



Part No.

**AL-513OR4C**

Diff No.

5 mm

Round

Type : LED Lamps

PART NO.	Chip		Lens Color
	Material	Emitted Color	
AL-513OR4C	AlGaInP	Ultra Red	Water Clear

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I <sub>F</sub>	30	mA
Operating Temperature	T <sub>opr</sub>	-40 to +85	°C
Storage Temperature	T <sub>stg</sub>	-40 to +85	°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

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	9000	13000	/	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ1/2	/	15	/	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	/	630	/	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	/	625	/	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	/	30	/	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	/	2.0	2.4	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	/	/	10	μA	V <sub>R</sub> =5V

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## ■ Reliability test items and conditions :

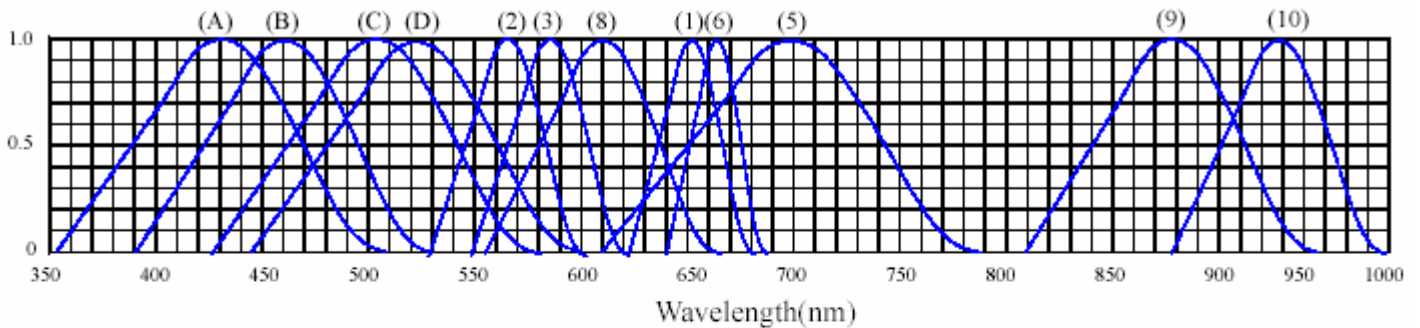
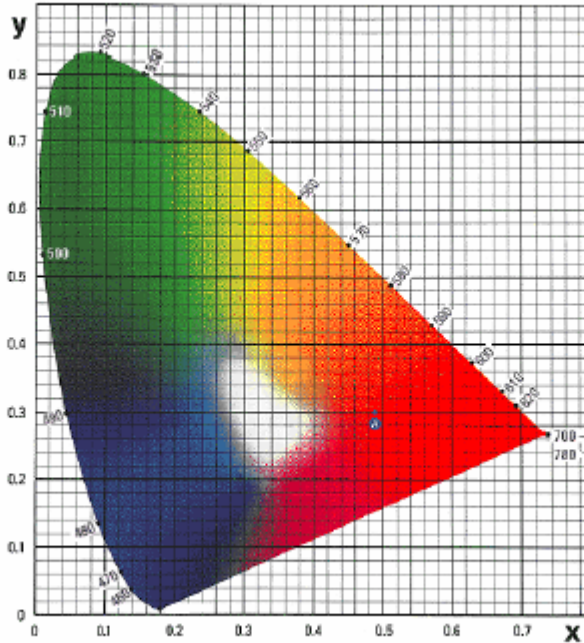
NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : $260 \pm 5^{\circ}\text{C}$	5 SEC	76 PCS	0/1
2	Temperature Cycle	H : $+85^{\circ}\text{C}$ 30min ┆ 5min L : $-55^{\circ}\text{C}$ 30min	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5min ┆ 10set L : $-10^{\circ}\text{C}$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

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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           |                                  |

Part No.

**AL-5130R4C**

Diff No.

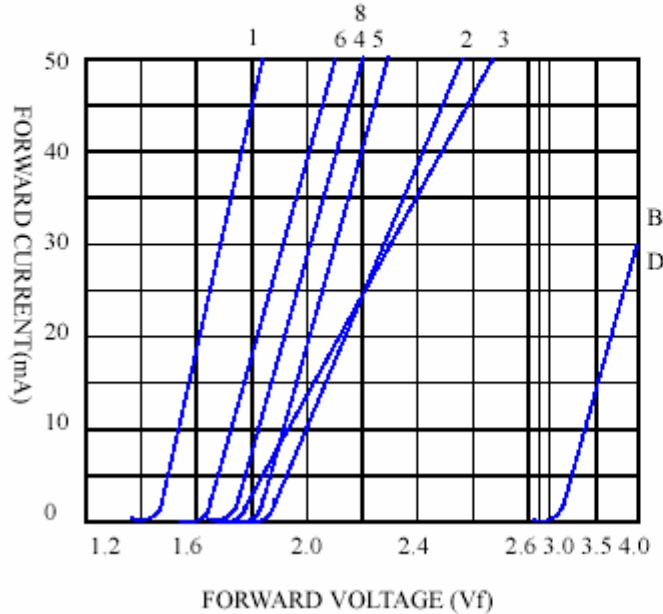
5 mm

Round

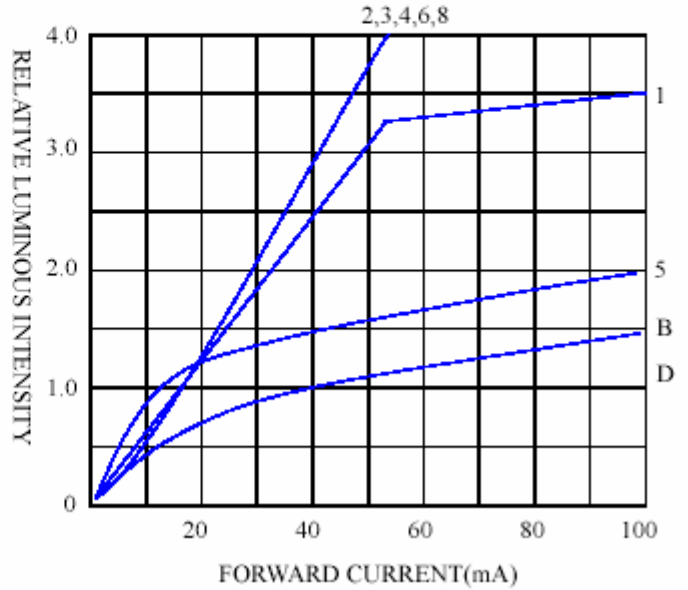
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◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

