

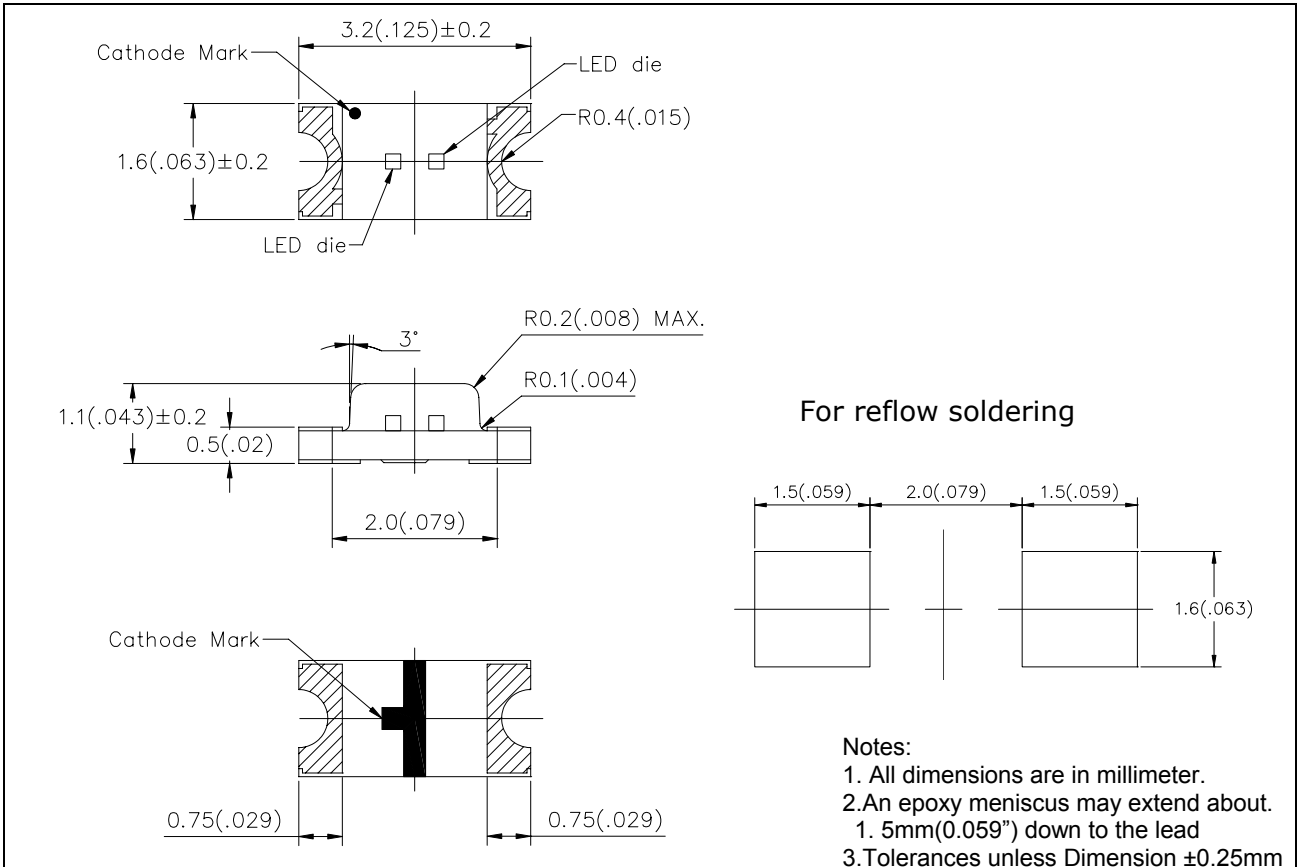
Part No. **AL-HA0B433**

Diff No.

3.2x1.6x1.1 mm

Type : SMD LED

Package Dimension :



■ Features :

- Choice of various viewing angles.
- Available on Tape and Reel.
- Reliable and robust.

■ Descriptions :

- The series is specially designed for application requiring higher brightness.
- The LED lamps are available with different colors, intensity, epoxy colors etc.

■ Applications :

- TV set
- Monitor
- Telephone

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| PART NO. | Chip | | Lens Color |
|------------|-----------|---------------|-------------|
| | Material | Emitted Color | |
| AL-HA0B433 | GaAsP/GaP | Amber | Water Clear |
| | InGaN | Super Blue | |

■ Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Unit |
|--|-----------------------|------------|------|
| Forward Current | I _F | 30 | mA |
| Operating Temperature | T _{opr} | -25 to +80 | °C |
| Storage Temperature | T _{stg} | -30 to +85 | °C |
| Soldering Temperature | T _{sol} | 260 ± 5 | °C |
| Power Dissipation | P _D | 80 | mW |
| Peak Forward Current (Duty 1/10@1KHz) | I _F (Peak) | 100 | mA |
| Reverse Voltage | V _R | 5 | V |

■ Electronic Optical Characteristics :

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition | |
|------------------------------|-------------------|------|------|------|------|----------------------|----------------------|
| Luminous Intensity | I _v | A | 2.4 | 8.0 | / | mcd | I _F =20mA |
| | | B | 28.0 | 40.0 | / | | |
| Viewing Angle | 2θ _{1/2} | / | 120 | / | deg | I _F =20mA | |
| Peak Wavelength | λ _p | A | / | 610 | / | nm | I _F =20mA |
| | | B | / | 475 | / | | |
| Dominant Wavelength | λ _d | A | / | 606 | / | nm | I _F =20mA |
| | | B | / | 470 | / | | |
| Spectrum Radiation Bandwidth | Δλ | A | / | 20 | / | nm | I _F =20mA |
| | | B | / | 30 | / | | |
| Forward Voltage | V _F | A | / | 2.1 | 2.6 | V | I _F =20mA |
| | | B | / | 3.2 | 3.5 | | |
| Reverse Current | I _R | / | / | 100 | μA | V _R =5V | |

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■ Reliability test items and conditions :

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

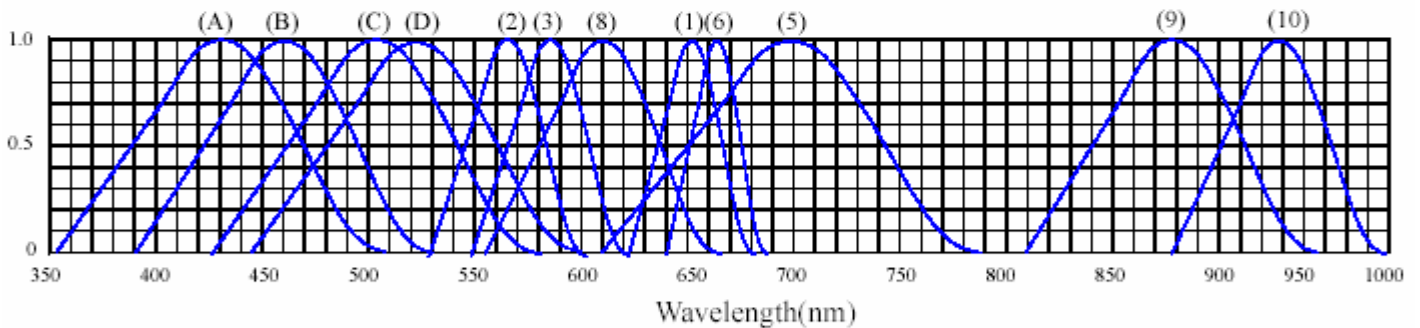
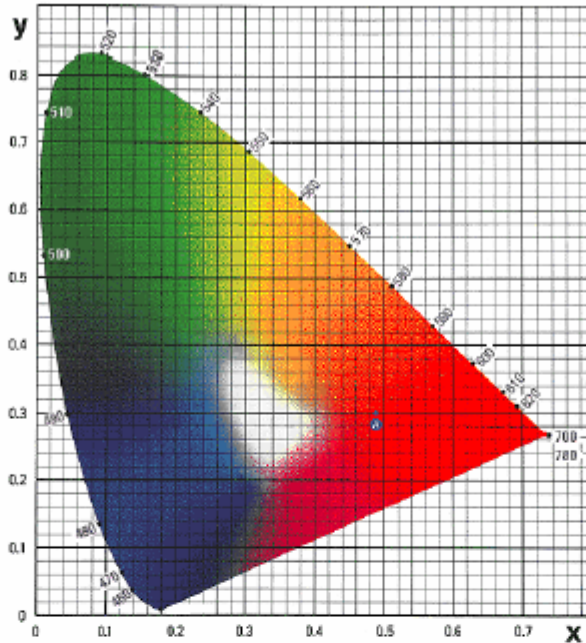
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◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH(λ_p)

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

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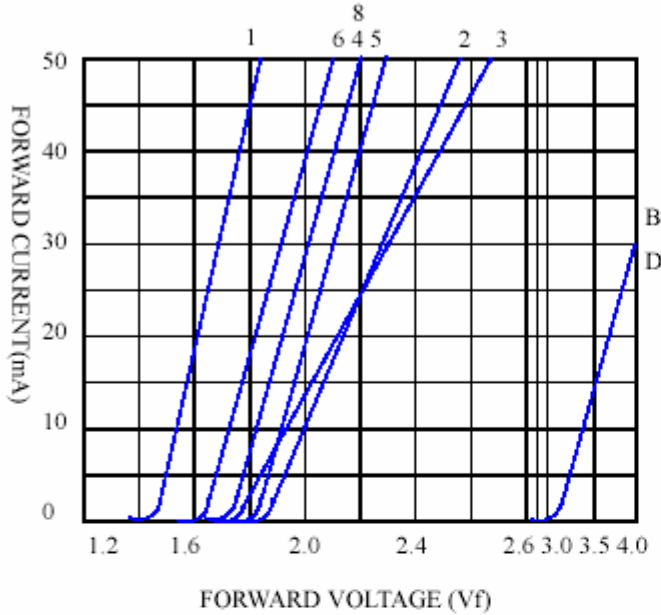
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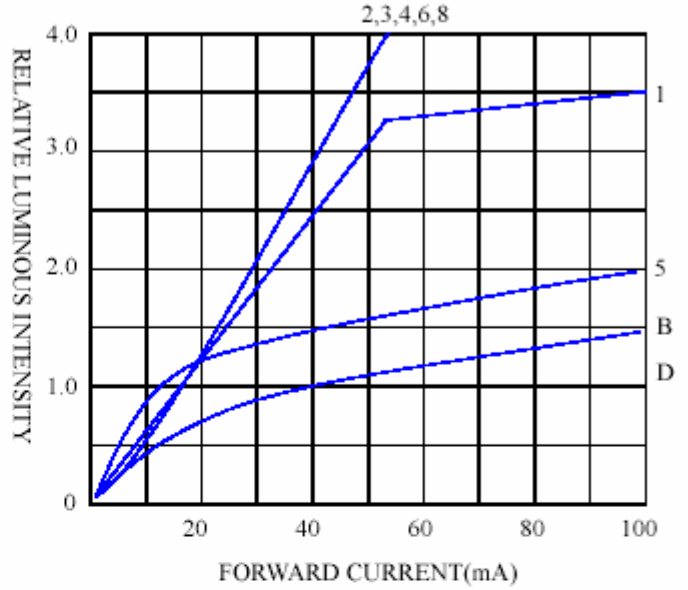
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◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

