relative Intensity vs. Forward Current

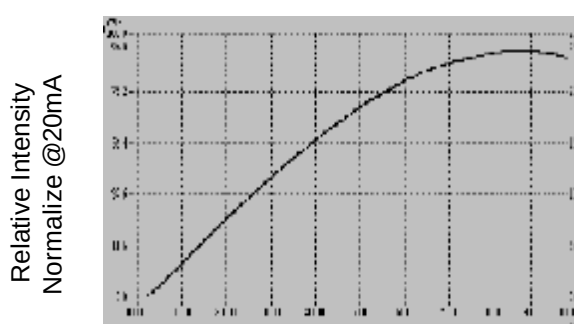


Fig.3 Forward Voltage vs. Temperature

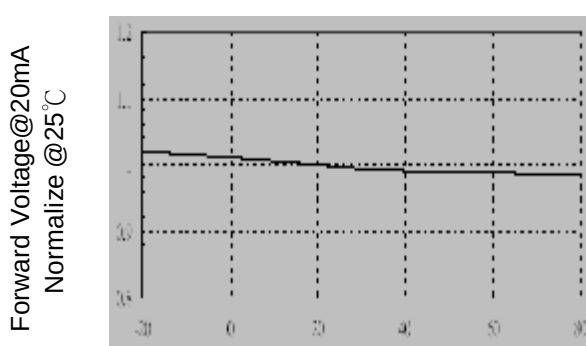


Fig.4 Relative Intensity vs. Temperature

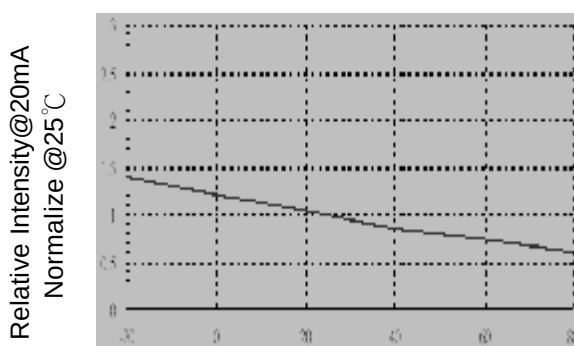
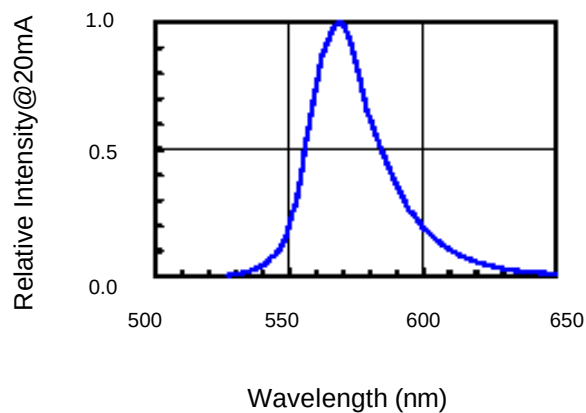


Fig.5 Relative Intensity vs. Wavelength



**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

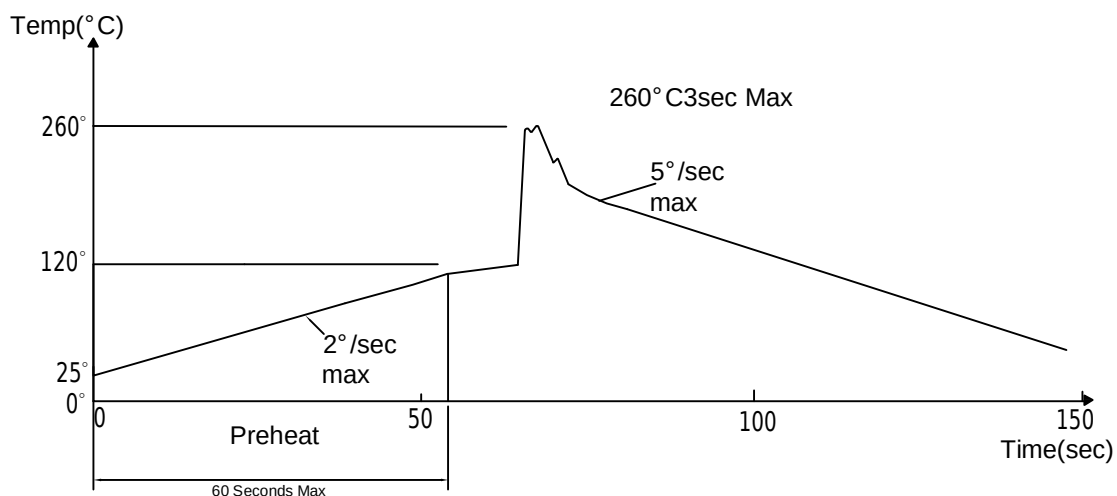
2° C/sec(max)

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<br>(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 |