

Part No. **AL-513IR-850-45C**

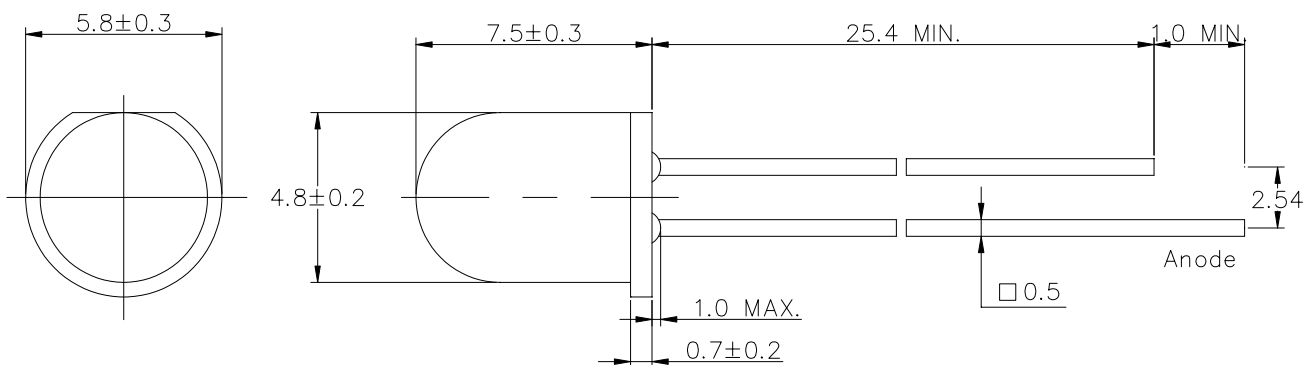
Diff No.002

5 mm

Round

Type : LED Lamps

■ Package Dimension:



Notes:

1. All dimensions are in millimeter.
2. An epoxy meniscus may extend about.
 1. 5mm(0.059") down to the lead
3. Tolerances unless Dimension $\pm 0.25\text{mm}$

■ 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 color, intensities, epoxy colors etc.

■ Applications :

- TV set
- Monitor
- Telephone

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| LED Parts P/N. | Chip | | Lens Color |
|------------------|----------|---------------|-------------|
| | Material | Emitted Color | |
| AL-513IR-850-45C | GaAlAs | Infrared | Water Clear |

■ Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Unit |
|--|--------------|----------|------|
| Continuous Forward Current | I_F | 50 | mA |
| Operating Temperature | T_{opr} | -30~+85 | °C |
| Storage Temperature | T_{stg} | -30~+100 | °C |
| Soldering Temperature | T_{sol} | 260±5 | °C |
| Power Dissipation | P_D | 110 | mW |
| Peak Forward Current (Duty 1/10@1KHz) | I_F (Peak) | 200 | mA |
| Reverse Voltage | V_R | 5.0 | V |

■ Electronic Optical Characteristics :

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|-----------------|------|------|------|-------|------------|
| Radiated Output Power | P_O | / | 36 | / | mW/sr | $I_F=50mA$ |
| Viewing Angle | 2θ 1/2 | / | 45 | / | deg | $I_F=50mA$ |
| Peak Wavelength | λ_p | / | 850 | / | nm | $I_F=50mA$ |
| Spectrum Radiation Bandwidth | $\Delta\lambda$ | / | 30 | / | nm | $I_F=50mA$ |
| Forward Voltage | V_F | / | 1.5 | 1.8 | V | $I_F=50mA$ |
| Reverse Current | I_R | / | / | 10 | μA | $V_R=5V$ |

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■ Reliability test items and conditions :

The reliability of products shall be satisfied with items listed below.

Confidence level: 90%

LTPD: 10%

| NO | ITEM | Test Conditions | Test hours/cycle | Sample Q'ty | Ac/Re |
|----|-------------------------------------|--|------------------|-------------|-------|
| 1 | Solder Heat | Temp : 260°C±5°C | 5 sec | 22 pcs | 0/1 |
| 2 | Temperature Cycle | H : +100°C 15min ∟ 5min L : -40°C 15min | 50 cycles | 22 pcs | 0/1 |
| 3 | Thermal Shock | H : +100°C 15min ∟ 10sec L : -10°C 15min | 50 cycles | 22 pcs | 0/1 |
| 4 | High Temperature Storage | Temp : 100°C | 1000 hrs | 22 pcs | 0/1 |
| 5 | Low Temperature Storage | Temp : -40°C | 1000 hrs | 22 pcs | 0/1 |
| 6 | DC Operating Life | I _F =20mA | 1000 hrs | 22 pcs | 0/1 |
| 7 | High Temperature / High Humidity | 85°C / 85%RH | 1000 hrs | 22 pcs | 0/1 |

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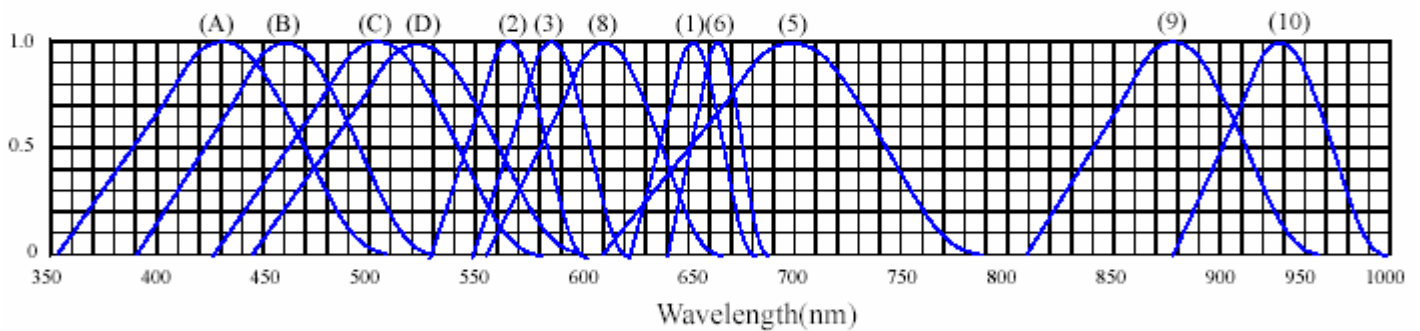
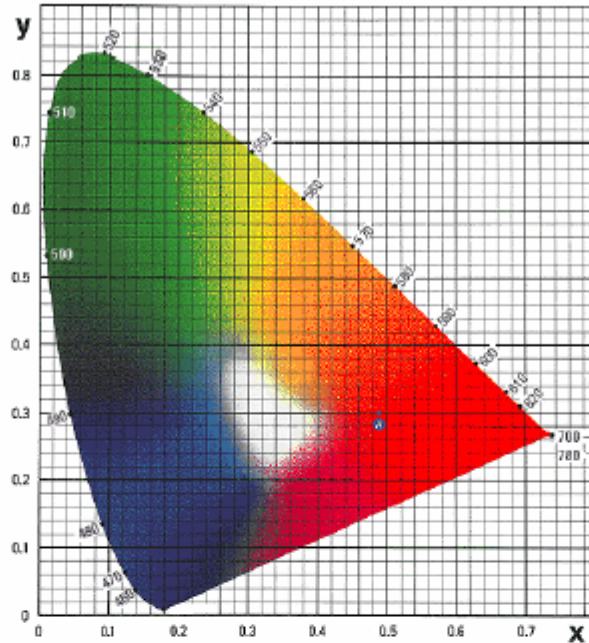
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◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



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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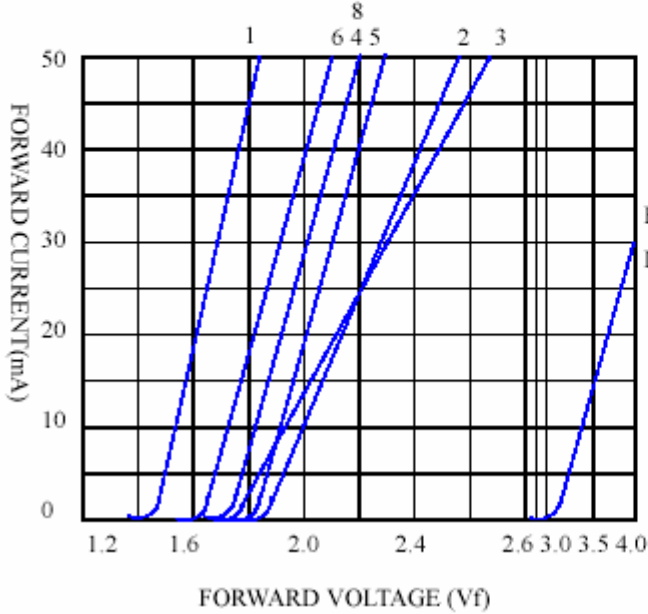
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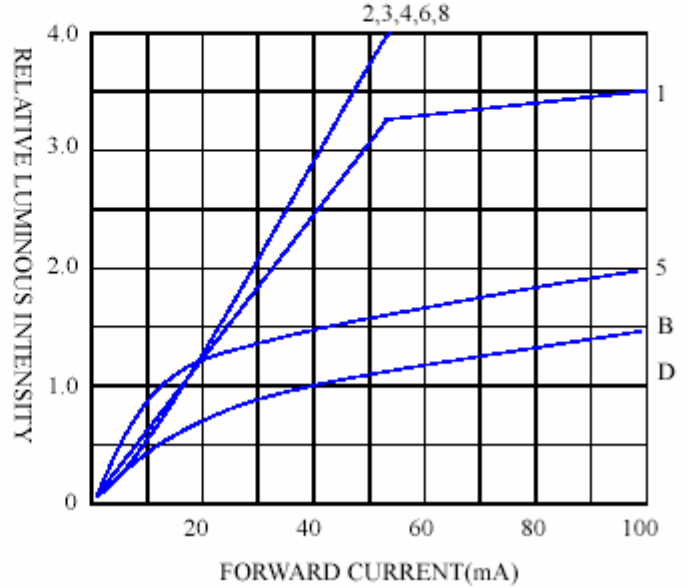
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◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

