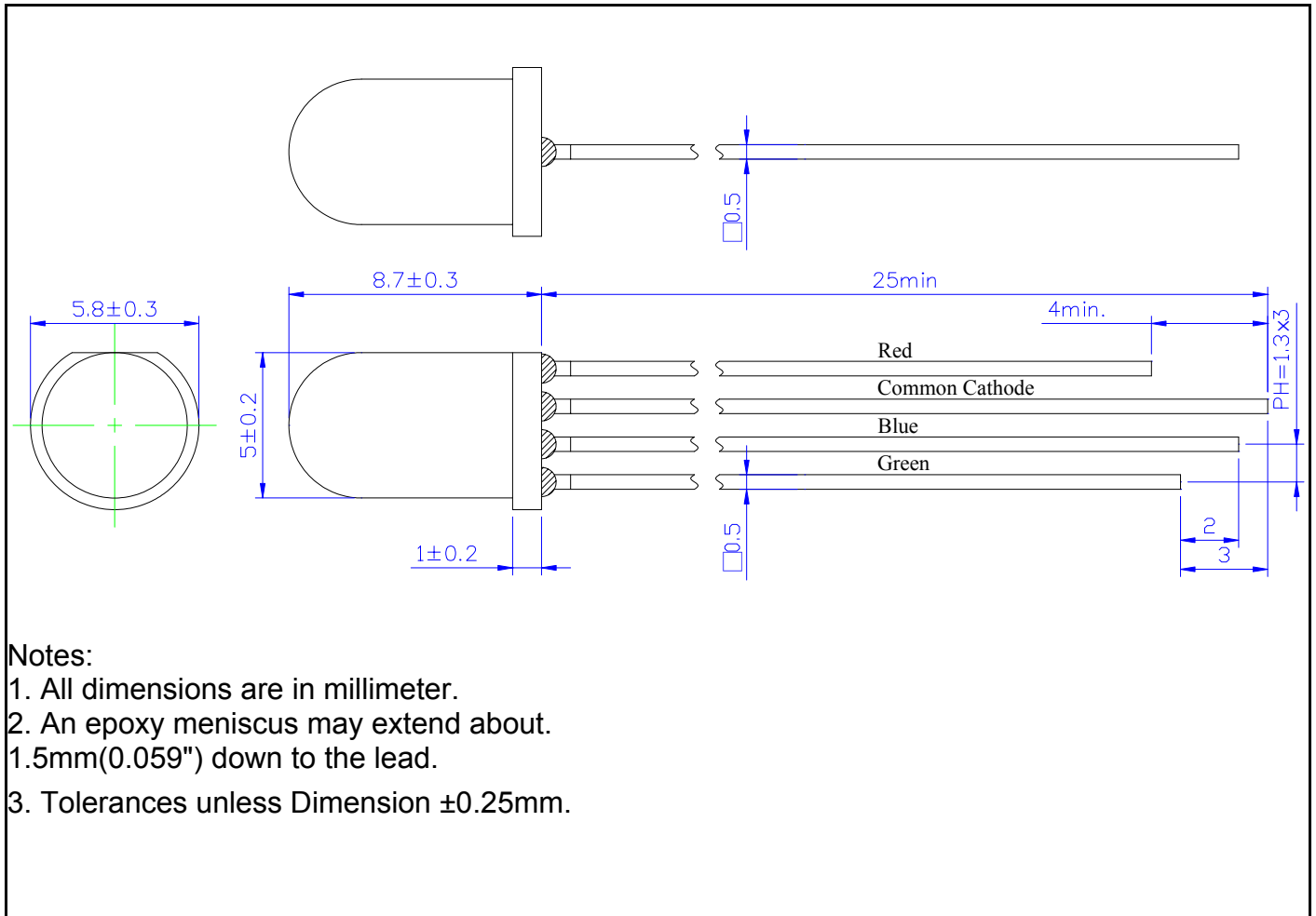


Part No.	<b>AL-513RGBW-C-002</b>	Diff No.002
5 mm	Round	Type : LED Lamps

### ■ 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  $\pm 0.25$ 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

Part No. **AL-513RGBW-C-002** Diff No.002

5 mm

Round

Type : LED Lamps

LED Parts P/N.	Chip		Lens Color
	Material	Emitted Color	
AL-513RGBW-C-002	AlGaInP	Super Red	White Diffused
	InGaN	Super Green	
	InGaN	Super Blue	

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating			Unit
		Red	Green	Blue	
Continuous Forward Current	I <sub>F</sub>	30	30	30	mA
Operating Temperature	T <sub>opr</sub>	-40~+85	-20~+80		°C
Storage Temperature	T <sub>stg</sub>	-40~+85	-30~+100		°C
Soldering Temperature	T <sub>sol</sub>	260±5			°C
Electrostatic Discharge	ESD	1000			V
Power Dissipation	P <sub>D</sub>	120			mW
Peak Forward Current (Duty 1/10@1KHz)	I <sub>F</sub> (Peak)	100			mA
Reverse Voltage	V <sub>R</sub>	5			V

Part No. **AL-513RGBW-C-002** Diff No.002

5 mm

Round

Type : LED Lamps

■ **Electronic Optical Characteristics :**

Parameter	Color	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Red	$I_v$	420	600	/	mcd	$I_F=20mA$
	Green		700	1000	/		
	Blue		140	200	/		
Viewing Angle	Red	$2\theta 1/2$	/	45	/	deg	---
	Green		/		/		
	Blue		/		/		
Peak Wavelength	Red	$\lambda_p$	/	630	/	nm	$I_F=20mA$
	Green		/	525	/		
	Blue		/	472	/		
Dominant Wavelength	Red	$\lambda_d$	/	625	/	nm	$I_F=20mA$
	Green		/	520	/		
	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	$\mu A$	$V_R=5V$
	Green		/	/			
	Blue		/	/			

Part No. **AL-513RGBW-C-002** Diff No.002

5 mm

Round

Type : LED Lamps

**■ 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

Part No. **AL-513RGBW-C-002**

Diff No.002

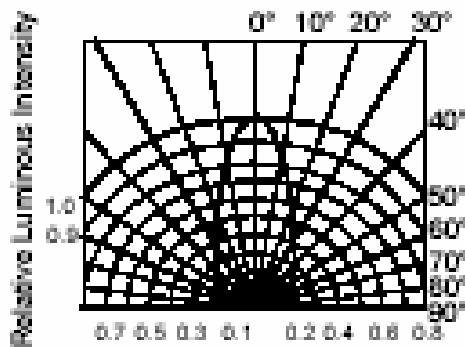
5 mm

Round

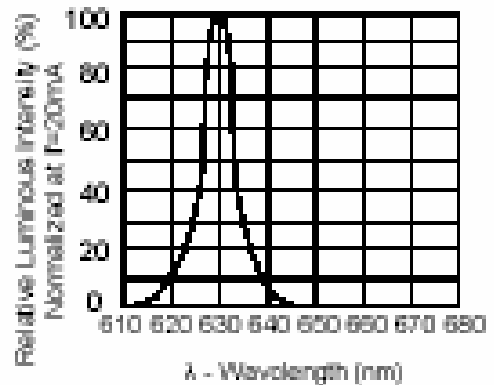
Type : LED Lamps

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

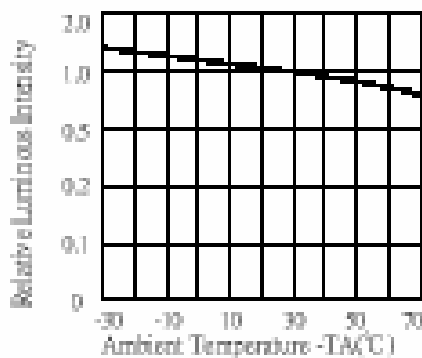
The data typical and the value are not guaranteed.



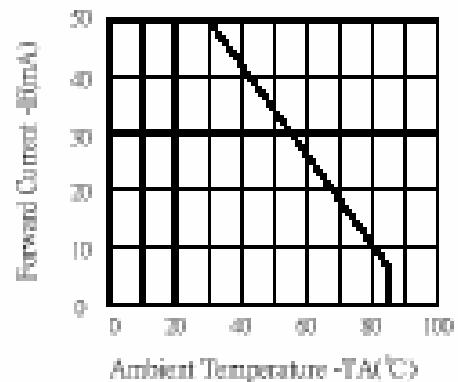
**RADIATION DIAGRAM**



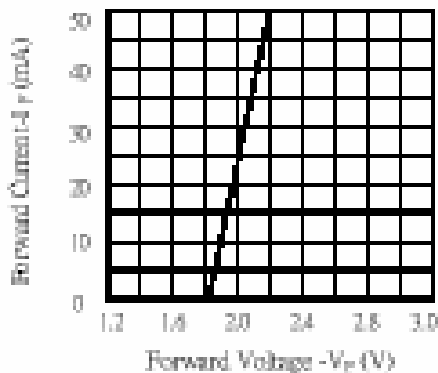
**RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH**



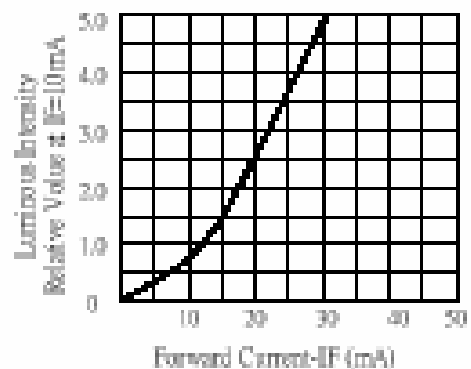
**LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE**



**FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**FORWARD CURRENT VS. FORWARD VOLTAGE**



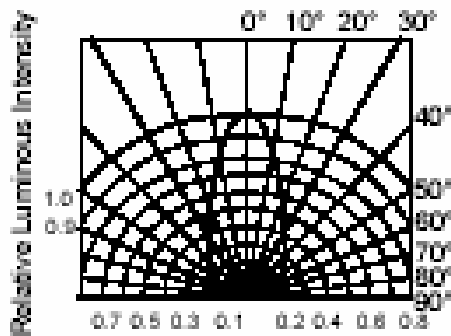
**LUMINOUS INTENSITY VS. FORWARD CURRENT**

**( Red )**

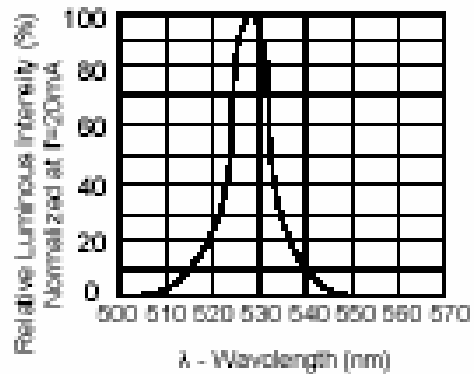
Part No.	<b>AL-513RGBW-C-002</b>	Diff No.002
5 mm	Round	Type : LED Lamps

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

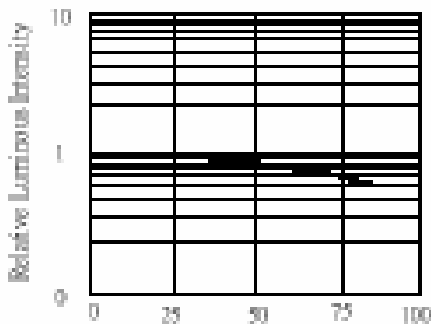
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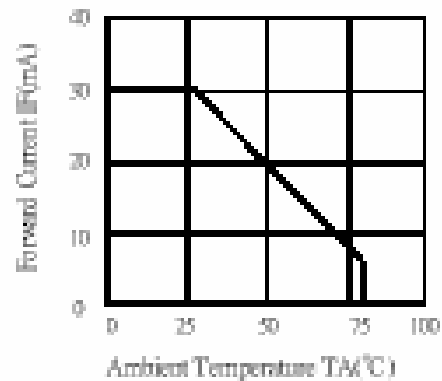
**RADIATION DIAGRAM**



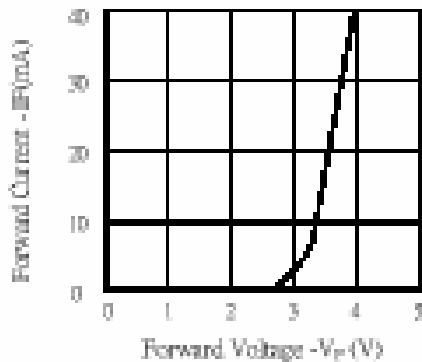
**RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH**



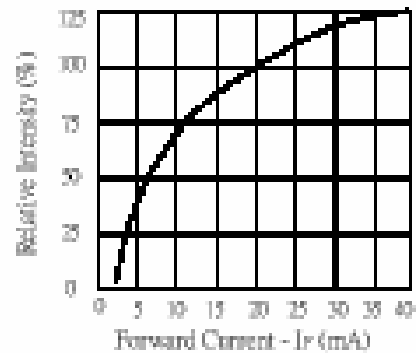
**LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE**



**FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**FORWARD CURRENT VS. FORWARD VOLTAGE**



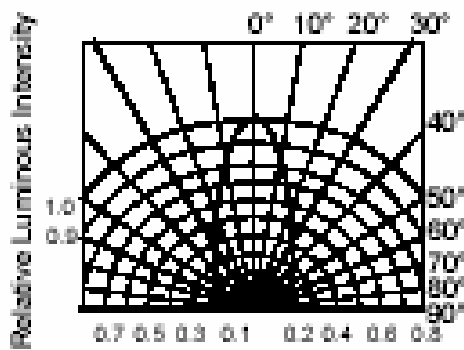
**LUMINOUS INTENSITY VS. FORWARD CURRENT**

**( Green )**

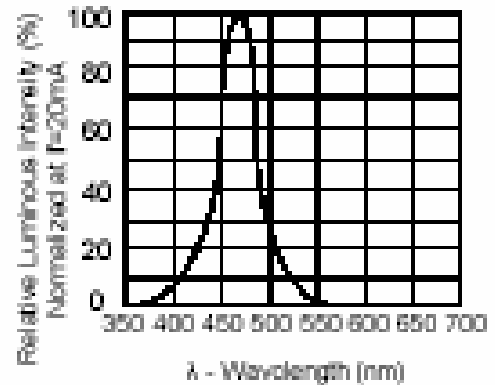
Part No.	<b>AL-513RGBW-C-002</b>	Diff No.002
5 mm	Round	Type : LED Lamps

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

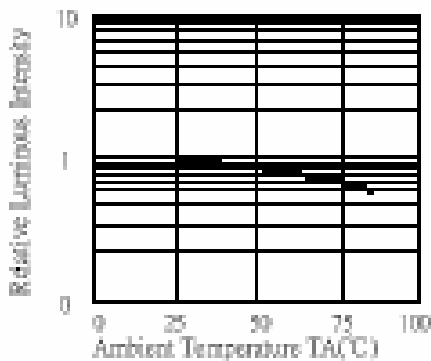
The data typical and the value are not guaranteed.



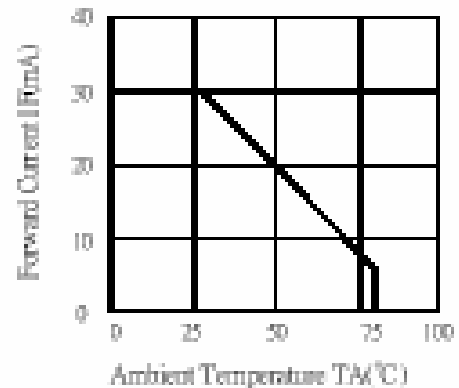
**RADIATION DIAGRAM**



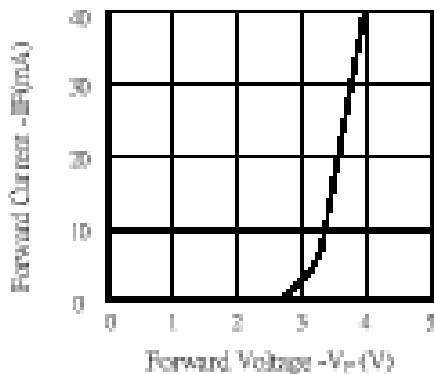
**RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH**



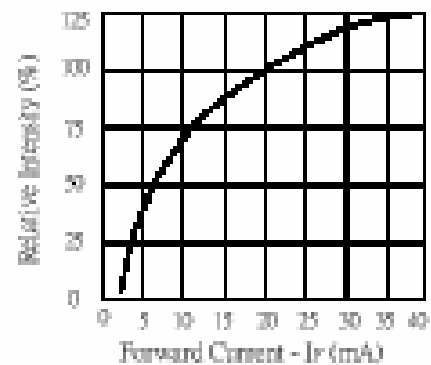
**LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE**



**FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**FORWARD CURRENT VS. FORWARD VOLTAGE**



**LUMINOUS INTENSITY VS. FORWARD CURRENT**

**( Blue )**