

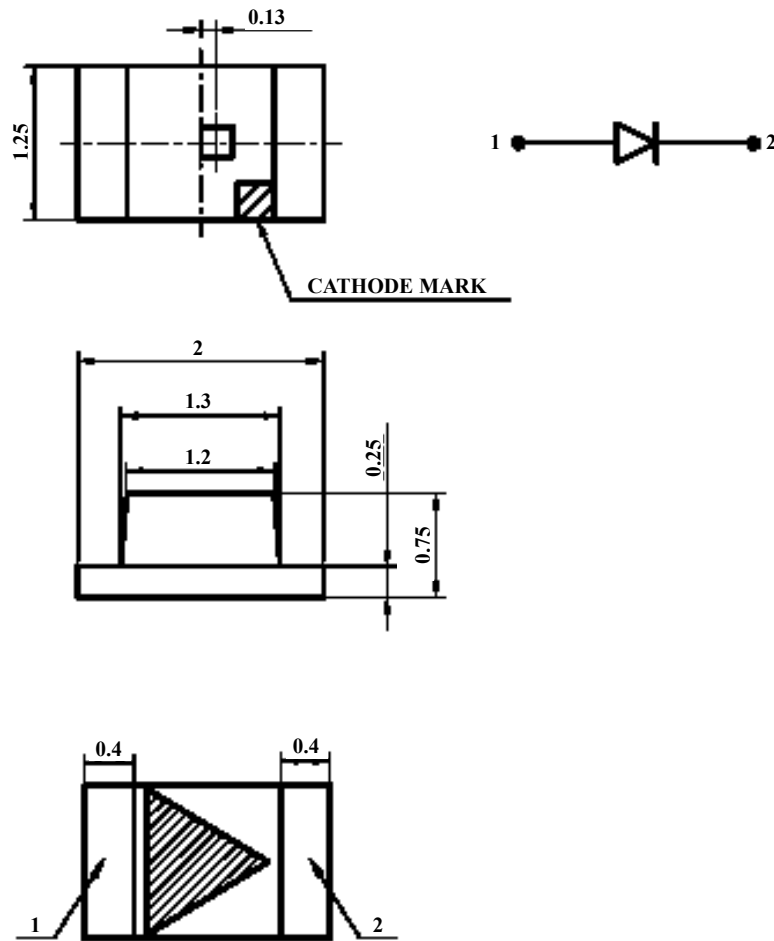
PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL-170CGX	NO. 61L20010	REV. 1
		SHEET 1 OF 9	

UNIT:MM

TOLERANCE: ± 0.15



Part No.	Emitting Color	Material	Lens Type	I _v (I _F =20mA)		Viewing Angle 2θ 1/2
				MIN (mcd)	TYP (mcd)	
KL-170CGX	Super brightness green	InGaN	Water Clear	135	165	120°

PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL-170CGX	NO. 61L20010 SHEET 2 OF 9	REV. 1
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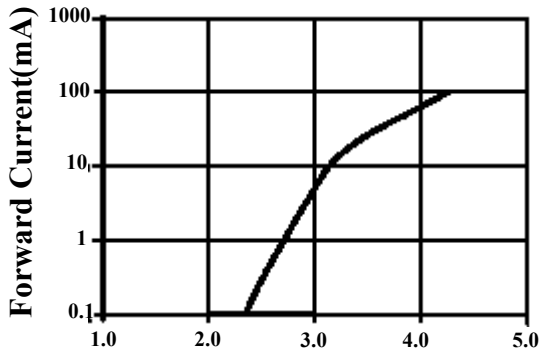
Absolute maximum ratings (TA=25°C)		T2G (InGaN)	Green	Unit
Reverse voltage	V _R	5		V
Forward current	I _F	30		mA
Forward current(Peak) <small>1/10 Duty Cycle,0.1ms Pulse Width</small>	I _{FP}	100		mA
Power dissipation	P _d	105		mW
LED LAMPS:				
Operating temperature	T _{OP}	-40~+85		°C
Storage temperature	T _{ST}	-40~+85		°C
LED DISPLAYS:				
Operating temperature	T _A	-40~+85		°C
Storage temperature	T _{STG}	-40~+85		°C

Operating characteristics (TA=25°C)		T2G (InGaN)	Green	Unit
Forward voltage(typ.) I _F =20mA	V _F	3.5		V
Forward voltage(max.) I _F =20mA	V _F	4.0		V
Reverse current(max.) V _R =5V	I _R	10		uA
Wavelength at dominant emission(typ.) I _F =20mA	λ _D	525		nm
Wavelength at peak emission(typ.) I _F =20mA	λ _P	523		nm
Spectral line half-width I _F =20mA	Δλ	36		nm
Capacitance V _F =0V,f=1MHz	C	20		pF

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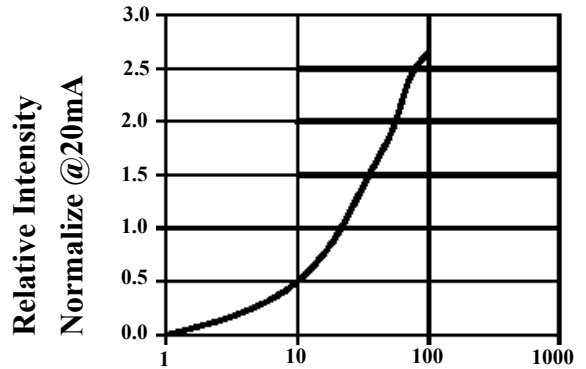
DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED :	NO.61L20010	REV.
	KL-170CGX	SHEET 3 OF 9	1



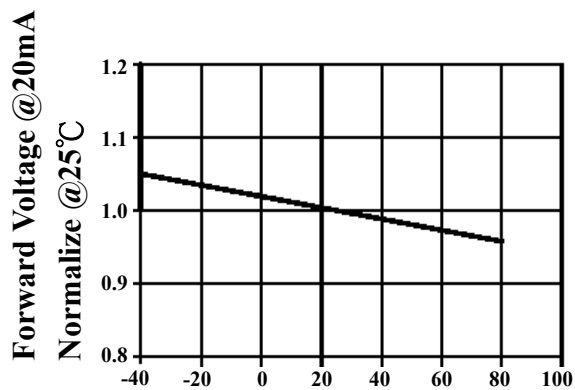
Forward Voltage(V)

Forward Current Vs.
Forward Voltage



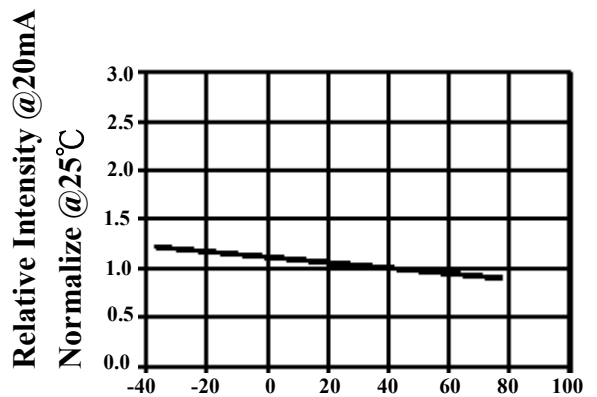
Forward Current(mA DC)

Relative Intensity Vs.
Forward Current



Ambient Temperature (°C)

Forward Voltage Vs.
Ambient Temperature



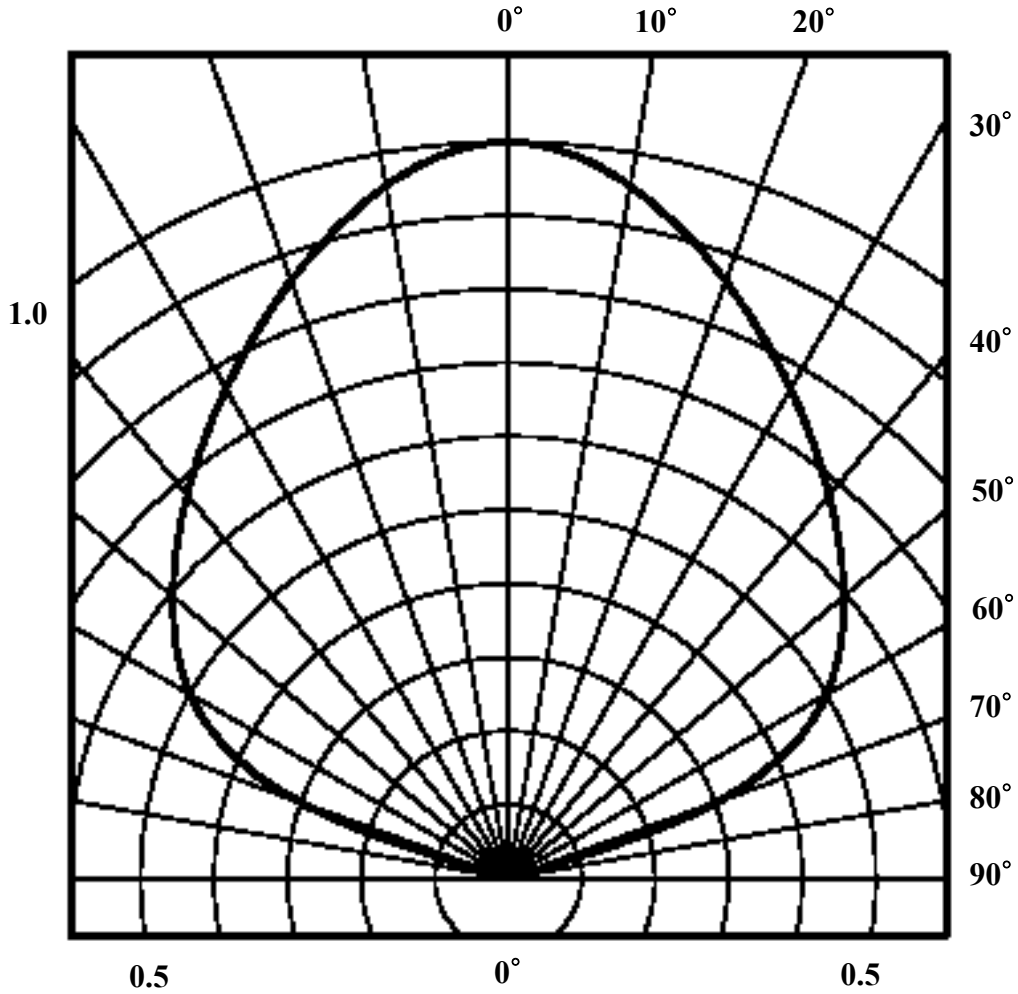
Ambient Temperature (°C)

Relative Intensity Vs.
Ambient Temperature

PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL-170CGX	NO. 61L20010	REV.
		SHEET 4 OF 9	1



View Angle $2\theta_{1/2}=120^\circ$

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cosmo ELECTRONICS CORPORATION	SMD LED : KL-170CGX	NO. 61L20010	REV. 1
		SHEET 5 OF 9	

UNIT:MM

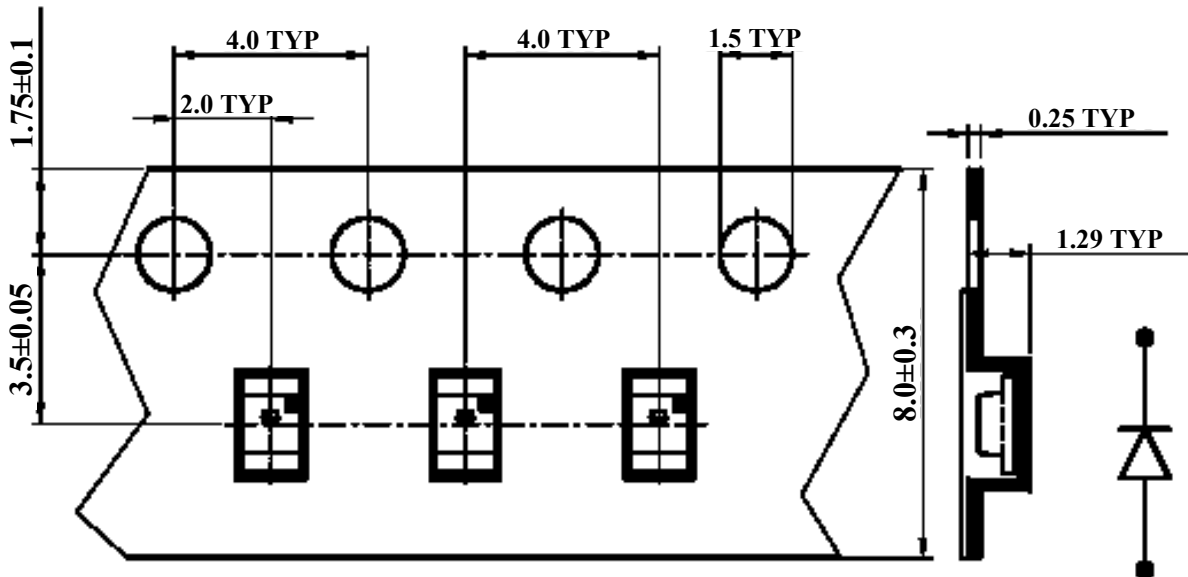
TOLERANCE: ± 0.25

TYPE



PACKAGE:2000 OR 1000PCS/REEL

REEL" T":14mm TYP



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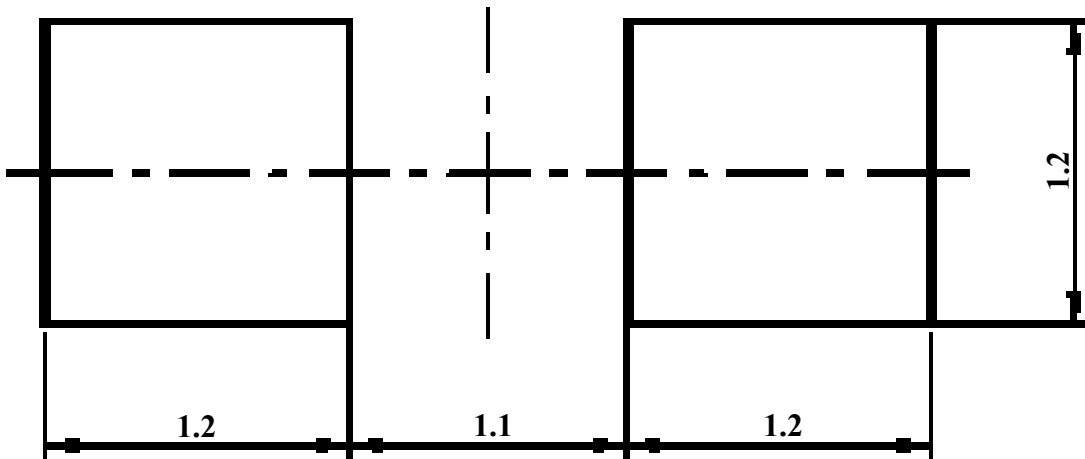
DATE: 05/20/2004

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		SHEET 6 OF 9	

UNIT:MM

The following soldering patterns are recommended for reflow-soldering:

For reflow soldering



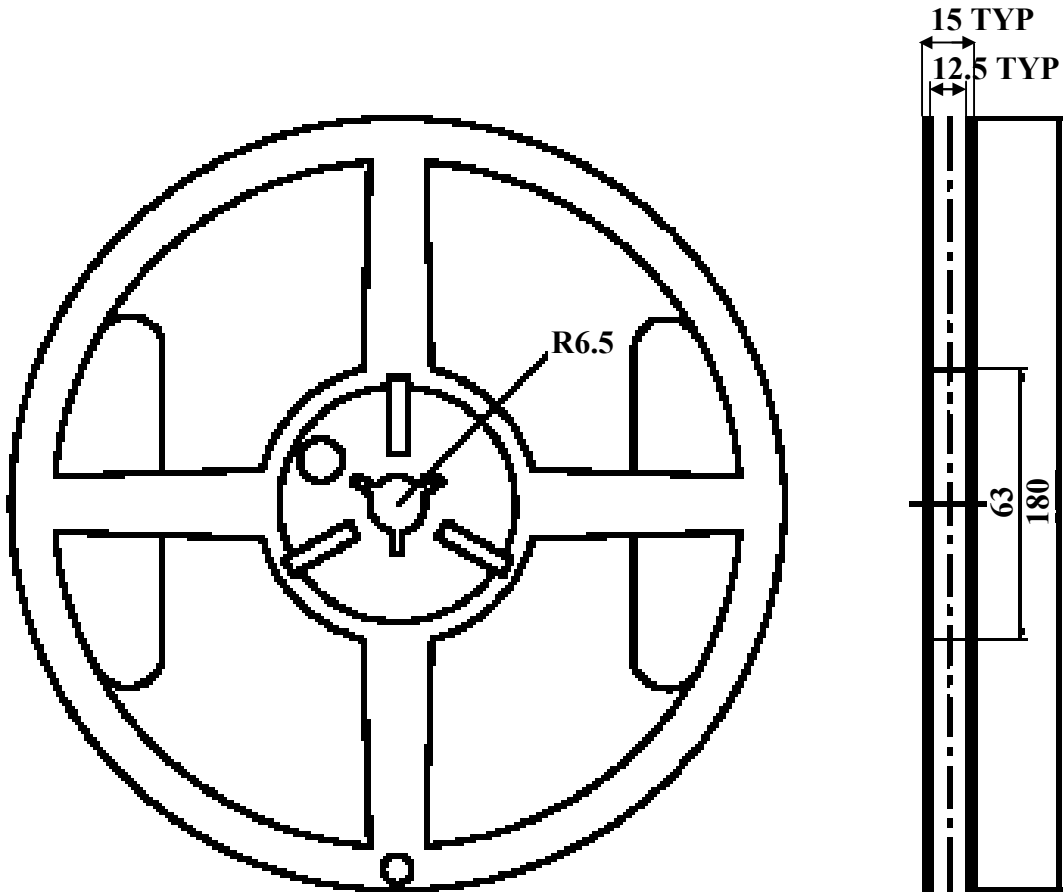
PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED :	NO. 61L20010	REV.
	KL-170CGX	SHEET 7 OF 9	1

UNIT:MM

TOLERANCE: ± 0.25



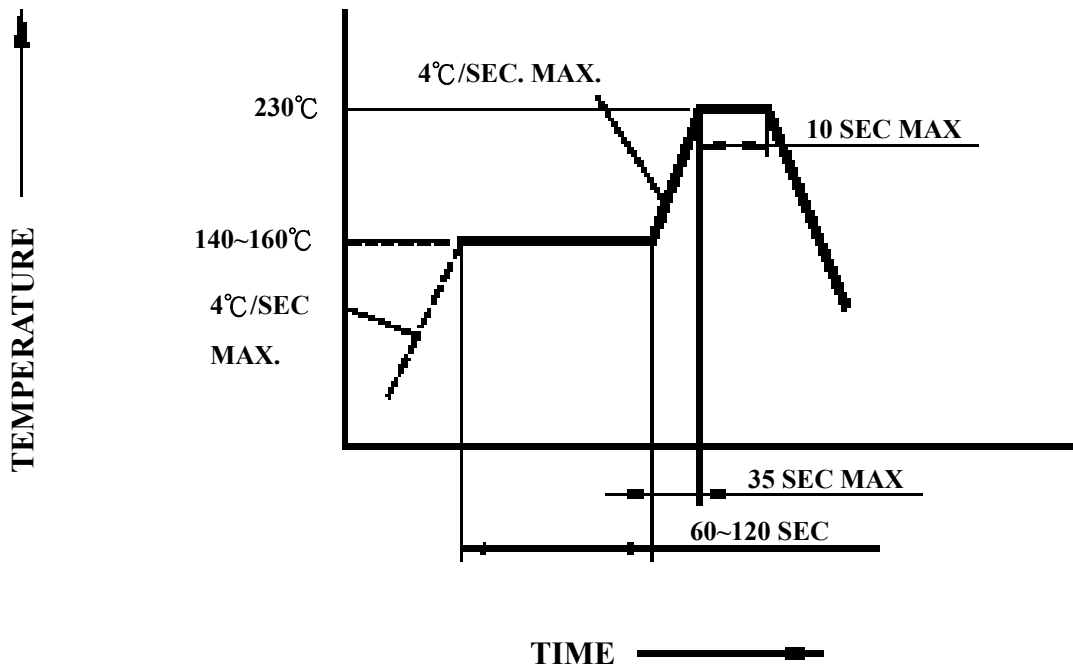
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	KL-170CGX	SHEET 8 OF 9	1

SOLDERING

SMT REFLOW SOLDERING INSTRUCTIONS



SOLDERING INSTRUCTIONS

TYPES	DIP AND WAVE SOLDERING			IRON SOLDERING(WITH 1.5mm IRON TIP)		
	TEMPERATURE OF THE SOLDERING BATH	MAXIMUM SOLDERING TIME	DISTANCE FROM SOLDER JOINT TO CASE	TEMPERATURE OF SOLDERING IRON	MAXIMUM SOLDERING TIME	DISTANCE FROM SOLDER JOINT TO CASE
LEDS	≤260°C	3S	>2mm	≤260°C	3S	>2mm
	≤260°C	5S	>4mm	≤260°C	5S	>4mm
DISPLAYS	≤260°C	3S	>2mm	≤260°C	3S	>2mm

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		SHEET 9 OF 9	1

SMD HANDLING AND APPLICATION PRECAUTIONS

STORAGE

(1.1) It is recommended to store the devices in accordance with the following conditions:

Humidity: 60%RH Max.

Temperature: 5°C~30°C (41°F~86°F)

(1.2) Shelf life in sealed bag: 12 month at <5°C~30°C and <30%RH.

After the package is opened, the products should be used within 72hrs.

Or they should be kept at $\leq 20\%$ RH in zip -locked sealed bags.

DRY PACK AND BAKING

SMD LEDs are MOISTURE SENSITIVE devices. Avoid absorbing moisture at any time during transportation and/or storage. It is recommended to bake before soldering when the pack is unsealed after 72 hrs, or any suspicious moisture being found. Bake devices in accordance with the following conditions:

(a) 60±3°C x (12~24hrs) and <5%RH, taped reel type

(b) 100±3°C x (45min~1hr), loose packing type, or

(c) 130±3°C x (15~30min), loose packing type

ELECTRIC STATIC DISCHARGE(ESD) PROTECTION

Materials with GaN, InGaN, AlInGaP are STATIC SENSITIVE devices. They will be packed in anti-static bags. ESD protection must be deliberately observed from the initial design stage. The static -electric discharge may result in severe malfunction of the devices. In the events of manual working in process, make sure the devices are well protected from ESD at any time. Surge before and during handling products.