

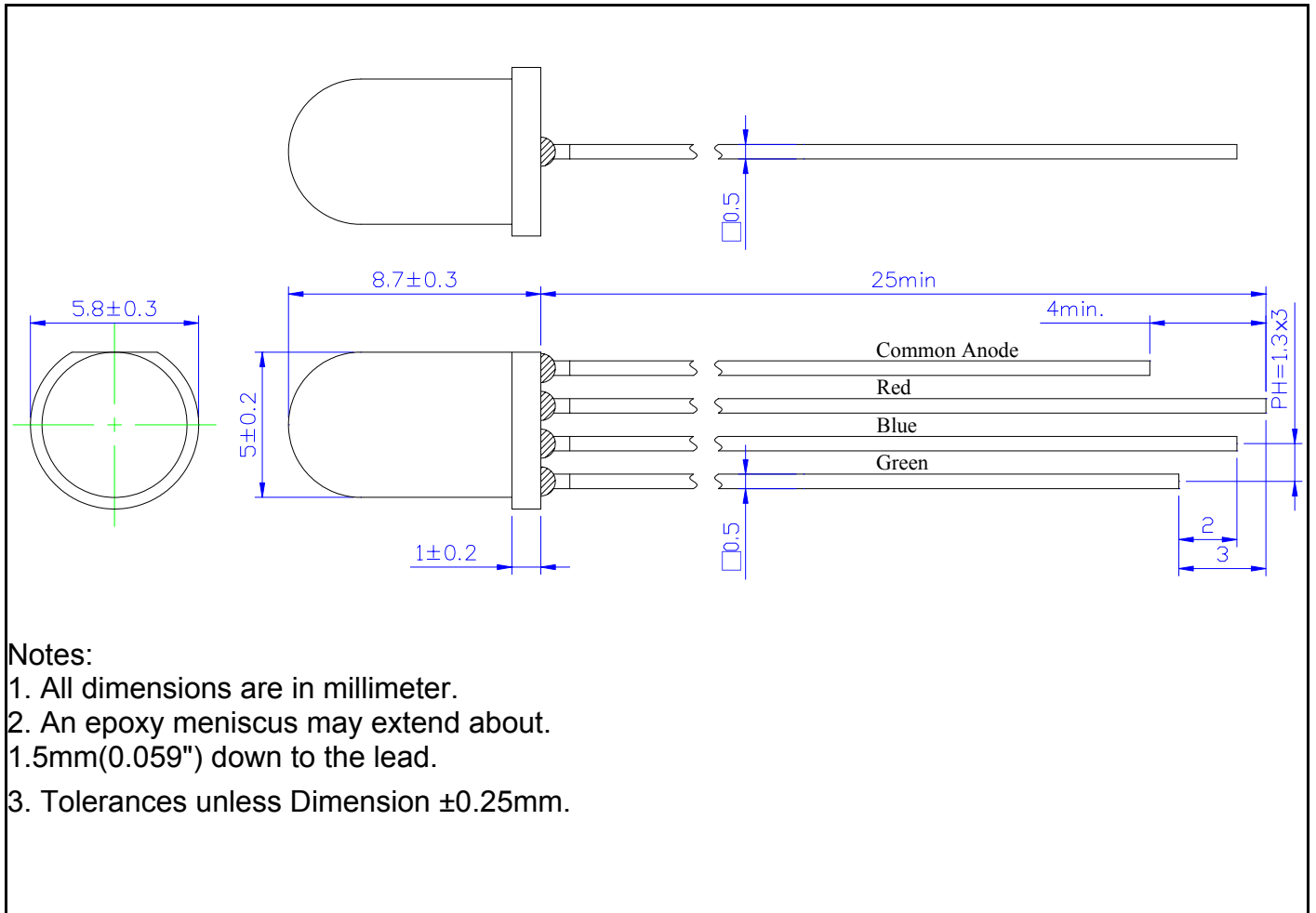
Part No. **AL-513RGBC-A-002** Diff No.002

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 ± 0.25 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-513RGBC-A-002	AlGaInP	Super Red	Water Clear
	InGaN	Super Green	
	InGaN	Super Blue	

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating			Unit
		Red	Green	Blue	
Continuous Forward Current	I_F	50	30	30	mA
Operating Temperature	T_{opr}	-40~+85	-20~+80		°C
Storage Temperature	T_{stg}	-40~+85	-30~+100		°C
Soldering Temperature	T_{sol}	260±5			°C
Electrostatic Discharge	ESD	1000			V
Power Dissipation	P_D	120			mW
Peak Forward Current (Duty 1/10@1KHz)	I_F (Peak)	200	100	100	mA
Reverse Voltage	V_R	5			V

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■ **Electronic Optical Characteristics :**

Parameter	Color	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Red	I_v	840	1200	/	mcd	$I_F=20mA$
	Green		2590	3700	/		
	Blue		490	700	/		
Viewing Angle	Red	$2\theta 1/2$	/	20	/	deg	---
	Green		/		/		
	Blue		/		/		
Peak Wavelength	Red	λ_p	/	630	/	nm	$I_F=20mA$
	Green		/	517	/		
	Blue		/	472	/		
Dominant Wavelength	Red	λ_d	/	625	/	nm	$I_F=20mA$
	Green		/	515	/		
	Blue		/	470	/		
Spectrum Radiation Bandwidth	Red	$\Delta\lambda$	/	20	/	nm	$I_F=20mA$
	Green		/	30	/		
	Blue		/	35	/		
Forward Voltage	Red	V_F	/	2.0	2.4	V	$I_F=20mA$
	Green		/	3.5	4.0		
	Blue		/	3.5	4.0		
Reverse Current	Red	I_R	/	/	10	μA	$V_R=5V$
	Green		/	/			
	Blue		/	/			

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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%

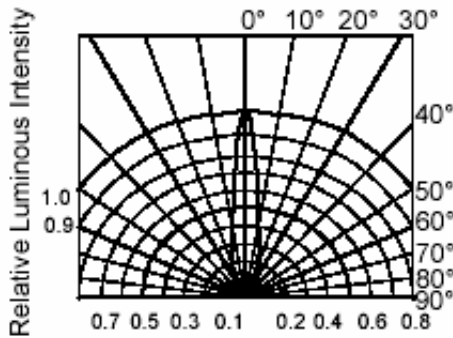
NO	ITEM	Test Conditions	Test hours/cycle	Sample Q'ty	Ac/Re
1	Solder Heat	Temp : 260°C±5°C	5 sec	22 pcs	0/1
2	Temperature Cycle	H : +100°C 15min) 5min L : -40°C 15min	50 cycles	22 pcs	0/1
3	Thermal Shock	H : +100°C 15min) 10sec L : -10°C 15min	50 cycles	22 pcs	0/1
4	High Temperature Storage	Temp : 100°C	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

Part No. **AL-513RGBC-A-002** Diff No.002

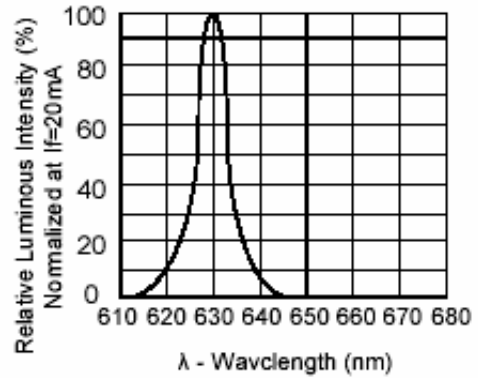
5 mm Round Type : LED Lamps

■ **Typical electro-optical characteristics curves :**

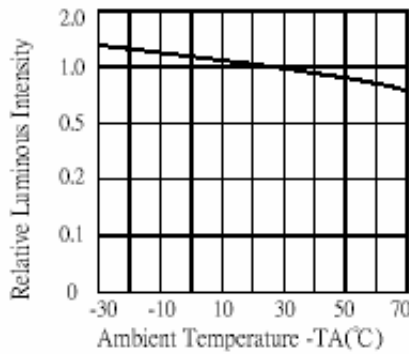
The data typical and the value are not guaranteed.



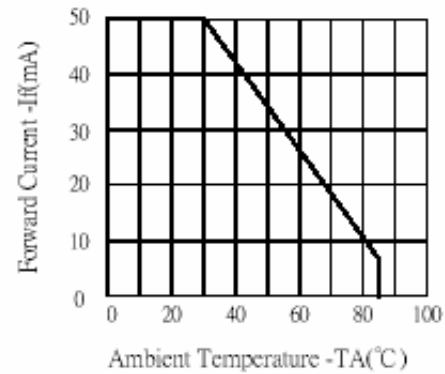
RADIATION DIAGRAM



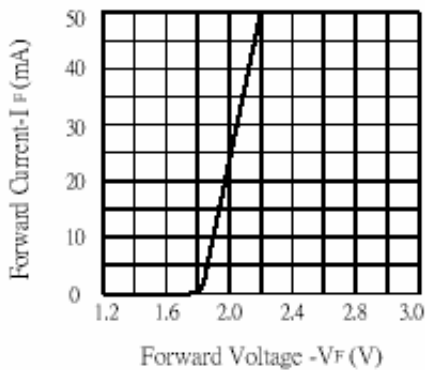
RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH



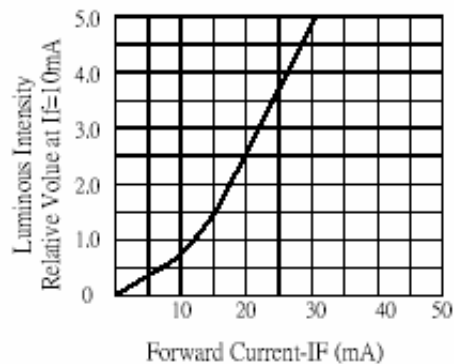
LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



FORWARD CURRENT Vs. AMBIENT TEMPERATURE



FORWARD CURRENT Vs. FORWARD VOLTAGE



LUMINOUS INTENSITY Vs. FORWARD CURRENT

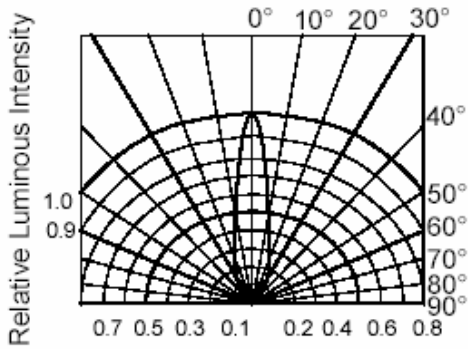
(Red)

■ **Typical electro-optical characteristics curves :**

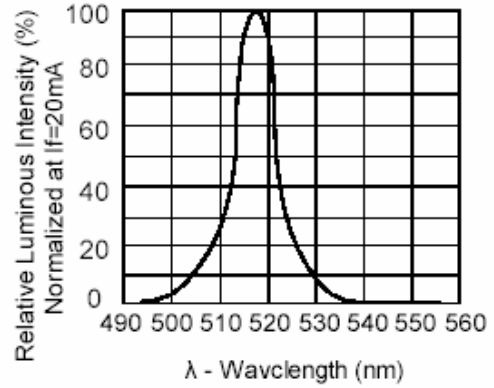
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5 mm Round Type : LED Lamps

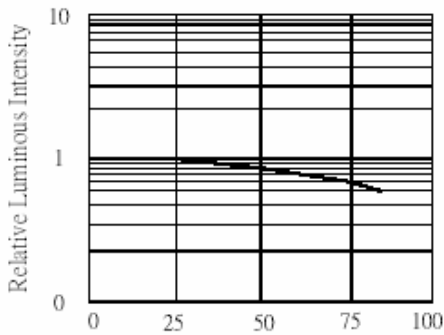
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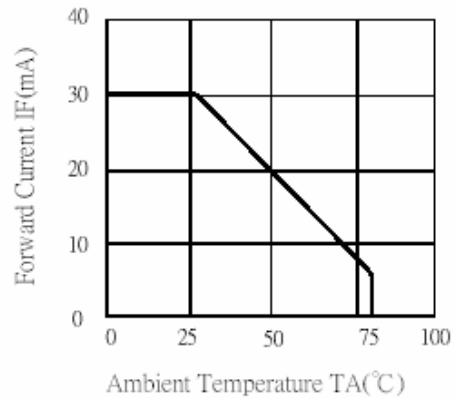
RADIATION DIAGRAM



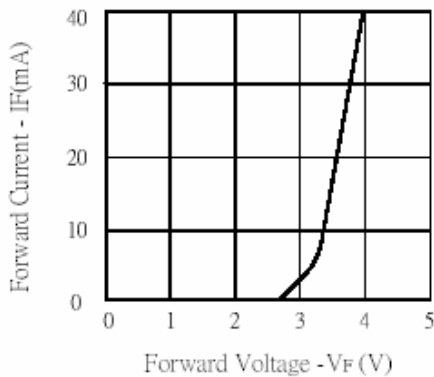
RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH



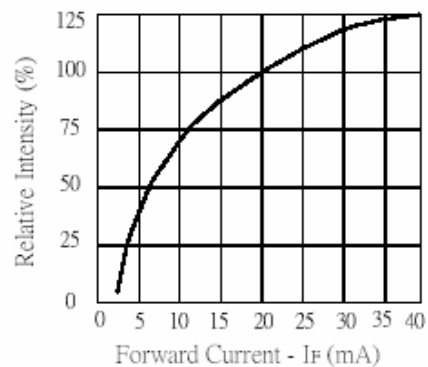
LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



FORWARD CURRENT Vs. AMBIENT TEMPERATURE



FORWARD CURRENT Vs. FORWARD VOLTAGE



LUMINOUS INTENSITY Vs. FORWARD CURRENT

(Green)

■ **Typical electro-optical characteristics curves :**

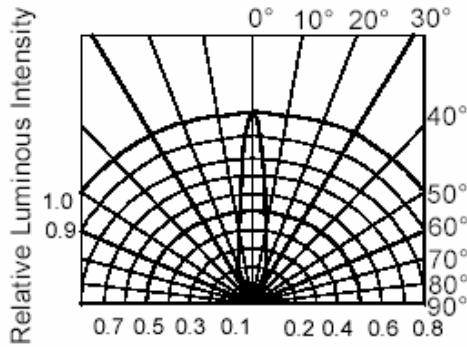
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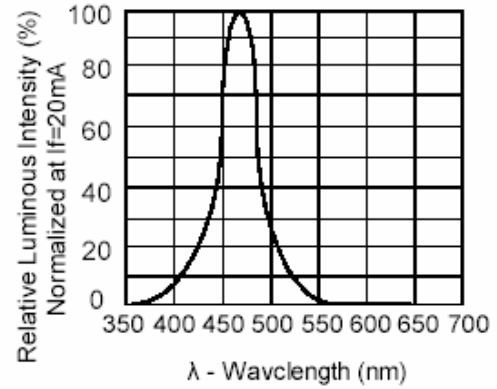
5 mm

Round

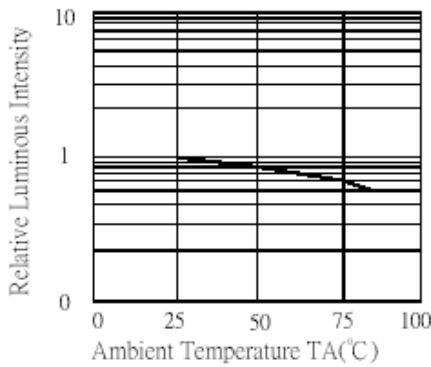
Type : LED Lamps



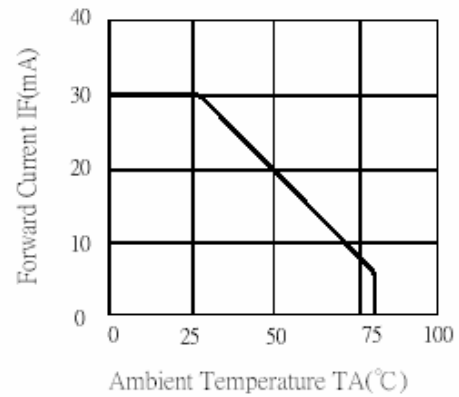
RADIATION DIAGRAM



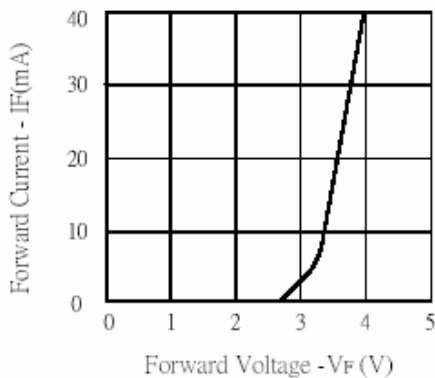
RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH



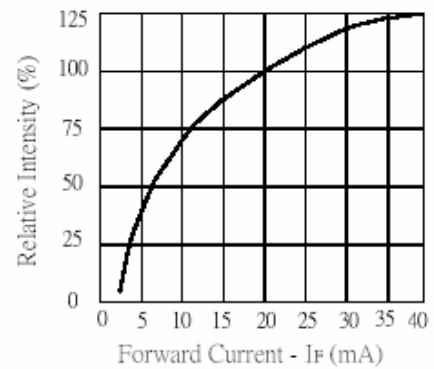
LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



FORWARD CURRENT Vs. AMBIENT TEMPERATURE



FORWARD CURRENT Vs. FORWARD VOLTAGE



LUMINOUS INTENSITY Vs. FORWARD CURRENT

(Blue)