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LED ARRAY



Lead-Free Parts

LA181W/SEG-PF

DATA SHEET

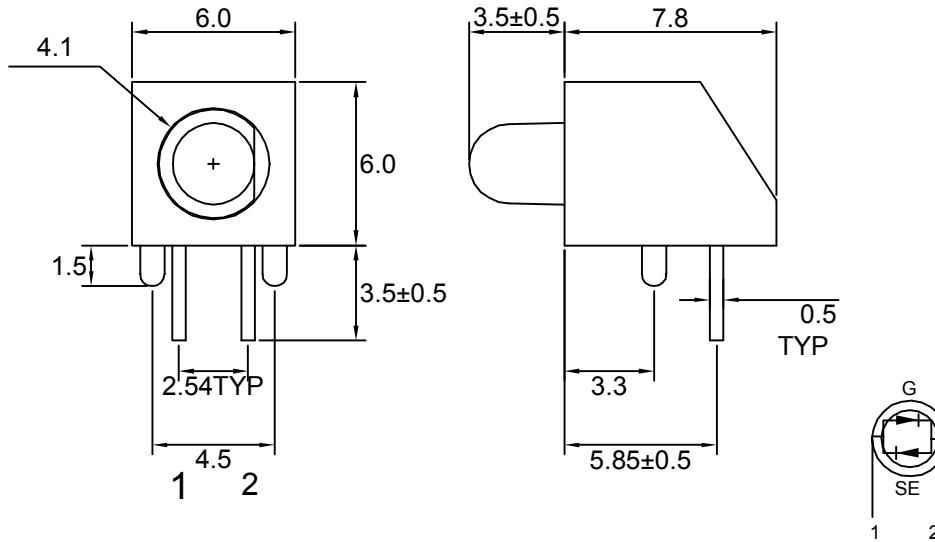
DOC. NO : QW0905-LA181W/SEG-PF

REV. : A

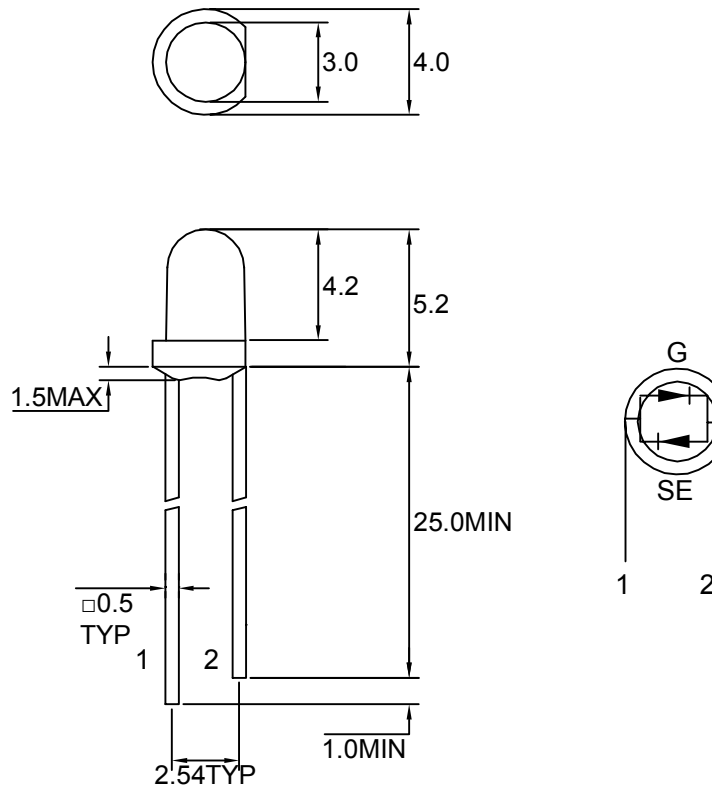
DATE : 12 - Jul - 2005



### Package Dimensions



### LSEG2062/R1



Note : 1.All dimension are in millimeter tolerance is ±0.25mm unless otherwise noted.  
2.Specifications are subject to change without notice.



**Absolute Maximum Ratings at Ta=25**

| Parameter                               | Symbol | Ratings                                  |     | UNIT |
|---|--------|--|-----|------|
|   |        | SE                                       | G   |      |
| Forward Current                         | IF     | 20                                       | 30  | mA   |
| Peak Forward Current<br>Duty 1/10@10KHz | IFP    | 80                                       | 120 | mA   |
| Power Dissipation                       | PD     | 80                                       | 100 | mW   |
| Reverse Current @5V                     | Ir     | 10                                       | 10  | μ A  |
| Operating Temperature                   | Topr   | -40 ~ +85                                |     |      |
| Storage Temperature                     | Tstg   | -40 ~ +100                               |     |      |
| Soldering Temperature                   | Tsol   | Max 260 for 5 sec Max<br>(2mm from body) |     |      |

**Typical Electrical & Optical Characteristics (Ta=25 )**

| PART NO       | MATERIAL  | COLOR   |                | Peak wave length Pnm | Spectral halfwidth nm | Forward voltage @20mA(V) |      | Luminous intensity @ 10mA(mcd) |      | Viewing angle 2 1/2 (deg) |
|---------------|-----------|---------|----------------|----------------------|-----------------------|--------------------------|------|--------------------------------|------|---------------------------|
|               |           | Emitted | Lens           |                      |                       | Min.                     | Max. | Min.                           | Typ. |                           |
| LA181W/SEG-PF | GaAsP/GaP | Orange  | White Diffused | 610                  | 45                    | 1.7                      | 2.6  | 3.0                            | 5.0  | 70                        |
|               | GaP       | Green   |                | 565                  | 30                    | 1.7                      | 2.6  | 3.0                            | 5.0  | 70                        |

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

G CHIP

Fig.1 Forward current vs. Forward Voltage

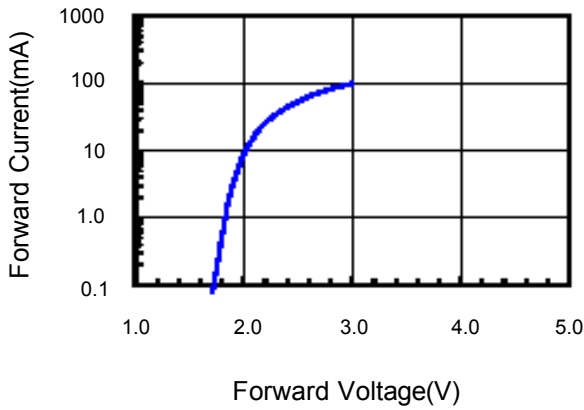


Fig.2 Relative Intensity vs. Forward Current

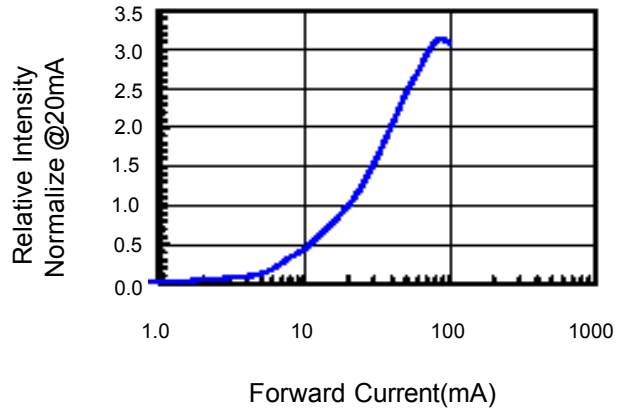


Fig.3 Forward Voltage vs. Temperature

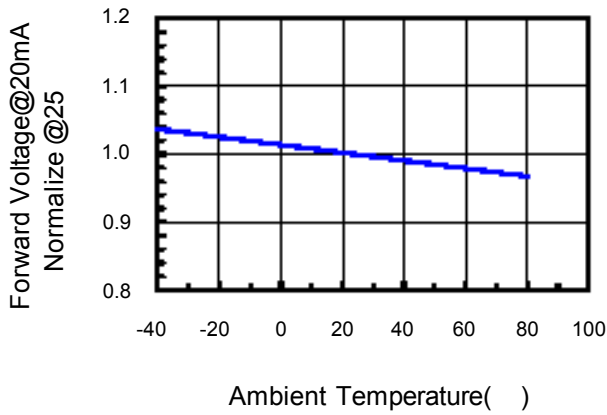


Fig.4 Relative Intensity vs. Temperature

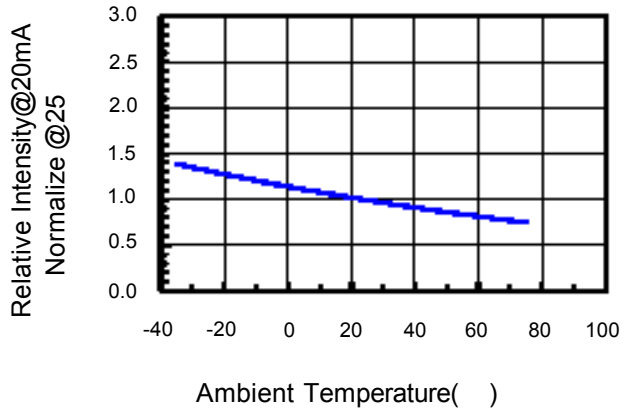
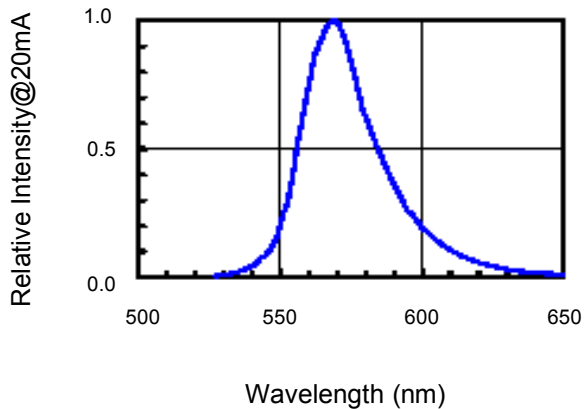


Fig.5 Relative Intensity vs. Wavelength





### Typical Electro-Optical Characteristics Curve

#### SE CHIP

Fig.1 Forward current vs. Forward Voltage

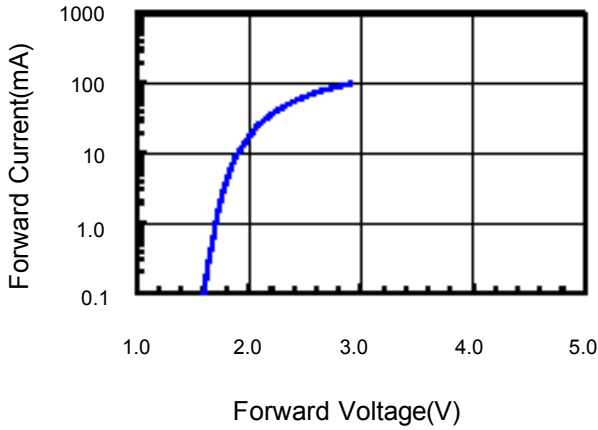


Fig.2 Relative Intensity vs. Forward Current

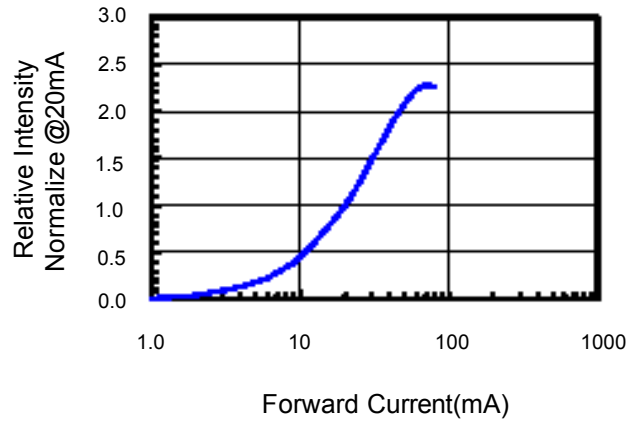


Fig.3 Forward Voltage vs. Temperature

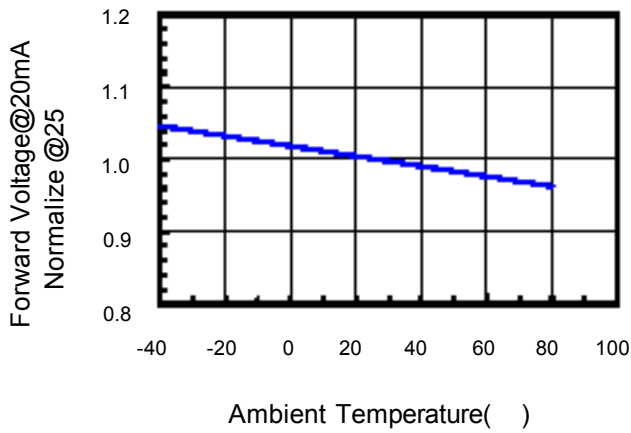


Fig.4 Relative Intensity vs. Temperature

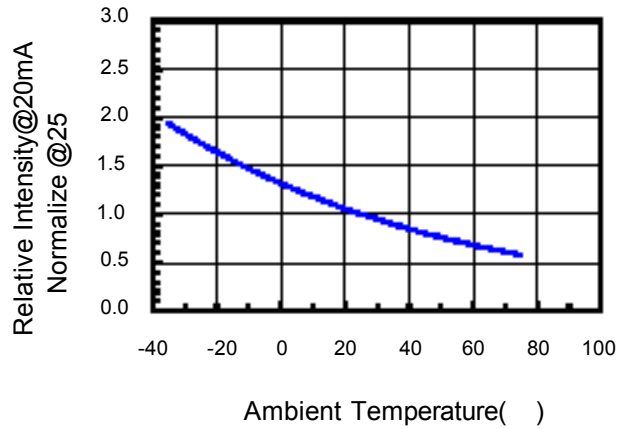
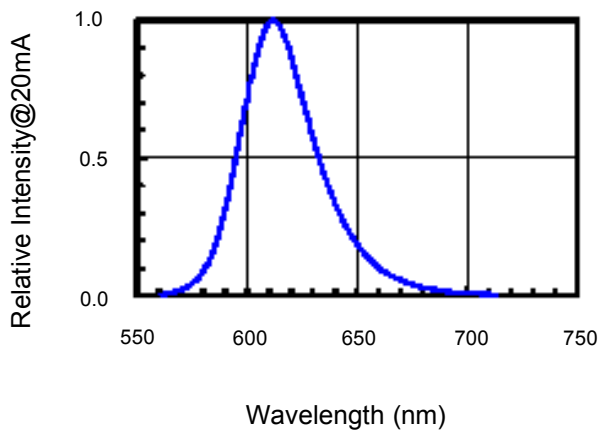


Fig.5 Relative Intensity vs. Wavelength





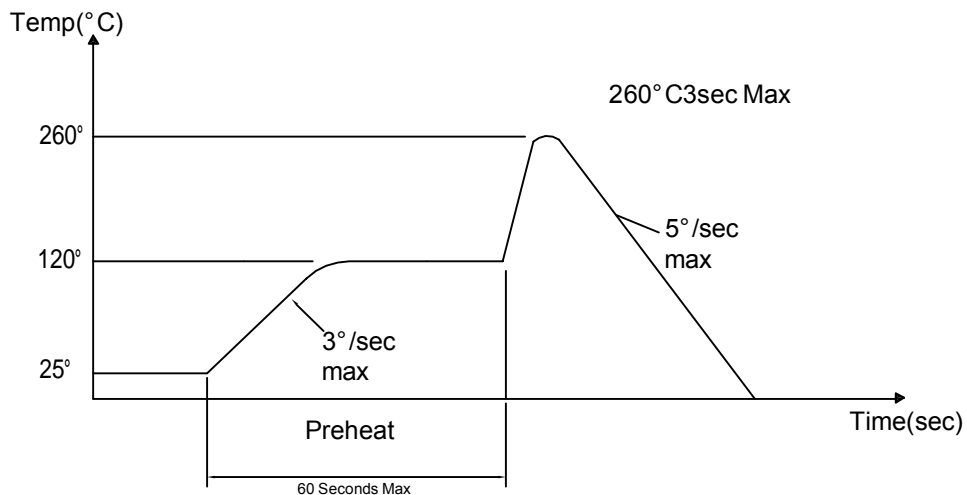
### Soldering Condition(Pb-Free)

#### 1.Iron:

- Soldering Iron:30W Max
- Temperature 350° C Max
- Soldering Time:3 Seconds Max(One Time)
- Distance:2mm Min(From solder joint to case)

#### 2.Wave Soldering Profile

- Dip Soldering
- Preheat: 120° C Max
- Preheat time: 60seconds Max
- Ramp-up
- 3° 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 case)





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 ±5<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 ±5<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 ±5<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 ±5 & -40 ±5 (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 ±5<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 ±5<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 |