专业铝电解电容器生产商

CUSTOMER:_____

JIA WEI CHENG ELECTRONICS CO.,LTD

SPECIFICATION FOR APPROVAL

ITEM: HLK 100V 2200μF 25*40

NAME: Aluminium Electrolytic Capacitor

PART NO: HLK222M2ABKJ2540EBK

DATE: July. 24th, 2025

After signing, please kindly return one copy. Thanks.

专业铝电解电容器生产商

樣品規格目錄

TO: DATE:2025.7.24

序號	電容料號	規格	尺寸	數量	特性	備注
1	HLK222M2ABKJ2540EBK	2200uF/100V	25*40	10	牛角品	黑色膠管
	以下空白					

专业铝电解电容器生产商

鋁電解電容參數檢測報告

AL.Electrolytic Capacitors Test Report

Customer 客戶：

Part No 客戶料號：

Series 系列：HLK

Size 尺寸：Φ 25 X 40

Temperature Range 耐溫：-25 ℃~ +105 ℃

CP Wire Dimension 引線直徑：1.5 mm

Produce Date 日期：2025 年 7 月 24 日

JWCO P/N 料号：HLK222M2ABKJ2540EBK

Description 規格：2200 μF 100 WV

QTY 數量：10 PCS

Cap. Tolerance 容差：-20 %~ +20 %

Inspection Warranty 檢驗依據：JIS C 5141

Test Condition 測試環境：

Temperature 溫度：23 ℃

Relative Humidity 相對濕度：60 RH%

Frequency 頻率：120 HZ

CRITERIA 標準：

Cap. Range 容量范圍：1760 μF~ 2640 μF

Dissipation Factor 損失角：20 % Max

Leakage current 漏電流：2200 μA/2Min/ Max

TEST DATA 檢驗數據：

項目 Item / 編號 NO:	Capacitance(μF) 靜電容量	Dissipation Factor(%) 損失角	Leakage.Current (μA) 漏電流	REMARK 備注
	1760 μF~2640 μF	≦ 20 %	≦2200 μA	黑色
1	2106.8	7.68	359	105 度
2	2110.3	7.69	363	
3	2112.2	7.73	368	
4	2110.9	7.65	358	
5	2109.5	7.76	357	
6	2108.8	7.73	363	
7	2112.3	7.81	366	
8	2115.2	7.69	359	
9	2110.6	7.82	368	
10	2112.3	7.79	359	
$\bar{X}$	**2110.89**	**7.735**	**362.0**	
判定				
OK				

LCR METER 容量測試儀名稱：Chen Hwa1062A

Leakage Current METER 漏電流測試儀名稱：Chen Hwa 202A CLC

核準 Approved By	復核 Checked By	檢驗 Test By

专业铝电解电容器生产商

黄小珍	江 蓉	品檢-01

ESTIMATION 總判定： 合格

HLK 2200 μF 100 V

Size: 25*40

Feature

- working voltage range : **100** V
- Surge voltage range : **125** V

- Operating tcmp. . Range : **-40** to **105** ℃
- Rate capacitance range : **1760** uF to 2640 uF
- DC leakage current (uA) : 2200 uA
  (After **2** minutes application of DC working voltage at 25℃)
- Dissipation factor : at **120** Hz, 25℃, **20** %(Max)
- Ripple current : at **120** Hz, 105℃, 3030 mA

Load Life (2000 hours)

Capacitance change……...Within 20% of initial value

Dissipation Factor ……Not exceed 200% of initial requirement

DC leakage current……Not exceed the initial requirement

Shelf Life : 1000 hours no voltage applied

Capacitance change……:within 20% of initial value

Dissipation Factor……:Not exceed 200% of initial requirement

D C leakage current……:Not exceed 500% of initial requirement

.

CORPORATION

Performance Characteristics

1. General Characteristics

1.1 Marking:

Capacitors shall be marked with **JWCO** mark, rated capacitance,

rated DC working voltage

The cathode lead will be identified with minus signs (-) on the side of the case

1.2 Operating Temperature Range:

These capacitors are designed to operate over a temperature range of -40 to +105℃

At -40℃ capacitance shall retain at least 70% of their original 25℃ measured capacitance. At +105℃, capacitance shall increase to no more than 120% of their original 25℃ measured capacitance.

1.3 Vent Test(applies only to those capacitors with vents)

During and after the applicable test below (1.3.1) there shall be no explosion, flash, flame or expulsion of particles of the core or container

In addition, the case shall not be expelled from the core. If the capacitor under test is a multisection unit , this test shall apply to the input section only.

1.3.1 DC test, Capacitors with DC rating volts or less:

Both of the following tests shall be performed, but on separate test units.

1.3.1.1 Forward Bias Test;

The capacitor under test shall be connected to a DC power supply that has sufficient voltage to supply a constant direct current of 500 milliamperes with the positive terminal of the capacitor connected to the positive supply terminal and the negative capacitor terminal connected to the negative supply terminal. The constant current shall be maintained until (1) the capacitor vents, (2)300 seconds have elapsed ,or (3) the capacitor under test open circuits

1.3.1.2 Reverse Bias Test:

The capacitor under test shall be connected to a power supply with sufficient voltage to provide a Constant direct current of 500 milliamperes

when the positive capacitor terminal is connected to the negative supply terminal and the negative capacitor terminal to the positive supply terminal .The constant current shall be maintained until(1)the capacitor vents, (2)300 seconds have elapsed, or (3) the capacitor open circuits.

2. Mechanical Characteristics

2.1 Lead pull test:

2.1.1 That with diameter of lead wire less than 0.5mm and case size less than10mm be capable of with standing a steady pull of 0.5kg for a period of 10 seconds.

2.1.2 That with diameter of lead wire between 0.6 to 0.8mm be capable of with standing a steady pull of 1kg for a period of 10 seconds.

2.1.3 That with diameter of lead wire larger than 0.8mm be capable of withstanding a steady pull of 2.5kg for a period of 10 seconds.

3. Electrical Characteristics

3.1 Standard Test Conditions:

Unless other wise specified all tests shall be performed at, or referred to an ambient temperature 0f 25℃ and a relative humidity not greater than 50%

3.2 Capacitance and Dissipation Factor:

Measurements shall be made on a capacitance bridge capable of = 2% accuracy on capacitance and dissipation factor measurements.

Measurements shall be made at 120 HZ The RMS value of the AC measuring voltage shall not exceed 1.0 volt.

3.3 Leakage Current:

3.3.1 Pre-conditioning: Rated working voltage shall be applied to capacitors for a minimum period of 15 minutes duration at least 24 hours and not more than 48 hours before test.

3.3.2 Test: Measurements shall be made after 3 minutes charge at rated working voltage at 25℃with an application of a steady source of power.

3.4 Surge Voltage:

The surge DC rating is the maximum voltage to which the capacitor should be subjected under any condition. This includes transients and peak ripple at the highest line voltage.

3.4.1 Capacitors connect in series with 1000 ohm resisters shall with stand surge test voltage applied at the rated of 1/2 minute on,4 1/2 minutes off, for 1000 successive test cycles at 25℃.

3.5 Humidity Test:

Capacitors shall be subjected to a temperature of 40±2℃ at relative humidity of 95-98% for a period of 100 hours. Then air dried for 1 hour. Following this condition, capacitors shall meet the specified requirements for dissipation factor & DC leakage current, and the capacitance value shall not change more than 10%.

4. Life and Reliability Test

4.1 Life Test:

4.1.1 Rated voltage shall be applied to the capacitors for a period of 2000 hours while units are maintained at an ambient temperature of 105℃

4.1.2 Capacitors shall then be removed from the test chamber and return to room temperature.

4.1.3 The Capacitance shall then be measured in accordance with section 3.2 it shall not decrease to less than 80%of the capacitance at 25℃,measured prior to the test, nor shall it increase to more than120% of the original 25℃ value.

4.1.4 The dissipation factor shall be measured in accordance with section 3.2 The dissipation factor shall not exceed 200% of the initial requirement.

4.1.5 At the conclusion of the test, the leakage current shall not exceed the initial DC leakage current requirement Measurements shall be made in accordance with section 3.3.

4.2 Shelf Test:

After storage for 1000 hours at 105℃ with no voltage applied the capacitance shall not decrease to less than 80% of the capacitance at 25℃ and dissipation factor shall meet the initial requirements of section **4.1.4,** the DC leakage current measured in accordance with section 3.3 shall not exceed 200% of the initial requirement for the capacitor (or not exceed the initial DC leakage current requirement).

5. Maximum Ripple Current:

5.1 Maximum RMS ripple current at 105℃ 120Hz is given in the table

5.2 When capacitors are operated at temperatures other than 105℃,and frequency other than 120Hz , the maximum RMS ripple currents must be multiplied by the factors shown in below table

Ripple Current multiplier frequency. Vs Temp

FREQUENCY	TEMPERATURE					
Hz		25℃	45℃	65℃	85℃	105℃
60	1.4	1.2	1.0	0.8	0.6	
120	2.0	1.7	1.3	1.0	0.7	
400	2.2	1.9	1.4	1.1	0.8	
1000	2.4	2.1	1.6	1.2	0.9	
100K	2.6	2.2	1.7	1.3	1.0	

6. Ripple Voltage:

Ripple voltage must not exceed the following:

The Sum of the DC voltage plus the AC ripple voltage must not exceed the rated DC voltage The DC Voltage plus the peak AC voltage must not cause a voltage reversal more than 1.5 volts.

7. Insulating:

General series of aluminum electrolytic capacitors are covered with a vinyl sleeve or the like And this Sleeve is used for marking, when the internal element or the container is needed to be insulated capacitors specially designed for insulation requirement are recommended to be used.

8. Soldering:

8.1 When soldering a printed circuit board with various components, too high soldering temperature or too long dipping times may cause secondary shrinking of the sleeve which unnecessarily exposes the container. Soldering is allowed to perform at less than 260℃ for less than 10 seconds.

8.2 Soldering may melt or break the sleeve if the sleeve is contacted with circuit patterns To avoid this trouble the capacitors are recommended to be slightly apart from the circuit boards.

9. Vent:

The capacitors are provided with a pressure resistive controlled safety vent formed on the bottom of the Container. The vent is designed to rupture in the event that higher internal pressure is developed by Circuit malfunction or capacitor misuse.

10. High Altitude:

These capacitors are capable of withstanding in transit conditions where storage temperature may range from -40to+105℃and the altitude may reach 200,000 feet.

11. Cleaning Agents:

Halogenated hydrocarbon cleaning solvents are not recommended for use in cleaning capacitors supplied With exposed end seals where cleaning with a halogenated solvent is desired, capacitors should be ordered with a Epoxy-coated end seal.