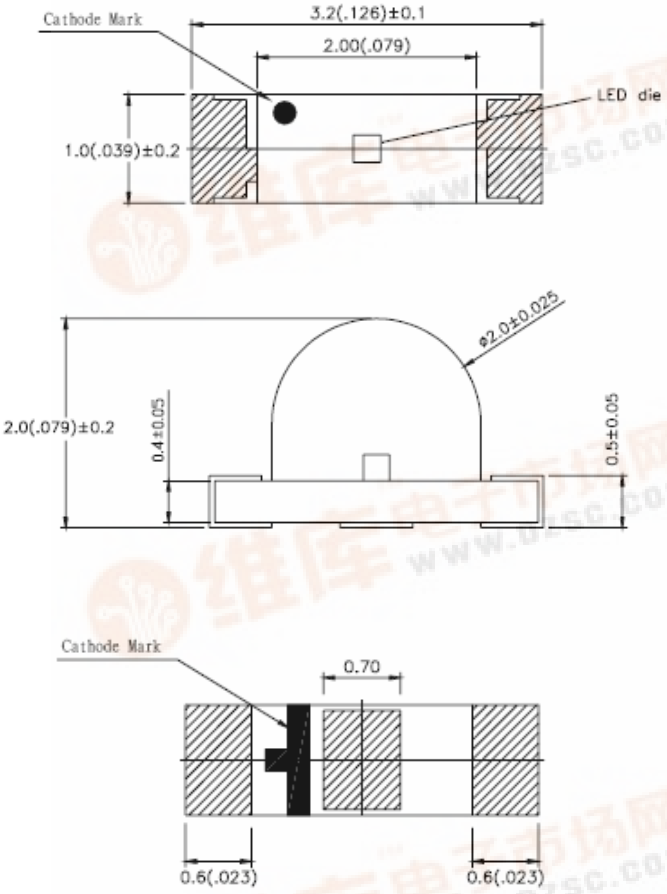
# A-BRIGHT INDUSTRIAL CO., LTD.

# SURFACE MOUNT CHIP LED LAMPS

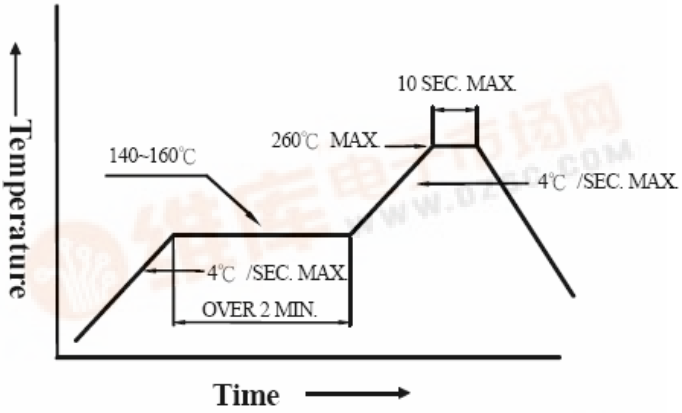
## Right Angle Lens Super Red SMD Chip LED Lamps

## Part Number: AL-HD034A

## Package outlines & Re-flow Profile




■Reflow Temp/Time

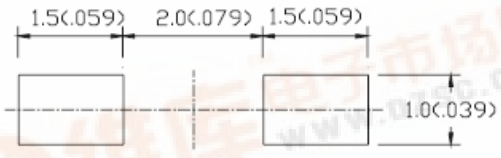



■Soldering iron

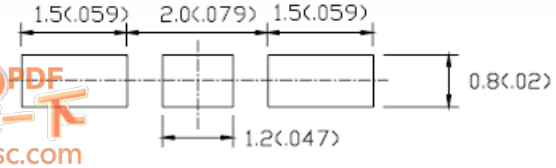
Basic spec is ≤ 5sec when 260℃. If temperature is higher, time should be shorter (+10℃→ -1sec ).Power dissipation of iron should be smaller than 15W, and temperatures should be controllable .Surface temperature of the device should be under 230℃ .

For Reflow Soldering

For upright mounting




For right anoge mounting




| ITEM | MATERIALS |
|---|---|
| Resin (mold) | Epoxy |
| Lens color | Water Clear |
| Printed circuit board | BT |
| Dice | GaAlAs/GaAs |
| Emitted color | Super Red |

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.

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## ELECTRO-OPTICAL CHARACTERISTICS ($T_A$=25℃)

| Parameter | Test Condition | Symbol | Value | Unit |
|---|---|---|---|---|
| Viewing angle at 50% $I_V$ | $I_F$=10mA | 2 $\theta$ 1/2 | 100 | Deg |
| Forward voltage (Typ.) (Max.) | $I_F$=20mA | $V_F$ | 1.80 2.60 | V |
| Luminous intensity (Min.) (Typ.) | $I_F$=20mA | $I_V$ | 12.3 30.0 | mcd |
| Wavelength | $I_F$=20mA | $\lambda$ p $\lambda$ d | 660 643±5 | nm |
| Spectral Line Half-Width | $I_F$=20mA | $\triangle\lambda$ | 30 | nm |
| Peak pulsing current (1/10 duty f=1kHz) | | $I_{FP}$ | 100 | mA |

## Absolute maximum ratings ($T_A$=25℃)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Forward current | $I_F$ | 30 | mA |
| Reverse voltage | $V_R$ | 5 | V |
| Reverse current | $I_R$ | 100 | μA |
| Power Dissipation | $P_D$ | 100 | mW |
| Operating temperature range | Top | -25 ~+80 | ℃ |
| Storage temperature range | Tstg | -30 ~+85 | ℃ |
| Lead soldering temperature | 260℃ For 5 Seconds | | |

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## Part Number: AL-HD034A

## Test items and results of reliability

| Classification | Test Item | Reference Standard | Test Conditions | Result |
|---|---|---|---|---|
| Endurance Test | Operation Life | MIL-STD-750:1026<br>MIL-STD-883:1005<br>JIS-C-7021 :B-1 | Connect with a power If=20mA<br>Ta=Under room temperature<br>Test time=1,000hrs | 0/20 |
| | High Temperature High Humidity Storage | MIL-STD-202:103B<br>JIS-C-7021 :B-11 | Ta=+65℃±5℃<br>RH=90%-95%<br>Test time=240hrs | 0/20 |
| | High Temperature Storage | MIL-STD-883:1008<br>JIS-C-7021 :B-10 | High Ta=+85℃±5℃<br>Test time=1,000hrs | 0/20 |
| | Low Temperature Storage | JIS-C-7021 :B-12 | Low Ta=-35℃±5℃<br>Test time=1,000hrs | 0/20 |
| Environmental Test | Temperature Cycling | MIL-STD-202:107D<br>MIL-STD-750:1051<br>MIL-STD-883:1010<br>JIS-C-7021 :A-4 | -35℃ ~ +25℃ ~ +85℃ ~ +25℃<br>60min 20min 60min 20min<br>Test Time=5cycle | 0/20 |
| | Thermal Shock | MIL-STD-202:107D<br>MIL-STD-750:1051<br>MIL-STD-883:1011 | -35℃±5℃ ~+85℃±5℃<br>20min 20min<br>Test Time=10cycle | 0/20 |
| | Solder Resistance | MIL-STD-202:201A<br>MIL-STD-750:2031<br>JIS-C-7021 :A-1 | Preheating：<br>140℃-160℃,within 2 minutes.<br>Operation heating：<br>260℃(Max.), within 10seconds. (Max.) | 0/20 |

＊Refer to reliability test standard specification for in this line.

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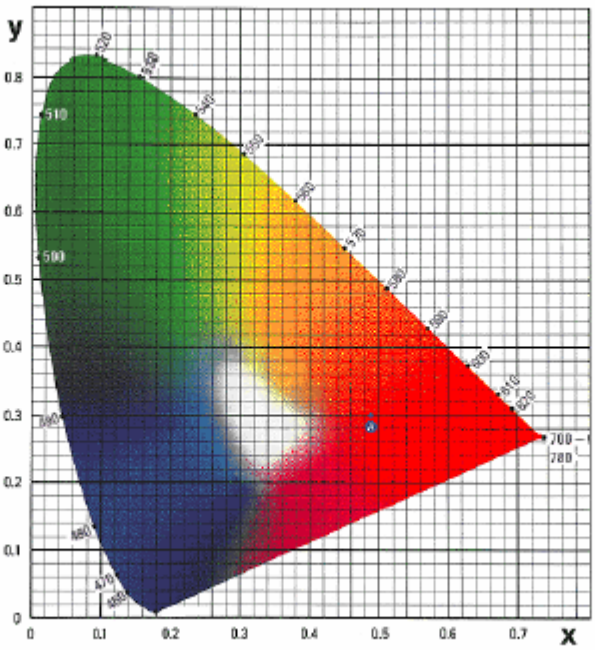
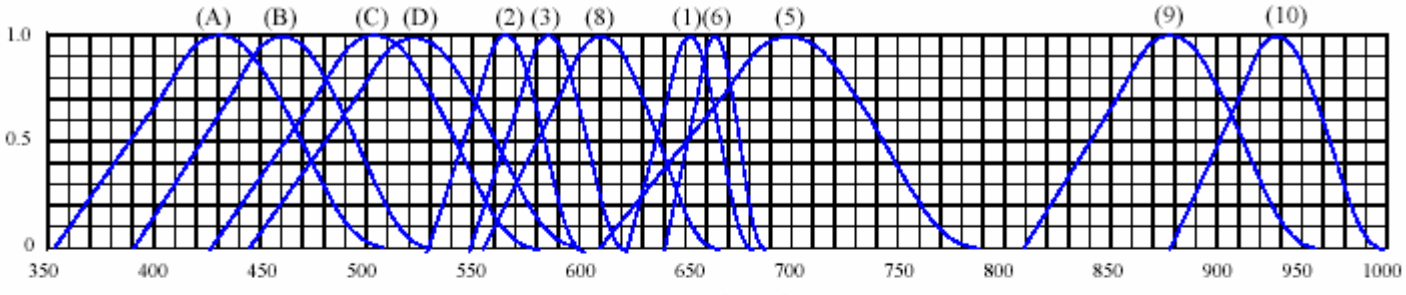
# SURFACE MOUNT CHIP LED LAMPS

## Part Number: AL-HD034A

## Typical Optical-Electrical Characteristic Curves

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES




RELATIVE INTENSITY VS. WAVELENGTH(λp)

(1) GaAsP/GaAs 655nm/Red
(2) GaP 568nm/ Yellow Green
(3) GaAsP/GaP 585nm/Yellow
(4) GaAsP/GaP 635nm/Orange & Hi-Eff Red
(5) GaP 700nm/Bright Red
(6) GaAlAs/GaAs 660nm/Super Red
(8) GaAsP/GaP 610nm/Super Red
(9)- GaAlAs 880nm
(10)-GaAs/GaAs&GaAlAs/GaAs 940nm
(A)- GaN 430nm/Blue
(B)- InGaN 470nm/Blue
(C)- InGaN 502nm/Ultra Green
(D)- InGaN 523nm/Ultra Green

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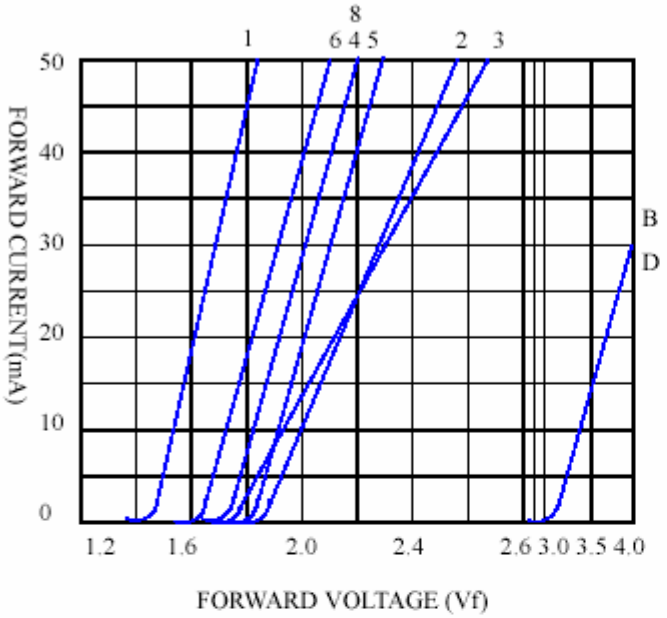
## Part Number: AL-HD034A

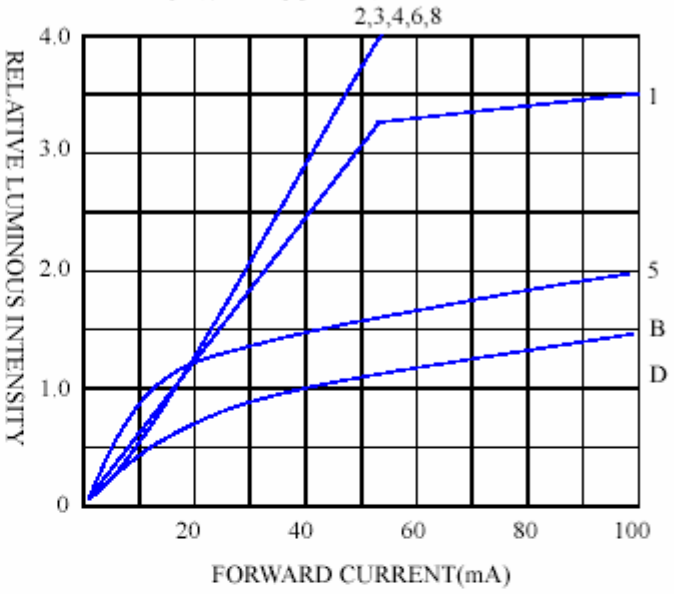
## Typical Optical-Electrical Characteristic Curves

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE




RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT




FORWARD CURRENT VS. AMBIENT TEMPERATURE