

# Specification

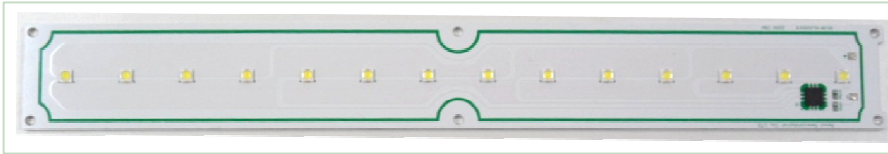
## Acrich2

### 220V 15W – Street Light

SMJB-SL220V15

SSC Development			SSC QC	Customer
Drawn	Checked	Approval	Approval	Approval

## Acrich2 – SMJB-SL220V15



### Description

Acrich 2 series designed for AC drive(or operation) doesn't need the converter which is essential for conventional general lighting. Also, its high power factor can show best energy saving effect in many lighting applications.

As there is no need of converter, Acrich 2 series can realize as close life-time as original LED and make a better use of a space in many applications.

## Acrich2

### Features

- Connect using a AIC directly to AC power
- High Power Efficiency
- High Power Factor
- Low THD
- Long Life Time
- Simplest BOM
- Miniaturization
- Lead Free product
- RoHS compliant

### Applications

- Wall Washer

## Contents

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## 1. Characteristics of SMJB-SL220V15

### 1-1. Electro-Optical characteristics of SMJB-SL220V15 – 5000K

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	1320	1500		lm
Correlated Color Temperature <sup>[3]</sup>	CCT		5000		K
CRI	$R_a$		-	-	-
Operating Voltage <sup>[4]</sup>	$V_{opt}$		220		$V_{RMS}$
Power Dissipation	$P_D$	-	14.3	-	W
Operating Frequency	Freq		50 / 60		Hz
Power Factor	PF		Over 0.97		-
View Angle	$2\theta$ 1/2		220		deg.

### 1-2 Absolute Maximum Ratings of SMJB-SL220V15

Parameter	Symbol	Value	Unit
Max. Voltage	$V_{opt}$	264	V[RMS]
Power Dissipation	$P_d$		W
Operating Temperature <sup>[5]</sup>	$T_{opr}$	-30 ~ 85	°C
Storage Temperature	$T_{stg}$	-40 ~ 100	°C
ESD Sensitivity	-	±4,000V HBM	-

\* Notes :

[1] At 220V RMS,  $T_a=25^\circ\text{C}$

Acrich 2 series maintain the tolerance of  $\pm 10\%$  on flux and power measurements.

[2]  $\Phi_V$  is the total luminous flux output measured with an integrated sphere.

[3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.

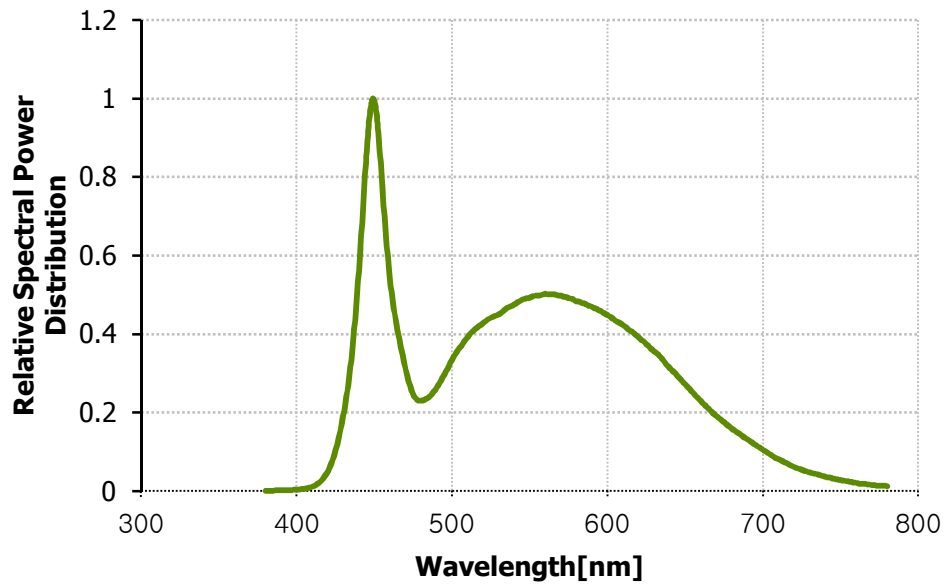
Measurement Uncertainty of the Color Coordinates in ANSI-Color Bin :  $\pm 0.01$

[4] 'Operating Voltage' doesn't indicate the maximum voltage which customers use but means tolerable voltage according to each country's voltage variation rate.

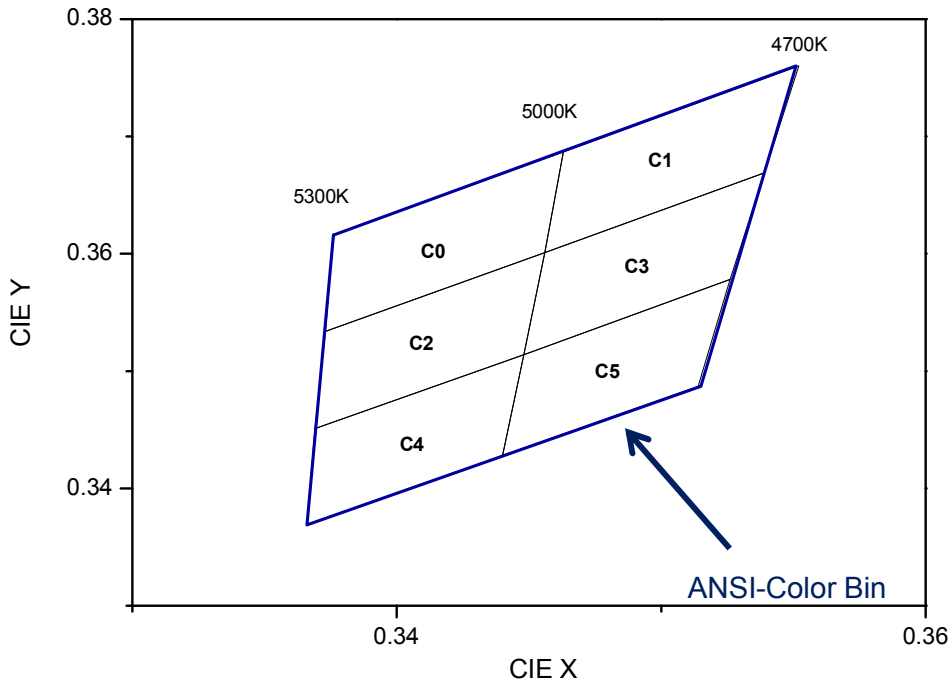
It is recommended that the solder pad temperature should be below  $70^\circ\text{C}$ .

## 2. Color spectrum

Relative Spectral Power Distribution at Ta=25°C 5000K



### 3. Color & Binning

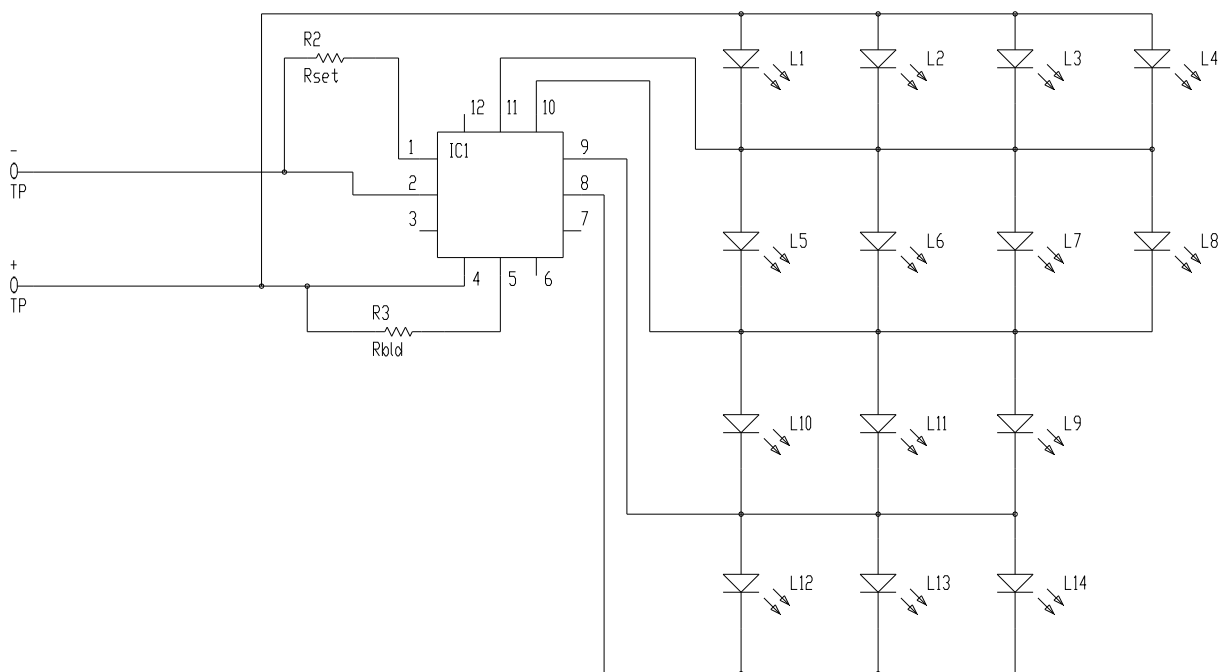


Color Rank at IF=20mA, Ta=25°C

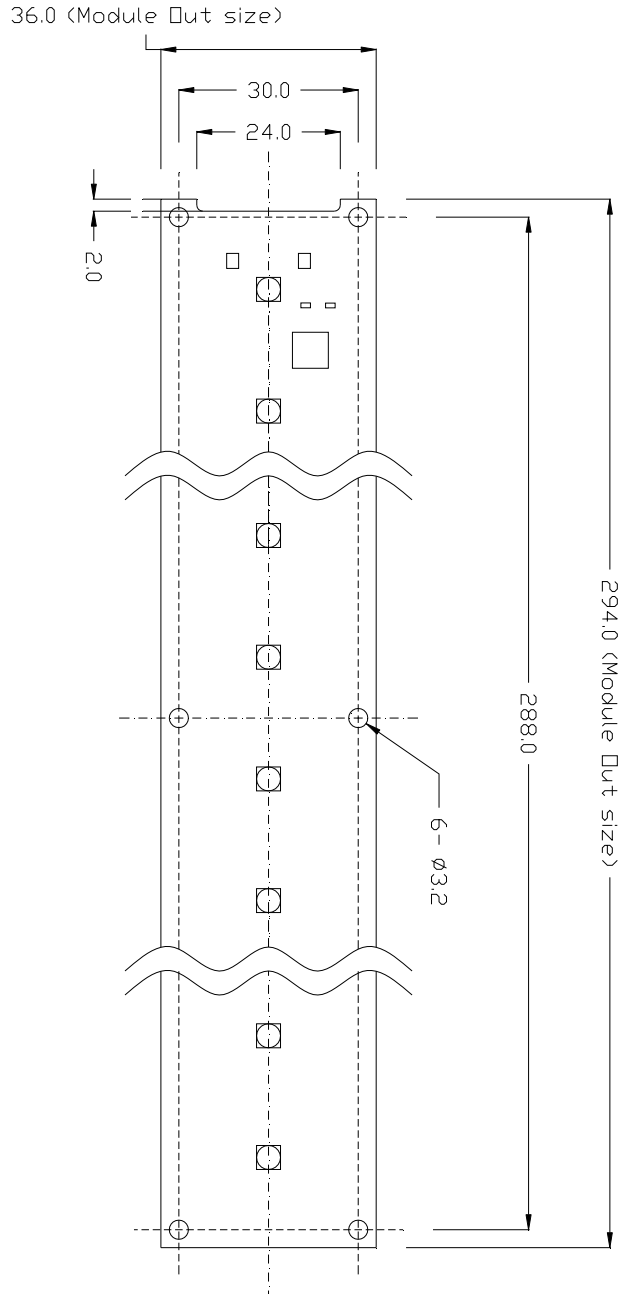
Bin code	X	Y	Bin code	X	Y	Bin code	X	Y
C0	0.3376	0.3616	C1	0.3463	0.3687	C2	0.3373	0.3534
	0.3373	0.3534		0.3456	0.3601		0.3369	0.3451
	0.3456	0.3601		0.3539	0.3669		0.3448	0.3514
	0.3463	0.3687		0.3552	0.3760		0.3456	0.3601
C3	0.3456	0.3601	C4	0.3369	0.3451	C5	0.3448	0.3514
	0.3448	0.3514		0.3366	0.3369		0.3440	0.3428
	0.3526	0.3578		0.3440	0.3428		0.3514	0.3487
	0.3539	0.3669		0.3448	0.3514		0.3526	0.3578

\* Measurement Uncertainty of the Color Coordinates : ± 0.01

## 4. Circuit Drawing



## 5. Outline Dimension



\* Notes :

- [1] All dimensions are in millimeters.
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice



## 6. Part List

No.	Part	Silk	Specification	Q'ty
1	PCB	-	Metal(Al) 293.9 X 36(mm)1.6T	1
2	LED	-	SAW09H0A	14
3	IC	U1	DT3001B	1
4	Resistor	Rset	1608size 1.4K Ohm	1
5	Resistor	Rbld	1608size 1K Ohm	1

## 7. Cautions for use

- Please attach a varistor for protecting surge according to the application note
- Please attach a resistance according to the application note
- Please note Acrich runs on high voltage so use caution when near the leads or if a dome is inadvertently removed while circuit is active
- Please do not touch any of the circuit board, components or terminals with bare hands or metal while circuit is electrically active.
- Please do not add or change wires while Acrich circuit is active
- Please do not touch wire on solder pad at driving AC source
- The appearance and specifications of the product may be modified for improvement without notice.
- Long time exposure of sunlight or occasional UV exposure will cause lens discoloration.
- Attaching LEDs, do not use adhesives that outgas organic vapor.
- Please do not use together with the materials containing Sulfur
- Please do not assemble under the condition of moisture and oxidizing gas in the air(Cl, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, NOX, etc)
- Please do not make any modification on module.
- Please be cautious as soldering in order to avoid short between different patterns.

## 8. Handling of silicone resin for LEDs

- Acrich series is encapsulated with silicone resin for high optical efficiency.
- Please do not touch the silicone resin area with sharp objects such as pincette(tweezers).
- Finger prints on silicone resin area may affect the performance.
- Please store LEDs in covered containers as it is dust sensitive.
- Excessive force more than 3000gf to the silicone lens can result in fatal or permanent damage with LEDs.
- Please do not cover the silicone resin area with any other resins such as epoxy, urethane, etc.

## 9. Content regarding static electricity

- Acrich2 control IC is installed in this product. This kind of package could get damaged when it is exposed to static electricity. So, please, wear equipment to prevent it from static electricity.  
Moreover, be cautious not to touch each exposed package and AC PAD on top of product with bare hands.  
When installing the product on user's Main heat sink, should wear some equipment to prevent static electricity.

## 10. Content regarding storage and treatment

- Do not impact or pressure on this product since this product get damaged easily by small amount of impact. Moreover, it should avoid high temperature, high humidity, and direct sunlight in order to function properly since LED PKG is sensitive to temperature and humidity, when storing or operating it.  
Criteria are here as below.
- Please, confirm to next lists, when storing it in a long term.
  - \*It should be stored in the anti-static bag that Seoul-Semiconductor packed without opening it.
  - \* If you opened it in order to prevent humidity, you should seal it and not let the air and humidity into the bag.

## 11. Guidelines for Acrich module work

- Discharge the lighting system minimum 2~3 times prior to starting work.
- Use only the tested instruments, and insulated tools rated for the voltage and current specified.
- Wear rubber made gloves and rubber bottom shoes or sneakers.
- Do not wear any conductive items (such as jewelry) which could accidentally contact electric circuits.
- Perform several tests with power off and the lighting system unplugged.
- Faults, lightning, or switching transients can cause voltage surges in excess of the normal ratings.
- Internal component failure can cause excessive voltages.
- Stored or residual electricity in long wire could be hazardous.  
Make sure proper discharge prior to starting work.