

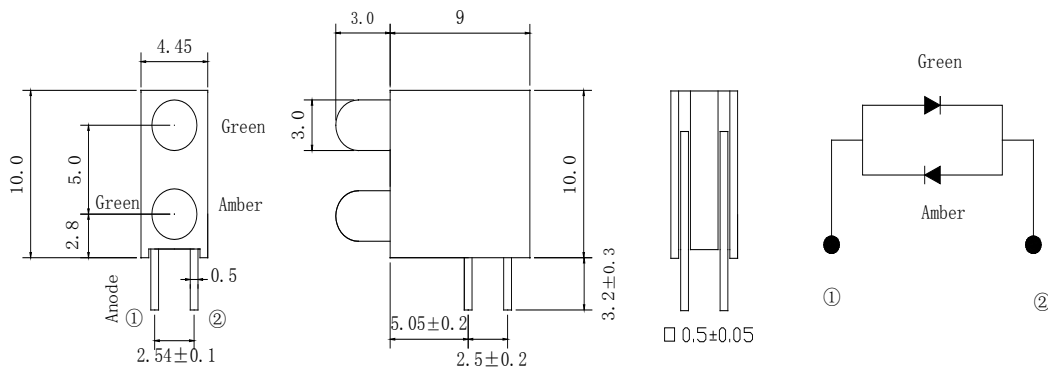
**Features**

- 3mm Round Type LED Assembly
- Low Power Consumption
- High Efficiency
- Various Colors and Viewing Angle
- Long Solid State Reliability
- Package: 1000pcs/Packing

**Applications**

- Indicator

**Package Dimensions**



**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2mm (.0079") unless otherwise noted.
3. Specifications are subject to change without notice
4. This drawing is only for indication, not as a basis for the actual structure.



**Selection Guide**

|                       |                |       |                |
|-----------------------|----------------|-------|----------------|
| Part No               | Lens Type      | Dice  | Emitted Color  |
| FDA-3522GGA-TWD1-D3.2 | White Diffused | GaAsP | Green<br>Amber |

**Electrical / Optical Characteristics At Ta=25 °C**

| Symbol | Parameter                |      | Green | Amber | Unit | Test Condition |
|--------|--------------------------|------|-------|-------|------|----------------|
| Iv     | Luminous Intensity       | MIN. | 18.0  | 30.0  | mcd  | IF=20mA        |
|        |                          | TYP. | 35.0  | 72.0  |      |                |
| 2θ1/2  | Viewing Angle            | TYP. | 30    | 30    | deg  | IF=20mA        |
| λ Peak | Peak Emission Wavelength | TYP. | 574   | 610   | nm   | IF=20mA        |
| λ d    | Dominant Wavelength      | TYP. | 571   | 605   | nm   | IF=20mA        |
| Δλ     | Spectral Line Half-Width | TYP. | 20    | 20    | nm   | IF=20mA        |
| VF     | Forward Voltage          | TYP. | 2.1   | 2.1   | V    | IF=20mA        |
|        |                          | MAX. | 2.4   | 2.7   |      |                |
| IR     | Reverse Current          | MAX. | 10    | 10    | μ A  | VR=5V          |

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 optical centerline value

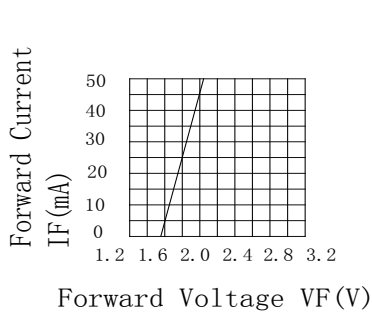
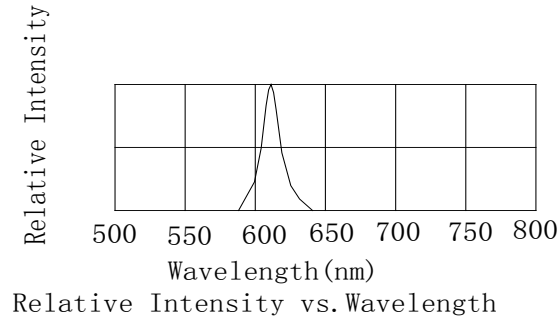
**Absolute Maximum Ratings At Ta=25°C**

| Parameter                   | Green               | Amber | Unit |
|-----------------------------|---------------------|-------|------|
| Power Dissipation           | 80                  | 80    | mW   |
| Peak Forward Current[1]     | 150                 | 150   | mA   |
| Continuous Forward Current  | 30                  | 30    | mA   |
| Reverse Voltage             | 5                   | 5     | V    |
| Operating Temperature Range | -25°C to + 85°C     |       |      |
| Storage Temperature Range   | -55°C to + 105°C    |       |      |
| Soldering Condition         | 260°C For 5 Seconds |       |      |

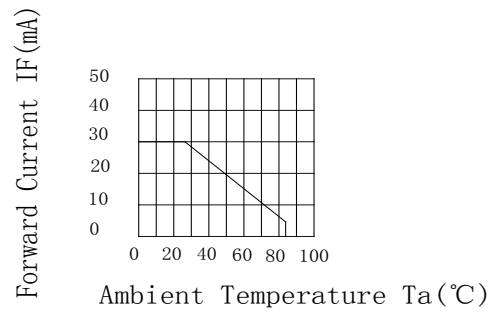
Note:

1. 1/10DutyCycle, 0.1msPulseWidth

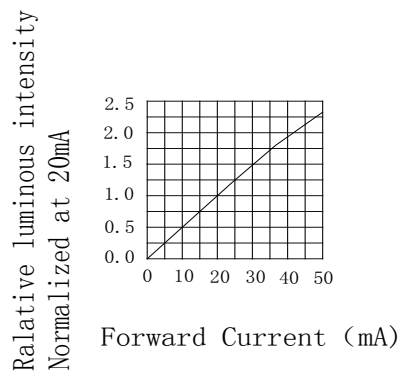
**Electrical Optical Characteristics Curves At Ta=25 °C**



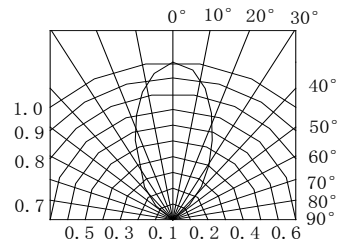
Forward Current vs. Forward Voltage



Forward Current Derating Curve

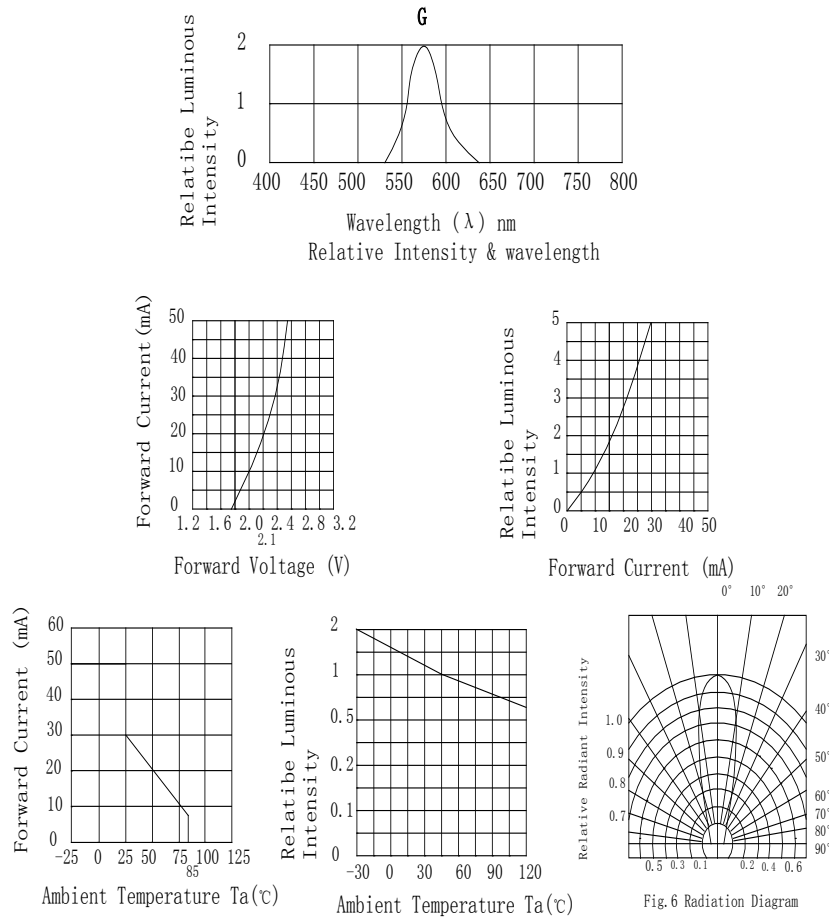


Forward luminous Intensity vs. Forward Current

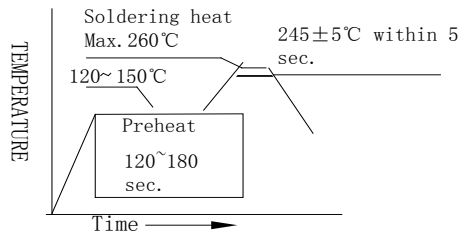


Spatial Distribution

**Electrical Optical Characteristics Curves At Ta=25 °C**



**Reflow Soldering Instructions**



Notes:

1. The LEDs should be used within a year.
2. The LEDs should be kept in 5~30°C and 60% RH for less.
3. The LEDs should be used within 24 hours, or else should be kept a 5~30°C and 30% RH or less. And LEDs should be used within 7 days after opening the package.

**Reliability Test Items Conditions**

| Classification     | Test Item                         | Test Conditions   | Test hours | Result |
|--------------------|-----------------------------------|---|------------|--------|
| Endurance Test     | Opertion Life                     | Connect with a power $I_f=20mA$<br>$T_a$ =Under room temperature  | 1000Hrs    | 0/20   |
|                    | Hige Temperature<br>High Humidity | $T_a=+65^{\circ}C\pm5^{\circ}C$<br>RH=90%-95%   | 240Hrs     | 0/20   |
|                    | Hige Temperature<br>Storage       | High $T_a=+85^{\circ}C\pm5^{\circ}C$  | 1000Hrs    | 0/20   |
|                    | Low Temperature<br>Storage        | Low $T_a=-35^{\circ}C\pm5^{\circ}C$<br>Test time=1000hrs  | 1000Hrs    | 0/20   |
| Environmental Test | Temperature<br>Cycling            | $-45^{\circ}C \sim +105^{\circ}C$<br>15min 5min 15min   | 300 Cycles | 0/20   |
|                    | Thermal Shock                     | $-35^{\circ}C \sim \pm5^{\circ}C \sim +85^{\circ}C \sim \pm5^{\circ}C$<br>5min 10sec 5min   | 300 Cycles | 0/20   |
|                    | Solder<br>Resistance              | Preheating:<br>$120^{\circ}C-150^{\circ}C$ , within 2 minutes.<br>Operation heating :<br>$260^{\circ}C$ (Max.), within 5 seconds (Max.) | 5Cycles    | 0/20   |

**Judgment criteria of fialure for the reliability**

| Measuring items    | Symbol       | Measuring conditions | Judgment criteria for failure |
|--------------------|--------------|----------------------|-------------------------------|
| Forward voltage    | $V_F(V)$     | $I_F=20mA$           | Over $U \times 1.2$           |
| Rvevrse current    | $I_R(\mu A)$ | $V_R=5V$             | Over $U \times 2$             |
| Luminous intensity | $I_v(mcd)$   | $I_F=20mA$           | Below $S \times 0.5$          |

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Meansurerment shall be taken between 2 hours after the test pieces have been returned to normal ambient cnditions after completion of each test.