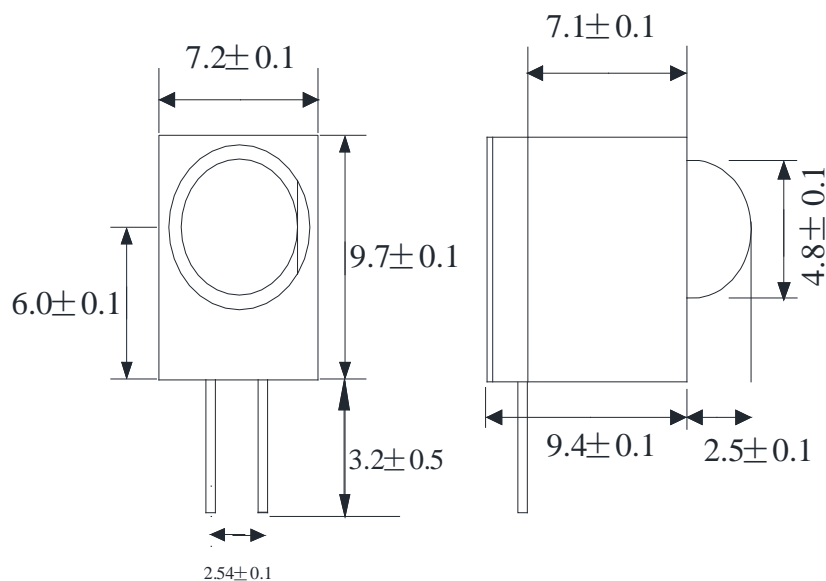


Features

- 4.8mm DIA LED Lamp
- 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 ± 0.25 mm (.01") unless otherwise noted.
3. Protruded Resin under flange is 1.0mm (0.04") max.
4. Specifications are subject to change without notice.



Selection Guide

| | | | |
|--------------------|-------------|---------|---------------|
| Part No | Lens Type | Dice | Emitted Color |
| FDA-4847HW-HQ-D3.2 | Water Clear | InGaALN | White |

Electrical / Optical Characteristics At Ta=25 °C

| Symbol | Parameter | Min. | Typ. | Max. | Unit | Test Condition |
|--------|--------------------------|------|-----------|------|------|----------------|
| Iv | Luminous Intensity | 900 | | 1800 | mcd | IF=20mA |
| 2θ1/2 | Viewing Angle | | 110 | | deg | IF=20mA |
| λ Peak | Peak Emission Wavelength | | - | | nm | IF=20mA |
| X/Y | Chrotral Coordinage | | 0.33/0.34 | | nm | IF=20mA |
| Δλ | Spectral Line Half-Width | | 30 | | nm | IF=20mA |
| VF | Forward Voltage | 2.8 | 3.3 | 3.7 | V | IF=20mA |
| IR | Reverse Current | | | 50 | μ A | VR 5V |

Note:

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

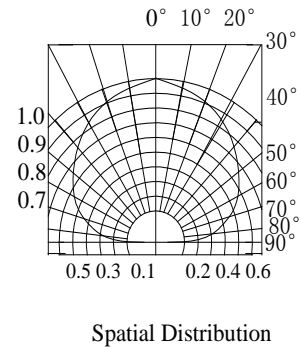
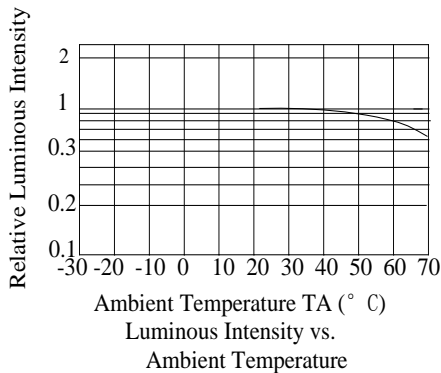
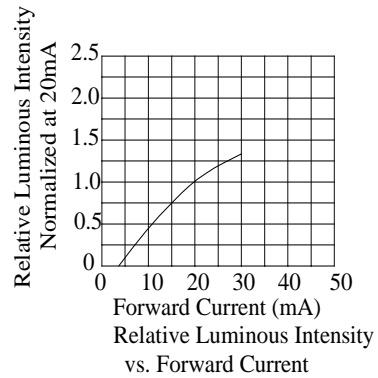
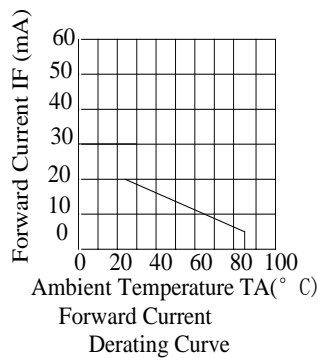
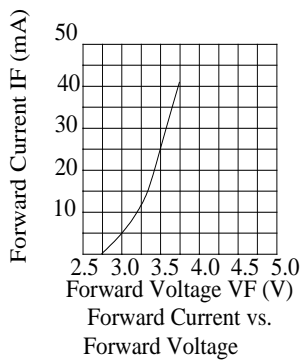
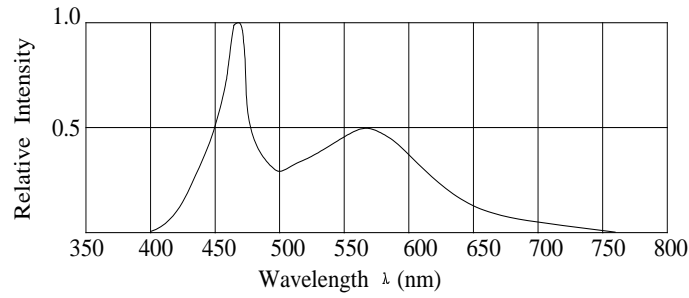
Absolute Maximum Ratings At Ta=25°C

| Parameter | White | Unit |
|--|---------------------|------|
| Power Dissipation | 100 | mW |
| Peak Forward Current[1] | 60 | mA |
| Continuous Forward Current | 30 | mA |
| Reverse Voltage | 5 | V |
| Electrostatic Discharge Threshold(HBM) | 1000 | V |
| Operating Temperature Range | -20°C to + 80°C | |
| Storage Temperature Range | -40°C to + 100°C | |
| Soldering Condition | 260°C For 5 Seconds | |

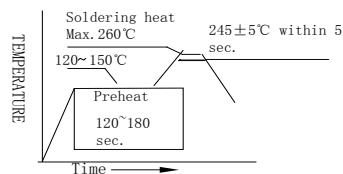
Note:

1. 1/10DutyCycle, 0.1msPulseWidth

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.

Bin Range Of Luminous Intensity (+/-15%)

| Symbol | Bin Code | Min. | Max. | Unit | Condition |
|--------|----------|------|------|------|-----------|
| Iv | H1 | 900 | 1120 | mcd | IF=20mA |
| | H2 | 1120 | 1450 | | |
| | H3 | 1450 | 1800 | | |

Bin Range Of Forward Voltage (+/-0.1)

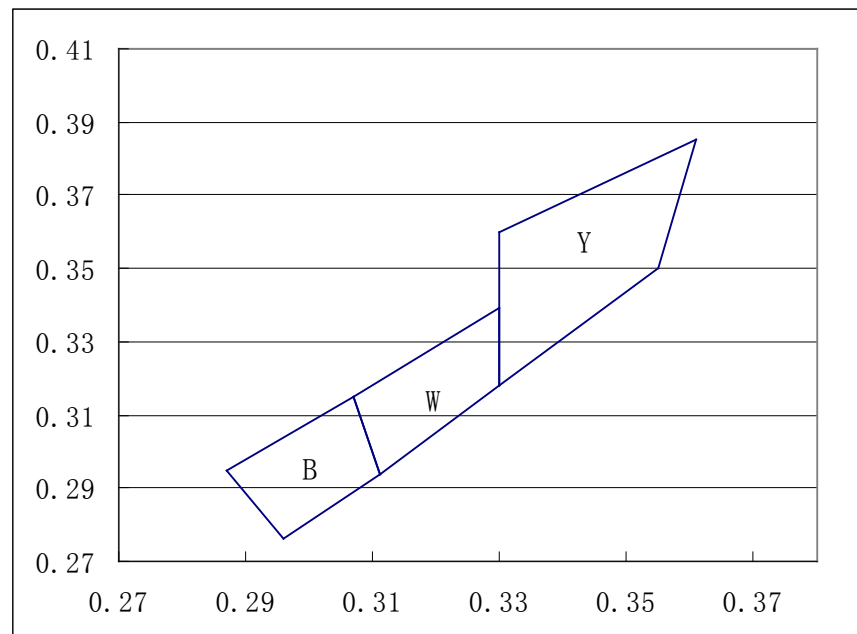
| Symbol | Bin Code | Min. | Max. | Unit | Condition |
|--------|----------|------|------|------|-----------|
| VF | V28 | 2.8 | 3.1 | V | IF=20mA |
| | V31 | 3.1 | 3.4 | | |
| | V34 | 3.4 | 3.7 | | |

Chromaticity Coordinates Specifications for Bin Grading (+/-0.05)

IF=20mA

| Bin | CIE_x | CIE_y | Bin | CIE_x | CIE_y | Bin | CIE_x | CIE_y |
|-----|-------|-------|-----|-------|-------|-----|-------|-------|
| B | 0.287 | 0.295 | W | 0.307 | 0.315 | Y | 0.33 | 0.36 |
| | 0.307 | 0.315 | | 0.33 | 0.339 | | 0.361 | 0.385 |
| | 0.311 | 0.294 | | 0.33 | 0.318 | | 0.355 | 0.35 |
| | 0.296 | 0.276 | | 0.311 | 0.294 | | 0.33 | 0.318 |

CIE Chromaticity Diagram



Reliability Test Items Conditions

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

Judgment criteria of failure for the reliability

| Measuring items | Symbol | Measuring conditions | Judgment criteria for failure |
|--------------------|--------------|----------------------|-------------------------------|
| Forward voltage | $V_F(V)$ | $I_F=20mA$ | Over $U \times 1.2$ |
| Reverse 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.Measurment shall be taken between 2 hours after the test pieces have been returned to normal ambient conditions after completion of each test.