

Part No.

**AL-513IR-940-45B**

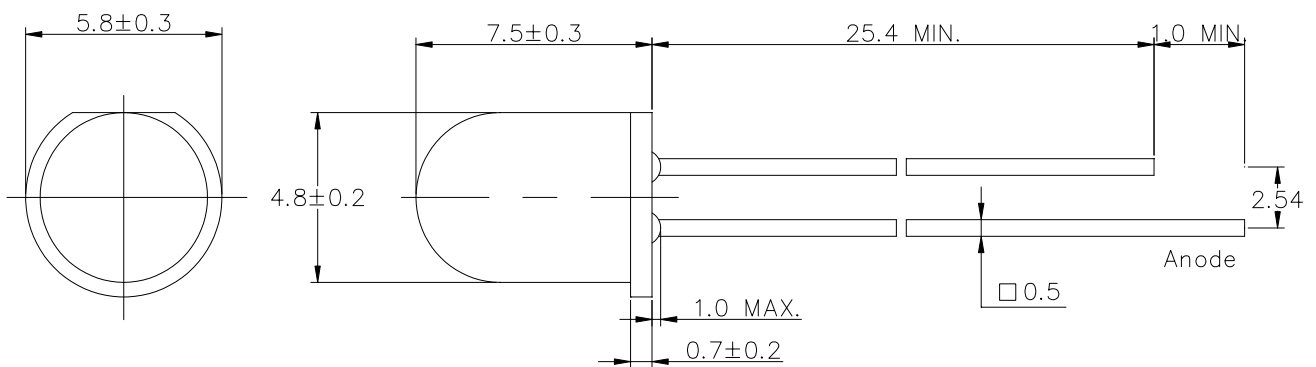
Diff No.002

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-940-45B	GaAlAs/GaAs	Infrared	Blue Transparent

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I <sub>F</sub>	50	mA
Operating Temperature	T <sub>opr</sub>	-30~+85	°C
Storage Temperature	T <sub>stg</sub>	-30~+100	°C
Soldering Temperature	T <sub>sol</sub>	260±5	°C
Power Dissipation	P <sub>D</sub>	110	mW
Peak Forward Current (Duty 1/10@1KHz)	I <sub>F</sub> (Peak)	200	mA
Reverse Voltage	V <sub>R</sub>	5.0	V

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiated Output Power	P <sub>O</sub>	/	53	/	mW/sr	I <sub>F</sub> =50mA
Viewing Angle	2θ 1/2	/	45	/	deg	I <sub>F</sub> =50mA
Peak Wavelength	λ <sub>p</sub>	/	940	/	nm	I <sub>F</sub> =50mA
Spectrum Radiation Bandwidth	Δλ	/	30	/	nm	I <sub>F</sub> =50mA
Forward Voltage	V <sub>F</sub>	/	1.3	1.45	V	I <sub>F</sub> =50mA
Reverse Current	I <sub>R</sub>	/	/	10	μA	V <sub>R</sub> =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 <sub>F</sub> =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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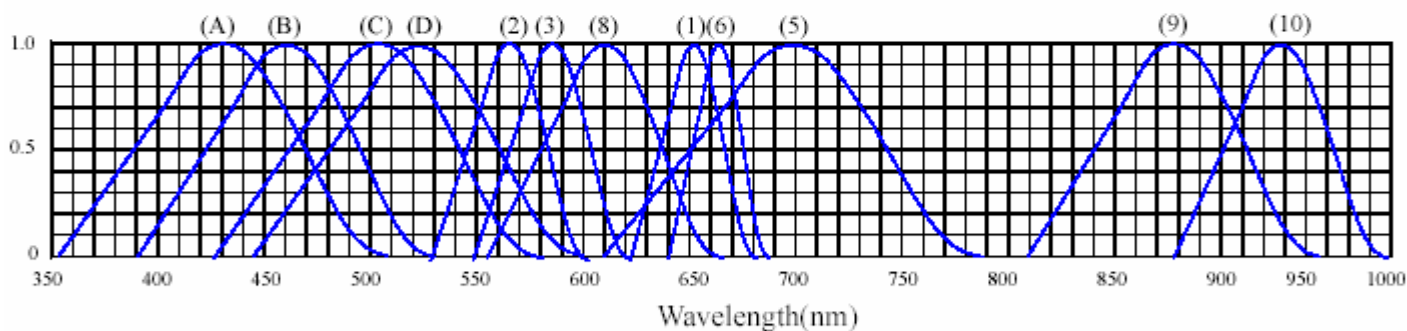
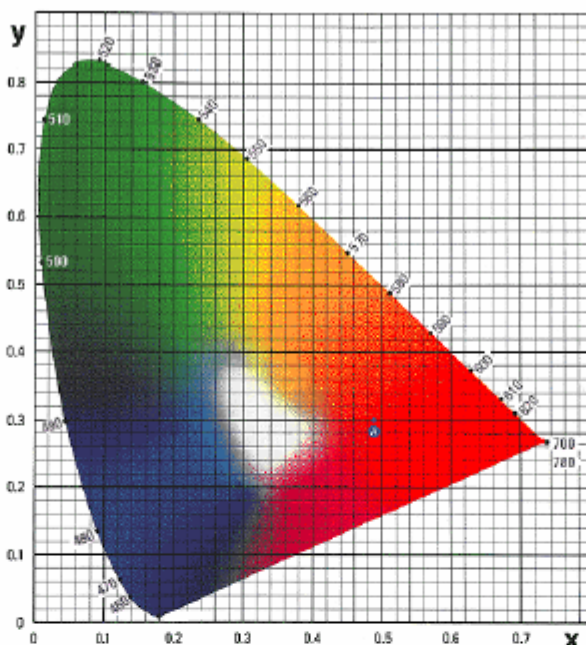
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◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH( $\lambda_p$ )

- |   |                                  |
|---|----------------------------------|
| (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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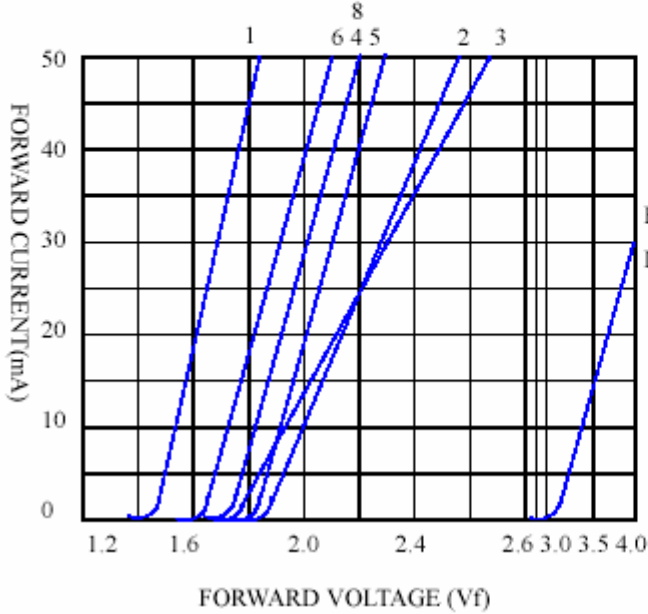
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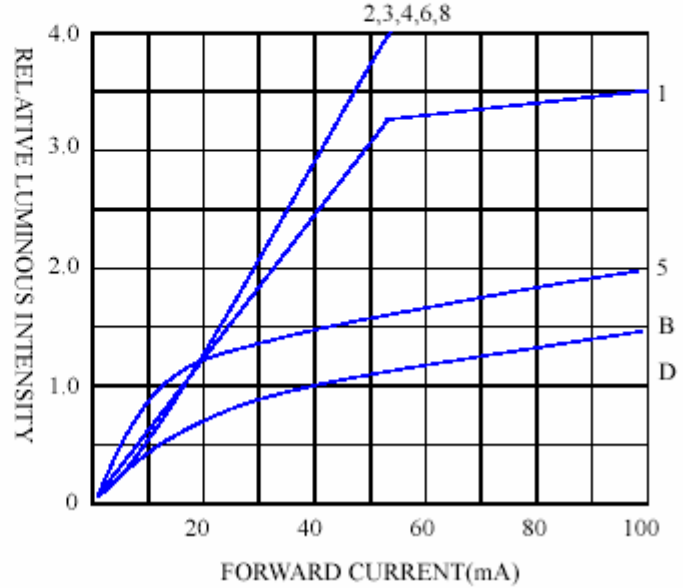
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◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

