PRODUCT SPECIFICATION

DATE: 06/30/2008

cosmo ELECTRONICS CORPORATION	H.P LED : KLS06WXX4	NO. 61L70036	REV. 1
		SHEET 1 OF 6	

1. Features

Cosmo's high power LED packages can handle up to 350-500mA DC current,. These packages are formed by bonding 2~4 pcs LED chips on a Φ20mm metal PCB. The main features of these packages are as follows：

- Very high flux output per LED.
- Flat PCB package. On each PCB, the quantity of LED being adjustable from 2 to 4 to meet user's need. These LEDs being connected in series.
- Very long operation life time up to 100k hours attainable, by using a proper heat sink.
- 120 ± 10^{o} cool beam in most packages.

2. Applications

- Outdoor and indoor architectural lighting
- Reading light (car/bus/aircraft)
- Decorative/entertainment lighting
- Bollards/Security/Garden lighting
- Traffic signal
- Portable lighting (flashlight/bicycle)
- Edge-lit signs (exit sign/point of sales)
- LCD backlights
- Light guide

3. Operation and Storage Temperature

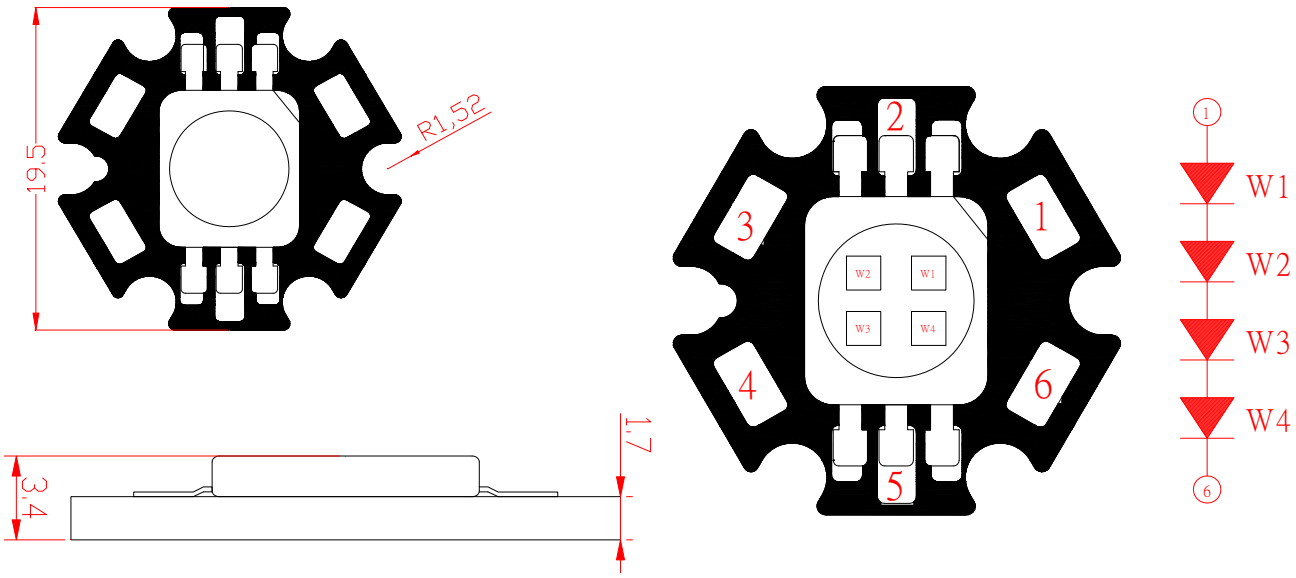
Parameter	Symbol	Value	Unit
Operation temperature	Topr	(Data to be ready, -30~+85)	℃
Storage temperature	Tstg	(Data to be ready, -40~+110)	℃

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4. Dimensions



Unit = mm ; Tolerances ±1mm

5. Electrical & Optical Characteristics

*LED at **350mA (1 chip / W)**, Ta = 25°C*

Chip quantity：4 LEDs/PCB

Part Number	*CCT (K)*	*Forward Voltage (Vf)*		*Luminous Flux (lm)*		*Wattage Max. (W)*	*View angle* ($2\theta_{\frac{1}{2}}$)
		Typ.	*Max*	*Min*	*Typ.*		
WXX4	*4500~9000*	*14.4*	*16*	*160*	*180*	*5.6*	*120±10°*

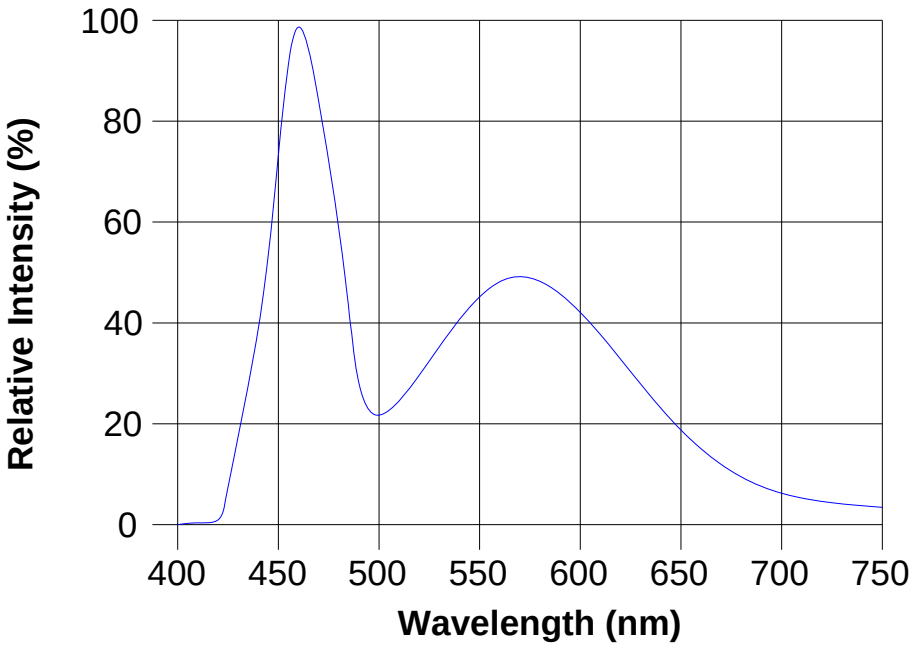
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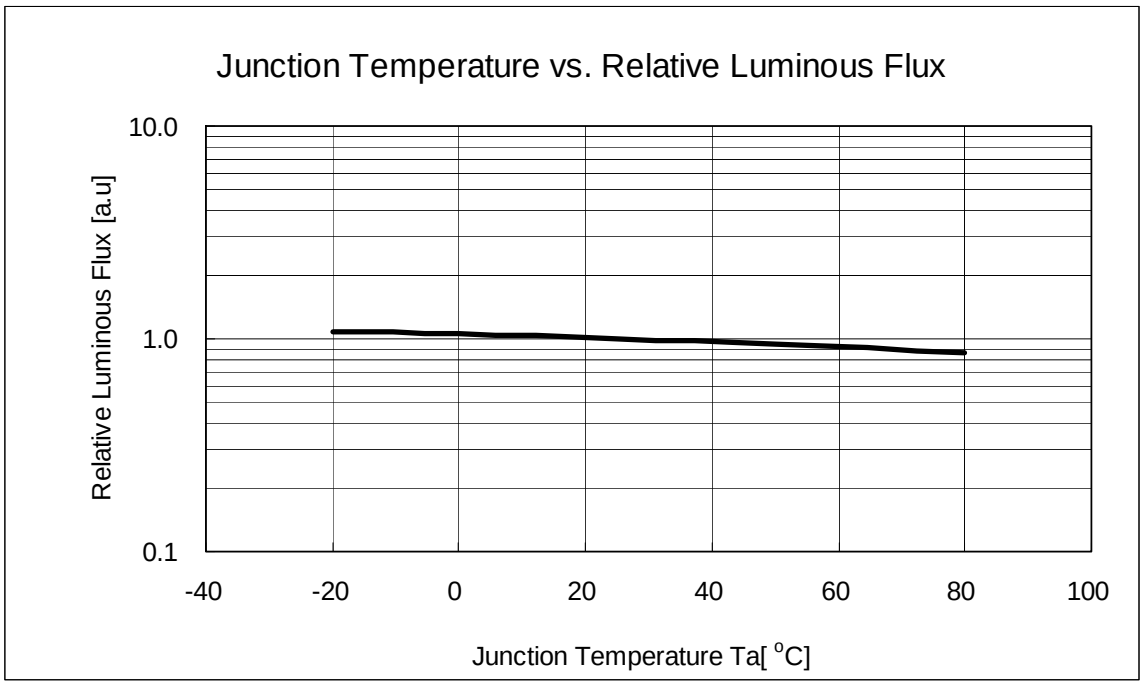
6. Wavelength Characteristics

- Relative spectral power intensity of white vs. wavelength (Ta=25℃)



7. Light Output Characteristics

- Relative light output vs. junction temperature



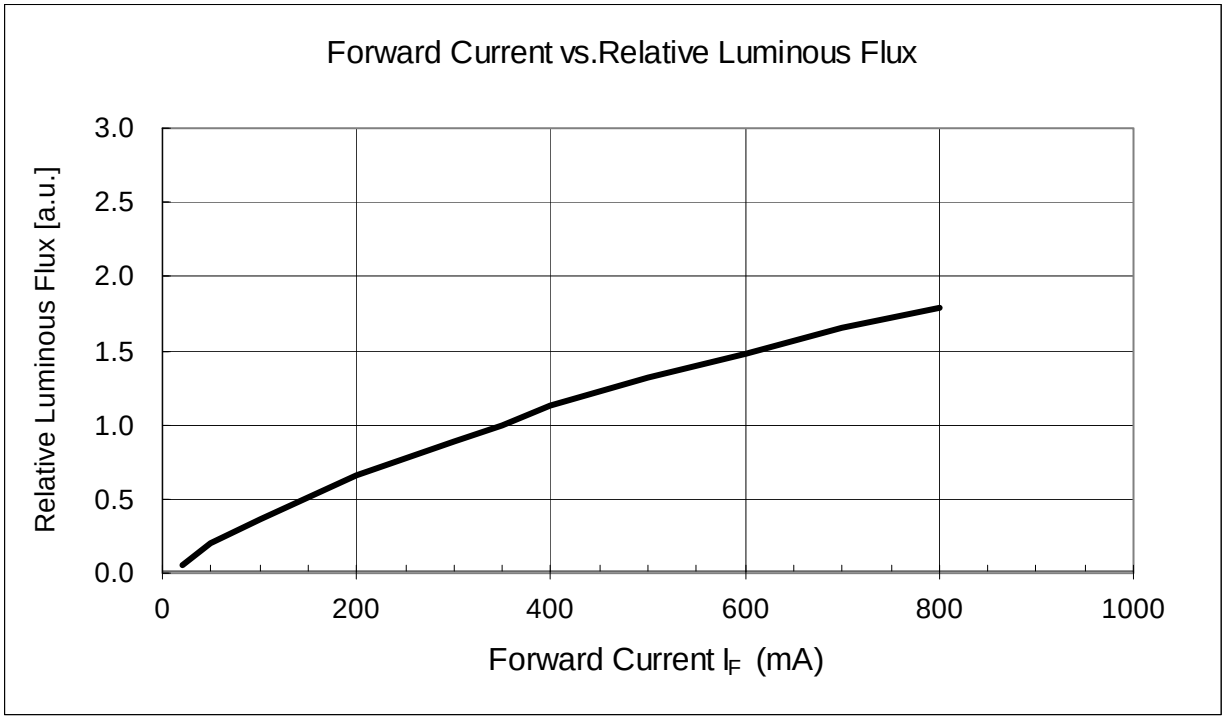
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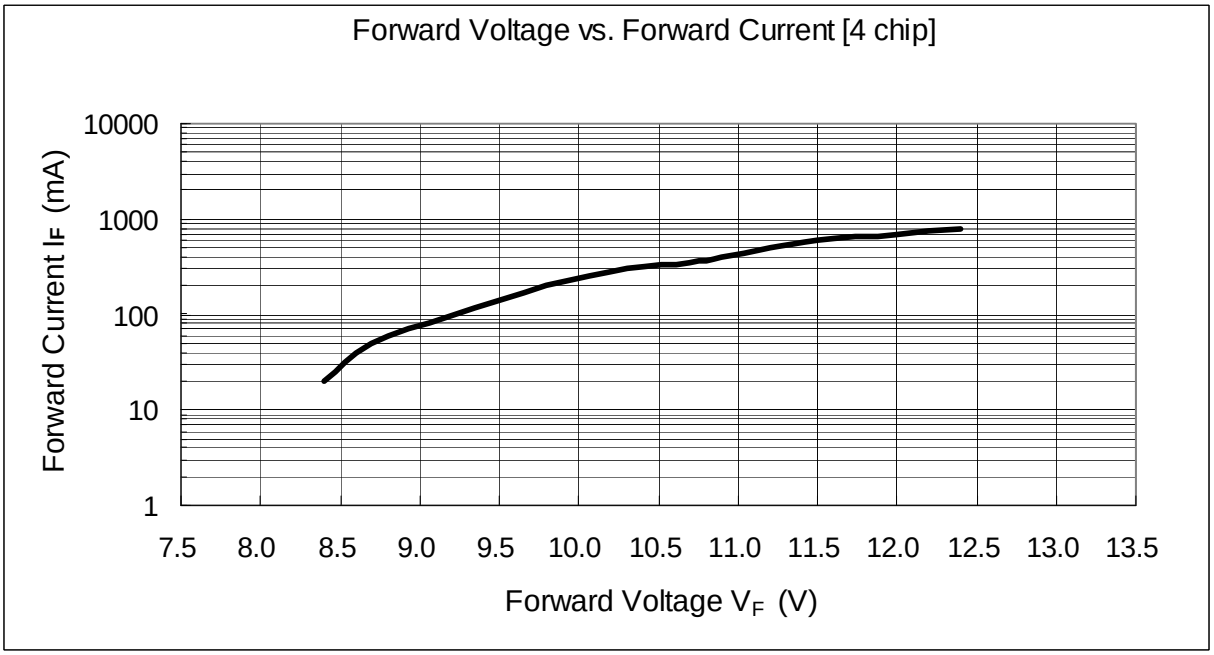
cosmo ELECTRONICS CORPORATION	H.P LED : KLS06WXX4	NO. 61L70036	REV. 1
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8. Spatial Radiation Pattern

● Forward current vs. relative luminous flux (Ta=25℃)



● Forward voltage vs. forward current (4 LEDs/PCB, Ta=25℃)

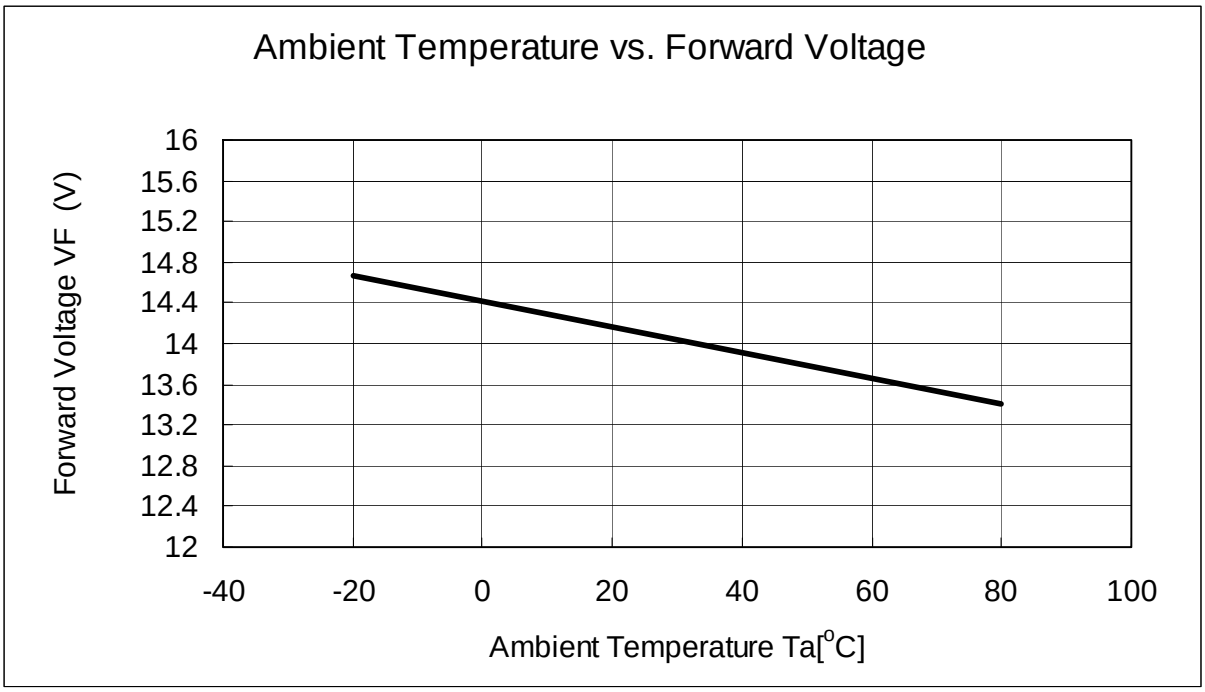


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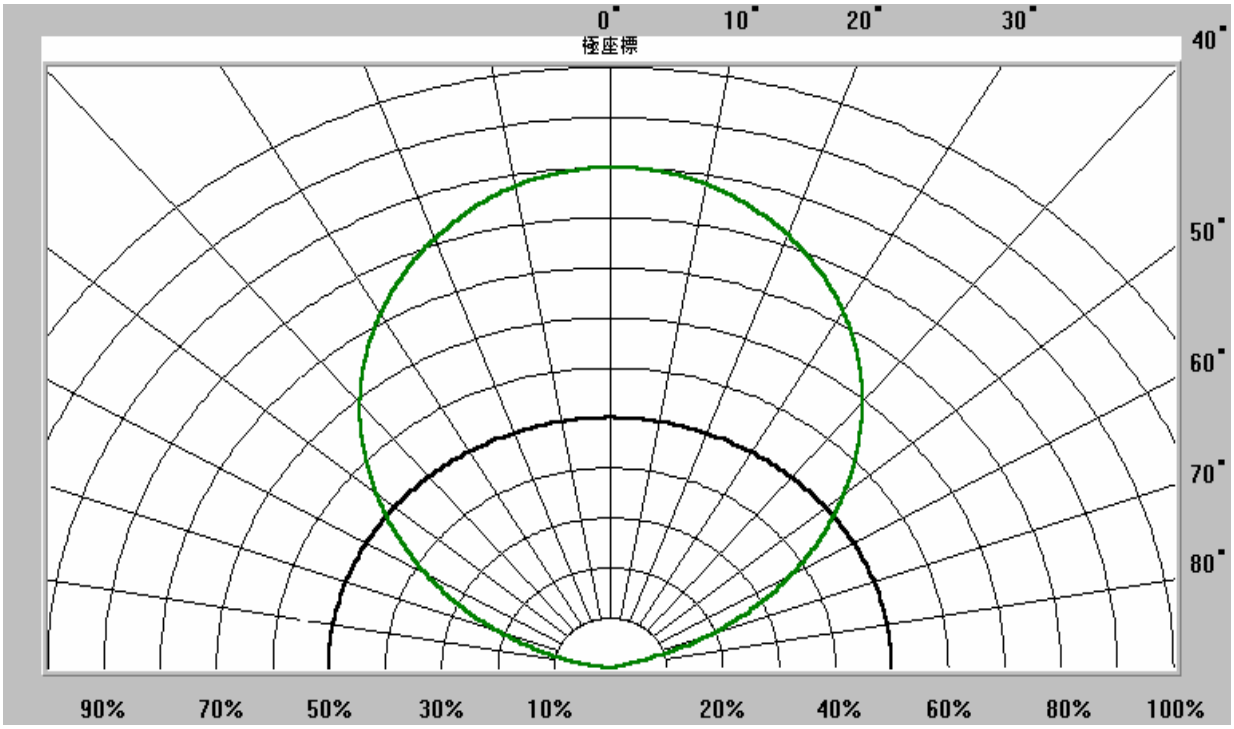
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- Forward voltage vs. ambient temperature (4 LEDs/PCB, I_F=350mA)



9. Spatial Radiation Pattern

- **White**



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10. Reliability Test

Stress Test	Stress Conditions	Stress Duration	Failure Criteria	Failure rate
1.High temperature operation life	85℃ at 350mA	1,000 hrs	(1)Iv< 50% degradation (2)Vf max=110% initial	0/12
2.Room temperature operation life	25℃ at 350 mA	1,000 hrs		0/12
3. Low temperature operation life	-40℃ at 350 mA	1,000 hrs		0/12
4. Wet high temperature operation life	85℃ / 60% RH at 350 mA	1,000 hrs		0/12
5.Powered temperature cycle	(1.)-45℃/18min at 350 mA (2.)Transform /42min (3.)85℃ /18min at 350 mA	200 cycles		0/12
6.Temperature Cycle	(1.)-45℃ /30 min (2.)25℃ /5 min (3.)120℃ /30 min (4.)25℃ /5 min	200 cycles		0/12
7.High temperature storage	110℃	1,000 hrs		0/12
8. Low temperature storage	-40℃	1,000 hrs		0/12
9.High temperature humidity storage	60℃ / 90% RH	1,000 hrs		0/12
10.Thermal shock	(1.)-40℃ /20min (2.)Transform /20sec (3.)110℃ /20min	200 cycles		0/12