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# Specification

## AN4240 module (Preliminary)

| SSC   |          | 고객명      |
|-------|----------|----------|
| Drawn | Approval | Approval |
|       |          |          |

# Contents

- 1. Part number**
- 2. Outline dimensions**
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**Part number of AN4240 module**

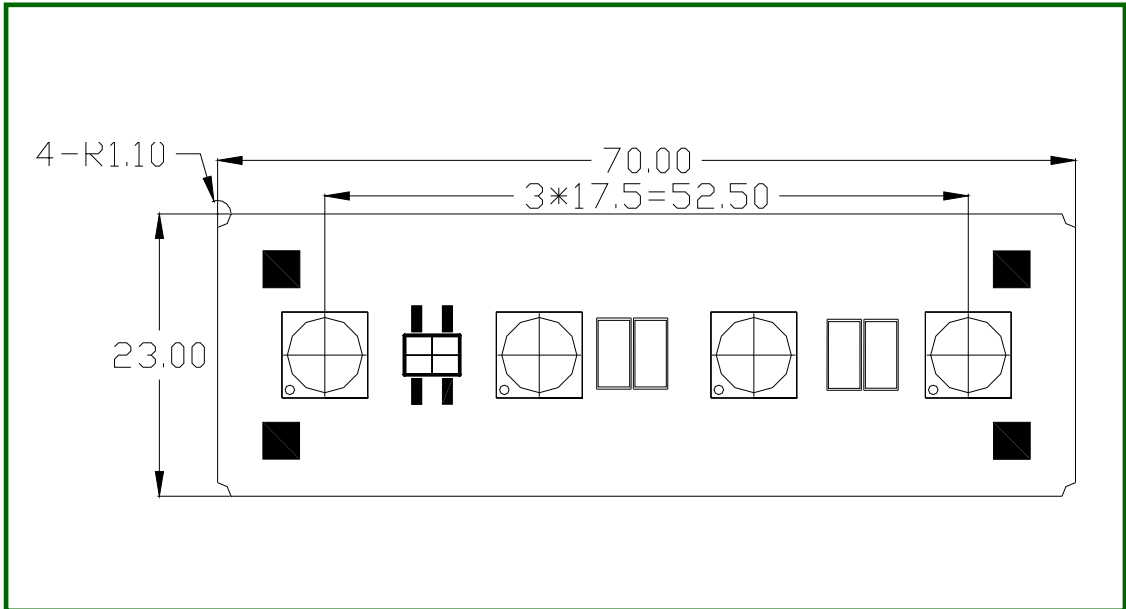
**1. Part Number form : A X<sub>1</sub> X<sub>2</sub> X<sub>3</sub> X<sub>4</sub> X<sub>5</sub>**

|                      |                       |          |                       |
|----------------------|-----------------------|----------|-----------------------|
| <b>X<sub>1</sub></b> | <b>Color</b>          | <b>N</b> | Warm white            |
| <b>X<sub>2</sub></b> | <b>Acriche series</b> | <b>4</b> | A4 series             |
| <b>X<sub>3</sub></b> | <b>Lens type</b>      | <b>2</b> | Dome type             |
| <b>X<sub>4</sub></b> | <b>Voltage</b>        | <b>0</b> | 100V(AC)              |
|                      |                       | <b>1</b> | 110V(AC)              |
|                      |                       | <b>2</b> | 220V(AC)              |
|                      |                       | <b>3</b> | 230V(AC)              |
|                      |                       | <b>4</b> | 50,55V, RMS (Emitter) |
| <b>X<sub>5</sub></b> | <b>PCB type</b>       | <b>1</b> | 4W Compact            |
|                      |                       | <b>2</b> | 4W Square             |
|                      |                       | <b>3</b> | 4W Line               |
|                      |                       | <b>4</b> | 8W Bulb               |

For more information about binning and labeling, refer to the Application Note -1

**Outline dimensions**

**1. AN4211**



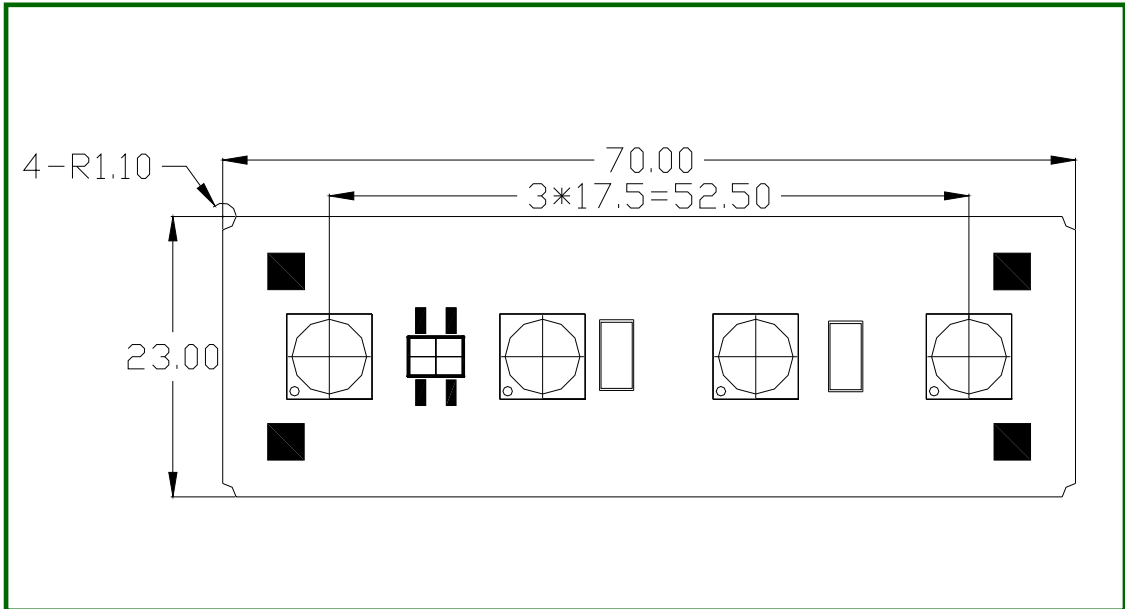
**Notes :**

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice



**Outline dimensions**

**2. AN4221**

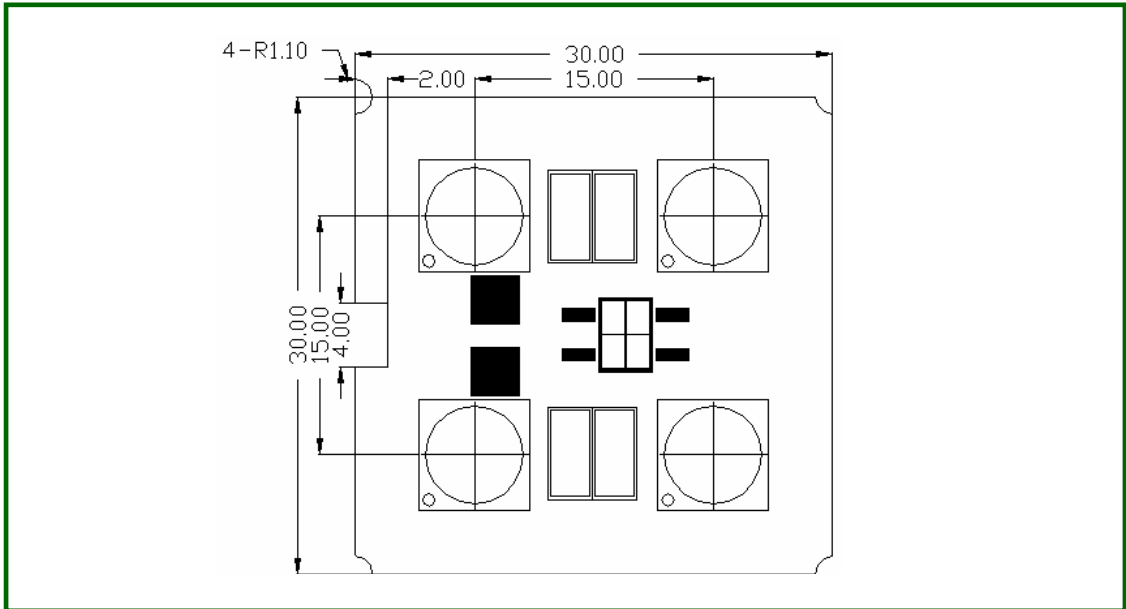


**Notes :**

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice

**Outline dimensions**

**3. AN4212**

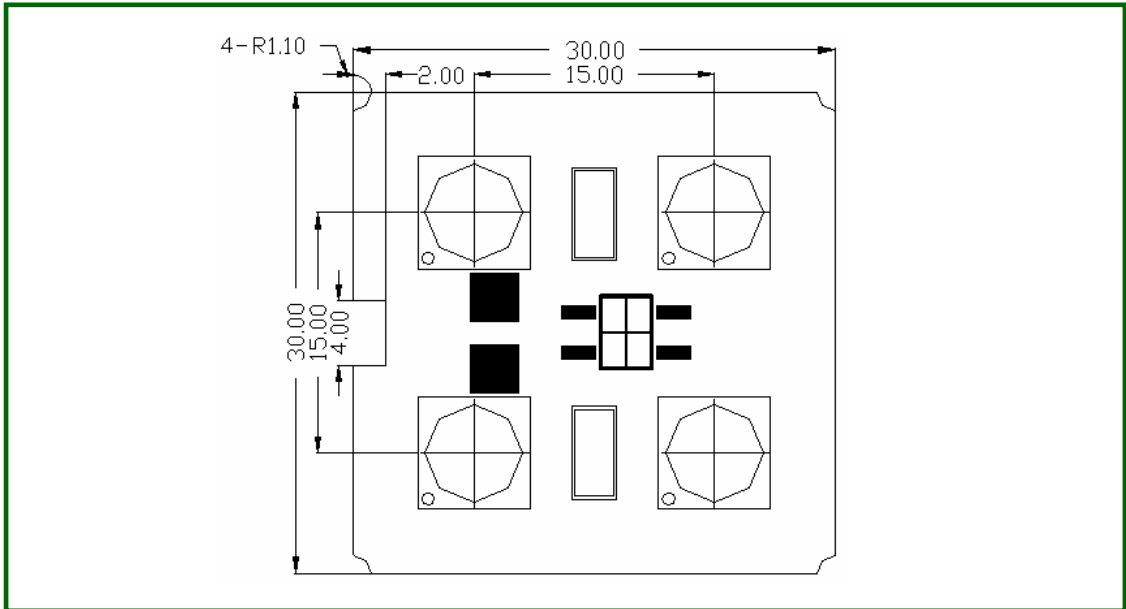


Notes :

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice

**Outline dimensions**

**4. AN4222**



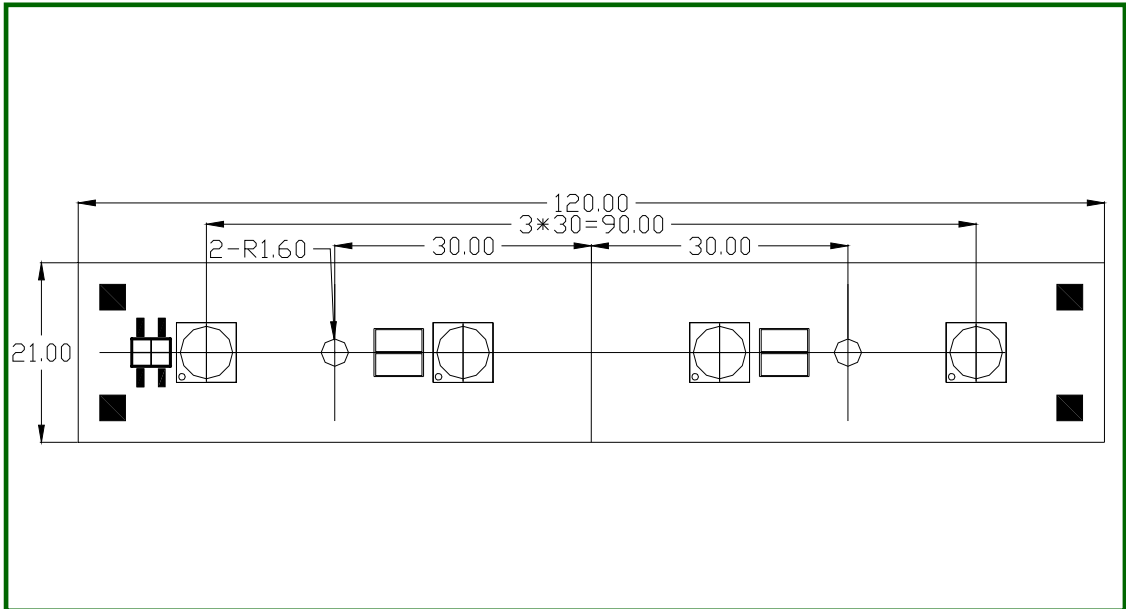
Notes :

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice



**Outline dimensions**

**5. AN4213**

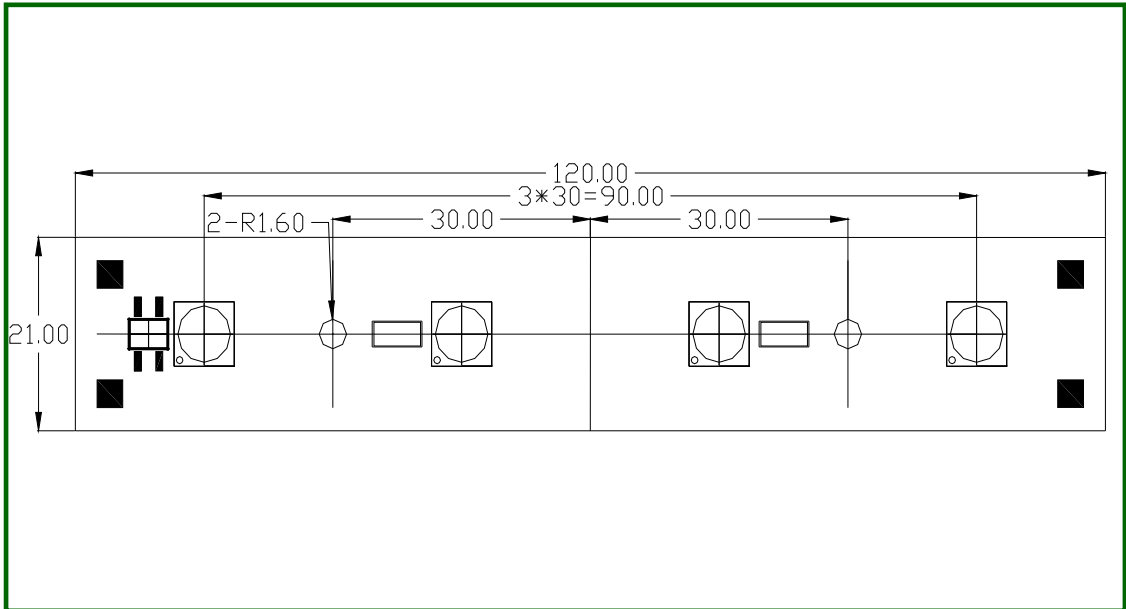


**Notes :**

- [1] All dimensions are in millimeters. (Tolerance : ±0.2)
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice

**Outline dimensions**

**6. AN4223**

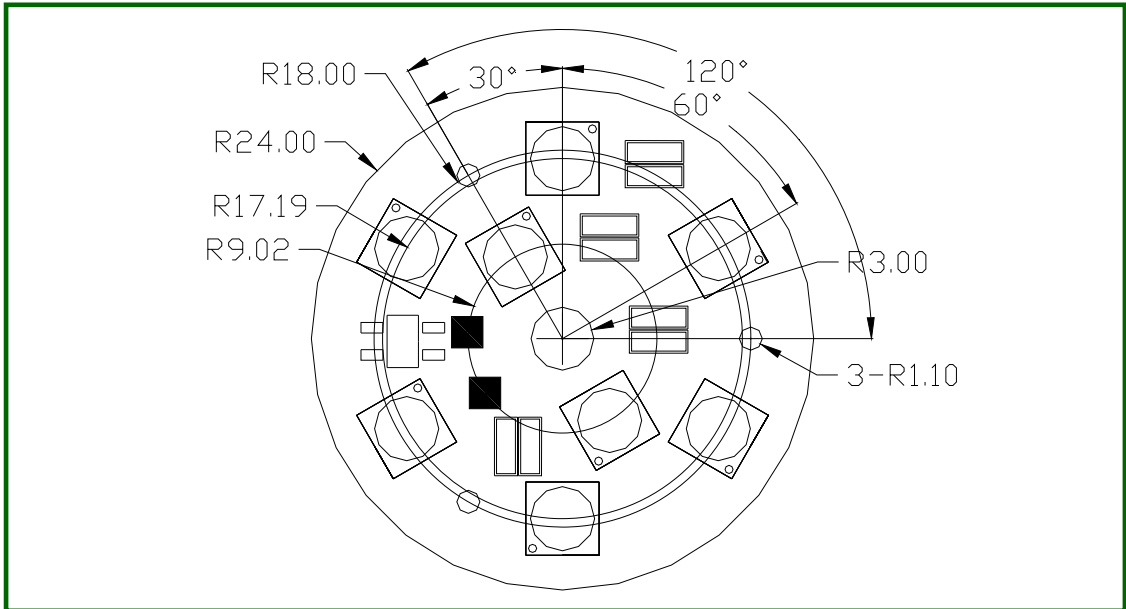


**Notes :**

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice

**Outline dimensions**

**7. AN4214**

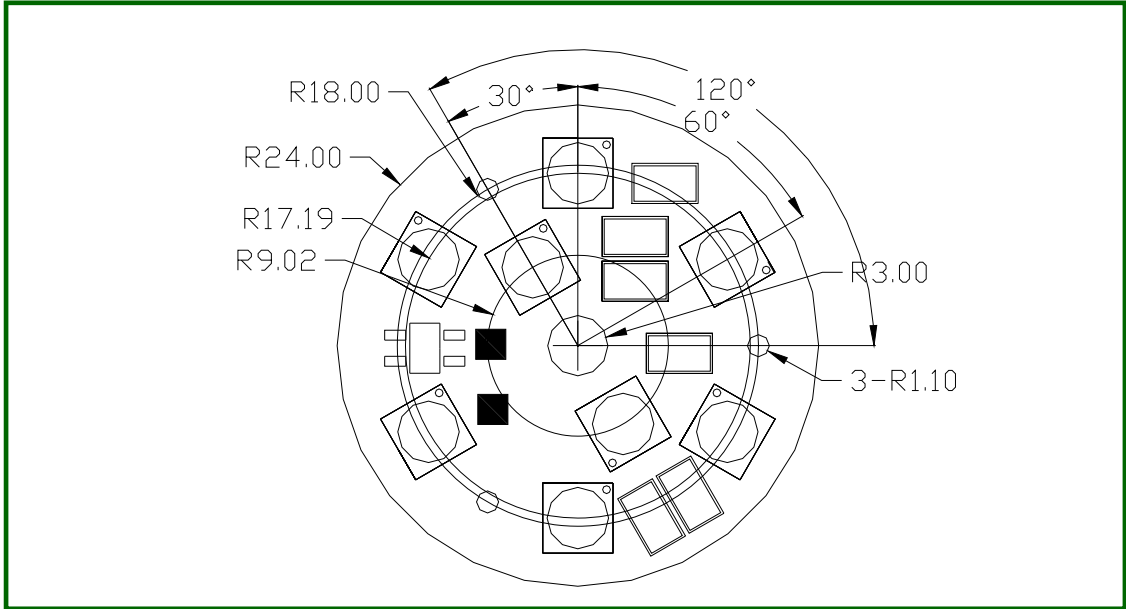


**Notes :**

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice

**Outline dimensions**

**8. AN4224**



**Notes :**

- [1] All dimensions are in millimeters. (Tolerance :  $\pm 0.2$ )
- [2] Scale : none
- [3] The appearance and specifications of the product may be changed for improvement without notice

## Characteristics of AN4240 module

### 1. AN4211/ AN4212/ AN4213

1-1 Electro-Optical characteristics at 110V[RMS] Ta=25°C

| Parameter                        | Symbol       | Value   |      |     | Unit        |
|----------------------------------|--------------|---------|------|-----|-------------|
|                                  |              | Min     | Typ  | Max |             |
| Luminous Flux [1]                | $\Phi_V$ [2] | -       | 200  | -   | lm          |
| Illuminance [3]                  | $\Phi_I$     | -       | -    | -   | lx          |
| Correlated Color Temperature [4] | CCT          | -       | 3000 | -   | K           |
| CRI                              | $R_a$        | -       | 85   | -   | -           |
| Operating Current                | $I_{opt}$    | -       | 40   | -   | mA<br>[RMS] |
| Power Dissipation                | $P_D$        | 4       |      |     | W           |
| Operating Frequency              | Freq         | 50 / 60 |      |     | Hz          |

1-2 Absolute Maximum Ratings

| Parameter             | Symbol    | Value       | Unit |
|-----------------------|-----------|-------------|------|
| Power Dissipation     | $P_D$     | -           | W    |
| Junction Temperature  | $T_j$     | 125         | °C   |
| Operating Temperature | $T_{opr}$ | -30 ~ +85   | °C   |
| Storage Temperature   | $T_{stg}$ | -40 ~ +120  | °C   |
| ESD Sensitivity       | -         | ±6,000V HBM | -    |

\*Notes :

- [1] Acriche series maintains a tolerance of ±10% on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT ±5% tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of solder pad should be below 70 °C.

## Characteristics of AN4240 module

### 2. AN4221/ AN4222/ AN4223

2-1 Electro-Optical characteristics at 220V[RMS] Ta=25°C

| Parameter                        | Symbol       | Value   |      |     | Unit        |
|----------------------------------|--------------|---------|------|-----|-------------|
|                                  |              | Min     | Typ  | Max |             |
| Luminous Flux [1]                | $\Phi_V$ [2] | -       | 200  | -   | lm          |
| Illuminance [3]                  | $\Phi_I$     | -       | -    | -   | lx          |
| Correlated Color Temperature [4] | CCT          | -       | 3000 | -   | K           |
| CRI                              | $R_a$        | -       | 85   | -   | -           |
| Operating Current                | $I_{opt}$    | -       | 20   | -   | mA<br>[RMS] |
| Power Dissipation                | $P_D$        | 4       |      |     | W           |
| Operating Frequency              | Freq         | 50 / 60 |      |     | Hz          |

2-2 Absolute Maximum Ratings

| Parameter             | Symbol    | Value       | Unit |
|-----------------------|-----------|-------------|------|
| Power Dissipation     | $P_D$     | -           | W    |
| Junction Temperature  | $T_j$     | 125         | °C   |
| Operating Temperature | $T_{opr}$ | -30 ~ +85   | °C   |
| Storage Temperature   | $T_{stg}$ | -40 ~ +120  | °C   |
| ESD Sensitivity       | -         | ±6,000V HBM | -    |

\*Notes :

- [1] Acriche series maintains a tolerance of ±10% on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT ±5% tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of solder pad should be below 70 °C.



## Characteristics of AN4240 module

### 3. AN4214

#### 3-1 Electro-Optical characteristics at 110V[RMS] Ta=25°C

| Parameter                                   | Symbol                  | Value   |      |     | Unit        |
|---------------------------------------------|-------------------------|---------|------|-----|-------------|
|                                             |                         | Min     | Typ  | Max |             |
| Luminous Flux <sup>[1]</sup>                | $\Phi_V$ <sup>[2]</sup> | -       | 400  | -   | lm          |
| Illuminance <sup>[3]</sup>                  | $\Phi_I$                | -       | -    | -   | lx          |
| Correlated Color Temperature <sup>[4]</sup> | CCT                     | -       | 3000 | -   | K           |
| CRI                                         | R <sub>a</sub>          | -       | 85   | -   | -           |
| Operating Current                           | I <sub>opt</sub>        | -       | 80   | -   | mA<br>[RMS] |
| Power Dissipation                           | P <sub>D</sub>          | 8       |      |     | W           |
| Operating Frequency                         | Freq                    | 50 / 60 |      |     | Hz          |

#### 3-2 Absolute Maximum Ratings

| Parameter             | Symbol           | Value       | Unit |
|-----------------------|------------------|-------------|------|
| Power Dissipation     | P <sub>D</sub>   | -           | W    |
| Junction Temperature  | T <sub>j</sub>   | 125         | °C   |
| Operating Temperature | T <sub>opr</sub> | -30 ~ +85   | °C   |
| Storage Temperature   | T <sub>stg</sub> | -40 ~ +120  | °C   |
| ESD Sensitivity       | -                | ±6,000V HBM | -    |

\*Notes :

- [1] Acriche series maintains a tolerance of ±10% on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT ±5% tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of solder pad should be below 70 °C.

## Characteristics of AN4240 module

### 4. AN4224

#### 4-1 Electro-Optical characteristics at 220V[RMS] Ta=25°C

| Parameter                                   | Symbol                  | Value   |      |     | Unit        |
|---------------------------------------------|-------------------------|---------|------|-----|-------------|
|                                             |                         | Min     | Typ  | Max |             |
| Luminous Flux <sup>[1]</sup>                | $\Phi_V$ <sup>[2]</sup> | -       | 400  | -   | lm          |
| Illuminance <sup>[3]</sup>                  | $\Phi_I$                | -       | -    | -   | lx          |
| Correlated Color Temperature <sup>[4]</sup> | CCT                     | -       | 3000 | -   | K           |
| CRI                                         | $R_a$                   | -       | 85   | -   | -           |
| Operating Current                           | $I_{opt}$               | -       | 40   | -   | mA<br>[RMS] |
| Power Dissipation                           | $P_D$                   | 8       |      |     | W           |
| Operating Frequency                         | Freq                    | 50 / 60 |      |     | Hz          |

#### 4-2 Absolute Maximum Ratings

| Parameter             | Symbol    | Value       | Unit |
|-----------------------|-----------|-------------|------|
| Power Dissipation     | $P_D$     | -           | W    |
| Junction Temperature  | $T_j$     | 125         | °C   |
| Operating Temperature | $T_{opr}$ | -30 ~ +85   | °C   |
| Storage Temperature   | $T_{stg}$ | -40 ~ +120  | °C   |
| ESD Sensitivity       | -         | ±6,000V HBM | -    |

\*Notes :

- [1] Acriche series maintains a tolerance of ±10% on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT ±5% tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of solder pad should be below 70 °C.

**VF Bin & Resistor Value**

|                                     |               |                       |                       |               |
|-------------------------------------|---------------|-----------------------|-----------------------|---------------|
|                                     | <b>VF Bin</b> | <b>R1, R3</b>         | <b>R2, R4</b>         |               |
| <b>AN4211<br/>AN4212<br/>AN4213</b> | A             | 3000                  | 3000                  |               |
|                                     | B             | 2700                  | 3000                  |               |
|                                     | C             | 2000                  | 3300                  |               |
|                                     | D             | 2000                  | 2700                  |               |
|                                     | <b>VF Bin</b> | <b>R1</b>             | <b>R2</b>             |               |
| <b>AN4221<br/>AN4222<br/>AN4223</b> | A             | 1500                  | 1500                  |               |
|                                     | B             | 1000                  | 1800                  |               |
|                                     | C             | 1000                  | 1500                  |               |
|                                     | D             | 1000                  | 1300                  |               |
|                                     | <b>VF Bin</b> | <b>R1, R3, R5, R7</b> | <b>R2, R4, R6, R8</b> |               |
| <b>AN4214</b>                       | A             | 3000                  | 3000                  |               |
|                                     | B             | 2700                  | 3000                  |               |
|                                     | C             | 2000                  | 3300                  |               |
|                                     | D             | 2000                  | 2700                  |               |
|                                     | <b>VF Bin</b> | <b>R3, R5</b>         | <b>R1, R4</b>         | <b>R2, R6</b> |
| <b>AN4224</b>                       | A             | 820                   | 4420                  | 4420          |
|                                     | B             | 430                   | 3900                  | 4300          |
|                                     | C             | 820                   | 3600                  | 3600          |
|                                     | D             | 820                   | 3000                  | 3000          |

## Precaution for use

- [1] Acriche series run on high voltage such as 110 V or 220 V.
- [2] Please don't touch the PCB surface, which has built-in terminals and chips, with your hands or metals, while Acriche series is running.
- [3] Please don't add or change wires, while Acriche series is running.
- [4] LED ASS'Y should be attached to customer product properly and be careful twist or bend when it is assembled.
- [5] LED ASS'Y should be kept from mechanical or electrical shock cause physical damage to the module.
- [6] Do not disassemble the module.
- [7] During processing, mechanical stress on the surface should be minimized as much as possible. Sharp object of all types should not be used to pierce the LED resin.

## ESD protection

- (1) Ionizer, earthing and keeping appropriate humidity are necessary for work environment.
- (2) Anti-static glove and grounded band must be used.

## Storage

- (1) Do not leave the module in high temperature and humidity conditions. Normal condition is recommended to store the module.  
(  $0^{\circ}\text{C} \leq T_a \leq 70^{\circ}\text{C}$  , relative humidity  $\leq 70\%$  )
- (2) Keep the module out of the direct rays of the sun.

## Operation

The module should be operated under the given forward voltage. When the module is operated in the excessive voltage or current conditions, the LEDs mounted on the PCB could be burned out.