



# 物料承认书

## APPROVAL SHEET

☒ RoHS

档案编号:

客户名称: 华秋电子  
Customer Name:

|      |                                                                                                                             |                                                       |                                                                 |
|------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------|
| 供应商  | 东莞市创慧电子有限公司                                                                                                                 |                                                       |                                                                 |
| 公司地址 | 东莞市谢岗镇金川工业区                                                                                                                 |                                                       |                                                                 |
| 物料名称 | 铝电解电容器                                                                                                                      | 物料名称                                                  | 铝电解电容器                                                          |
| 物料编码 | CD1102G330M                                                                                                                 | 物料品牌                                                  | CH                                                              |
| 物料规格 | 400V33uF                                                                                                                    | 供方电话                                                  | 0769-87633398                                                   |
| 物料尺寸 | D13X21L                                                                                                                     | 供方传真                                                  | 0769-87633399                                                   |
| 附件   | 物料规格书:                                                                                                                      | <input type="checkbox"/> N <input type="checkbox"/> Y | ROHS检测报告: <input type="checkbox"/> N <input type="checkbox"/> Y |
|      | 样品测试报告:                                                                                                                     | <input type="checkbox"/> N <input type="checkbox"/> Y | IQC样品: <input type="checkbox"/> N <input type="checkbox"/> Y    |
| 备注   | <input type="checkbox"/> 新机型物料 <input type="checkbox"/> 物料变更 <input type="checkbox"/> 增加/变更供应商 <input type="checkbox"/> 其它: |                                                       |                                                                 |
|      |                                                                                                                             |                                                       |                                                                 |

### 客户确认栏

|                |               |                |    |
|----------------|---------------|----------------|----|
| 批准<br>Approver | 审核<br>Checker | 制作<br>Engineer | 盖章 |
|                |               |                |    |

日期:

|                |               |                |    |
|----------------|---------------|----------------|----|
| 供应商确认栏         |               |                |    |
| 批准<br>Approver | 审核<br>Checker | 制作<br>Engineer | 盖章 |
| 刘劲松            | 魏小容           | 邓瑶玲            |    |

日期:

2023/5/30

## CD110 Series

### Aluminum Electrolytic Capacitors

| Item Name   | Rating         | Case size |
|-------------|----------------|-----------|
| CD1102G330M | 400V33 $\mu$ F | D13X21L   |

#### 1. Operating Temp. Range

-40+105°C

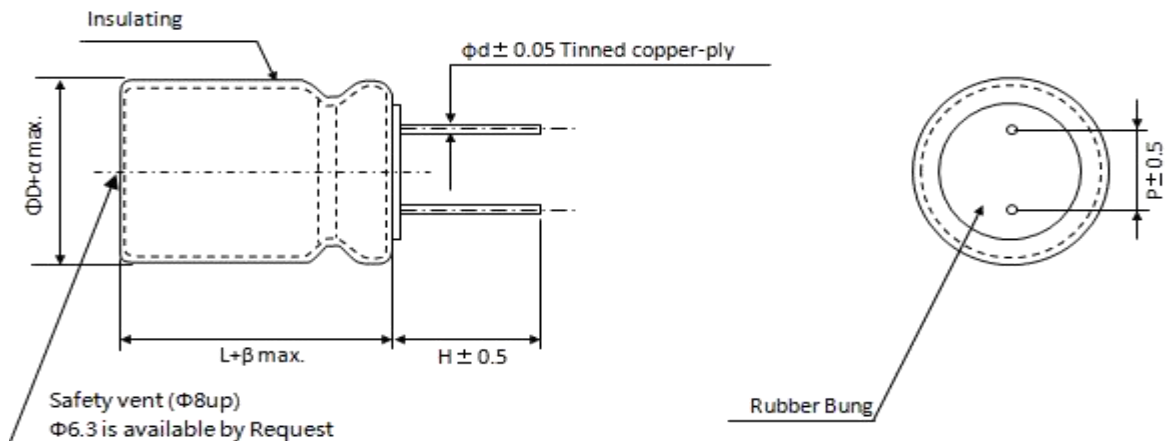
#### 2. Electrical Characteristics

See Table 1.

【Table 1】

| Rated Voltage VDC | Surge Voltage VDC | Nominal Static Capacitance ( $\mu$ F) | Tolerance on Capacitance (%) 20°C 120Hz | Dissipation Factor (tan $\delta$ ) max 20°C 120Hz | Leakage Current 2min. 20°C ( $\mu$ A) | Permissible Ripple Current (mA rms) 105°C 120Hz | Impedance ( $\Omega$ ) 100KHz 20°C |
|-------------------|-------------------|---------------------------------------|-----------------------------------------|---------------------------------------------------|---------------------------------------|-------------------------------------------------|------------------------------------|
| 400               | 450               | 33                                    | ±20%                                    | 0.20                                              | 279                                   | 211                                             | /                                  |

#### 3. Dimensions



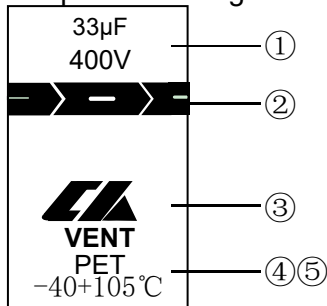
Unit(mm)

| ΦD | α   | L    | β   | Φd  | P   | H   |
|----|-----|------|-----|-----|-----|-----|
| 13 | 0.5 | 21.0 | 2.0 | 0.6 | 5.0 | 4.0 |

#### 4. Marking

Following items are printed with white colour on black colour sleeve

Example of Marking



- ① Rated Voltage & Nominal Capacitance
- ② Polarity (negative)
- ③ Trade Mark of CH
- ④ Product Series
- ⑤ Operating Temp. Range

#### 5. MULTIPLIER FOR RIPPLE CURRENT

##### ①. Frequency Coefficient

| Freq.(Hz)     | 50Hz | 120Hz | 300Hz | 1KHz | 10KHz |
|---------------|------|-------|-------|------|-------|
| Cap( $\mu$ F) |      |       |       |      |       |
| 33            | 0.75 | 1     | 1.35  | 1.55 | 2     |

##### ②. Temperature Coefficient

| Ambient Temperature(°C) | 40  | 60  | 70   | 85   | 105 |
|-------------------------|-----|-----|------|------|-----|
| Coefficient             | 2.4 | 2.1 | 1.78 | 1.65 | 1   |

## 6. Characteristics

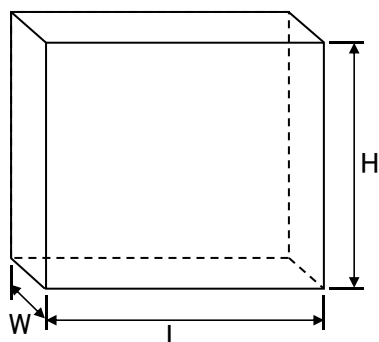
| No.                | Item                                | Performance                                                                                                                                                                                                                                                                                                                                                             |                    | Test Method                                                                                                                                                                           |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
|--------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------|---------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------|---|------|---|--------|---|--------|---|------|---|-------|---|------|
| 1                  | Leakage Current                     | $I \leq 279\mu A$                                                                                                                                                                                                                                                                                                                                                       |                    | Protection Resistor: 1000±10Ω<br>Applied Volt: Rated Voltage<br>Measuring time: 2 minutes                                                                                             |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 2                  | Static Capacitance                  | ±20%                                                                                                                                                                                                                                                                                                                                                                    |                    | Measured Frequency: 120Hz±20%<br>Measured Voltage:<br>≤ 0.5Vrms, 1.5 ~ 2.0VDC                                                                                                         |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 3                  | Dissipation Factor (tanδ)           | 0.20 and Under                                                                                                                                                                                                                                                                                                                                                          |                    | Same as condition of Capacitors                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 4                  | Load Life                           | <table><tr><td>Leakage Current</td><td>≤the value specified in Table 1</td></tr><tr><td>Cap. Change</td><td>≤±20% of initial value</td></tr><tr><td>Dissipation Factor</td><td>≤200% of value specified in Table 1</td></tr><tr><td>Appearance</td><td>No remarkable abnormality</td></tr></table>                                                                      | Leakage Current    | ≤the value specified in Table 1                                                                                                                                                       | Cap. Change        | ≤±20% of initial value              | Dissipation Factor                                      | ≤200% of value specified in Table 1  | Appearance                                                                                                             | No remarkable abnormality     | Test condition: 105±2°C 120Hz<br>Applied voltage: Rated voltage<br>Applied Ripple Current: 211mA <sub>rms</sub><br>Test Time: 2000 +72, -0 hours |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Leakage Current    | ≤the value specified in Table 1     |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Cap. Change        | ≤±20% of initial value              |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Dissipation Factor | ≤200% of value specified in Table 1 |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Appearance         | No remarkable abnormality           |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 5                  | Shelf Life                          | <table><tr><td>Leakage Current</td><td>≤the value specified in Table 1</td></tr><tr><td>Cap. Change</td><td>≤±20% of initial value</td></tr><tr><td>Dissipation Factor</td><td>≤200% of value specified in Table 1</td></tr><tr><td>Appearance</td><td>No remarkable abnormality</td></tr></table>                                                                      | Leakage Current    | ≤the value specified in Table 1                                                                                                                                                       | Cap. Change        | ≤±20% of initial value              | Dissipation Factor                                      | ≤200% of value specified in Table 1  | Appearance                                                                                                             | No remarkable abnormality     | Test Temp. : 105±2°C<br>No voltage applied<br>Test Time 1000 hours<br>+24, -0 hours                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Leakage Current    | ≤the value specified in Table 1     |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Cap. Change        | ≤±20% of initial value              |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Dissipation Factor | ≤200% of value specified in Table 1 |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Appearance         | No remarkable abnormality           |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 6                  | Terminal Strength                   | <table><tr><td>Tensile Strength</td><td>45N {4.5kg}</td></tr><tr><td>Bending Strength</td><td>25N {2.5kg}</td></tr></table>                                                                                                                                                                                                                                             | Tensile Strength   | 45N {4.5kg}                                                                                                                                                                           | Bending Strength   | 25N {2.5kg}                         | Keeping time<br>Tensile: 1 ~ 5 sec<br>Bending: 30±5 sec |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Tensile Strength   | 45N {4.5kg}                         |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Bending Strength   | 25N {2.5kg}                         |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 7                  | Impedance Ratio                     | <table><tr><td>Z(-25°C) /Z(+20°C)</td><td>10</td></tr><tr><td>Z(-40°C) /Z(+20°C)</td><td>0</td></tr></table>                                                                                                                                                                                                                                                            | Z(-25°C) /Z(+20°C) | 10                                                                                                                                                                                    | Z(-40°C) /Z(+20°C) | 0                                   |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Z(-25°C) /Z(+20°C) | 10                                  |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Z(-40°C) /Z(+20°C) | 0                                   |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 8                  | Temperature Characteristics         | <table><tr><td>Stage</td><td>Item</td><td>Performance</td></tr><tr><td>2,3</td><td>Impedance Ratio</td><td>less than the value mentioned in 6-7</td></tr><tr><td>5</td><td>Cap. Change</td><td>≤±25% against value in stage 4</td></tr></table> <p>After the capacitor is held at temperature of each stage and reaches temperature stability, measure performance.</p> | Stage              | Item                                                                                                                                                                                  | Performance        | 2,3                                 | Impedance Ratio                                         | less than the value mentioned in 6-7 | 5                                                                                                                      | Cap. Change                   | ≤±25% against value in stage 4                                                                                                                   | <table><tr><td>Stage</td><td>Test Temp(°C)</td></tr><tr><td>1</td><td>20±2</td></tr><tr><td>2</td><td>-25±3;</td></tr><tr><td>3</td><td>-40±3;</td></tr><tr><td>4</td><td>20±2</td></tr><tr><td>5</td><td>105±2</td></tr><tr><td>6</td><td>20±2</td></tr></table> |                                                                                                                                                                                  | Stage | Test Temp(°C) | 1 | 20±2 | 2 | -25±3; | 3 | -40±3; | 4 | 20±2 | 5 | 105±2 | 6 | 20±2 |
| Stage              | Item                                | Performance                                                                                                                                                                                                                                                                                                                                                             |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 2,3                | Impedance Ratio                     | less than the value mentioned in 6-7                                                                                                                                                                                                                                                                                                                                    |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 5                  | Cap. Change                         | ≤±25% against value in stage 4                                                                                                                                                                                                                                                                                                                                          |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Stage              | Test Temp(°C)                       |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 1                  | 20±2                                |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 2                  | -25±3;                              |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 3                  | -40±3;                              |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 4                  | 20±2                                |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 5                  | 105±2                               |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 6                  | 20±2                                |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 9                  | Surge Voltage                       | <table><tr><td>Item</td><td>Performance</td></tr><tr><td>Leakage Current</td><td>≤ the initial specified value</td></tr><tr><td>Cap. Change</td><td>≤ ±15% against value before test</td></tr><tr><td>Dissipation Factor</td><td>≤ the initial specified value</td></tr><tr><td>Appearance</td><td>No remarkable abnormality</td></tr></table>                          | Item               | Performance                                                                                                                                                                           | Leakage Current    | ≤ the initial specified value       | Cap. Change                                             | ≤ ±15% against value before test     | Dissipation Factor                                                                                                     | ≤ the initial specified value | Appearance                                                                                                                                       | No remarkable abnormality                                                                                                                                                                                                                                         | Test Temp.: 15 ~ 35°C<br>Test volt.: Surge Volt. Specified in 2<br>Voltage apply 1,000 times of charge for 30±5 sec, under frequency of 6±0.5 sec, and discharge for 5min 30sec. |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Item               | Performance                         |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Leakage Current    | ≤ the initial specified value       |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Cap. Change        | ≤ ±15% against value before test    |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Dissipation Factor | ≤ the initial specified value       |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Appearance         | No remarkable abnormality           |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 10                 | Vibration Resistance                | <table><tr><td>Capacitance</td><td>Stability required</td></tr><tr><td>Cap. Change</td><td>≤±5% of the initial specified value</td></tr><tr><td>Appearance</td><td>No remarkable abnormality</td></tr></table>                                                                                                                                                          | Capacitance        | Stability required                                                                                                                                                                    | Cap. Change        | ≤±5% of the initial specified value | Appearance                                              | No remarkable abnormality            | Frequency: 10 ~ 55Hz<br>Width of vibration: 1.5mm<br>Direction and duration:<br>X,Y and Z directions, each for 2 hours |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Capacitance        | Stability required                  |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Cap. Change        | ≤±5% of the initial specified value |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Appearance         | No remarkable abnormality           |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 11                 | Solderbility                        | 3/4 area of surrounding directions of surface should be covered with new solder.                                                                                                                                                                                                                                                                                        |                    | Solder: Sn-Ag, Sn-Cu Type<br>Soldering Temp: 240±5°C<br>Dipping degree: 2 ~ 2.5mm<br>Flux: Ethanol solution (JIS K8101) or Isopropylalcohol (JIS K8839) solution of Rosin (JIS K5902) |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| 12                 | Resistance to Soldering             | <table><tr><td>Leakage Current</td><td>≤ the initial specified value</td></tr><tr><td>Cap. Change</td><td>≤ ±15% against value before test</td></tr><tr><td>Dissipation Factor</td><td>≤ the initial specified value</td></tr><tr><td>Appearance</td><td>No remarkable abnormality</td></tr></table>                                                                    | Leakage Current    | ≤ the initial specified value                                                                                                                                                         | Cap. Change        | ≤ ±15% against value before test    | Dissipation Factor                                      | ≤ the initial specified value        | Appearance                                                                                                             | No remarkable abnormality     | Soldering Temp. 280±5°C<br>Soldering Time . 10±1sec.                                                                                             |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Leakage Current    | ≤ the initial specified value       |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Cap. Change        | ≤ ±15% against value before test    |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Dissipation Factor | ≤ the initial specified value       |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |
| Appearance         | No remarkable abnormality           |                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                       |                    |                                     |                                                         |                                      |                                                                                                                        |                               |                                                                                                                                                  |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                  |       |               |   |      |   |        |   |        |   |      |   |       |   |      |

## 6-2. Characteristics

| No. | Item                                  | Performance                                                                            | Test Method                                                                                         |                                                                                                                                              |
|-----|---------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 13  | Resistance to Humidity                | Leakage Current                                                                        | ≤ Initial specified value                                                                           | Test Temp. : 40±2℃<br>Humidity 90～95%<br>Test Time : 500 ± 8 hours<br>After the above condition, restored to normal temp, and then measured. |
|     |                                       | Cap. Change                                                                            | ≤±15% of initial value                                                                              |                                                                                                                                              |
|     |                                       | Dissipation Factor                                                                     | ≤ Initial specified value                                                                           |                                                                                                                                              |
|     |                                       | Appearance                                                                             | No remarkable abnormality                                                                           |                                                                                                                                              |
|     |                                       |                                                                                        |                                                                                                     |                                                                                                                                              |
| 14  | Pressure valve moment characteristics | Pressure valve open safely. There must be nothing ignition or scattering from product. | DC method: Apply an reverse current of 1A to impress the reverse voltage until pressure valve open. |                                                                                                                                              |

## 7. Packing method

Packaging shape, size, quantity



|                   |                |
|-------------------|----------------|
| Component size    | <b>D13X21L</b> |
| Quantity per case | <b>PCS</b>     |
| Symbol of box     | Y-2            |
| L                 | 480            |
| H                 | 320            |
| W                 | 320            |

## 8 Related Standards: JIS C 5141

## 9 Marking on packing box

- ① Item name
- ② Series name
- ③ Rated Voltage
- ④ Nominal Static Capacitance
- ⑤ Case size
- ⑥ Lot No.
- ⑦ Quantity

## 10 Soldering

10-1 Soldering by soldering iron

Temperature of iron top :  $270 \sim 350^\circ\text{C}$

Operating time : within 3 sec.

10-2 Flow soldering.

Preheat : PCB surface temperature  $120^\circ\text{C} \pm 5^\circ\text{C}$

Solder temp.:  $260^\circ\text{C} \pm 5^\circ\text{C}$

Solder dipping time: 2~4sec.

## 11 Cleaning of PC board after soldering

Some solvents is acceptable but make sure following condition:

Solvent:

IPA or Alcoholic agent like Pinealpa ST-100S, Cleanthrough 750H, 750L, 710M, 750K, or Technocare FRW-14~17

- ① Cleaning should be made by ultrasonic within 5min, at the temperature less then  $60^\circ\text{C}$ .
- ② Control of pollution is necessary.
- ③ Keep away from cleaning agent. Please do not store in air-tight container.  
Dry it by hot air, keep the temperature of air less than maximum operating temp.



# 东莞市创慧电子有限公司

DongGuan ChuangHui electronics Co.,Ltd.

## TEST DATA SHEET OF ELECTROLYTIC CAPACITORS (检测数据表)

|                  |            |                         |             |
|------------------|------------|-------------------------|-------------|
| DATE (日期):       | 2023/5/30  | QUANTITY (数量):          | 10 PCS      |
| CUSTOMER (客户):   | 华秋电子       | BRAND/SERIES (商标 / 系列): | CH CD110    |
| RATINGS (规格):    | 400V33uF   | CASE SIZE (尺寸):         | D13X21L     |
| LEAD PITCH (脚距): | 5.0 ±0.5mm | LEAD DIA. (引线直径):       | 0.6 ±0.05mm |

|      |                                     |                         |                                        |                                   |                                             |                    |                 |
|------|-------------------------------------|-------------------------|----------------------------------------|-----------------------------------|---------------------------------------------|--------------------|-----------------|
| Item | Capacitance Tolerance at 120Hz 20°C | Max. Tanδ at 120Hz 20°C | Max. Leakage Current (μA) after 2 min. | Max. Impedance (Ω) at 100KHz 20°C | Max. Ripple Current (mArms) at 120Hz 105 °C | Working Temp. (°C) | Surge Volt. (V) |
| Spec | ±20%                                | 20%                     | 279.0                                  | /                                 | 211                                         | -40+105°C          | 450             |

| No.  | Capcitanace<br>(μF) | Tanδ<br>(%) | Leakage<br>Current(μA) | Impedance<br>(Ω) | Remarks |     |
|------|---------------------|-------------|------------------------|------------------|---------|-----|
| 1    | 30.9                | 3.1         | 33.2                   |                  |         |     |
| 2    | 30.0                | 3.3         | 25.7                   |                  |         |     |
| 3    | 30.5                | 3.5         | 32.1                   |                  |         |     |
| 4    | 30.0                | 3.5         | 31.3                   |                  |         |     |
| 5    | 30.9                | 3.1         | 27.6                   |                  |         |     |
| 6    | 30.2                | 3.5         | 40.8                   |                  |         |     |
| 7    | 30.9                | 3.5         | 28.7                   |                  |         |     |
| 8    | 30.4                | 3.2         | 36.6                   |                  |         |     |
| 9    | 30.1                | 3.2         | 37.6                   |                  |         |     |
| 10   | 30.4                | 3.5         | 37.6                   |                  |         |     |
| MIN. | 30.0                | 3.1         | 25.7                   |                  |         |     |
| MAX. | 30.9                | 3.5         | 40.8                   |                  |         |     |
| AVE. | 30.4                | 3.3         | 33.1                   |                  |         |     |
| 核准   |                     | 刘劲松         | 审核                     | 魏小容              | 制作      | 邓瑶玲 |