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LED ARRAY



Lead-Free Parts

LA93B/YG-PF

DATA SHEET

DOC. NO : QW0905-L A93B/YG-PF

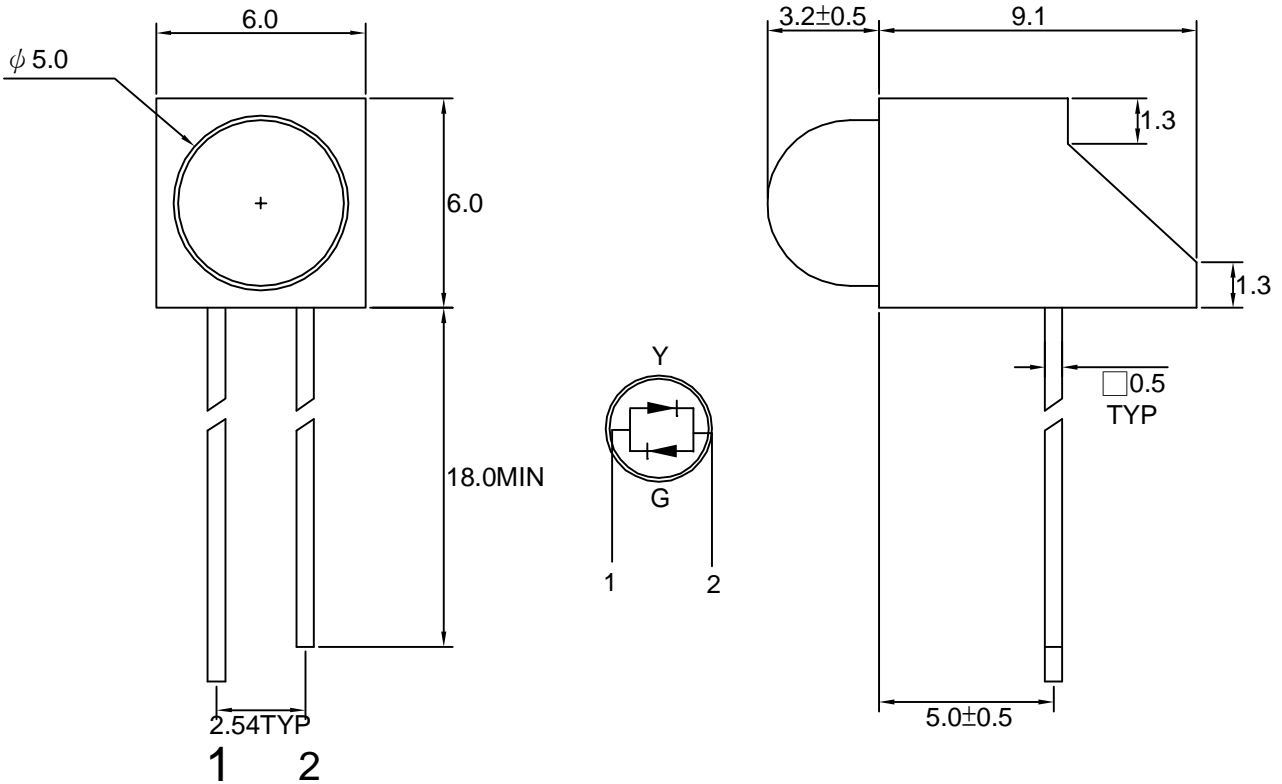
REV : A

DATE : 04 - Jun.- 2009

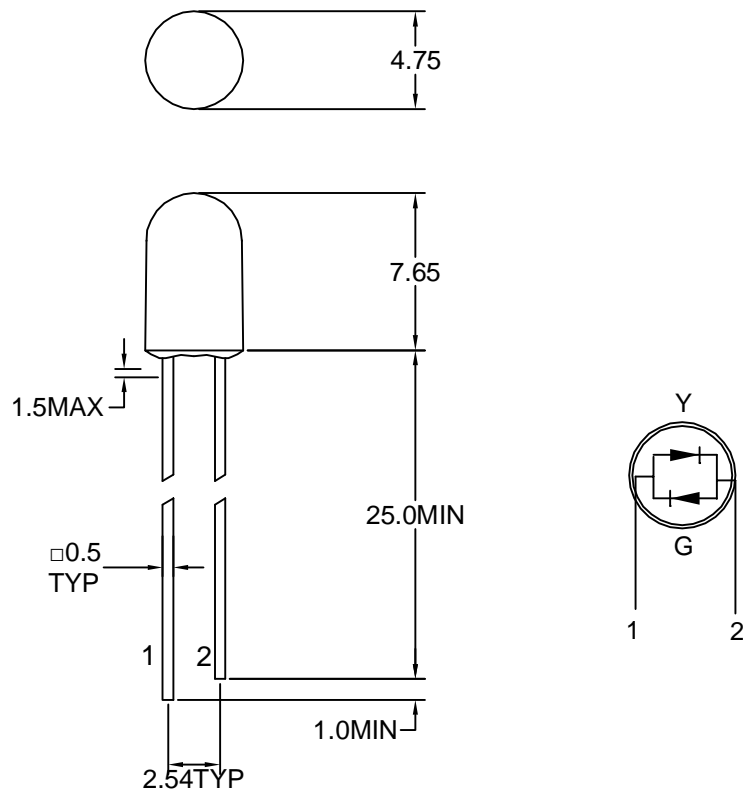




Package Dimensions



LYG3162-PF



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



Absolute Maximum Ratings at Ta=25 °C

| Parameter | Symbol | Ratings | | UNIT |
|---|--------|------------|-----|---------|
| | | Y | G | |
| Forward Current | IF | 20 | 30 | mA |
| Peak Forward Current Duty 1/10@10KHz | IFP | 80 | 120 | mA |
| Power Dissipation | PD | 60 | 100 | mW |
| Reverse Current @5V | Ir | 10 | 10 | μ A |
| Operating Temperature | Topr | -40 ~ +85 | | °C |
| Storage Temperature | Tstg | -40 ~ +100 | | °C |

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

| PART NO | MATERIAL | COLOR | | Peak wave length λ Pnm | Spectral halfwidth $\Delta \lambda$ nm | Forward voltage @20mA(V) | | Luminous intensity @10mA(mcd) | | Viewing angle 2 θ 1/2 (deg) |
|-------------|-----------|---------|----------------|-----------------------------------|---|-----------------------------|------|----------------------------------|------|--|
| | | Emitted | Lens | | | Min. | Max. | Min. | Typ. | |
| LA93B/YG-PF | GaAsP/GaP | Yellow | White Diffused | 585 | 35 | 1.7 | 2.6 | 8.0 | 12 | 54 |
| | GaP | Green | | 565 | 30 | 1.7 | 2.6 | 12 | 20 | 54 |

- 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

Y CHIP

Fig.1 Forward current vs. Forward Voltage

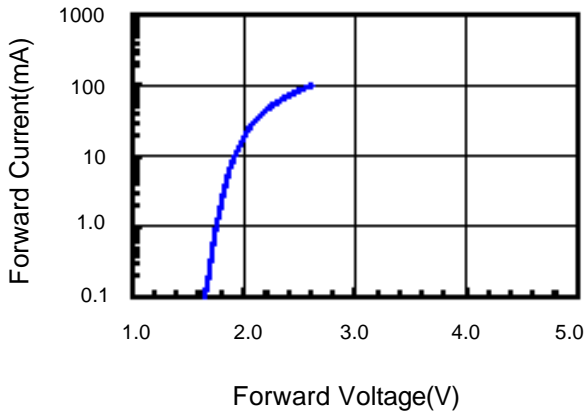


Fig.2 Relative Intensity vs. Forward Current

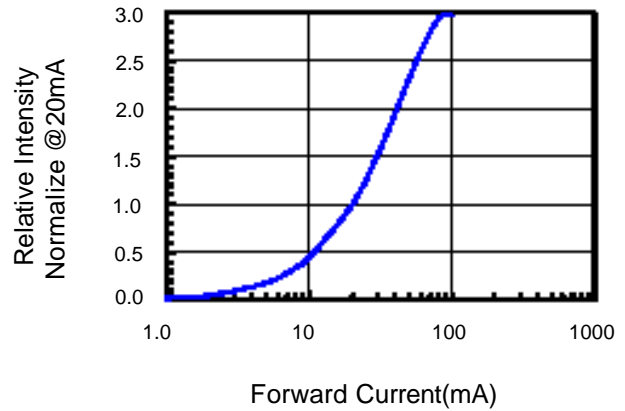


Fig.3 Forward Voltage vs. Temperature

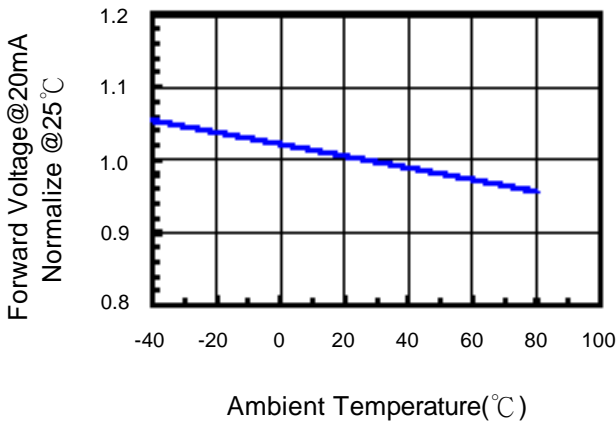


Fig.4 Relative Intensity vs. Temperature

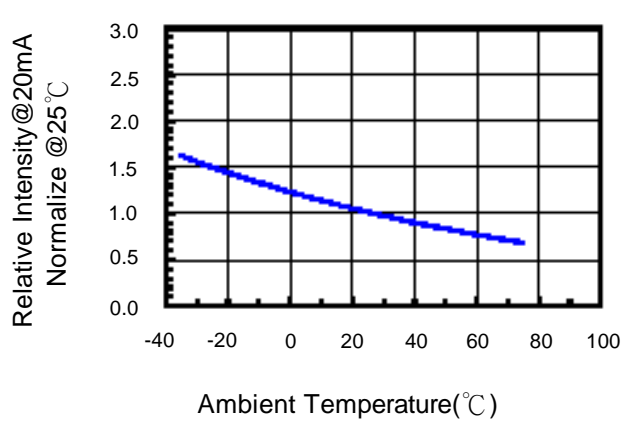
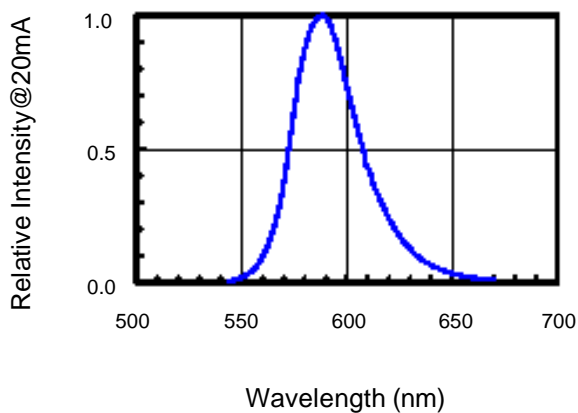


Fig.5 Relative Intensity vs. Wavelength





Typical Electro-Optical Characteristics Curve

G CHIP

Fig.1 Forward current vs. Forward Voltage

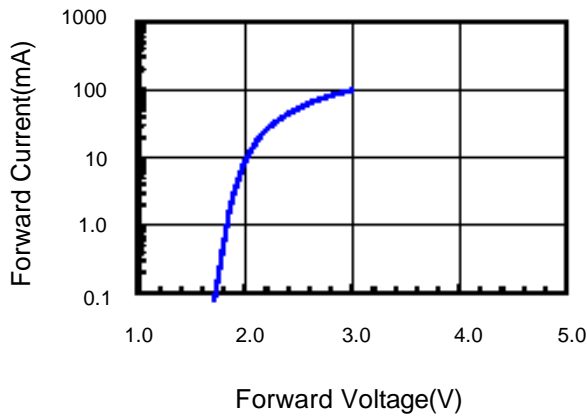


Fig.2 Relative Intensity vs. Forward Current

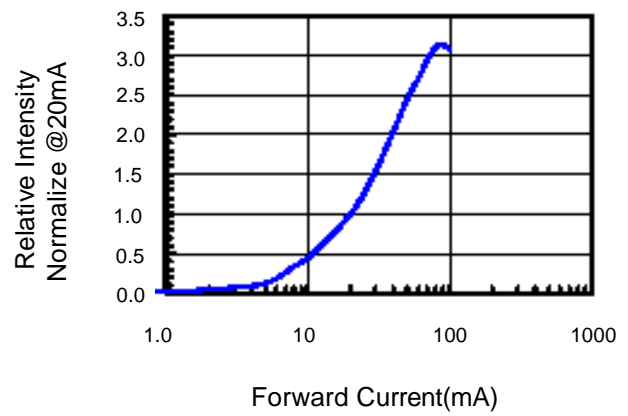


Fig.3 Forward Voltage vs. Temperature

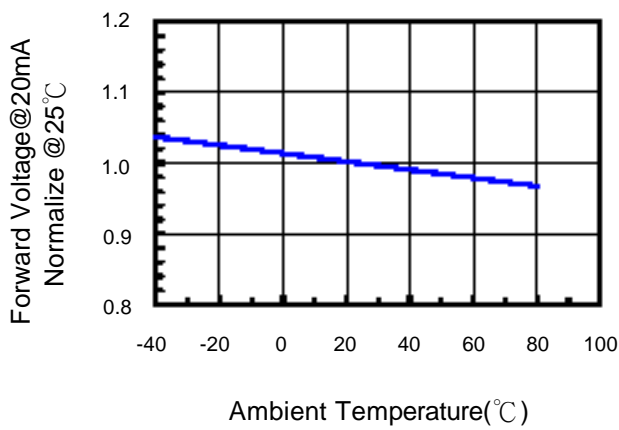


Fig.4 Relative Intensity vs. Temperature

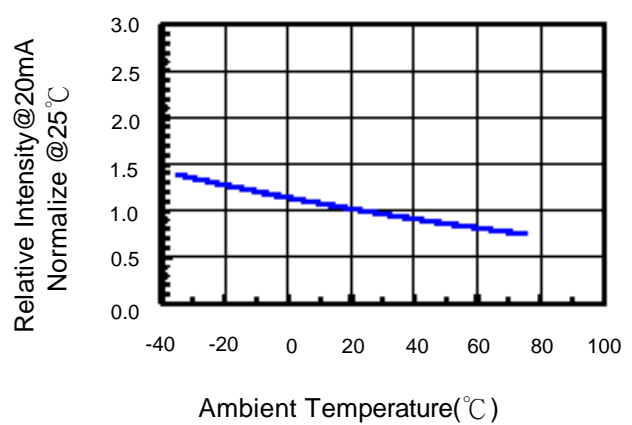
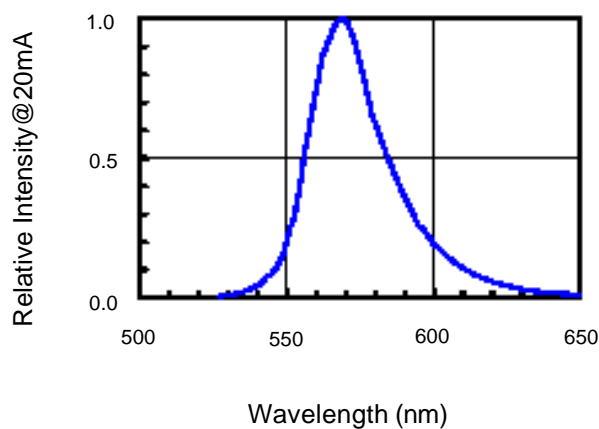


Fig.5 Relative Intensity vs. Wavelength





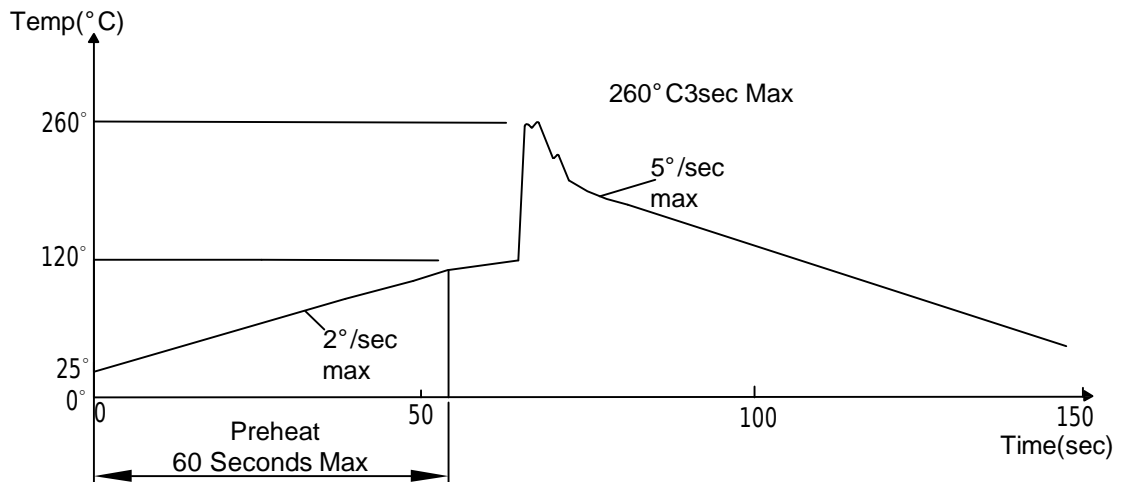
Soldering Condition(Pb-Free)

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 2.If=20mA 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 MIL-STD-883: 1005 JIS C 7021: B-1 |
| High Temperature Storage Test | 1.Ta=105°C±5°C 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 JIS C 7021: B-10 |
| Low Temperature Storage Test | 1.Ta=-40°C±5°C 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 2.RH=90%~95% 3.t=240hrs±2hrs | The purpose of this test is the resistance of the device under tropical for hours. | MIL-STD-202:103B JIS C 7021: B-11 |
| Thermal Shock Test | 1.Ta=105°C±5°C & -40°C±5°C (10min) (10min) 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 MIL-STD-750: 1051 MIL-STD-883: 1011 |
| Solder Resistance Test | 1.T.Sol=260°C±5°C 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 MIL-STD-750: 2031 JIS C 7021: A-1 |
| Solderability Test | 1.T.Sol=230°C±5°C 2.Dwell time=5±1sec | This test intended to see soldering well performed or not. | MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2 |