SPECIFICATIONS

MODEL	Infrared LAMP LED
PART NO.	LI520C

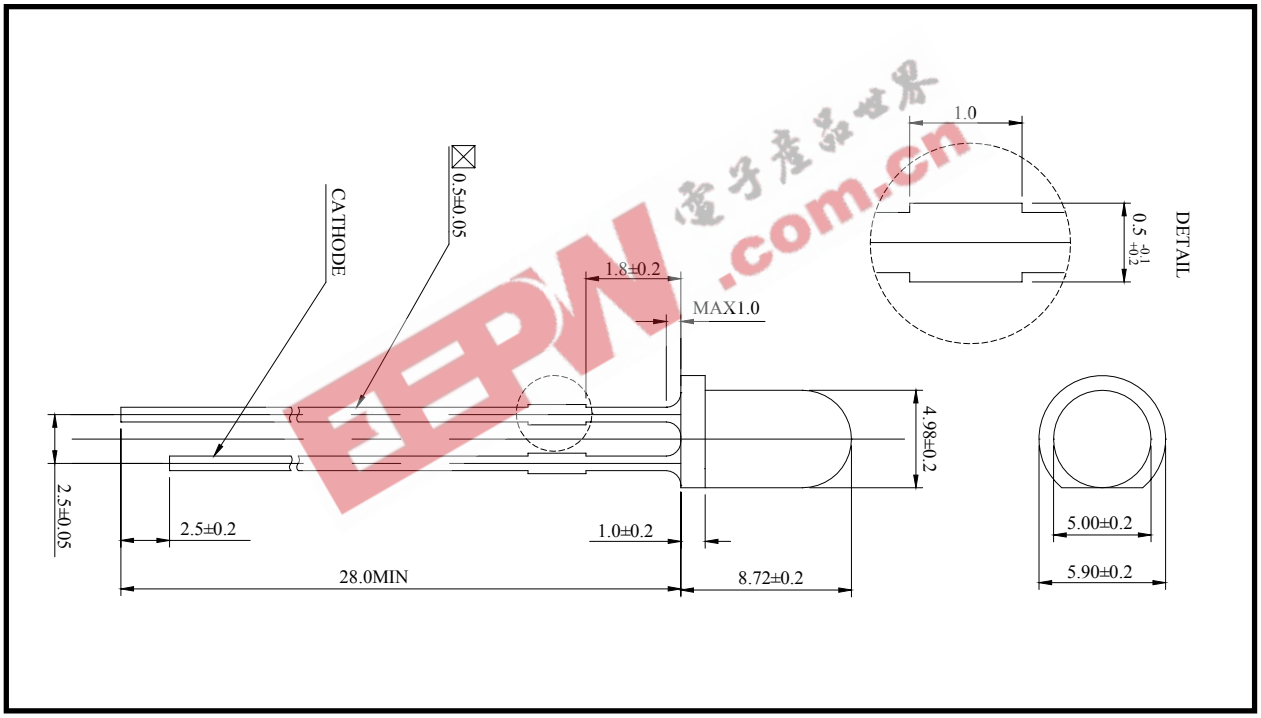
[Contents]

Rev : 0.0

1. Devices

Part Number	Lens		Source	
	Color	Diffusion	Dice Source	Color
LI520C	Blue -Risen	Non-Diffused	GaAlAs/GaAs	Infrared

2. Outline Dimensions



Notes : 1. All dimensions are in millimeters.
2. Protruded epoxy is 1.0mm maximum.

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3. Absolute Maximum Ratings (at T_a = 25ºC)

Item	Symbol	Value	Unit
DC Forward Current	I_F	100	mA
Forward Peak Pulse Current	I_{FM} *1	1000	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	150	mW
Operating Temperature	T_{opr}	-20 ~ +80	ºC
Storage Temperature	T_{stg}	-30 ~ +100	ºC
Solder Temperature	T_S	260 ºC for 5 second*2	ºC

Notes :*1. $t \leq 0.01$ms, $D = 1/100$
*2. 3mm bellow seating plane

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4. Electro-Optical Characteristics (at I_F = 100mA, T_a = 25°C)

Item	Symbol	Value			Unit
		Min.	Typ.	Max.	
Radiant Intensity	I_e	30	65	130	mW/sr
Peak Wavelength	λ_p	-	940	-	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$	-	50	-	nm
Forward Voltage	V_F	-	1.2	1.55	V
View Angle	$2\theta_{1/2}$		24		deg.
Reverse Current (at V_R = 5V)	I_R		10		μA

Note : 1. Radiant Intensity Tolerance ± 10%

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5. RELIABLITY TESTS

Item	Condition	Note	Failures
Life Test	T_a = RT, I_F = 100mA	1000 hrs	0/22
High Temperature Operating	T_a = 85ºC, I_F = 25mA	1000 hrs	0/22
Low Temperature Operating	T_a = -40ºC, I_F = 100mA	1000 hrs	0/22
Thermal Shock	T_a = -30ºC ~ +100º (Transfer time : 5sec , 1 Cycle =1hr)	100 cycles	0/22
Temperature Cycle	T_a = -20ºC ~ +80ºC (Transfer time : 5min , 1 Cycle =1hr)	100 cycles	0/22
Resistance to soldering Heat	T_s = 260 ± 5ºC, t = 10 ± 1 sec	1 time	0/22
ESD (Human Body Model)	1 kV, 1.5 kΩ ; 100 pF	1 time	0/22
High Temperature Storage	T_a = 100ºC	1000 hrs	0/22
Low Temperature Storage	T_a = -30ºC	1000 hrs	0/22
Temperature Humidity Storage	T_a = +85ºC,RH=85%	1000hrs	0/22
Temperature Humidity Operating	T_a = +85ºC,RH=85% I_F = 25mA	100hrs	0/22

< Judging Criteria For Reliability Tests >

V_F	USL [1] X 1.2
I_R	USL X 2.0
I_V	LSL [2] X 0.5

Notes : 1.USL : Upper Standard Level 2.LSL : Lower Standard Level.

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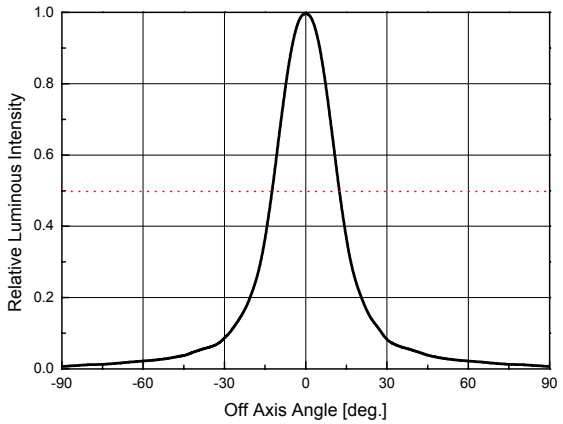
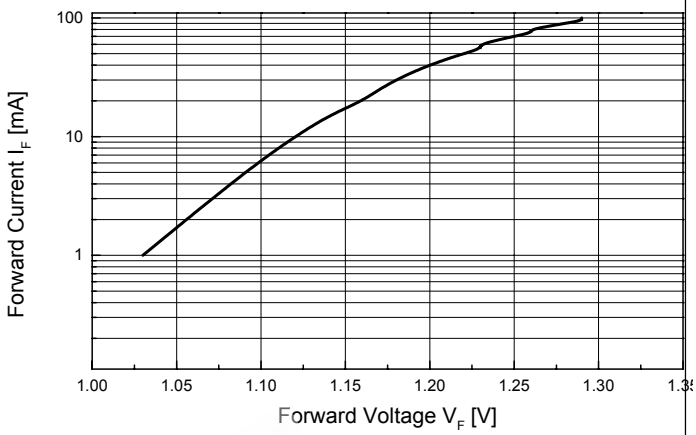
6. Characteristic Diagrams

$I_{rel} = f(\theta)$, T_a= 25ºC



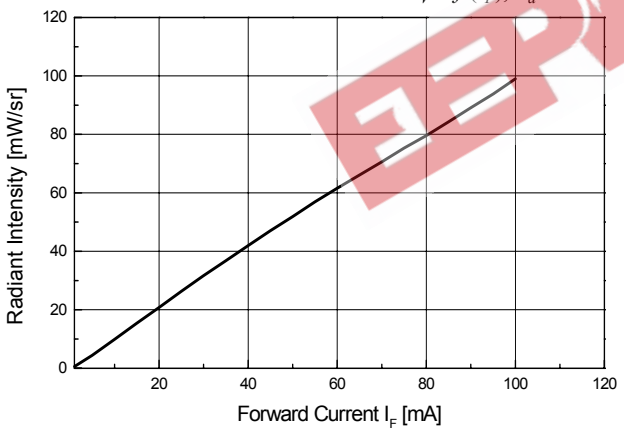
Off Axis Angle vs. Relative Radiant Intensity

$I_F = f(V_F)$, T_a= 25ºC



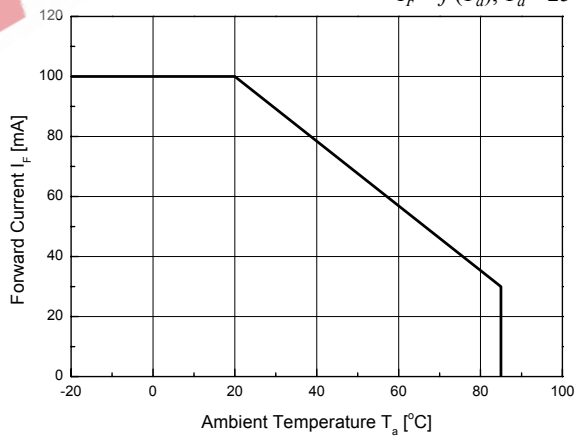
Forward Voltage vs. Forward Current

$I_V = f(I_F)$, T_a= 25ºC



Forward Current vs. Radiant Intensity

$I_F = f(T_a)$, T_a= 25ºC



Ambient Temperature vs. Forward Current

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7. Bin Code Description

**

BIN CODE		
Radiant Intensity	Peak Wavelength	Forward Voltage

Radiant Intensity (I_e) @ I_F = 100mA		
BIN CODE	Min.	Max.
A	30	55
B	55	65
C	65	70
D	70	130

Dominant Wavelength (nm) @ I_F = 100mA	
1	940

Forward Voltage (V) @ I_F = 100mA		
BIN CODE	Min.	Max.
1	1.2	1.55

**** Note : Binning range can be changed by customer's requirement.**

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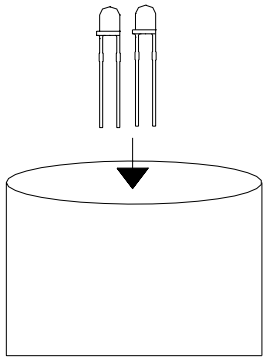
8. PACKING

1) Bulk Packing



(1) Antistatic poly vinyl bag apply

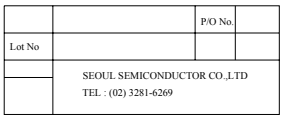
Poly bag:

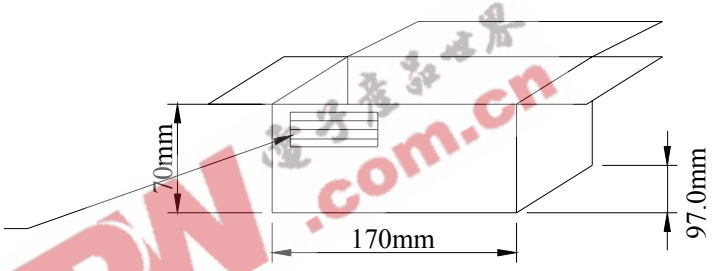
5ϕ Lamp Series : 500pcs

3ϕ Lamp Series : 500pcs

(2) Inner box structure

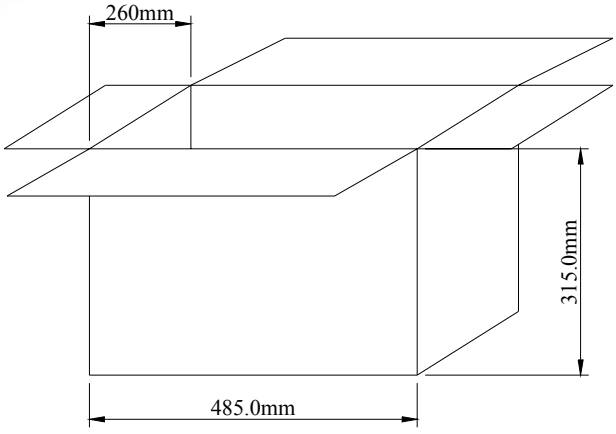
Box : 2 poly bags





(3) Outer box structure

Box : 27 boxes



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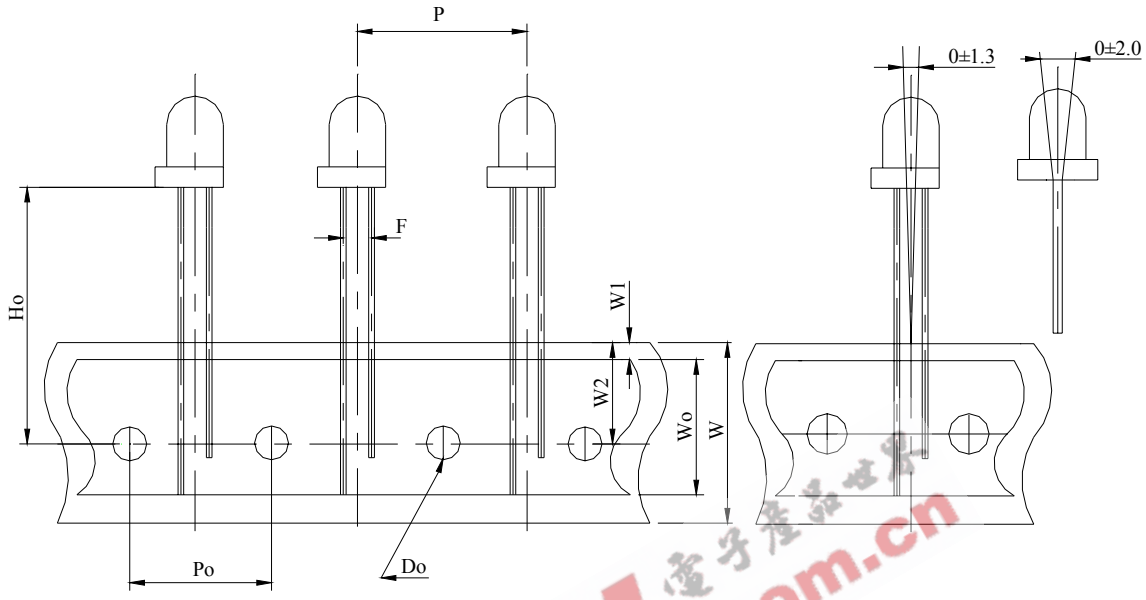
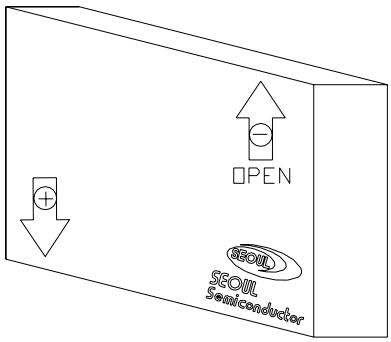
2) Tapping Outline Dimensions



Package Dimensions (unit : *mm*)			
Ho*		P	12.7±0.5
W	18.0 $^{+1.0}_{-0.5}$	Po	12.7±0.3
Wo	13.0±0.3	F	2.54±0.5
W1	1.0±0.5	Do	ϕ4.0±0.5
W2	9.0±0.5		



* Remark : Ho - users define.

1 Box contain quantity.

* 3ϕ Lamp Series : 3000pcs

* 5ϕ Lamp Series : 2000pcs

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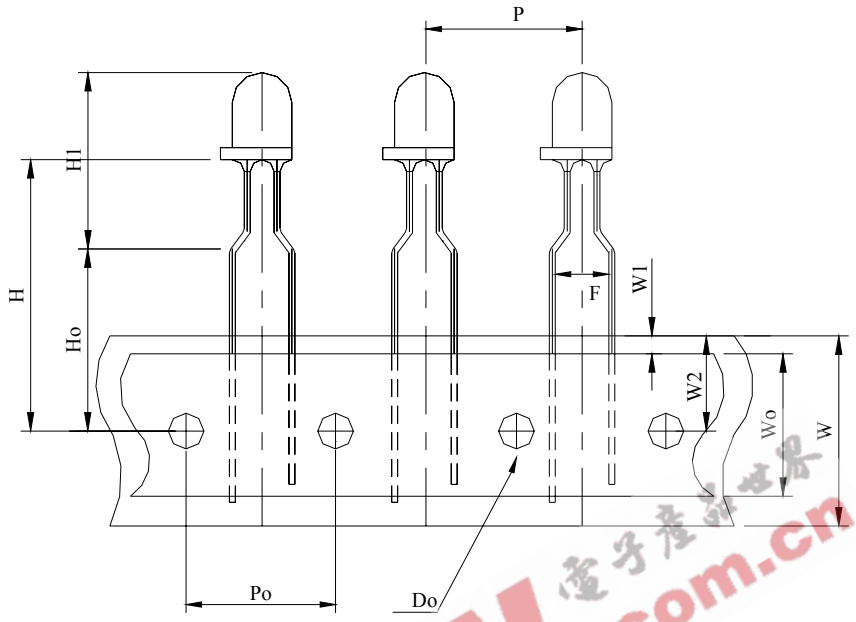
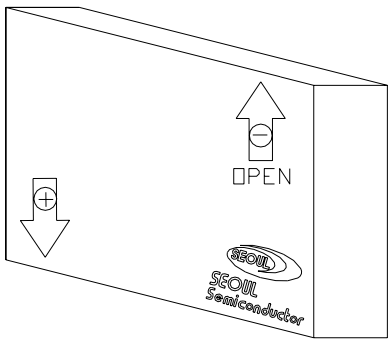
3) Forming Outline Dimensions



Package Dimensions (unit : *mm*)			
H *		W2	9.0±0.5
Ho *		P	12.7±0.5
H1 *		Po	12.7±0.3
W	18.0 $^{+1.0}_{-0.5}$	F	5.0±0.5
Wo	13.0±0.3	Do	ϕ4.0±0.5
W1	1.0±0.5		

* Remark : H / Ho / H1- users define.



1 Box contain quantity.

* 3ϕ Lamp Series : 2000pcs

* 5ϕ Lamp Series : 1500pcs

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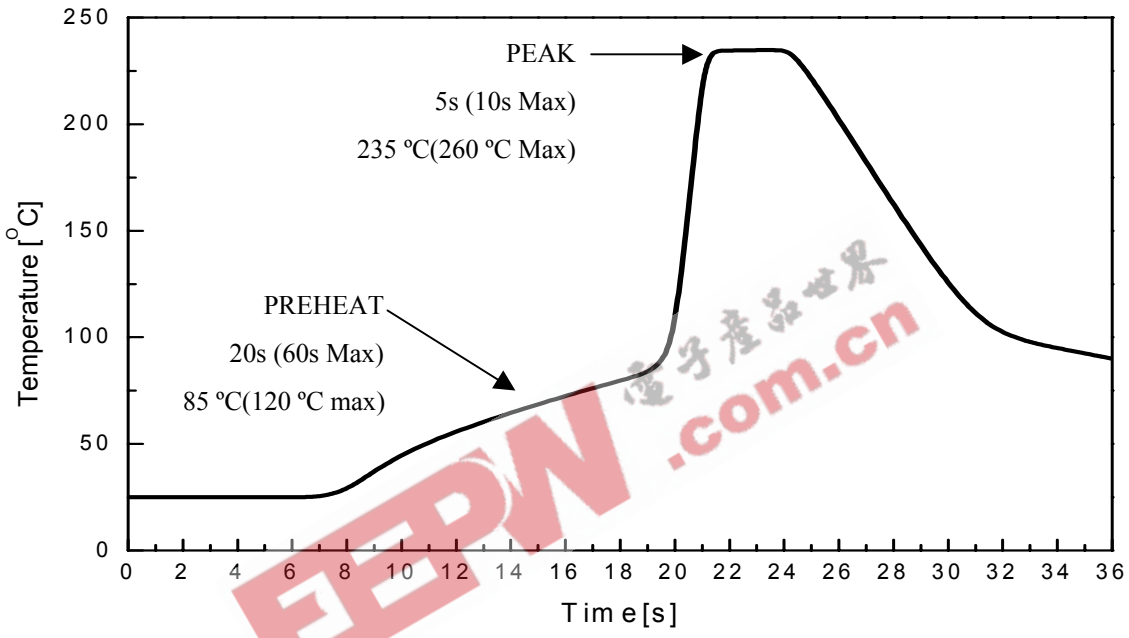
9. SOLDERING PROFILE

1) Wave Soldering Conditions / Profile

- Preliminary heating to be at 85ºC(120 ºC max) for 20 seconds(60 seconds max).
- Soldering heat to be at 235 ºC (260ºC max) for 5 seconds (10 seconds max.)
- Soak time above 200 ºC is 5 seconds



2) Hand Soldering conditions

- Not more than 5 seconds at max. 300ºC, under Soldering iron.

Note : In case the soldered products are reused in soldering process, we don't guarantee the products.

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10. PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8		A	B	C
L	*	*	*	*	*	*	*	-	*	*	*

1) Lamp LED initial

2) Color

U: Ultra Violet, B : Blue (460~490), C : Cyan (490~510),

T : True Green (510~540), G : Yellow-Green (540~580)

Y : Yellow (580~600) O : Orange (600~620) R : Red (620~700)

W : White M : Warm I : Infrared

3) If the products have 2 or 3chips

GR : Green + Red (according to wavelength), FL : Full color

4) Outline type

1 : 3x2(square), 2 : 5x2(square), 3 : Phi3, 5 : Phi 5 ,

6 : 3Phi Oval, 7 : 5Phi Oval

5) Half angle

1: ~14°, 2: 15~24° , 3: 25~34°, 4: 35~44°, 5 : 45~54°… 0 : more than 100°

6) 1st Development according to a chip

7) 2nd Development (other material)

D : diffused C : colored Z : zener chip attached

8) Stand off type

A, B, C : Bin cord description A: IV, B: WD C: VF

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11. PRECAUTION FOR USE

1) In order to avoid the absorption of moisture, it is recommended to store in the dry box (or desiccators) with a desiccant .

2) In case of more than 1 week passed after opening or change color of indicator on desiccant components shall be dried 10-12Hr, at 60±5℃.

3) In case of supposed the components is humid, shall be dried dip-solder just before, 12Hr at 80±5℃ or 10Hr at 100±5℃.

4) Any mechanical force or any excess vibration shall not be accepted to apply during cooling process to normal temp. after soldering.

5) Quick cooling shall not be avoid.

6) Components shall not be mounted on warped direction of PCB.

7) Anti radioactive ray design is not considered for the products listed here in.

8) This device should not be used in any type of fluid such as water, oil, organic solvent and etc. When washing is required, IPA should be used.

9) When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.

10) LEDs must be stored to maintain a clean atmosphere. If the LEDs are stored for 3 months or more after being shipped from SSC, a sealed container with a nitrogen atmosphere should be used for storage.

11) The LEDs must be soldered within seven days after opening the moisture-proof packing.

12) Repack unused products with anti-moisture packing, fold to close any opening and then store in a dry place.

13) The appearance and specifications of the product may be modified for improvement without notice.

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