



承 认 书

DATA SHEET

Customer name: _____

BERYL SERIES: BC TYPE: RADIAL

DESCRIPTION : 500 μ F/7.5V Φ 5.5*8L

绿宝石料号BERYLP/N: BC7R5M501PT5.5*8L-1A42R5TRDB

Apply date : 2019-11-20

| BERYL | | | CUSTOMER | | |
|----------|---------|----------|----------|---------|----------|
| P/N: | | | P/N: | | |
| PREPARED | CHECKED | APPROVAL | PREPARED | CHECKED | APPROVAL |
| 王丽 | 邹建明 | 伍小军 | | | |

Zhao Qing Beryl Electronic Technology Co., Ltd.

TEL: (0758) 2862871 FAX: (0758) 2862870

E-mail: master@zq-beryl.com <http://www.zq-beryl.com>

NO.8 DUANZHOU ROAD, ZHAOQING CITY. GUANGDONG. CHINA

After the product certification, please sign a copy, if you do not sign the acknowledgment before the formal order, it is considered that the user has defaulted our relevant standards and technical indicators.

[illegible]



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

1、Application

This specification applies to Aluminum electrolytic capacitor (foil type) used in electronic equipment.
Designed capacitor's quality meets IEC 60384.

2、Table of specification and characteristics

| Series | Cap(uF) 120Hz/20℃ | WV(V) | Size | Temperature (℃) | Life(hours) |
|---------------------------|--------------------------|-----------------------------|---------------------------|--------------------|-------------|
| BC | 500 | 7.5 | 5.5*8 | -55-105℃ | 2000 |
| DF (%) (MAX) 120Hz/20℃ | LC(μA) (MAX) 2min/20℃ | ESR(mΩ) (MAX) 100KHz/20℃ | RC (mArms) (MAX)100KHz | Surge voltage(V) | |
| 12 | 750 | 16 | 3100 | 8.625 | |

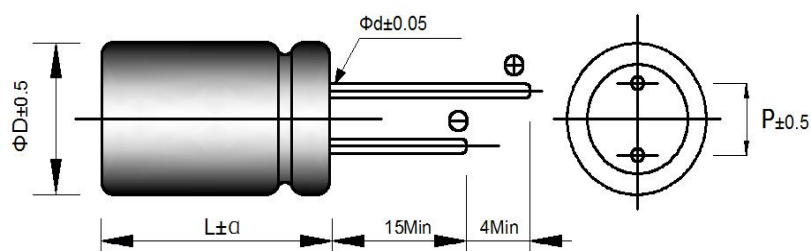
Other:

Frequency Multipliers:

| 频率 Frequency(Hz) | 60Hz | 120HZ≤f < 1KHZ | 1KHZ≤f < 10KHZ | 10KHZ≤f < 100KHZ | 100KHZ≤f < 500KHZ |
|---------------------|------|----------------|----------------|------------------|-------------------|
| 系数Coefficient | 0.04 | 0.05 | 0.30 | 0.70 | 1.00 |

3、Product Dimensions

Standard Type



| ΦD | L | Φd | P |
|---------|-------|----------|---------|
| 5.5±0.5 | 8±1.0 | 0.5±0.05 | 2.0±0.5 |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

4、Part Number

| | | | | | |
|----|-----|---|-----|----|-------|
| BC | 7R5 | M | 501 | LO | 5.5*8 |
|----|-----|---|-----|----|-------|

Size:D*L

TYPE CODE DESCRIPTION

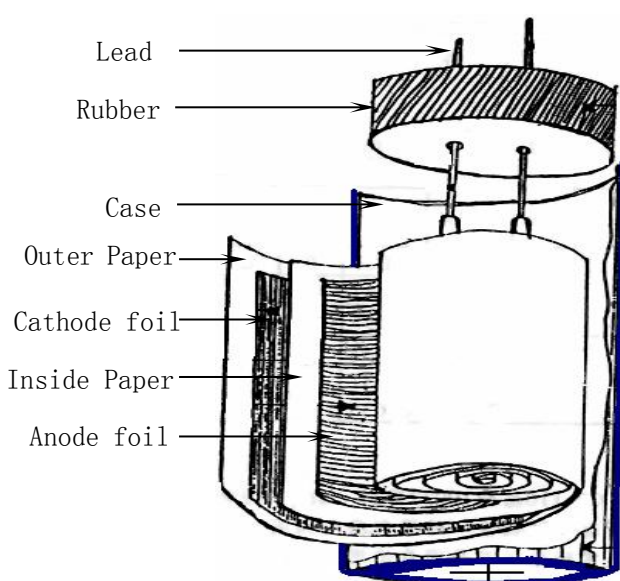
RATED CAPACITANCE: 501=500uF

CAPACITANCE TOLERANCE:M=±20%

RATED VOLTAGE:7R5=7.5V

SERIES NAME

5、Construction



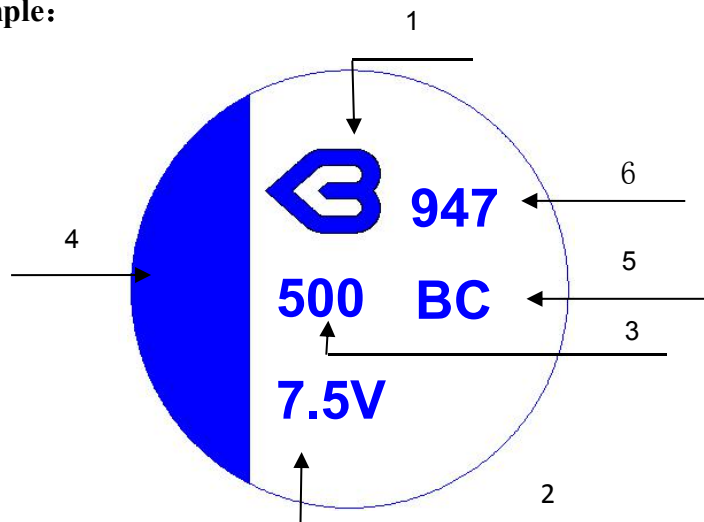
| Material name | Composition | Supplier name |
|---------------|-------------------------------------|---------------------------------|
| Lead | Al and (Fe+Cu+Sn) | Nan Ming(Quan Yong)、Jin Lian fu |
| Rubber | EPT / IIR | Lian An 、 Lian Hua Xin |
| Case | Aluminum+Coating | Yi Peng、Ao Xing |
| Paper | Wood / Fibrous plant materials | KAN、NKK |
| Anode foil | Al + Al ₂ O ₃ | KDK、Heng Yang、JCC |
| Cathode foil | Aluminum | JCC、TOYO、Na Nuo |
| Dielectrics | Poly3,4-Ethylene Dioxy Thiophene | BERYL |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

6、Product Marking

Marking Sample:



Marking Details:

Capacitor shall be marked the following items:

- 1) Trademark (BERYL)
- 2) working voltage
- 3) Nominal capacitance
- 4) Cathode marked
- 5) Series
- 6) Date code

19: Manufactured year 2019

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|-------|
| Code | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| Year | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | |

16: Manufactured week (01、02、03、04.....51、52)



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

7、Characteristics

Standard atmospheric conditions

Unless other specified, the standard range of atmospheric conditions for making measurements and tests is as follows:

Ambient temperature : 15°C to 35°C

Relative humidity : 45% to 85%

Air pressure : 86kPa to 106kPa

If there is any doubt about the results, measurement shall be made within the following conditions:

Ambient temperature : 20°C ± 2°C

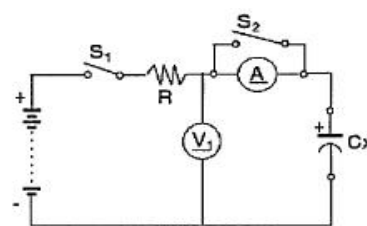
Relative humidity : 60% to 70%

Air pressure : 86kPa to 106kPa

Operating temperature range

The ambient temperature range at which the capacitor can be operated continuously at rated voltage is -55°C to +105°C.

Table

| ITEM | | PERFORMANCE |
|------|---------------------------------|--|
| 1 | Nominal capacitance (Tolerance) | <p><Condition> Measuring Frequency: 120Hz±12Hz Measuring Voltage: Not more than 0.5Vrms +1.5~2.0V.DC Measuring Temperature: 20±2°C</p> <p><Criteria> Shall be within the specified capacitance tolerance.</p> |
| 2 | Leakage current | <p><Condition> Connecting the capacitor with a protective resistor (1kΩ±10Ω) in series for 2 minutes, and then, measure leakage current.</p> <p><Criteria> I: Leakage current (μA) $I (\mu A) \leq 0.2CV \text{ or } 500 (\mu A)$ whichever is greater, measurement circuit refer to right drawing. C: Capacitance (μF) V: Rated DC working voltage (V)</p>  |
| 3 | Dissipation factor | <p><Condition> Nominal capacitance, for measuring frequency, voltage and temperature.</p> <p><Criteria> Must be within the parameters (See page 3)</p> |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

| ITEM | | PERFORMANCE | | | | | | | | | | | | | | | | | |
|------------------------------|---|--|--|--|-----------------------|------------------------------------|-----------------------|--------------------|-------------------------------|------------|--------------------|---|----------|------------------------------|---|--|------------|---|--|
| 4 | Equivalent Series Resistance | <Condition> Measuring frequency:100kHz; Measuring temperature:20±2℃ Measuring point: 2mm max. from the surface of a sealing rubber on the lead wire. <Criteria> (20℃) Must be within the parameters (See page 3) | | | | | | | | | | | | | | | | | |
| 5 | Load life test | <Condition> According to IEC60384-4No. 4.13 methods, the capacitor is stored at a temperature of Maximum operating temperature ±2℃ with DC bias voltage for Rated life +48/0hours. Then the product should be tested after 16 hours recovering time at atmospheric conditions. The result should meet the following table: <Criteria> The characteristic shall meet the following requirements. <table><tr><td>Leakage current</td><td colspan="2">Not more than the specified value.</td></tr><tr><td>Capacitance Change</td><td colspan="2">Within ±20% of initial value.</td></tr><tr><td>Dissipation Factor</td><td colspan="2">Not more than 150%of the specified value.</td></tr><tr><td>Equivalent Series Resistance</td><td colspan="2">Not more than 150%of the specified value.</td></tr><tr><td>Appearance</td><td colspan="2">There shall be no leakage of electrolyte.</td></tr></table> | | | Leakage current | Not more than the specified value. | | Capacitance Change | Within ±20% of initial value. | | Dissipation Factor | Not more than 150%of the specified value. | | Equivalent Series Resistance | Not more than 150%of the specified value. | | Appearance | There shall be no leakage of electrolyte. | |
| Leakage current | Not more than the specified value. | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±20% of initial value. | | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Not more than 150%of the specified value. | | | | | | | | | | | | | | | | | | |
| Equivalent Series Resistance | Not more than 150%of the specified value. | | | | | | | | | | | | | | | | | | |
| Appearance | There shall be no leakage of electrolyte. | | | | | | | | | | | | | | | | | | |
| 6 | Shelf life test | <Condition> The capacitors are then stored with no voltage applied at a temperature of Maximum operating temperature±2℃ for1000+48/0 hours. Following this period, the capacitors shall be removed from the test chamber and be allowed to stabilized at room temperature for16 hours. measure leakage current <Criteria> The characteristic shall meet the following requirements. <table><tr><td>Leakage current</td><td colspan="2">Not more than the specified value</td></tr><tr><td>Capacitance Change</td><td colspan="2">Within ±20% of initial value.</td></tr><tr><td>Dissipation Factor</td><td colspan="2">Not more than 150%of the specified value.</td></tr><tr><td>Equivalent Series Resistance</td><td colspan="2">Not more than 150%of the specified value.</td></tr><tr><td>Appearance</td><td colspan="2">There shall be no leakage of electrolyte.</td></tr></table> | | | Leakage current | Not more than the specified value | | Capacitance Change | Within ±20% of initial value. | | Dissipation Factor | Not more than 150%of the specified value. | | Equivalent Series Resistance | Not more than 150%of the specified value. | | Appearance | There shall be no leakage of electrolyte. | |
| Leakage current | Not more than the specified value | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±20% of initial value. | | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Not more than 150%of the specified value. | | | | | | | | | | | | | | | | | | |
| Equivalent Series Resistance | Not more than 150%of the specified value. | | | | | | | | | | | | | | | | | | |
| Appearance | There shall be no leakage of electrolyte. | | | | | | | | | | | | | | | | | | |
| 7 | Terminal strength | <Condition> Tensile strength of terminals Fixed the capacitor, applied force to the terminal in lead out direction for30+5-0 seconds. Bending strength of terminals. Fixed the capacitor, applied force to bent the terminal (1~4 mm from the rubber) for 90° within 2~3 seconds, and then bent it for 90° to its original position within 2~3 seconds. <table><tr><td>Diameter of lead wire</td><td>Tensile force N (kgf)</td><td>Bending force N (kgf)</td></tr><tr><td>0.5mm and less</td><td>5 (0.51)</td><td>2.5 (0.25)</td></tr><tr><td>0.6~0.8 mm</td><td>10 (1.02)</td><td>5 (0.51)</td></tr></table> <Criteria> No noticeable changes shall be found, no breakage or looseness at the terminal. | | | Diameter of lead wire | Tensile force N (kgf) | Bending force N (kgf) | 0.5mm and less | 5 (0.51) | 2.5 (0.25) | 0.6~0.8 mm | 10 (1.02) | 5 (0.51) | | | | | | |
| Diameter of lead wire | Tensile force N (kgf) | Bending force N (kgf) | | | | | | | | | | | | | | | | | |
| 0.5mm and less | 5 (0.51) | 2.5 (0.25) | | | | | | | | | | | | | | | | | |
| 0.6~0.8 mm | 10 (1.02) | 5 (0.51) | | | | | | | | | | | | | | | | | |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

| ITEM | | PERFORMANCE | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|---|--------------------------|---|-----------------|------------------------------------|--------------------|-----------------------------------|--------------------|------------------------------------|-----------------------------------|---|------|-----------------------------------|---|-------|-----------------------------------|---|------|-----------------------------------|---------------|--------|----------|---------------|--------|
| 8 | Temperature characteristics | <Condition> <table><tr><th>STEP</th><th>Testing temperature (°C)</th><th>Time</th></tr><tr><td>1</td><td>20±2</td><td>Time to reach thermal equilibrium</td></tr><tr><td>2</td><td>(-55)-25±3</td><td>Time to reach thermal equilibrium</td></tr><tr><td>3</td><td>20±2</td><td>Time to reach thermal equilibrium</td></tr><tr><td>4</td><td>105±2</td><td>Time to reach thermal equilibrium</td></tr><tr><td>5</td><td>20±2</td><td>Time to reach thermal equilibrium</td></tr></table> <p>Capacitance, DF, and impedance shall be measured at 120Hz.</p> <Criteria> <p>a. At +105°C, capacitance measured at +20°C shall be within ±25% of its original value. Dissipation factor shall be within the specified value The leakage current measured shall be within the specified value.</p> <p>b. In step 5, capacitance measured at +20°C shall be within ±10% of its original value. Dissipation factor shall be within the specified value The leakage current measured shall be within the specified value.</p> <p>c. At- 55°C/ (20°C), Impedance (Z) ratio shall not exceed the value of the following table.</p> <table><tr><td>Z-25°C/Z+20°C</td><td>≦ 1.25</td><td rowspan="2">(100KHz)</td></tr><tr><td>Z-55°C/Z+20°C</td><td>≦ 1.25</td></tr></table> | STEP | Testing temperature (°C) | Time | 1 | 20±2 | Time to reach thermal equilibrium | 2 | (-55)-25±3 | Time to reach thermal equilibrium | 3 | 20±2 | Time to reach thermal equilibrium | 4 | 105±2 | Time to reach thermal equilibrium | 5 | 20±2 | Time to reach thermal equilibrium | Z-25°C/Z+20°C | ≦ 1.25 | (100KHz) | Z-55°C/Z+20°C | ≦ 1.25 |
| | | STEP | Testing temperature (°C) | Time | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 20±2 | Time to reach thermal equilibrium | | | | | | | | | | | | | | | | | | | | | |
| | | 2 | (-55)-25±3 | Time to reach thermal equilibrium | | | | | | | | | | | | | | | | | | | | | |
| | | 3 | 20±2 | Time to reach thermal equilibrium | | | | | | | | | | | | | | | | | | | | | |
| | | 4 | 105±2 | Time to reach thermal equilibrium | | | | | | | | | | | | | | | | | | | | | |
| | | 5 | 20±2 | Time to reach thermal equilibrium | | | | | | | | | | | | | | | | | | | | | |
| | | Z-25°C/Z+20°C | ≦ 1.25 | (100KHz) | | | | | | | | | | | | | | | | | | | | | |
| | | Z-55°C/Z+20°C | ≦ 1.25 | | | | | | | | | | | | | | | | | | | | | | |
| | | 9 | Surge test | <Condition> <p>Applied a surge voltage to the capacitor connected with a (100 ±50)/CR (kΩ) resistor in series for 30±5 seconds in every 5±0.5 minutes at 15~35°C.Procedure shall be repeated 1000 times. Then the capacitors shall be left under normal humidity for 1-2 hours before measurement CR : Nominal Capacitance (μF)</p> <Criteria> <table><tr><td>Leakage current</td><td>Not more than the specified value.</td></tr><tr><td>Capacitance Change</td><td>Within ±15% of initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than the specified value.</td></tr><tr><td>Appearance</td><td>There shall be no leakage of electrolyte.</td></tr></table> Attention: <p>This test simulates over voltage at abnormal situation only. It is not applicable to such over voltage as often applied.</p> | Leakage current | Not more than the specified value. | Capacitance Change | Within ±15% of initial value. | Dissipation Factor | Not more than the specified value. | Appearance | There shall be no leakage of electrolyte. | | | | | | | | | | | | | |
| Leakage current | Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±15% of initial value. | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | |
| Appearance | There shall be no leakage of electrolyte. | | | | | | | | | | | | | | | | | | | | | | | | |

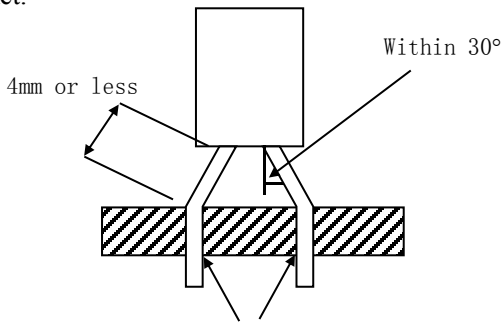


CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

| ITEM | | PERFORMANCE | | | | | | | | | | | | | | | | |
|--|--|---|------------------------|------------------------------------|--------------------|--|--|--|------------------------------------|---|------------------------------------|--|-----------------|------------------------------------|--------------------|------------------------------------|------------|---|
| 10 | Change of temperature test | <p><Condition> Temperature cycle: According to IEC60384-4 No.4.7 methods, capacitor shall be placed in an oven, the condition according as below:</p> <table><tr><th>Temperature</th><th>Time</th></tr><tr><td>(1) +20℃</td><td>3 Minutes</td></tr><tr><td>(2) Rated low temperature (- 55℃) (-25℃)</td><td>30±2 Minutes</td></tr><tr><td>(3) Rated high temperature (+105℃)</td><td>30±2 Minutes</td></tr><tr><td colspan="2">(1) to (3) =1 cycle, total 5 cycle</td></tr></table> <p><Criteria> The characteristic shall meet the following requirement.</p> <table><tr><td>Leakage current</td><td>Not more than the specified value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than the specified value.</td></tr><tr><td>Appearance</td><td>There shall be no leakage of electrolyte.</td></tr></table> | Temperature | Time | (1) +20℃ | 3 Minutes | (2) Rated low temperature (- 55℃) (-25℃) | 30±2 Minutes | (3) Rated high temperature (+105℃) | 30±2 Minutes | (1) to (3) =1 cycle, total 5 cycle | | Leakage current | Not more than the specified value. | Dissipation Factor | Not more than the specified value. | Appearance | There shall be no leakage of electrolyte. |
| Temperature | Time | | | | | | | | | | | | | | | | | |
| (1) +20℃ | 3 Minutes | | | | | | | | | | | | | | | | | |
| (2) Rated low temperature (- 55℃) (-25℃) | 30±2 Minutes | | | | | | | | | | | | | | | | | |
| (3) Rated high temperature (+105℃) | 30±2 Minutes | | | | | | | | | | | | | | | | | |
| (1) to (3) =1 cycle, total 5 cycle | | | | | | | | | | | | | | | | | | |
| Leakage current | Not more than the specified value. | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Not more than the specified value. | | | | | | | | | | | | | | | | | |
| Appearance | There shall be no leakage of electrolyte. | | | | | | | | | | | | | | | | | |
| 11 | Damp heat test | <p><Condition> Humidity test: According to IEC60384-4 No.4.12 methods, capacitor shall be exposed for 500±8 hours in an atmosphere of 90~95%R H .at 40±2℃, the characteristic change shall meet the following requirement.</p> <p><Criteria></p> <table><tr><td>Leakage current</td><td>Not more than the specified value.</td></tr><tr><td>Capacitance Change</td><td>Within ±10% of initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than 150% of the specified value.</td></tr><tr><td>Appearance</td><td>There shall be no leakage of electrolyte.</td></tr></table> | Leakage current | Not more than the specified value. | Capacitance Change | Within ±10% of initial value. | Dissipation Factor | Not more than 150% of the specified value. | Appearance | There shall be no leakage of electrolyte. | | | | | | | | |
| Leakage current | Not more than the specified value. | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±10% of initial value. | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Not more than 150% of the specified value. | | | | | | | | | | | | | | | | | |
| Appearance | There shall be no leakage of electrolyte. | | | | | | | | | | | | | | | | | |
| 12 | Solderability test | <p><Condition> The capacitor shall be tested under the following conditions: Soldering temperature : 245 ±5℃ Dipping depth : 2mm Dipping speed : 25±2.5mm/s Dipping time : 3±0.5s</p> <p><Criteria></p> <table><tr><td>Soldering wetting time</td><td>Less than 3s</td></tr><tr><td>Coating quality</td><td>A minimum of 95% of the surface being immersed</td></tr></table> | Soldering wetting time | Less than 3s | Coating quality | A minimum of 95% of the surface being immersed | | | | | | | | | | | | |
| Soldering wetting time | Less than 3s | | | | | | | | | | | | | | | | | |
| Coating quality | A minimum of 95% of the surface being immersed | | | | | | | | | | | | | | | | | |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

| ITEM | | PERFORMANCE | | | | | | | | |
|--------------------|---|---|--|--|--------------------|---|--------------------|------------------------------------|------------|---|
| 13 | Vibration test | <p><Condition></p> <p>The following conditions shall be applied for 2 hours in each 3 mutually perpendicular directions. Vibration frequency range : 10Hz ~ 55Hz each to peak amplitude : 1.5mm Sweep rate : 10Hz ~ 55Hz ~ 10Hz in about 1 minute Mounting method: The capacitor with diameter greater than 12.5mm or longer than 25mm must be fixed in place with a bracket.</p> <div></div> <p><Criteria></p> <p>After the test, the following items shall be tested:</p> <table><tr><td>Inner construction</td><td>No intermittent contacts, open or short circuiting. No damage of tab terminals or electrodes.</td></tr><tr><td>Appearance</td><td>No mechanical damage in terminal. No leakage of electrolyte or swelling of the case. The markings shall be legible.</td></tr></table> | Inner construction | No intermittent contacts, open or short circuiting. No damage of tab terminals or electrodes. | Appearance | No mechanical damage in terminal. No leakage of electrolyte or swelling of the case. The markings shall be legible. | | | | |
| | | Inner construction | No intermittent contacts, open or short circuiting. No damage of tab terminals or electrodes. | | | | | | | |
| Appearance | No mechanical damage in terminal. No leakage of electrolyte or swelling of the case. The markings shall be legible. | | | | | | | | | |
| 14 | Resistance to solder heat test | <p><Condition></p> <p>Terminals of the capacitor shall be immersed into solder bath at 260±5℃ for 10±1 seconds or 400±10℃ for 3~10 seconds to 1.5~2.0 mm from the body of capacitor. Then the capacitor shall be left under the normal temperature and normal humidity for 1~2 hours before measurement.</p> <p><Criteria></p> <table><tr><td>Leakage current</td><td>Not more than the specified value.</td></tr><tr><td>Capacitance Change</td><td>Within ±5% of initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than the specified value.</td></tr><tr><td>Appearance</td><td>There shall be no leakage of electrolyte.</td></tr></table> | Leakage current | Not more than the specified value. | Capacitance Change | Within ±5% of initial value. | Dissipation Factor | Not more than the specified value. | Appearance | There shall be no leakage of electrolyte. |
| Leakage current | Not more than the specified value. | | | | | | | | | |
| Capacitance Change | Within ±5% of initial value. | | | | | | | | | |
| Dissipation Factor | Not more than the specified value. | | | | | | | | | |
| Appearance | There shall be no leakage of electrolyte. | | | | | | | | | |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

8、 Packing Information

Packing Label Marked (the following items shall be marked on the label)

(Inside box or bag)

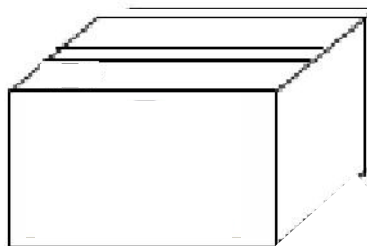
(1)Client order number (2)Client part number (3)Beryl part number (4)Capacitance (5)Voltage (6)Dimension
(7)Packaging quantity (8)Capacitance tolerance (9) QC Marking (10) Lot number (11) Series

LOT Number :

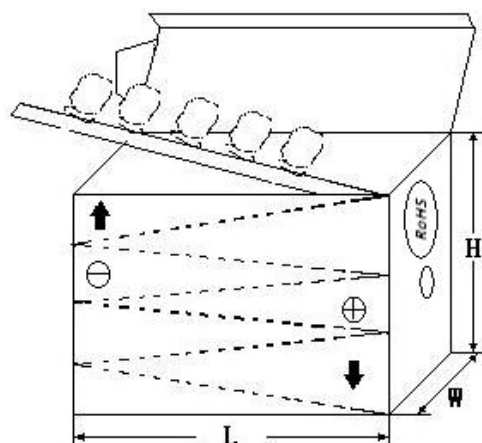
12 34 56 78910

year month date number

1) Bulk Packing:



2) Taped Packing:



3) Outer box



外箱

4) Outer box label:

| | | | |
|---|-----|--------------------|---|
| BERYL Zhao Qing Beryl Electronic Technology Co., Ltd. | | | |
| C.S.R: | | <div>RoHS HF</div> | |
| C.S.R P/O: | | | |
| C.S.R P/N: | | | |
| S.P.R P/N: | | QC | |
| SPEC: | | | |
| QTY: | PCS | TOL: | % |
| L/N: | | S.P.R: | |



CONDUCTIVE POLYMER ALUMINUM ELECTROLYTIC CAPACITORS

9、Prohibition to Use Environment- related Substances

We are hereby to certify the followings:

Our company hereby warrants and guarantees that all or part of products, including, but not limited to, the peripherals, accessories or package, delivered to your company (including your subsidiaries and affiliated companies) directly or indirectly by our company are free from any of the substances listed below.

The latest version of <Substances Prohibited as per ROHS or <Sony-SS-00259>

| | |
|---|--------------------------------------|
| Accord with heavy metal | Cadmium and cadmium compounds |
| | Lead and lead compounds |
| | Mercury and mercury compounds |
| | Hexavalent chromium compounds |
| Organic chlorin compounds | Polychlorinated biphenyls (PCB) |
| | Polychlorinated naphthalenes (PCN) |
| | Polychlorinated terphenyls (PCT) |
| | Chlorinated paraffins (CP) |
| | Other chlorinated organic compounds |
| Organic bromine compounds | Polybrominated biphenyls (PBB) |
| | Polybrominated diphenylethers (PBDE) |
| | Other brominated organic compounds |
| Tributyltin compounds | |
| Triphenyltin compounds | |
| Asbestos | |
| Specific azo compounds | |
| Formaldehyde | |
| Polyvinyl chloride (PVC) and PVC blends | |
| F、Cl、Br、I | |
| REACH | |