PRODUCT SPECIFICATION

DATE: 11/27/2006

cosmo ELECTRONICS CORPORATION	H.P LED : KLS00WWX1	NO. 61L70030	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 1 pcs LED chip on a Φ20mm Emitter. The main features of these packages are as follows：

- Very high flux output per LED.
- 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

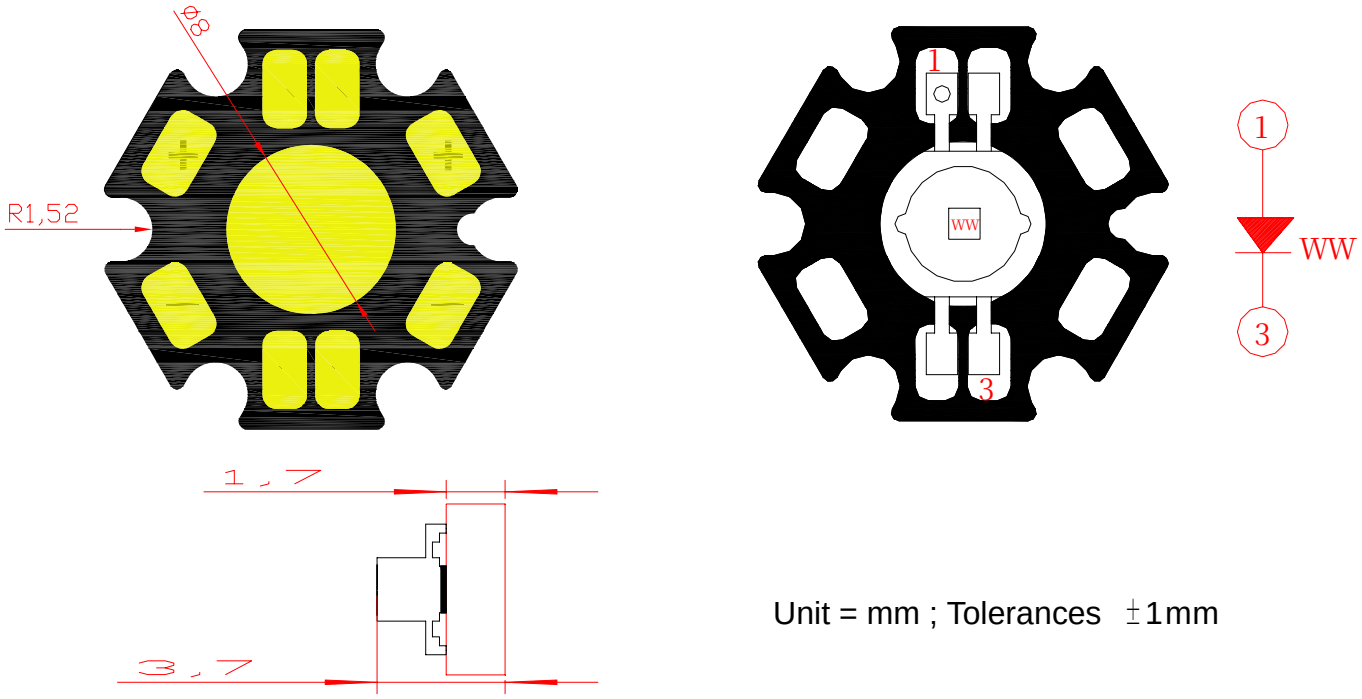
Parameter	Symbol	Value	Unit
Operation temperature	Topr	(Data to be ready, -30~+85)	^{o}C
Storage temperature	Tstg	(Data to be ready, -40~+110)	^{o}C

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4. Dimensions



Unit = mm ; Tolerances ±1mm

5. Electrical & Optical Characteristics

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

Part Number	*CCT (K)*	*Forward Voltage (Vf)*		*Luminous Flux (lm)*		*Wattage Max. (W)*	*View angle ($2\theta_{\frac{1}{2}}$)*
		Typ.	*Max*	*Min*	*Typ.*		
WWX1	*2500~3500*	*3.6*	*4*	*30*	*40*	*1.4*	*120±10°*

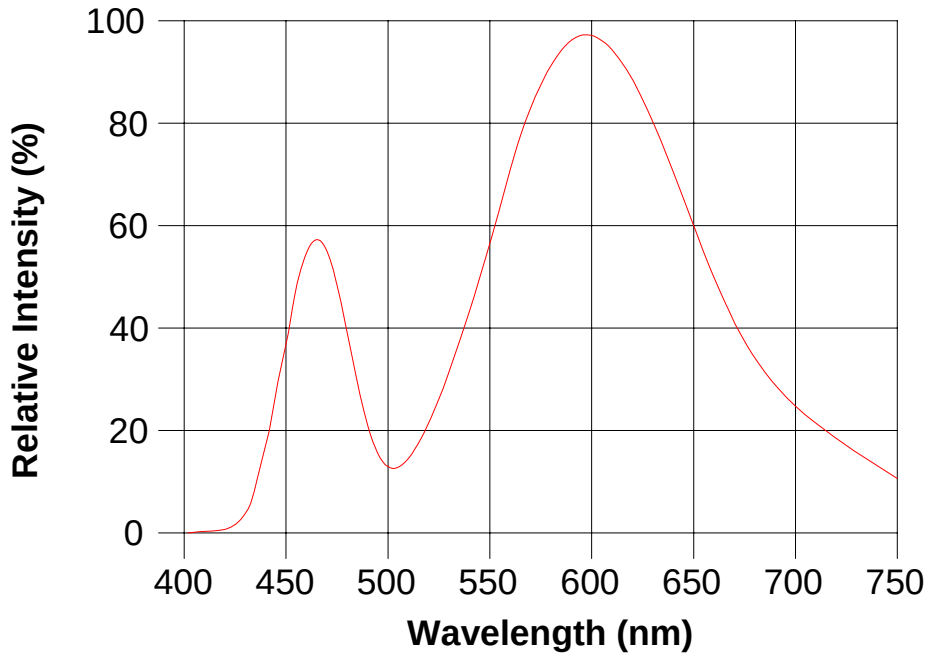
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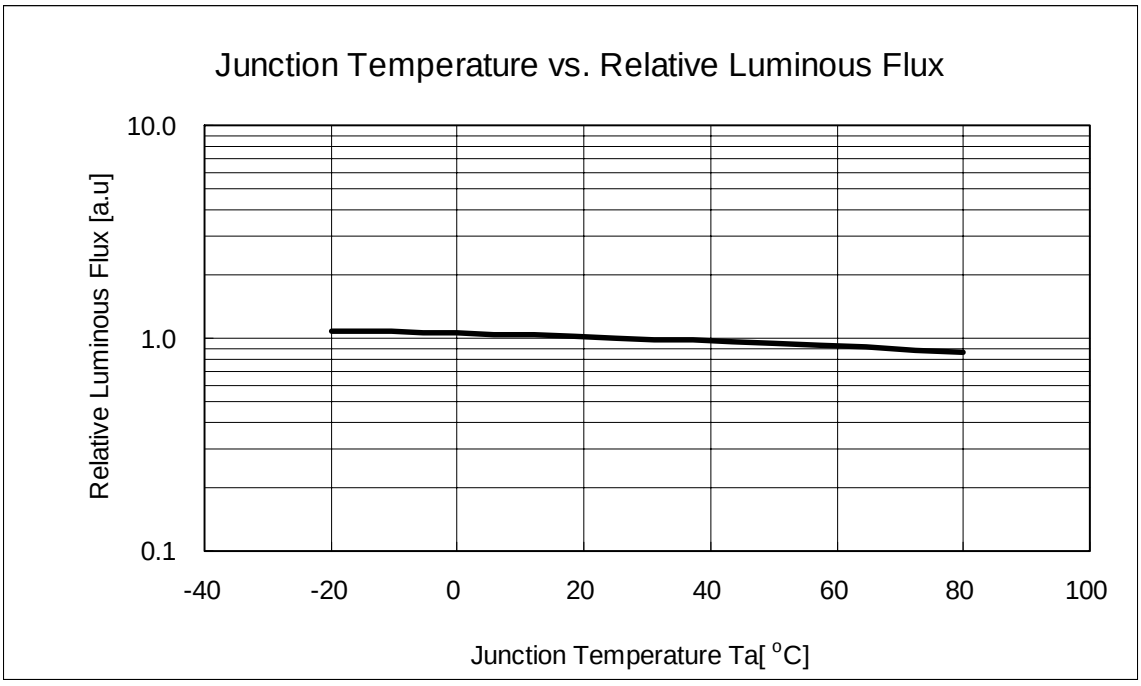
6. Wavelength Characteristics

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



7. Light Output Characteristics

- Relative light output vs. junction temperature



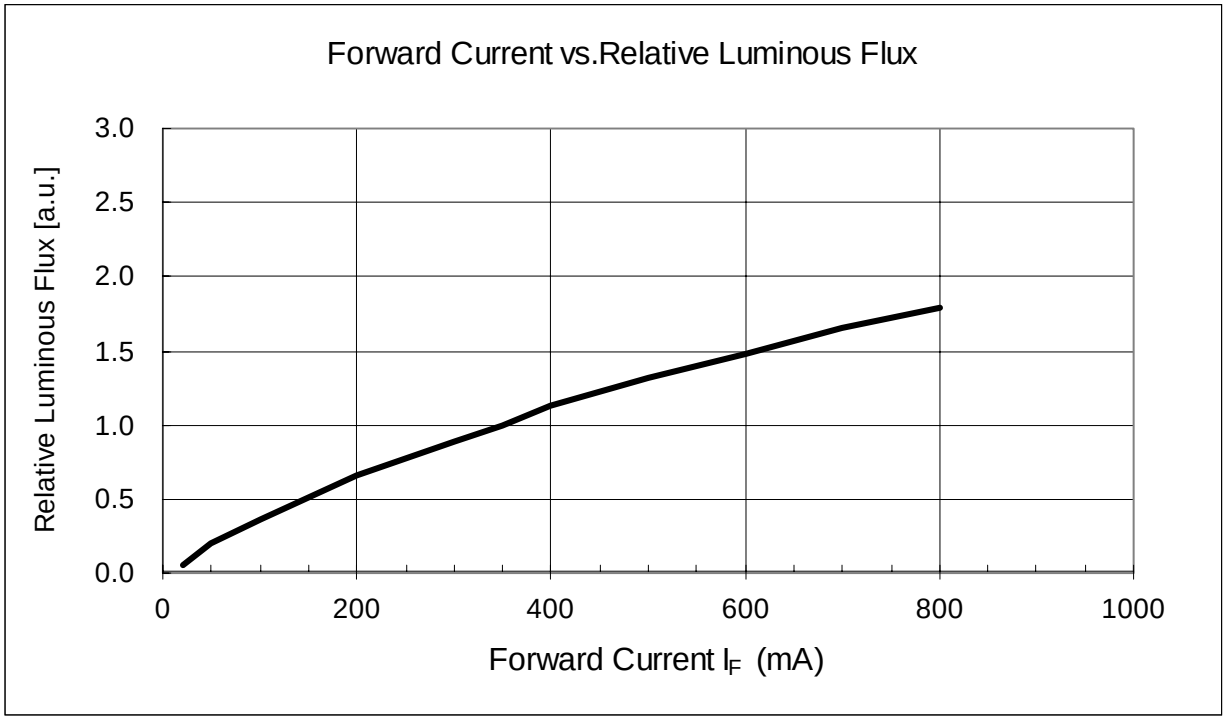
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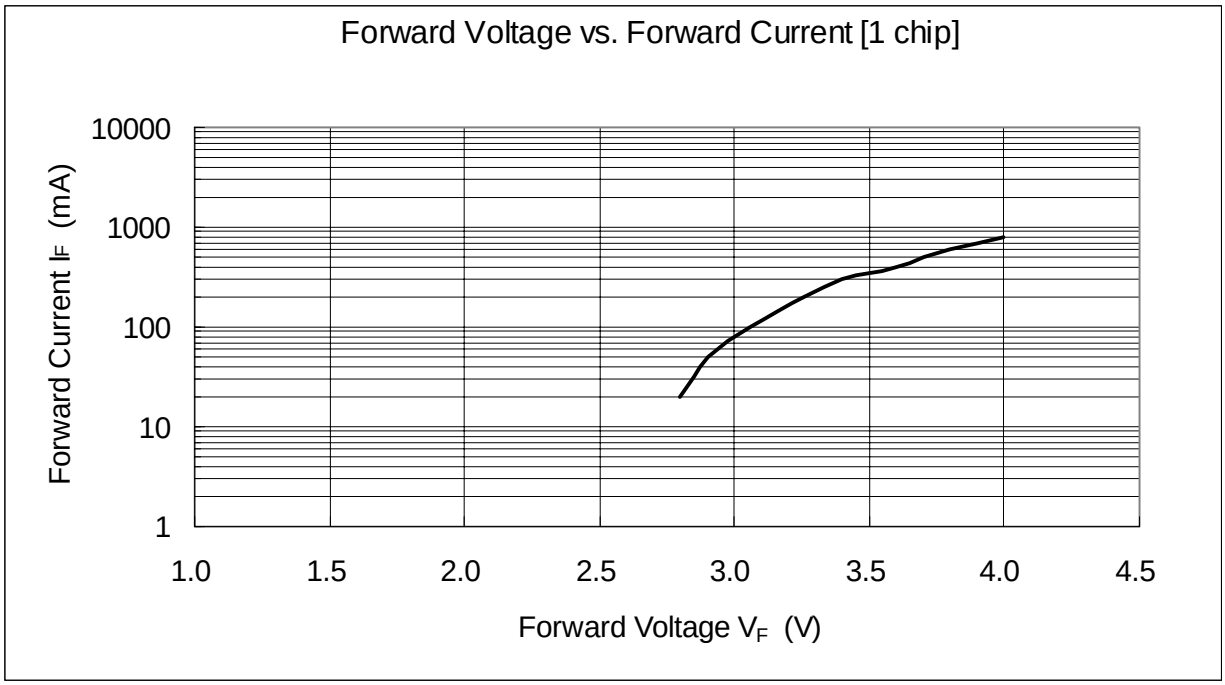
cosmo ELECTRONICS CORPORATION	H.P LED : KLS00WWX1	NO. 61L70030	REV. 1
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8. Spatial Radiation Pattern

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



● Forward voltage vs. forward current (1 LED/PCB, Ta=25℃)

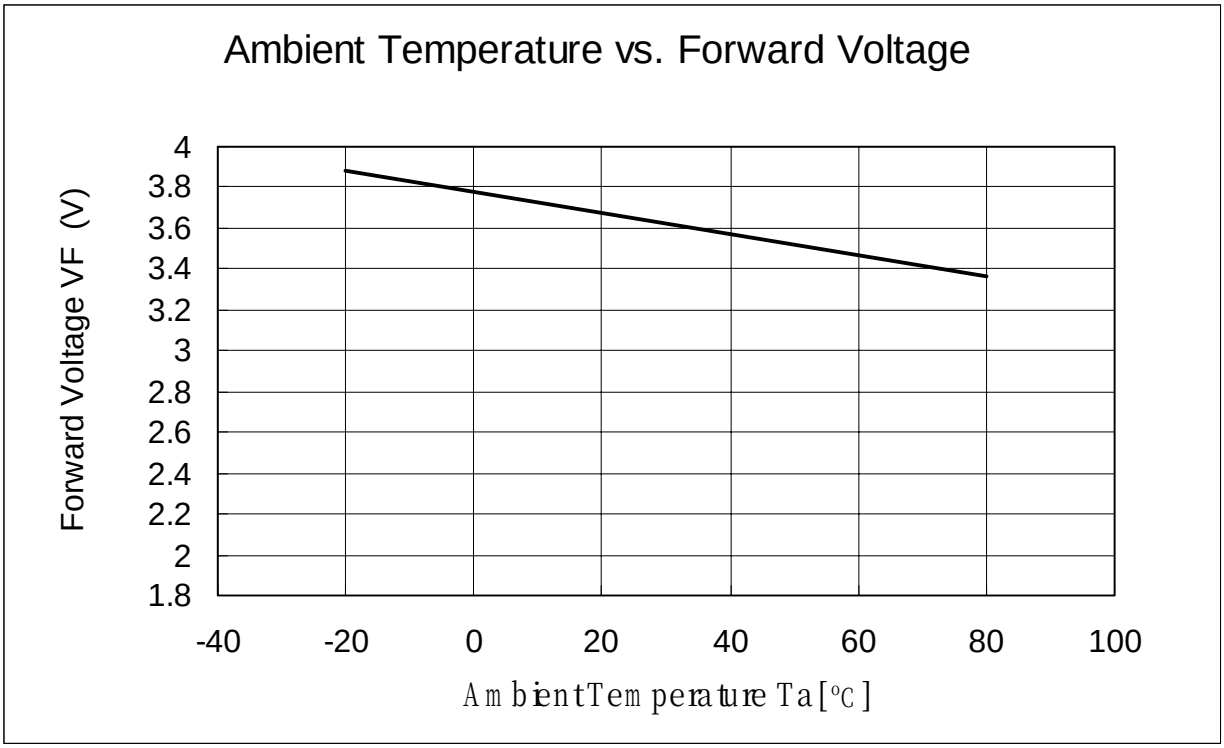


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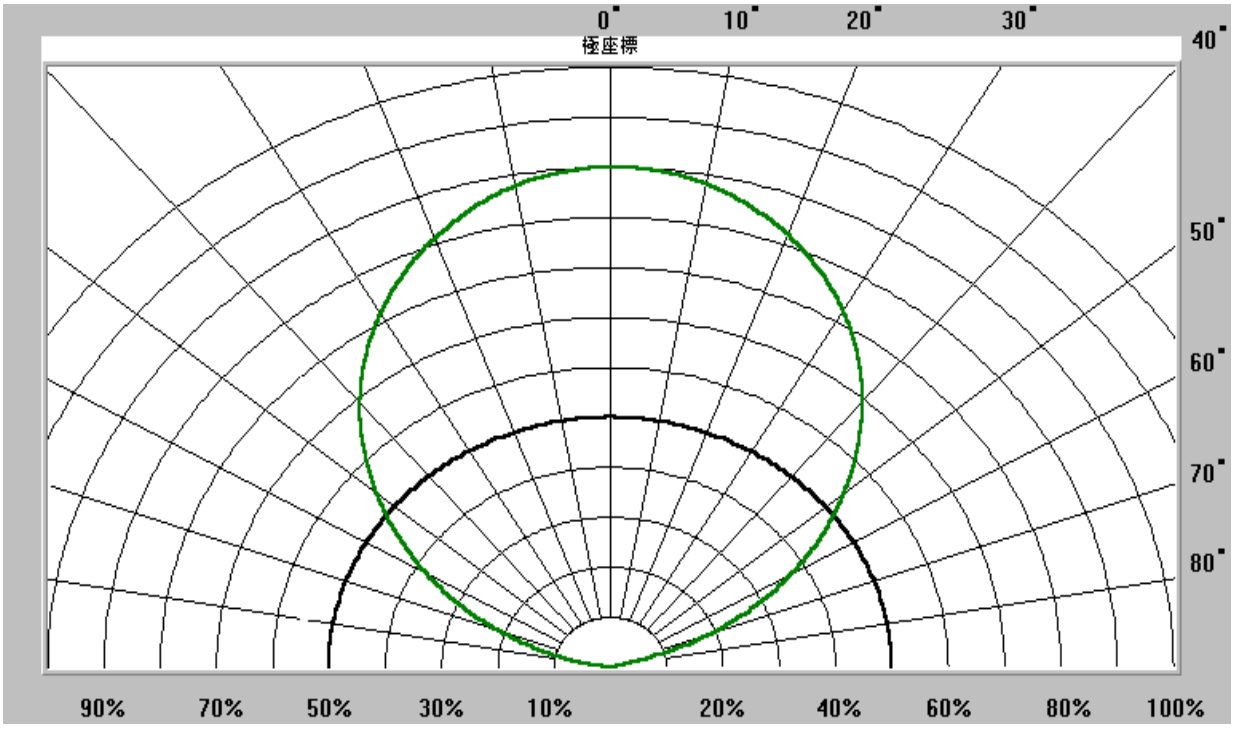
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- Forward voltage vs. ambient temperature (1 LED/PCB, I_F=350mA)



9. Spatial Radiation Pattern

- **Warm White**



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10. Reliability Test

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