

Part No. **AL-513SRGBC**

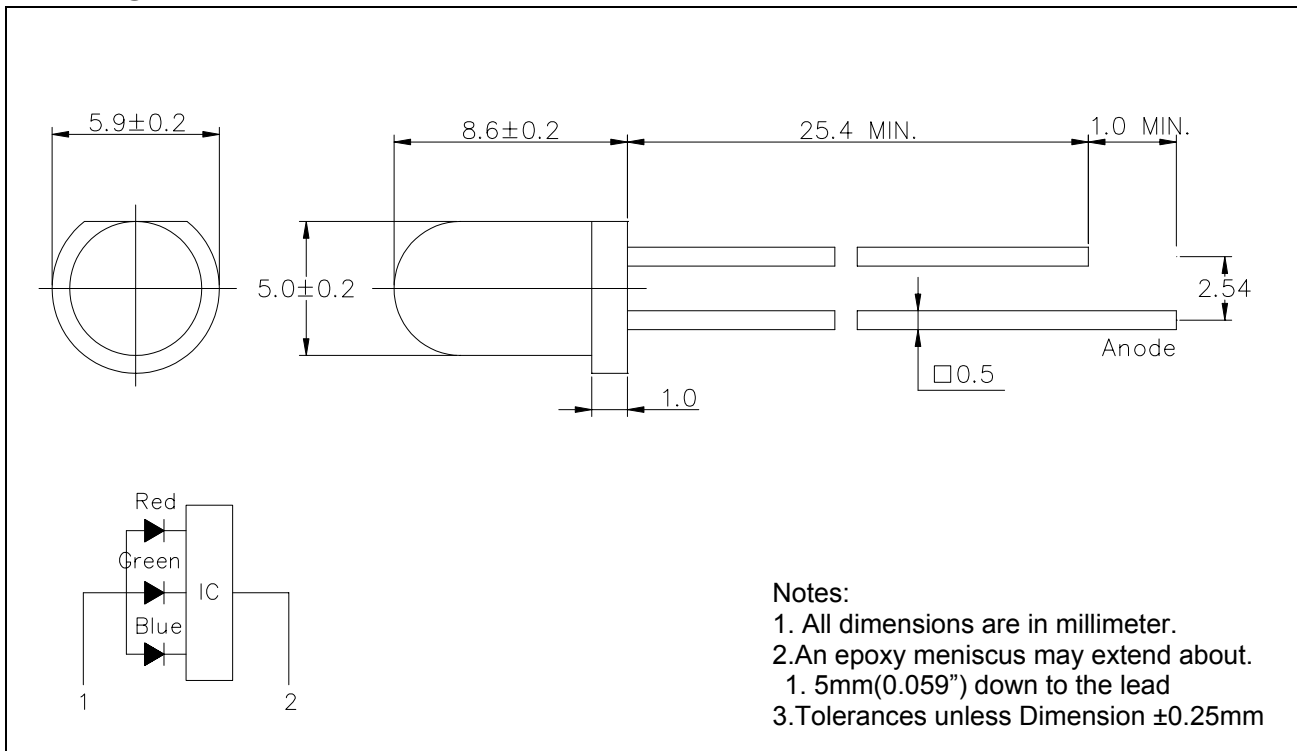
Diff No.

5 mm

Round

Type : LED Lamps

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-513SRGBC	AlGaInP	U/B Red	Water Clear
	InGaN	U/B Green	
	InGaN	Blue	

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Reverse Current	V <sub>R</sub>	100	μA
Peak Current	I <sub>F</sub> (Peak)	100	mA
Operating Temperature	T <sub>opr</sub>	-30 to +80	°C
Storage Temperature	T <sub>stg</sub>	-30 to +80	°C
Soldering Temperature	T <sub>sol</sub>	260 ± 5	°C
Derating Linear 25°C		0.4	mA/°C

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
Luminous Intensity	I <sub>v</sub>	R	/	1000	/	mcd	I <sub>F</sub> =10mA
		G	/	1800	/		
		B	/	550	/		
Viewing Angle	2θ1/2	R	/	25	/	deg	I <sub>F</sub> =20mA
		G	/	21	/		
		B	/	21	/		
Peak Wavelength	λ <sub>p</sub>	R	/	630	/	nm	I <sub>F</sub> =20mA
		G	/	535	/		
		B	/	475	/		
Dominant Wavelength	λ <sub>d</sub>	R	/	625	/	nm	I <sub>F</sub> =20mA
		G	/	520	/		
		B	/	470	/		
Forward Voltage	V <sub>F</sub>	R	/	2.1	2.6	V	I <sub>F</sub> =20mA
		G	/	3.5	4.0		
		B	/	3.5	4.0		

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■ Reliability test items and conditions :

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5°C	5 SEC	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min ┆ 5min L : -55°C 30min	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min ┆ 10set L : -10°C 5min	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	TEMP : 25°C I <sub>F</sub> =20mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 HRS	76 PCS	0/1

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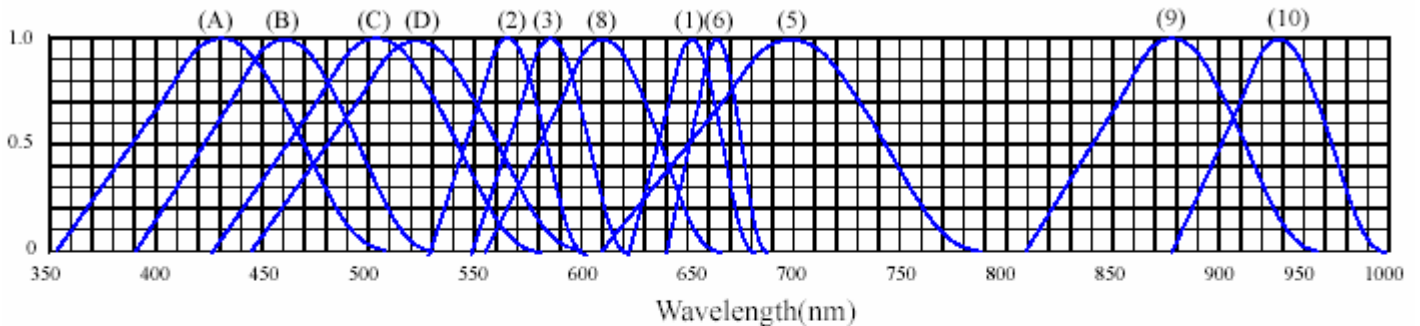
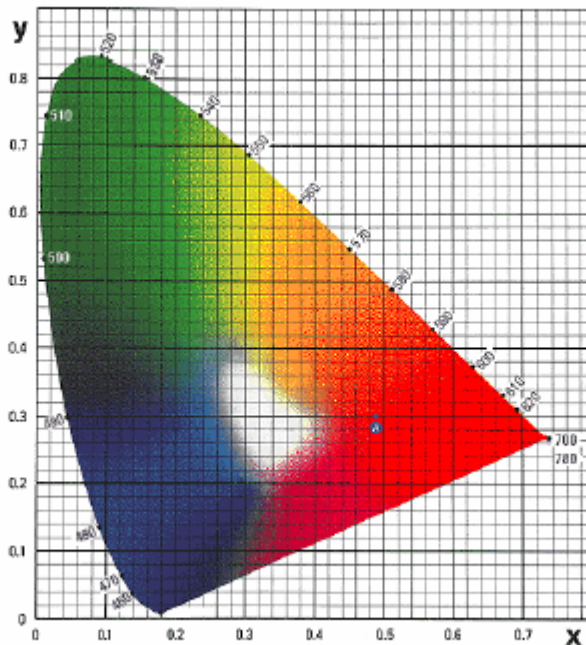
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◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



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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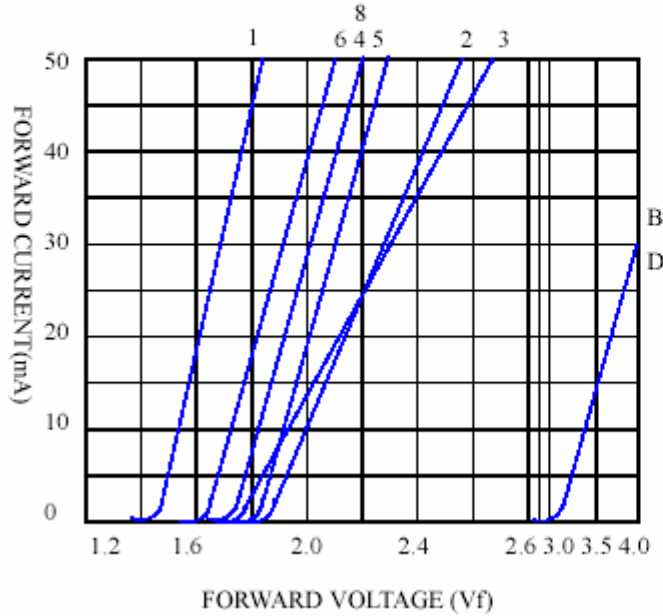
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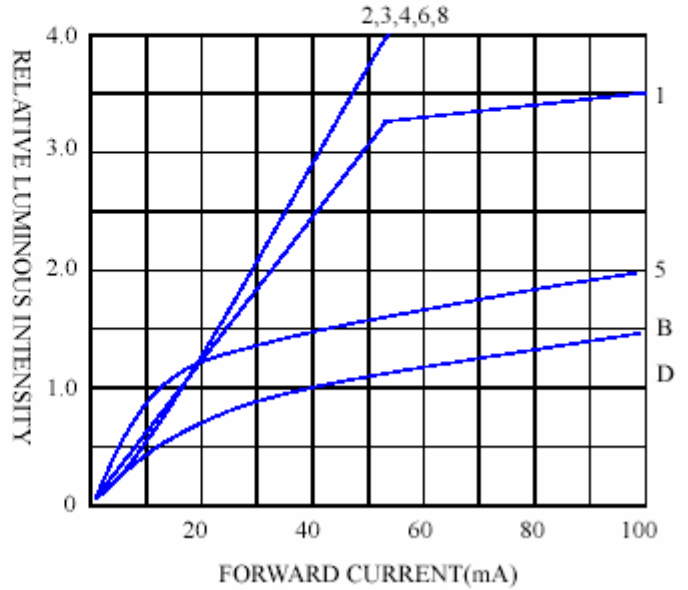
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◆ CHARACTERISTICS DIAGRAMS

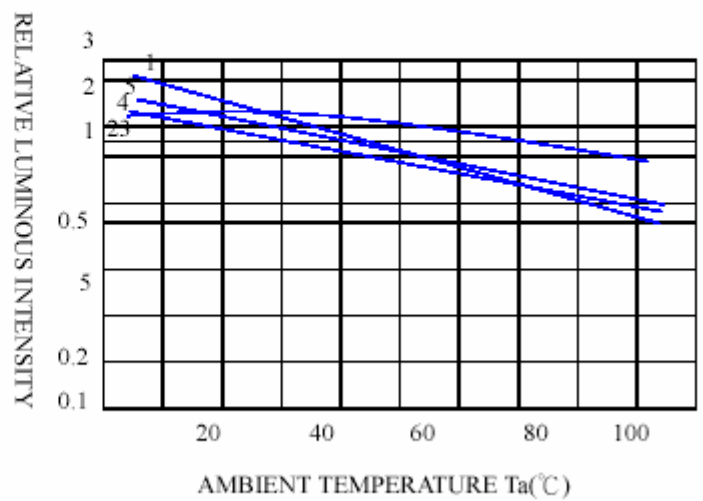
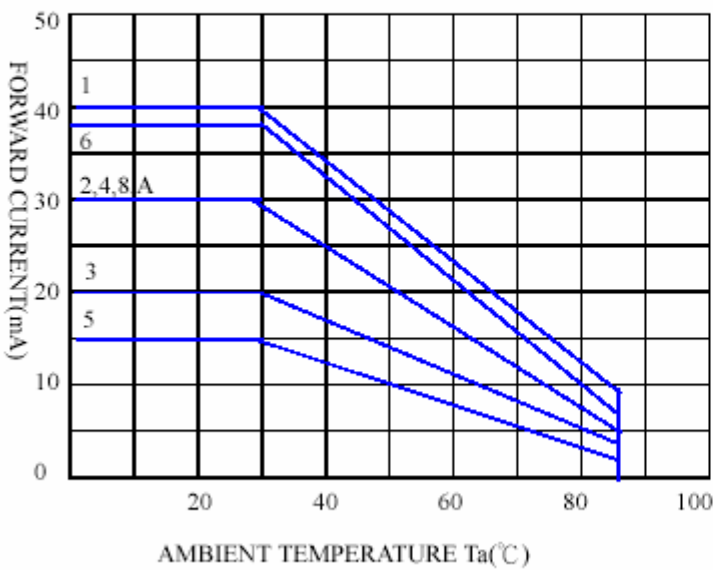
FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE



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SEC(K1)				SEC(K2)				SEC(K3)				SEC(K4)			
Single Light Flash				Dual Light Flash				Continue Light				No Light			
L1	L2	L3	L4	L1	L2	L3	L4	L1	L2	L3	L4	L1	L2	L3	L4
○	X	X	X	○	○	○	X	○	X	X	X	○	○	○	○
X	○	○	○	X	○	○	○	○	○	○	X	○	○	○	X
X	X	X	○	○	X	X	○	○	○	○	○	X	X	X	X
								X	X	X	X	X	X	X	X

TESTING CONDITION: 4.5VDC                      TOLERANCE: ±20%

SEC 1 ===0.79 SEC.                      SEC 2 ===0.81 SEC.

SEC 3 ===1.07 SEC.                      SEC 4 ===1.07 SEC.

SEC 5 ===0.50 SEC.                      SEC 6 ===1.80 SEC.

SEC. 7===2.90 SEC.

SEC(K5)				SEC.(K6)				SEC(K7)				SEC(K8)			
All Light Flash				Full Color				Full Color Dimmer				Sec 1 + Sec 6 + Sec 7			
L1	L2	L3	L4	L1	L2	L3	L4	L1	L2	L3	L4				
○	○	○	○	○	X	X	X	◇	X	X	X				
X	X	X	X	X	○	○	X	X	◇	◇	X				
				X	X	X	○	X	X	X	◇	SEC8(K8)			
				○	○	○	X	◇	◇	◇	X	SEC 1 ~ SEC7			
				○	○	○	○	X	◇	◇	◇				
				○	X	X	○	◇	X	X	◇				
				○	○	○	○	◇	◇	◇	◇				