ALLIX Co., Ltd.
69 Ballyong-ro, Deokjin,gu, Jeonju-city,
Jeollabuk-do, South Korea/ Postal Code : 54853
Tel : +82-63-210-9882/ E-Mail : allix@allixs.com

Features

- Package : Top View LED in Slug Type
- Size : 3.5(W) X 3.5(L) X 2.2(T) mm
- Power : 1W (350mA, 2.9V)
- Viewing Angle : $2\theta_{1/2}$ = 120deg
- Color : White

Description

AT35SNW Series are high power white LED devices which are materialized by combining blue chip and special phosphors. This feature makes the LED ideal for light guide application.

Applications

- Coupling into light guides
- Optical indicator
- Interior automotive lighting
- Indoor General Lighting
- Retrofits and Fixtures

SMD 3535 Top View LED(White)
Device No. : AT35SNW

Table of Contents

Document Revision V3. 2017.03.01

1. Specifications

■ Product Characteristics

(T_a=25℃)

Characteristics	Unit	Min.	Typ.	Max.
Thermal resistance, junction to solder point	℃/W		5	
Viewing angle(FWHM)	°		120	
Temperature coefficient of voltage	mV/℃		-1.5	
ESD withstand voltage(HBM perMil-Std-883D)	V			8000
DC forward current	mA		350	1000
Reverse Current	mA			0.1
Forward voltage(@700mA)	V		2.9	3.4
LED junction temperature Packaging (reflow)	℃			150

■ Flux Characteristics – White

(T_j=85℃)

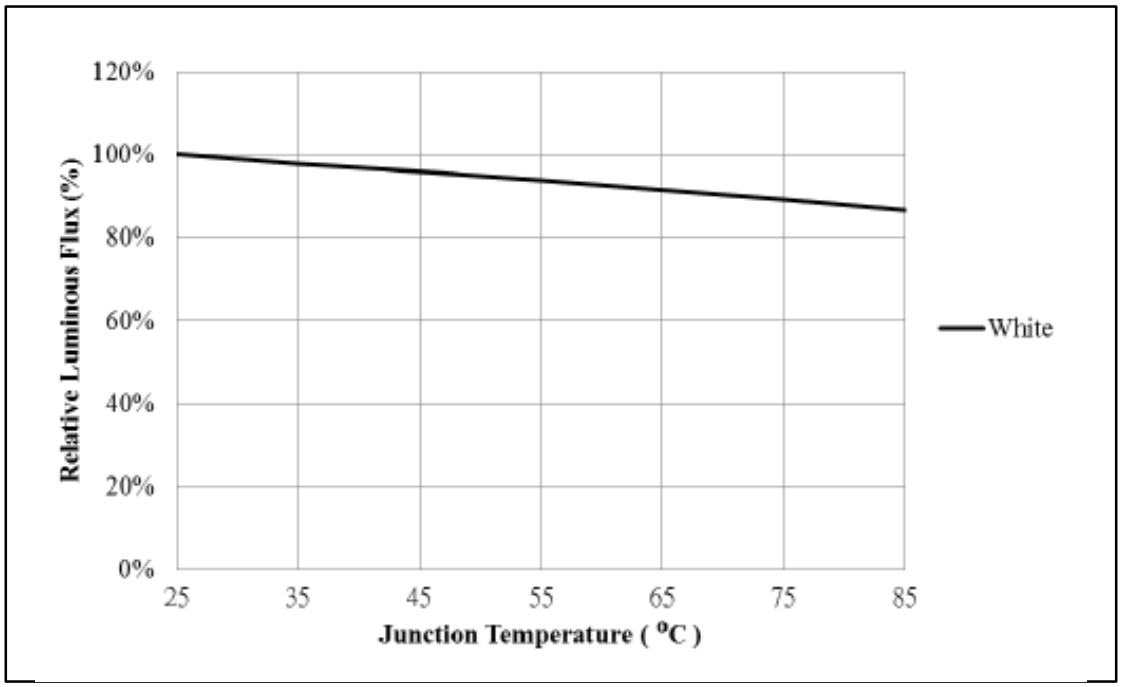
Color	CCT		Base order codes minimum luminous flux@350mA			Calculated minimum luminous flux (lm) @85℃	
	Min.	Max.	Group	Flux(lm) @85℃	Flux(lm) @25℃	700mA	1000mA
70 CRI Cool White	5300K	6000K	M16	122	140	217	280
			M17	130	149	231	299
			M18	139	158	247	320
			M19	148	168	262	340
70 CRI Natural White	3700K	4500K	M16	122	140	217	280
			M17	130	149	231	299
			M18	139	158	247	320
			M19	148	168	262	340

*Note

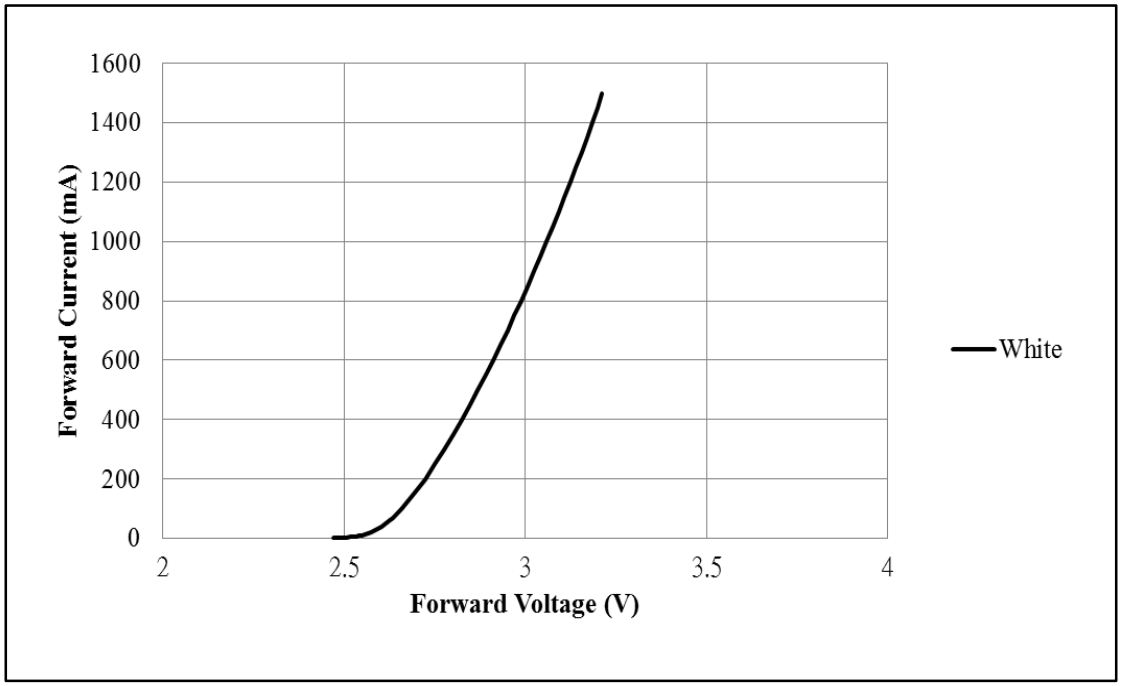
1) ALLIX maintains a tolerance of ±7% on flux and power measurements, ±0.005 on chromaticity (CCx, CCy) measurements and ±3 on CRI measurements.
2) Flux values @25^{0}C are calculated and for reference only.
*Calculated flux values at 700mA and 1000mA are for reference only.

2. Characteristics Diagrams

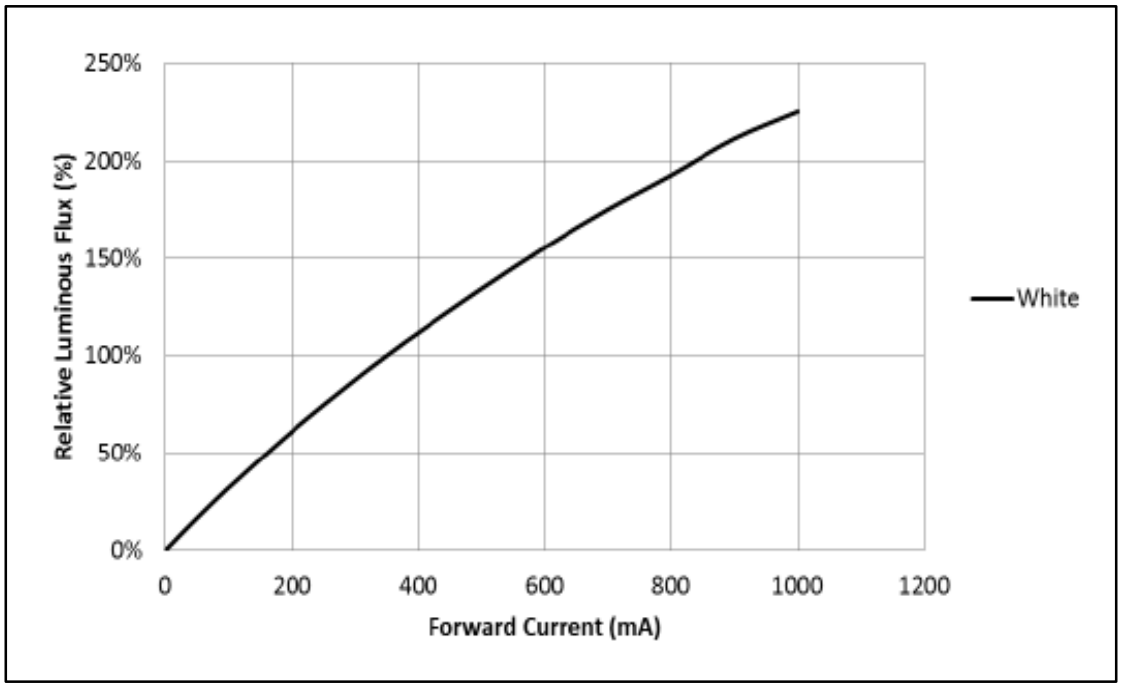
- **Relative Luminous flux vs. Junction Temperature (If = 350mA)**



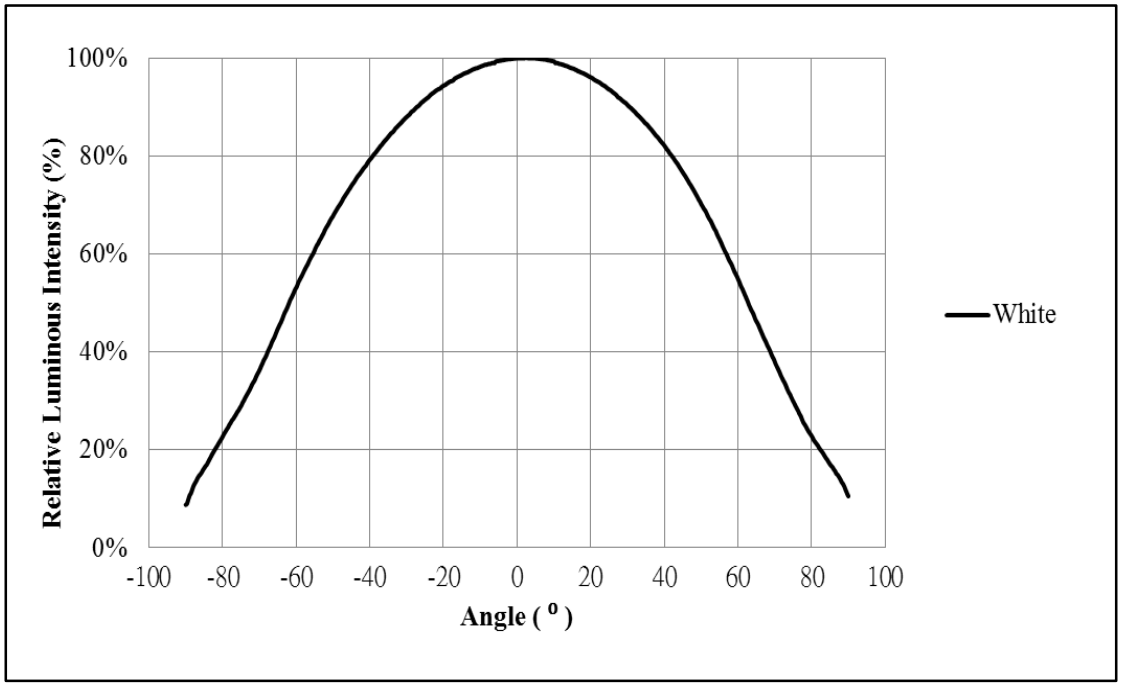
- **Electrical Characteristic (T_j=85℃)**



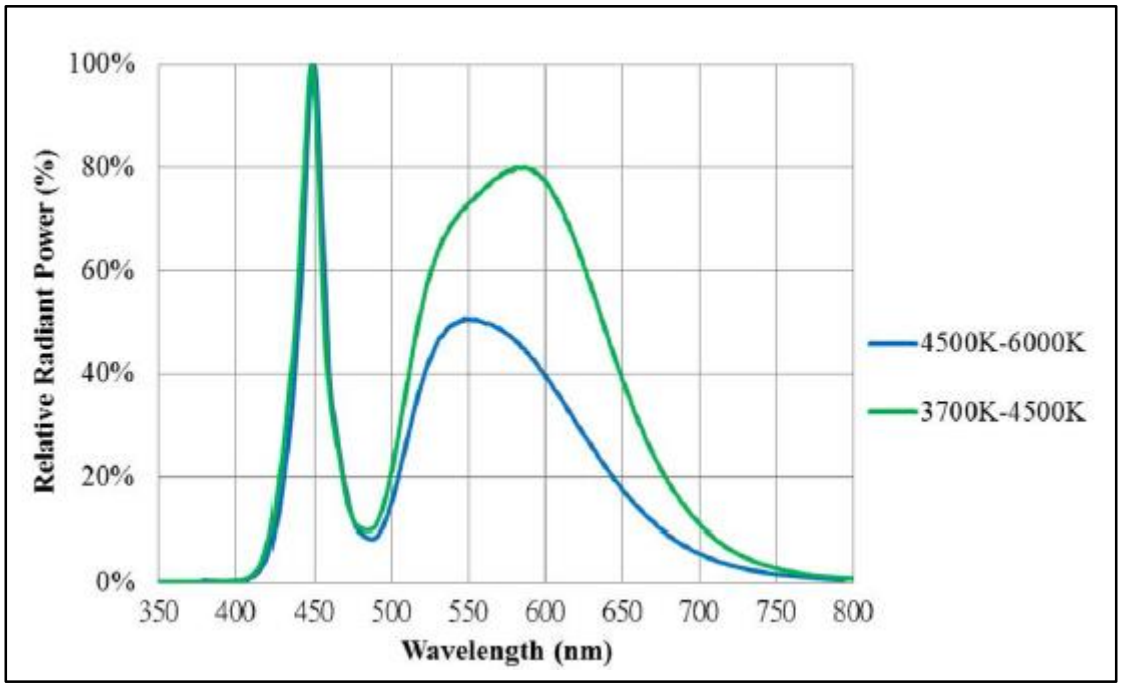
■ Relative Luminous Flux vs. Current (T_j=85℃)



■ Typical Spatial Distribution



■ Spectral Distribution



3. Color Rank

■ **Performance Groups – Brightness (T_j=85℃)**

Group code	Min. Luminous Flux(lm)	Max. Luminous Flux(lm)
M12	94	100
M13	100	107
M14	107	114
M15	114	122
M16	122	130
M17	130	139
M18	139	148
M19	148	156

■ **Performance Groups – Forward voltage (T_j=85℃)**

Group code	Min. Luminous Flux(lm)	Max. Luminous Flux(lm)
AH	2.7	2.8
AI	2.8	2.9
AJ	2.9	3.0
AK	3.0	3.1
AL	3.1	3.2
AM	3.2	3.3
AN	3.3	3.4

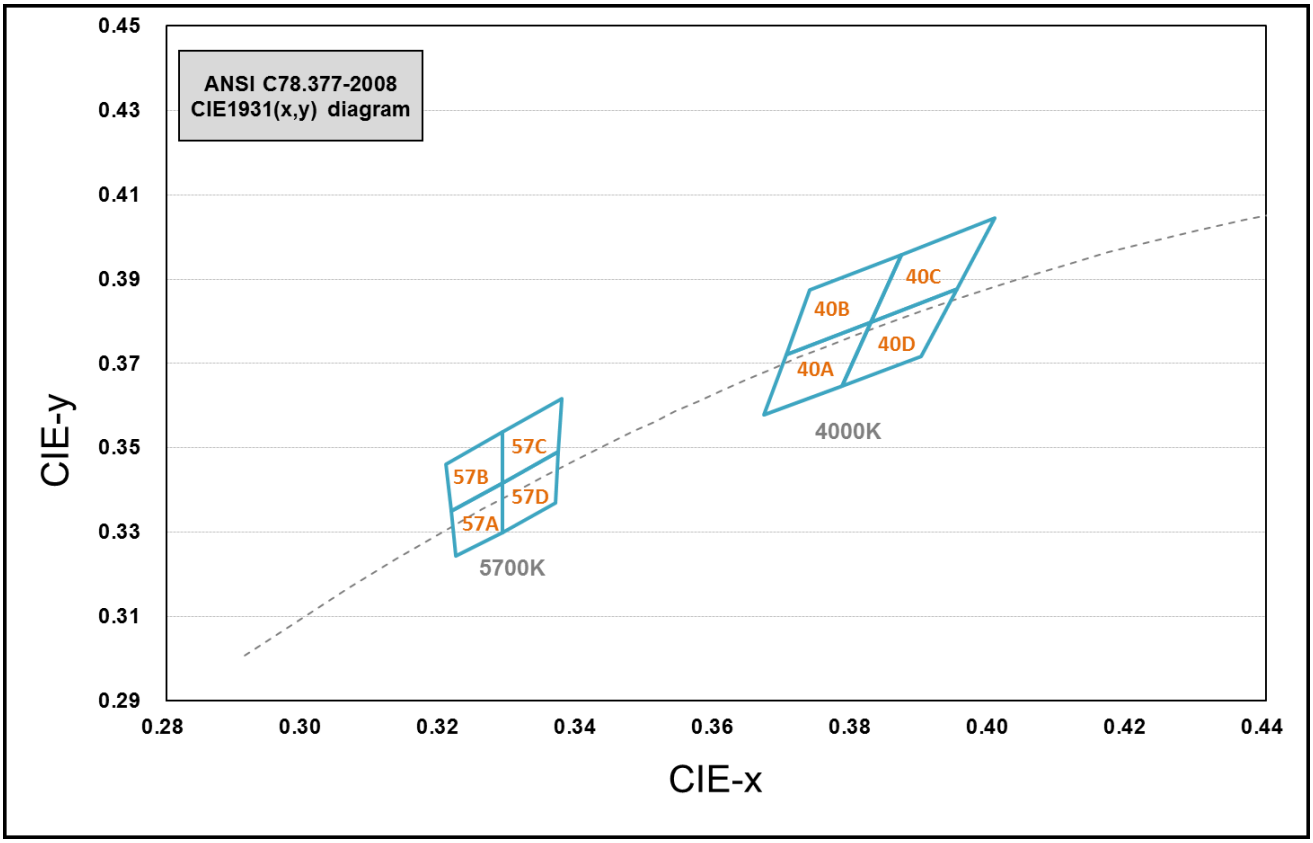
■ Performance Groups – Chromaticity

Bin code	Sub bin	X	y
57	57A	0.3215	0.3350
		0.3290	0.3417
		0.3290	0.3300
		0.3222	0.3243
	57B	0.3207	0.3462
		0.3290	0.3538
		0.3290	0.3417
		0.3215	0.3350

Bin code	Sub bin	X	y
57	57C	0.3290	0.3538
		0.3376	0.3616
		0.3371	0.3490
		0.3290	0.3417
	57D	0.3290	0.3417
		0.3371	0.3490
		0.3366	0.3369
		0.3290	0.3300

Bin code	Sub bin	X	y
40	40A	0.3670	0.3578
		0.3702	0.3722
		0.3825	0.3798
		0.3783	0.3646
	40B	0.3702	0.3722
		0.3736	0.3874
		0.3869	0.3958
		0.3825	0.3798

Bin code	Sub bin	X	y
40	40C	0.3825	0.3798
		0.3869	0.3958
		0.4006	0.4044
		0.3950	0.3875
	40D	0.3783	0.3646
		0.3825	0.3798
		0.3950	0.3875
		0.3898	0.3716



*Note

1) Dash line on ANSI CIE1931(x,y)

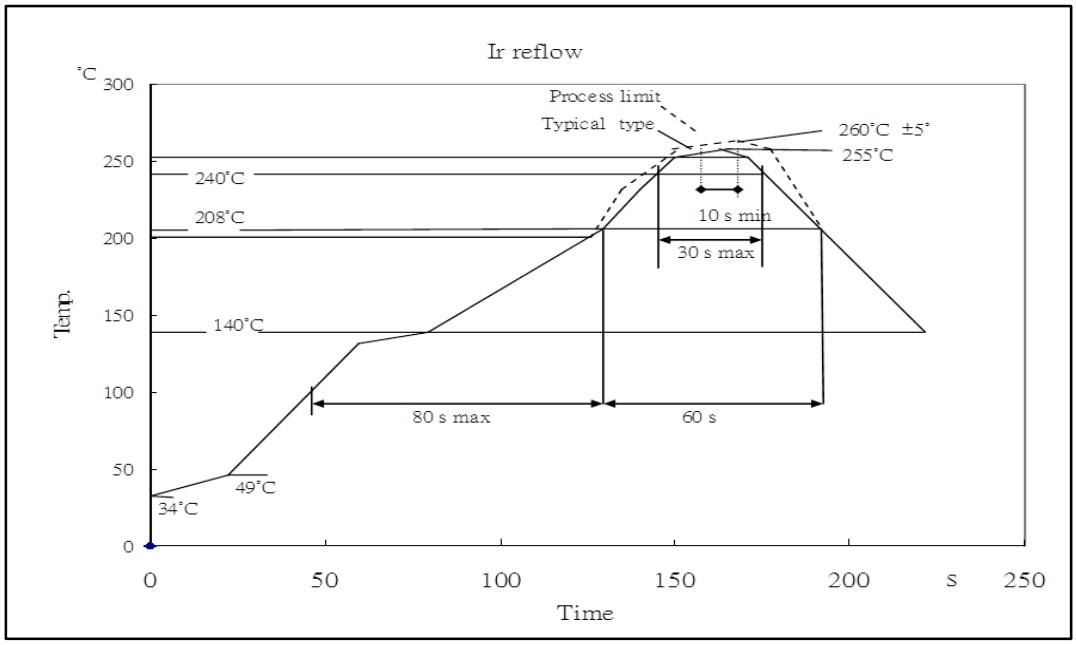
4. Reliability

Test item	Test Condition		Test Period	Ac/Re
Room Temperature Operating Life(RTOL)	If=350mA DC		1000 hrs	0/1
Wet High Temperature Operating Life(WHTOL)	Ta=85˚C 85% humidity If=350mA DC		1000 hrs	0/1
High Temperature Operating Life(HTOL)	Ta=85˚C If=350mA DC		1000 hrs	0/1
Thermal Cycle	-40˚C	125˚C	1000 cycle	0/1
	30 min.	30 min.		
Reflow Soldering	Tmax.=260˚C		3 times	0/1

*Note

1) No catastrophic (LED fail)
2) Lumen maintenance > 90%
3) Change in Vf < 10%
4) Change in white color point △x △y ± 0.01
5) No corrosion
6) Moisture sensitivity level 2 (IPC/JEDEC J-STD-020)

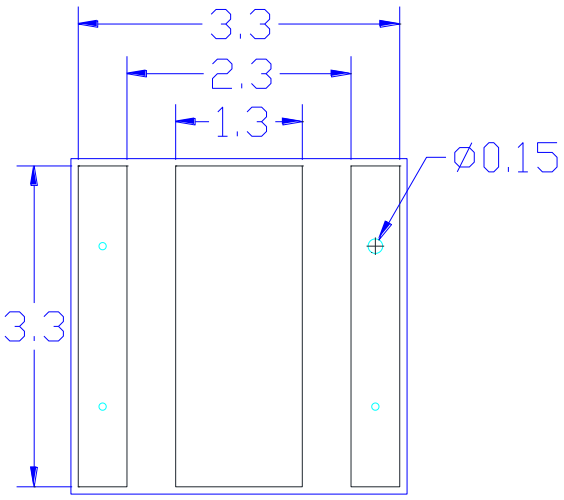
5. Reflow soldering characteristic

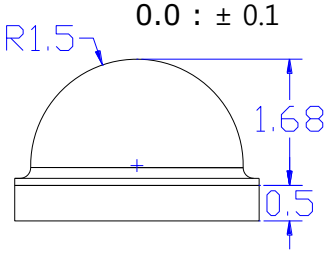


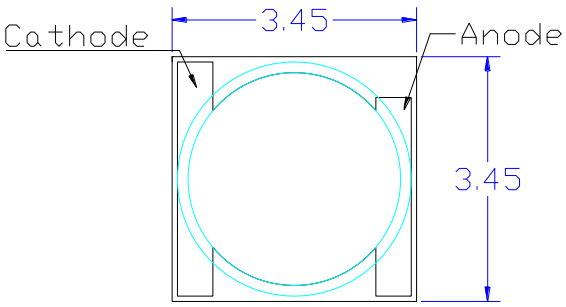
6. Outline Dimension

■ Outline Dimension

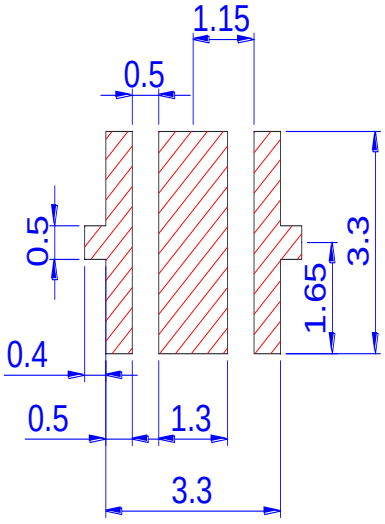
*Unit : mm
* Measurement tolerances :
0 : ± 0.13
0.0 : ± 0.1



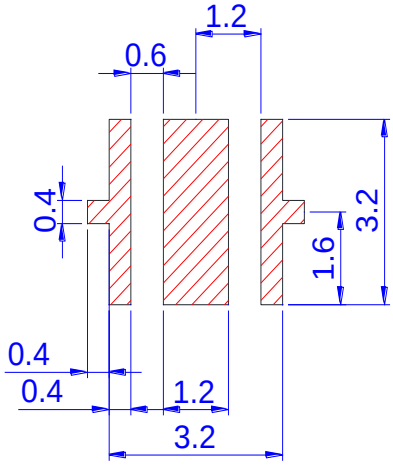




■ Recommended Solder Pad



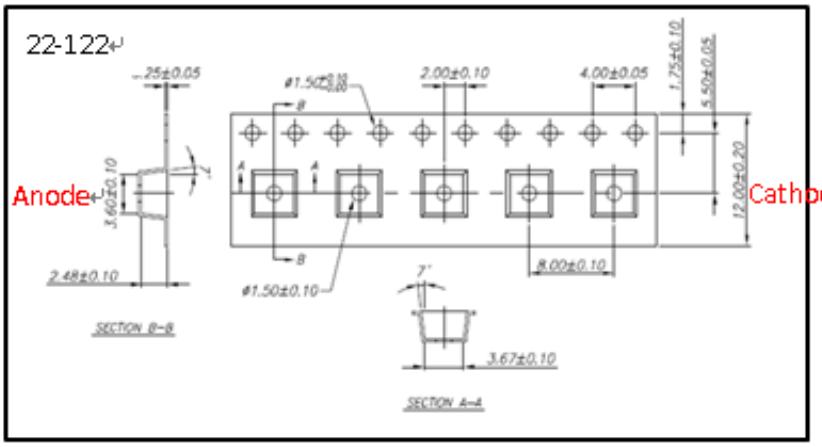
RECOMMENDED PCB SOLDER PAD



RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

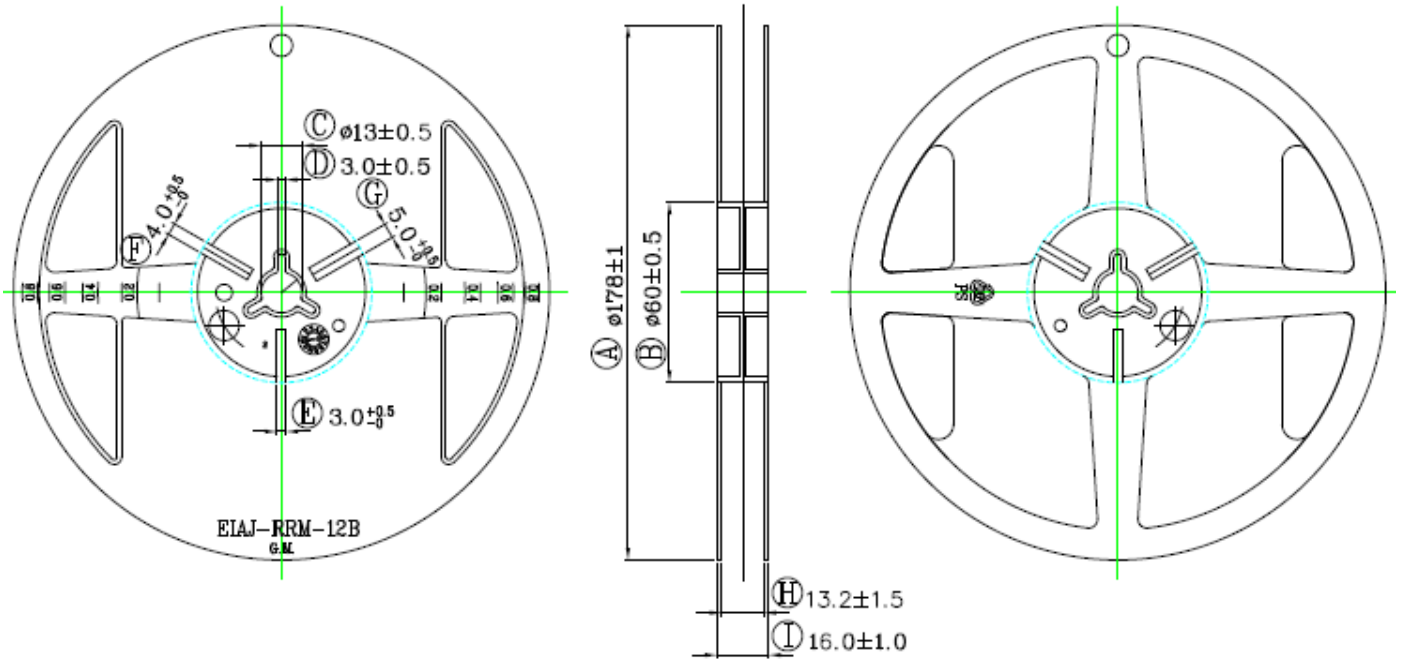
7. Taping

■ Tape and Reel



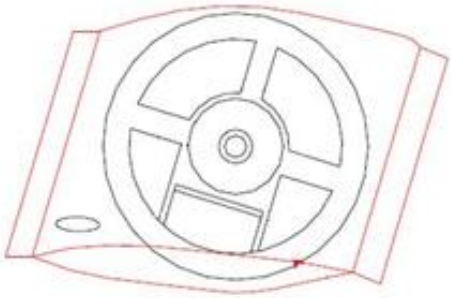
Item	Specification	Tol.(+/-)
W	12.00	±0.20
E	1.75	±0.10
F	5.50	±0.05
D0	1.50	+0.10,-0
D1	1.50	±0.10
P0	4.00	±0.05
P1	8.00	±0.10
P1	2.00	±0.10
P0 x 10	40.00	±0.20

t	0.25	±0.05
A0	3.67	±0.10
B0	3.60	±0.10
K0	2.48	±0.10

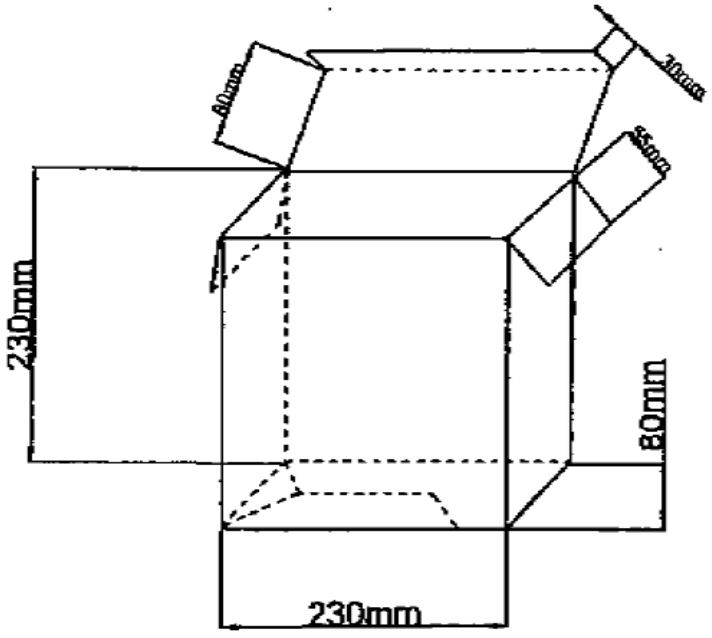


8. Packing

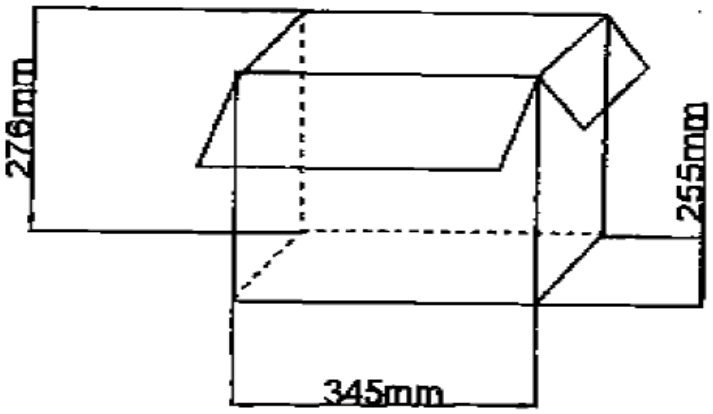
■ Packing



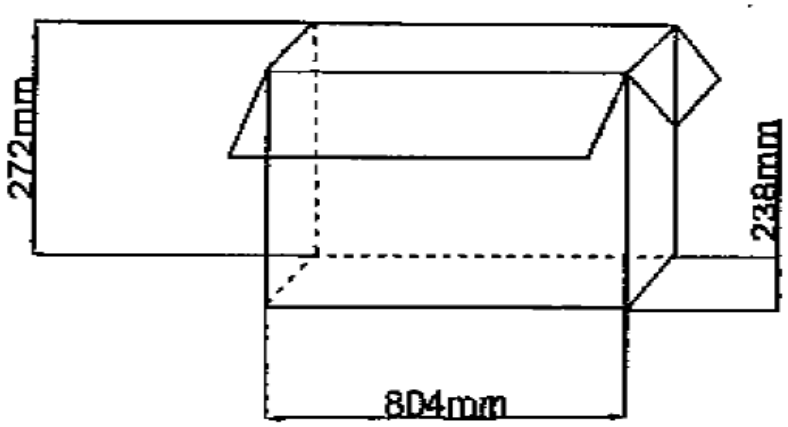
1 Anti-static reel in 1 moisture-proof foil bag
(within moisture absorbent material)



4 moisture-proof foil bags in box



4 moisture-proof foil bags in box



50 moisture-proof foil bags in box

9. Precautions

1. Moisture Sensitivity

In testing, ALLIX has found AT35SNW LEDs to have 1 year floor life in condition <,=30C°/ 60% relative humidity(RH). Moisture testing included a 168-hr soak at 85C°/60% RH followed by 3 times reflow cycles, with visual and electrical inspections at each stage.

ALLIX recommends keeping AT35SNW LEDs in their sealed moisture-barrier packaging until immediately prior to use. ALLIX also recommends returning any unusual LEDs to the re-sealable moisture-barrier bag and closing the bag immediately after use.

2. Handling Precautions

Do not handle LEDs with bare hands, it may contaminate the LED surface and affect optical characteristics. In the worst case, catastrophic failure from excess pressure through wire-bond breaks and package damage may result.
Do not stack assembled PCBs together. Failure to comply can cause the resin portion of the product to be cut, chipped, delaminated and/or deformed. It may cause wire to break, leading to catastrophic failures.

3. Eye safety

Warning : do not look at exposed lamp in operation. Eye injury can result.

4. Static Electricity

Wristbands and anti-electrostatic gloves are strongly recommended and all devices, equipment and machinery must be properly grounded when handling the LEDs, which are sensitive against static electricity and surge.

Precautions are to be taken against surge voltage to the equipment that mounts the LEDs. Unusual characteristics such as significant increase of current leakage, decrease of turn-on voltage or non-operation at a low current can occur when the LED is damaged.