

DATE OF ISSUE : 2008. 11.21

SPECIFICATION

MODEL : SLHNNWH629T0

HIGH POWER LED PKG -SUNNIX6

CUSTOMER : _____

CUSTOMER		
CHECKED	CHECKED	APPROVED

SAMSUNG ELECTRO-MECHANICS			
DRAWN	CHCKED(Sales)	CHECKED(Quality)	APPROVED

SAMSUNG ELECTRO-MECHANICS CO.,LTD.
314, MAETAN3-DONG, YEONGTONG-GU,
SUWON, GYEONGGI-DO,KOREA,443-743

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■ Product Outline

Features

- Plastic Molded Lead Frame Type (8.0 × 8.0 × 3.9mm³)
- High Flux LED
- Built In 9 LED Chips
- Beam View Angle($\Delta\theta$) : 120°
- Lead(Pb) Free Product - RoHS Compliant

Applications

- General Illumination
Down Lighting
Decorative Lighting

■ Rating and Characteristics

Absolute Maximum Rating(Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	16.5	V
Operating Forward Current	I _F	180	mA
Peak Pulsed Forward Current (Duty 1/10 and Pulse Width 10msec)	I _{FP}	250	mA
Thermal Resistance	R _{jc}	8.5	°C/W
Operating Temperature	T _{opr}	-40 ~ 85	°C
Storage Temperature	T _{stg}	-40 ~ 110	°C
Soldering Temperature	T _{sol}	260(for 5 second)	°C
LED Junction Temperature	T _j	120	°C

Electro-Optical Characteristics(Ta=25°C)

Parameter	Symbol	Rank	Min.	Typ.	Max.	Unit	Conditions
Reverse Voltage	V _R	-	12.0	-	16.5	V	I _R =10mA
Forward Voltage	V _F	S0	8.9	-	11.0	V	I _F =180mA
Luminous Flux	Φ _V	S0	120	150	180	lm	
Color Temperature	CCT	-	5000	-	7000	K	

※ Luminous Flux(1W) : Typ. 97lm/W(@120mA)

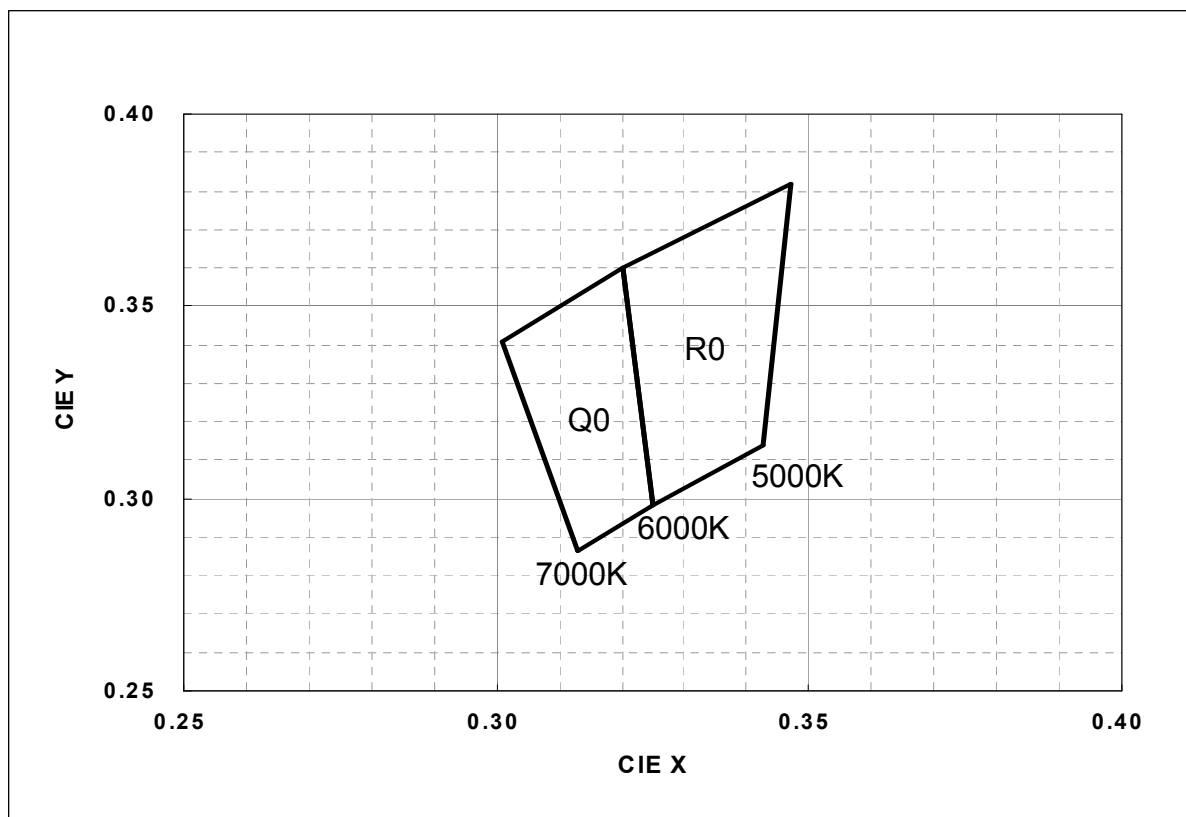
※ Tolerance : V_F : ±0.1, Φ_V : ±10%

■ Chromaticity Coordinate(CIE)

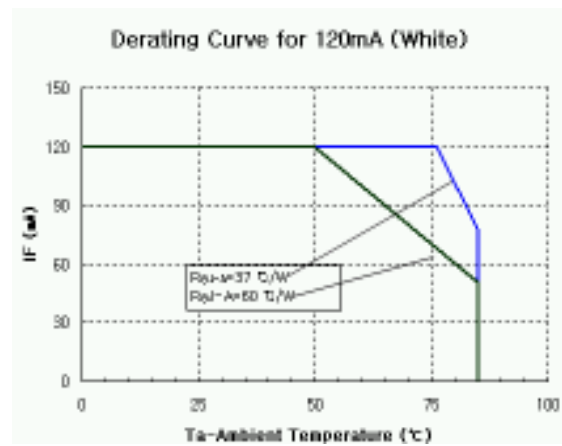
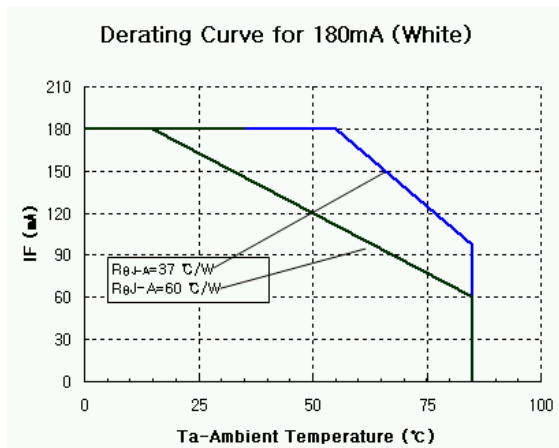
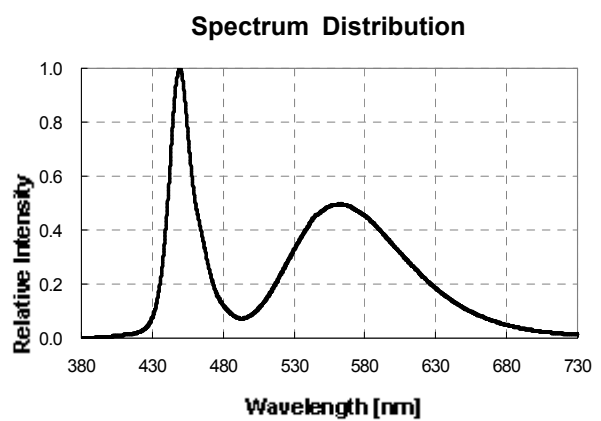
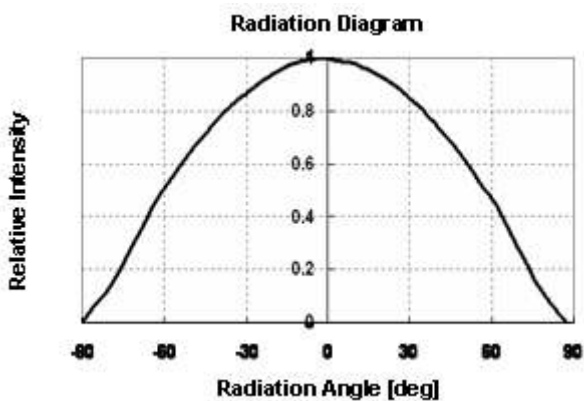
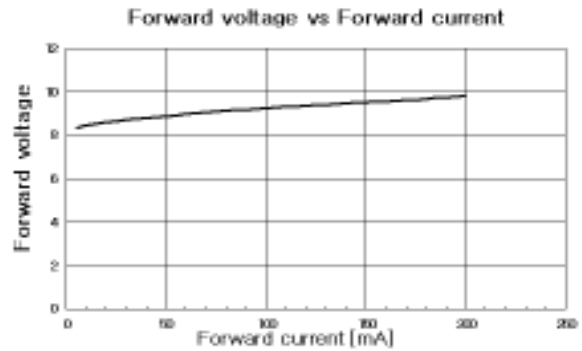
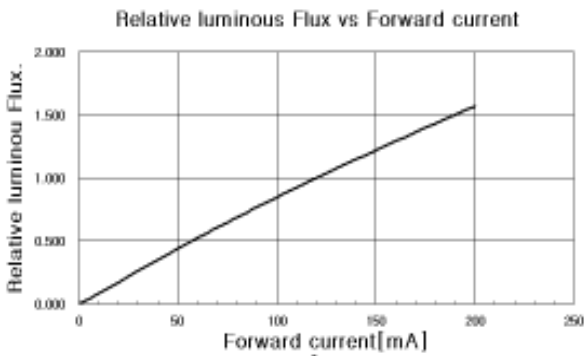
Chromaticity Coordinate(CIE)

Rank	CCT(K)	x				y				Condition
Q0	6000~7000	0.3128	0.3250	0.3200	0.3011	0.2864	0.2981	0.3600	0.3407	I _F =180mA
R0	5000~6000	0.3250	0.3428	0.3484	0.3200	0.2981	0.3138	0.3885	0.3600	

※ Tolerance : CCx CCy : ±0.02



Typical Characteristics Graph



※ Thermal Resistance Test Environment

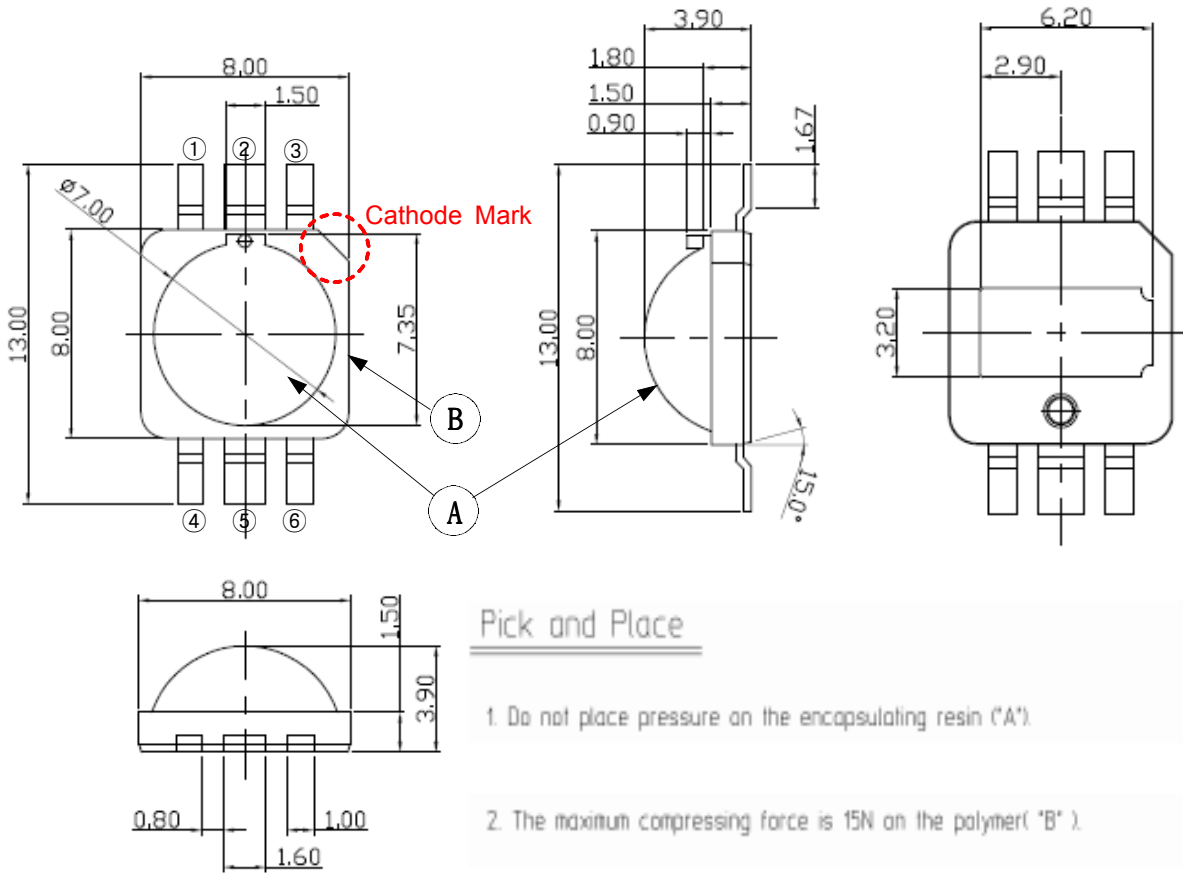
- Junction to ambient thermal resistance
- JEDEC Standard JESD 51-2,3

JESD 51-2 : Integrated Circuits Thermal Test Method Environmental Conditions - Natural Convection (Still Air)

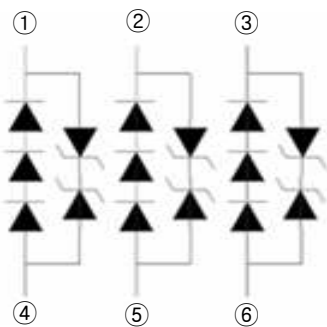
JESD 51-3 : Low Effective Thermal Conductivity Test Board for Leaded Surface Mount Package

Package Outline Dimensions

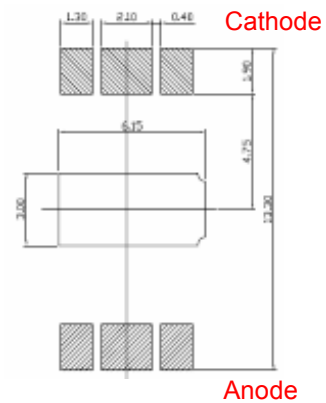
Unit:mm
Tolerance:±0.2



Circuit



Solder Pattern for Surface Mount

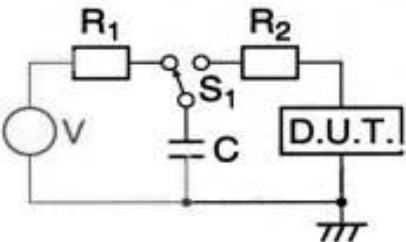


Remarks)

Make sure the heat sink is electrically connected to the Anode.
Heat sink is to be soldered, If not, use the heat conductive adhesive

■ Reliability Test Items and Conditions

1) Test Items

Test Item	Test Conditions	Test Hours/Cycles
Room Temperature life test	25℃, If=Max DC*	1,000 h
High Temperature humidity life test	85 ℃, 60 % RH, If=Max DC*	1,000 h
High Temperature life test	85 ℃, If=Max DC*	1,000 h
Low Temperature life test	-40℃, If=Max DC*	1,000 h
High Temperature Storage	110℃	1,000 h
Low Temperature Storage	-40℃	1,000 h
Thermal Shock	-40 / 120℃, each 30 min	200 cycles
Temperature humidity Cycle On/Off test	-40 / 85 ℃, each 20 min, 100 min transfer Power On/off each 5 min, DC 180 mA	100 cycles
Reflow (Pb-Free)	Peak 260±5℃ for 10sec	3 times
ESD(HBM)	 <p style="text-align: center;">R1:10M Ω , R2:1.5KΩ , C:100pF</p>	3 times (± 5kV)

※ Max. DC current depending on maximum current derating curve.

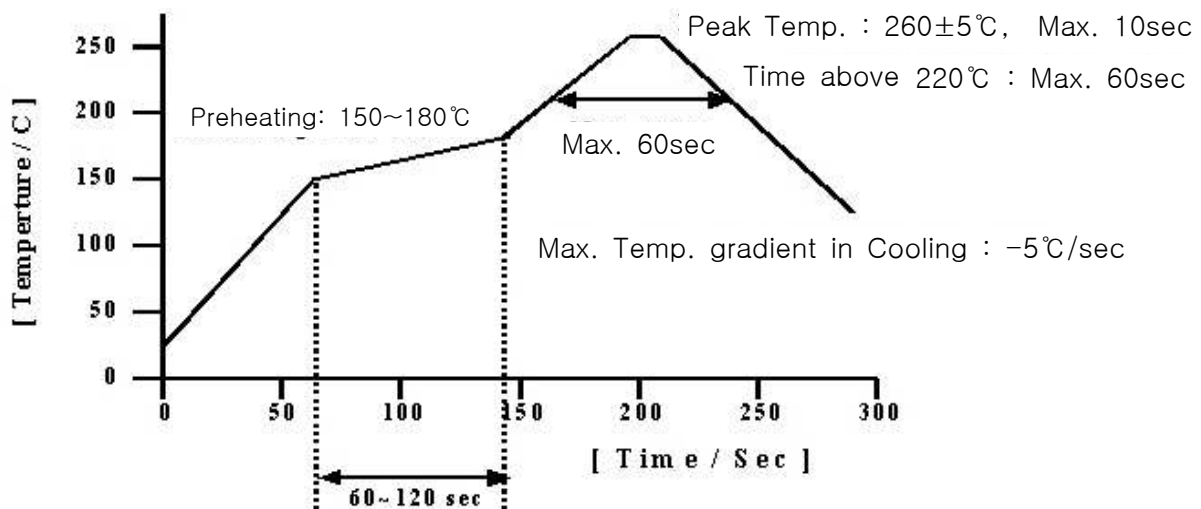
2) Criteria for Judging the Damage

Item	Symbol	Test Condition	Limit	
			Min	Max
Forward Voltage	V _F	I _F = 180 mA	-	U.S.L.*1.2
Luminous Flux	Φ _v	I _F = 180 mA	L.S.L.*0.5	-
Reverse Voltage	V _R	I _R = 5mA	-	U.S.L.*2.0

* USL : Upper Standard Level LSL : Lower Standard Level

■ Solder Conditions

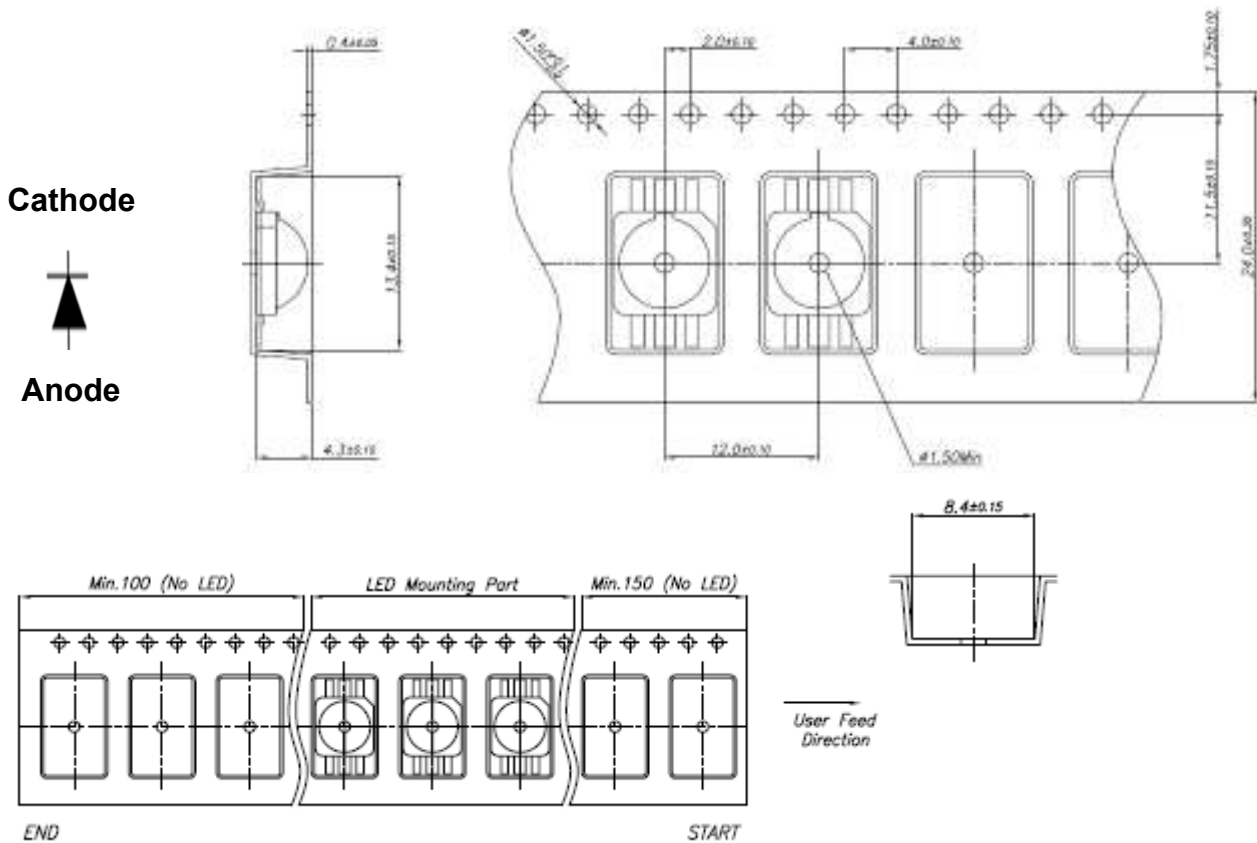
1) Reflow Conditions (Pb-Free Solder, Sn-Ag-Cu Series recommended)



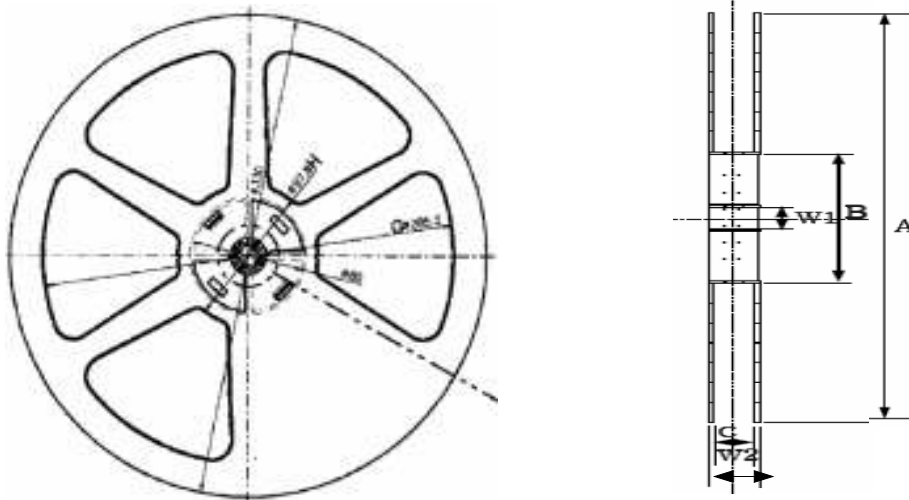
2) For Manual Soldering

Not more than 5 seconds @MAX400°C, under soldering iron.

Taping Dimension



2. Reel



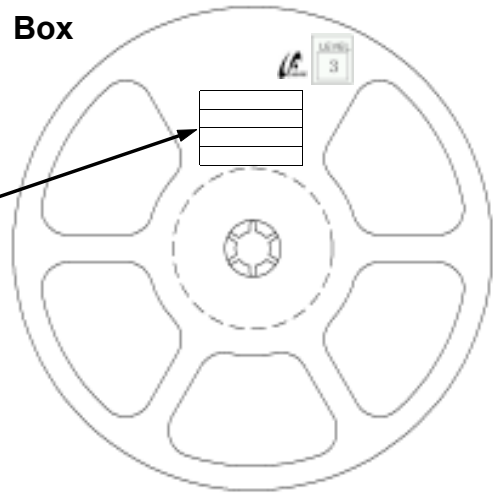
Symbol	A	B	C	W1	W2
Dimension(mm)	330 ± 1	80 ± 1	25 ± 0.5	13 ± 0.3	29.5 ± 1

- (1) Quantity : 1,000 Pcs / 13" Reel.
- (2) Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ± 0.2 mm
- (3) Adhesion Strength of Cover Tape : Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at 10°C angle to be the carrier tape.
- (4) Packaging : P/N, Manufacturing data Code No. and quantity to be indicated on a damp proof Package

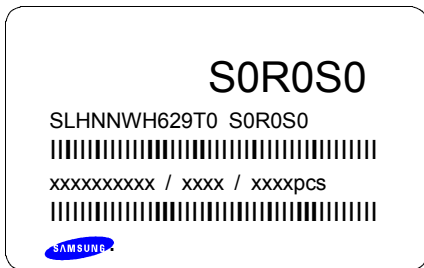
Reel Packing Structure

Packing Order : Reel → Al Bag → Carton Box

1) Reel



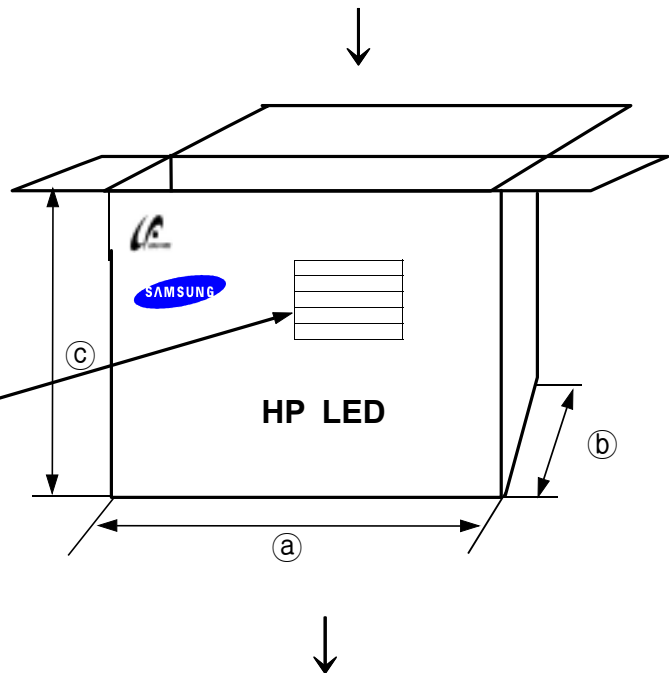
2) Aluminum Vinyl Bag



3) Inner Box

Material : Paper(SW3B(B))

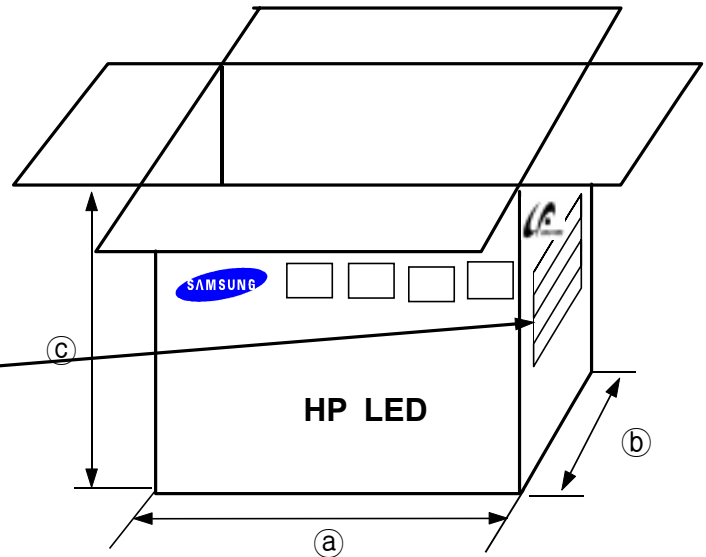
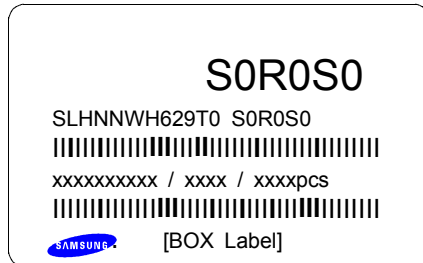
TYPE	SIZE(mm)		
	(a)	(b)	(c)
13inch	335	45	335



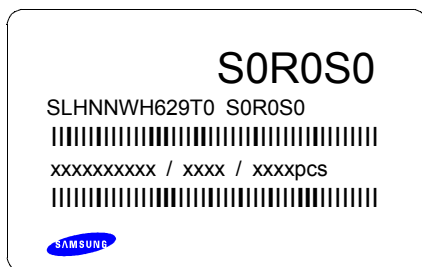
4) Carton Box

Material : Paper(SW3B(B))

TYPE	SIZE(mm)		
	(a)	(b)	(c)
13inch	350	350	350



Label Structure



* Rank Code

(S0): VF Rank

(R0): Chromaticity Coordinate Rank(CIE)

(S0): Luminous Flux

Lot Number

The Lot number is composed of the following characters

●◎◇◆□■△△△ / |▲▲▲ / 1000PCS

● : Production Site (S:SEMCO, G:Gosin China)

◎ : L (LED)

◇ : Product State (A:Normality, B: Bulk, C:First Production, R:reproduction, S:Sample)

◆ : Year (Q:2006, R:2007, S:2008...)

□ : Month (1 ~ 9, A, B)

■ : Day (1 ~ 9, A, B ~ V)

△ : SEMCo. Product number (1 ~ 999)

▲ : Reel Number (1 ~ 999)



CAUTION

This bag contains
MOISTURE SENSITIVE DEVICES

LEVEL
3

1. Shelf life in sealed bag: 12 months at < 40°C and < 90% relative humidity (RH)
2. Peak package body temperature : 260°C
3. After this bag is opened, devices that will be subjected to reflow solder or other high temperature processes must be:
 - a. Mounted within 168 hours at factory conditions of equal to or less than 30°C/ 60% RH, or
 - b. Stored at < 10% RH
4. Devices require bake, before mounting, if:
 - a. Humidity Indicator Card is > 60% when read at 23±5°C, or
 - b. 3 is not met.
5. If baking is required, devices must be baked for 24 hours at 60±5°C

Note: if device containers cannot be subjected to high temperature or shorter bake times are desired, reference IPC/JEDEC J-STD-033 for bake procedure.

Bag seal due date : _____
(if blank, see code label)

Note: Level and body temperature by IPC/JEDEC J-STD-020



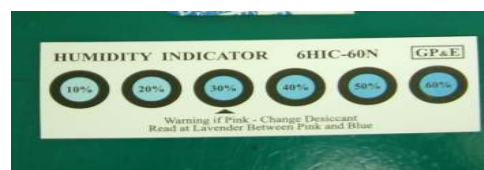
■ 주의 사항

이 알루미늄 지퍼 백은 습기 및 정전기로부터 제품을 보호하기 위해서 제작되었습니다. 개봉 후에는 즉시 솔더 작업을 실시하는 것을 권장합니다.
습기 및 정전기로부터 제품을 보호 하기 위해서 개봉 후 사용하지 않는 자재는 본 팩에 넣어 보관 하시기 바랍니다. 사용하지 않는 자재를 본 팩에 넣을 때는 반드시 동봉된 드라이 팩과 함께 넣고 지퍼부분을 완전하게 밀봉하여 주시기 바랍니다.

■ Important

This Al Zipper bag is designed to protect the enclosed products from moisture and ESD. Once opened, the products should be soldered onto the printed circuit board immediately. When not in use, please do not leave the products unprotected by the Al Zipper Bag. To repack unused products, please ensure the zip-lock is completely sealed with the dry pack left inside.

Silica gel & Humidity Indicator Card in Aluminum Vinyl Bag



■ Precaution for Use

- 1) For over-current-proof function, customers are recommended to apply resistors to prevent sudden change of the current caused by slight shift of the voltage.
- 2) This device should not be used in any type of fluid such as water, oil, organic solvent, etc.
When washing is required, IPA is recommended to use.
- 3) When the LEDs illuminate, operating current should be decided after considering the ambient maximum temperature.
- 4) LEDs must be stored in a clean environment.
If the LEDs are to be stored for 3 months or more after being shipped from SEMCO, they should be packed by a sealed container with nitrogen gas injected.
(Shelf life of sealed bags : 12 months, temp. 0~40℃, 20~70%RH)
- 5) After storage bag is open, device subjected to soldering, solder reflow, or other high temperature processes must be:
 - a. Mounted within 72 hours (3days) at an assembly line with a condition of no more than 30℃/60%RH,
 - b. Stored at <10% RH.
- 6) Repack unused Products with anti-moisture packing, fold to close any opening and then store in a dry place.
- 7) Devices require baking before mounting, if humidity card reading is >60% at 23±5℃.
- 8) Devices must be baked for 24hours at 60±5℃, if baking is required.
- 9) The LEDs are sensitive to the static electricity and surge. It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

If voltage exceeding the absolute maximum rating is applied to LEDs, it may cause damage or even destruction to LED devices.

Damaged LEDs may show some unusual characteristics such as increase in leak current, lowered turn-on voltage, or abnormal lighting of LEDs at low current.

Hazard Substance Analysis



Test Report No. F690501/LF-CTSAYAA08-28494R1

Issued Date: October 27, 2008

Page 1 of 4

To: SAMSUNG ELECTRO-MECHANICS CO., LTD.
314, Maetan3-dong
Yeongtong-gu
Suwon-city
GYEONGGI-DO 442-373
Korea

The following merchandise was submitted and identified by the client as :

Product Name : LED

SGS File No. : AYAA08-28494R1

Received Date : October 20, 2008

Test Performing Date : October 21, 2008

Test Performed : SGS Testing Korea tested the sample(s) selected by applicant with following results

Test Results : For further details, please refer to following page(s)

Comments : By the applicant's specific request, the sampling and testing was performed only for the part indicated in the photo without disassembly. This Report supersedes the Report No.F690501/LF-CTSAYAA08-28494 dated October 27,2008 issued by SGS Testing Korea Co.,Ltd. The item/part no. is changed from SLHNNWW629T0 to SLHNNWW629T0 (SLHNNWW629T1) by customer's request.The test result of (PBB/PBDE) are extracted from the test report number F690501/LF-CTSAYAA08-29674 where the sample is claimed to be identical.

SGS Testing Korea Co. Ltd.

Jeff Jang / Chemical Lab Mgr

Pluto Kim
Monet Jeong
Billy Oh / Testing Person

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SGS Testing Korea Co., Ltd.

322, The C-Valley, 695-6, Hoggae-dong, Dongen-gu, Anyang-si, Gyeonggi-do, Korea 431-050
T +82 (0)31 4626 000 F +82 (0)31 4903 059 <http://www.sgs.com> sgs@sgs.com

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Test Report No. F690501/LF-CTSA YAA08-28494R1

Issued Date: October 27, 2008

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Sample No. : AYAA08-28494R1.001
Sample Description : LED
Item No./Part No. : SLHNNWW629T0 (SLHNNWH629T0)

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	0.5	N.D.
Lead (Pb)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	5	N.D.
Mercury (Hg)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D.

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.

- NOTE: (1) N.D. = Not detected.(<MDL)
 (2) mg/kg = ppm
 (3) MDL = Method Detection Limit
 (4) - = No regulation
 (5) ** = Qualitative analysis (No Unit)
 (6) Negative = Undetectable / Positive = Detectable

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SGS Testing Korea Co., Ltd.

322, The O valley, 955-9, Hoggae-dong, Dongen-gu, Anyang-si, Gyeonggi-do, Korea 431-050
 t +82 (0)31 4856 000 f +82 (0)31 4803 059 <http://www.sgstab.co.kr> www.kr.sgs.com/gremlab

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Test Report No. F690501/LF-CTSAYAA08-28494R1

Issued Date: October 27, 2008 Page 3 of 4

Sample No. : AYAA08-28494R1.001
 Sample Description : LED
 Item No./Part No. : SLHNNWW629T0 (SLHNNWH629T0)

Halogen Contents

Test Items	Unit	Test Method	MDL	Results
Bromine(Br)	mg/kg	EN 14582:2007 , IC	30	N.D.
Chlorine(Cl)	mg/kg	EN 14582:2007 , IC	30	N.D.
Fluorine(F)	mg/kg	EN 14582:2007 , IC	30	N.D.
Iodine(I)	mg/kg	EN 14582:2007 , IC	30	N.D.

Other(s)

Test Items	Unit	Test Method	MDL	Results
PFOS(Perfluorooctane Sulfonates-Acid/Metal Salt/Amide)	mg/kg	US EPA 3540C, LC/MS	-1	N.D.

- NOTE: (1) N.D. = Not detected.(<MDL)
 (2) mg/kg = ppm
 (3) MDL = Method Detection Limit
 (4) - = No regulation
 (5) ** = Qualitative analysis (No Unit)
 (6) Negative = Undetectable / Positive = Detectable

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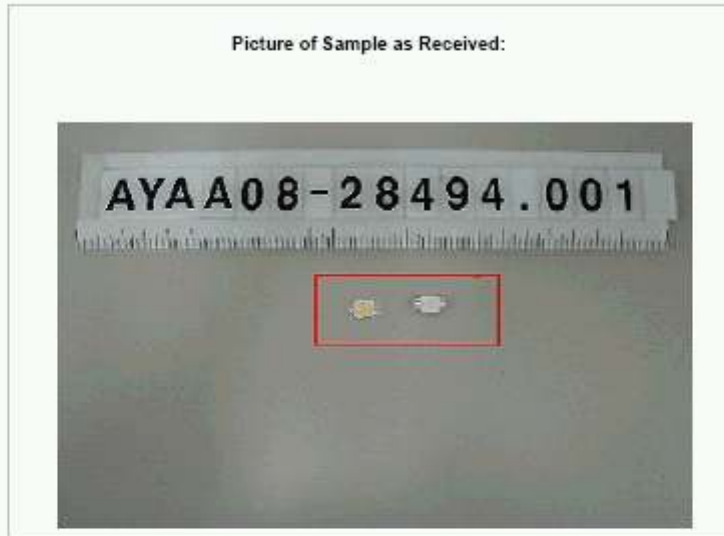


Test Report No. F690501/LF-CTSAYAA08-28494R1

Issued Date: October 27, 2008

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Picture of Sample as Received:



*** End ***

- NOTE:
- (1) N.D. = Not detected.(<MDL)
 - (2) mg/kg = ppm
 - (3) MDL = Method Detection Limit
 - (4) - = No regulation
 - (5) ** = Qualitative analysis (No Unit)
 - (6) Negative = Undetectable / Positive = Detectable

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SGS Testing Korea Co., Ltd.

322, The D Valley, 895-8, Hoge-dong, Dongen-gu, Anyang-si, Gyeonggi-do, Korea 431-030
t +82 (0)31 4608 000 f +82 (0)31 4933 059 <http://www.sgslab.co.kr> www.k2.sgs.com/glsr460

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