

承 认书 DATA SHEET

Customer name	:		
BERYL SERIES	:	RC	TYPE : RADIAL
DESCRIPTION	:	330uF/25V Φ8*12	
Apply date	:	2022-07-14	

BERYL		CUSTOMER			
P/N:RC025M331LO8*12TH-2A	1Et	P/N:			
PREPARED	APPROVAL	PREPARED	CHECKED	APPROVAL	
胡晓敏工程部略君	张业维				

After approved, please sign back 1 Approval Sheet before order. If not, we will treat it as tacitly acknowledged and accepted our relative standard and technical index.

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Revise record

NO.	Date	Revise reason	Revise content	Prepared
01	2022.07.14	First issue	First issue	胡晓敏

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1, Application

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

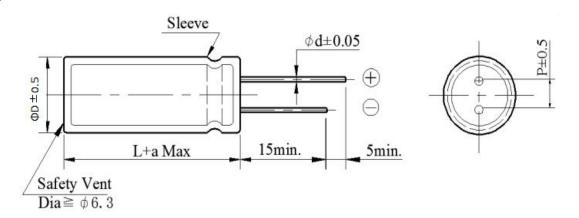
2. Table of specification and characteristics

Series	Cap(uF)	1		Capacitance Life(hour modern and				
	120112/20 C		D	L			1 orer ance	(a)103(C)
RC	330	25	8	12	-40 ~+1	-40~+105 ±		2000
,	%)(MAX) 0Hz/20°C	LC(μA)(1 2min/2	· · · · · · · · · · · · · · · · · · ·	,)(MAX) Hz/25°C	RC (mA rms) (MAX)105°C/100KHz		Surge voltage(V)
≤14		€83	3	€(0.17		580	29

Other: /

3. Product Dimensions

Type

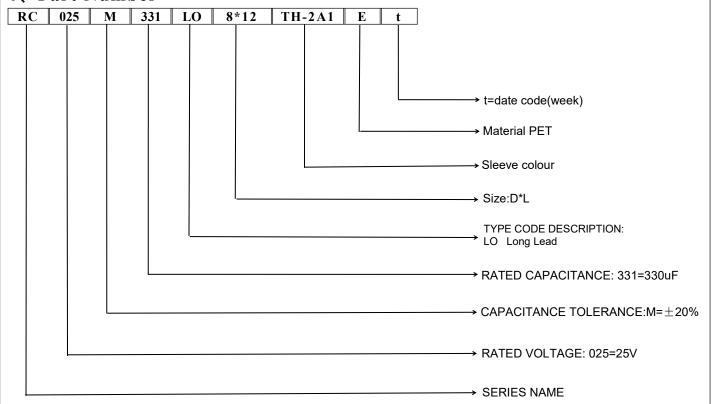


ФD	5	6.3	8	10	13	16	18	22
P	2	2.5	3.5	5	5	7.5	7.5	10
Фd	0.5	0.5	0.5/0.6	0.6	0.6	0.8	0.8	0.8
а			(L< 20)	± 1.5	(L≥2	$0) \pm 2.0$		·

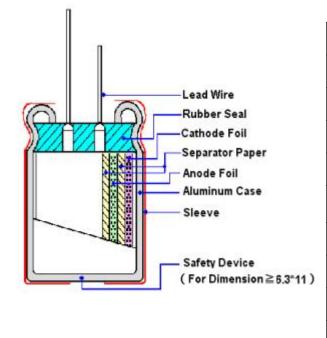
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4. Part Number



5, Construction



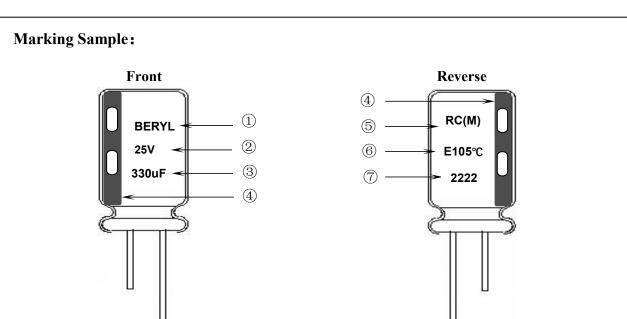
Material name	Composition	Supplier name		
Lead	Al and (Fe+Cu+Sn)	NM、JX		
Rubber	IIR	LHX、LA、TH、LM2		
Case	Aluminum	OX、YJ、HL、LY2		
Paper	Wood / Fibrous plant materials	KE、DF		
Anode foil	$Al + Al_2O_3$	HY1、HY2、HF、HY3、 LD、FQ		
Cathode foil	Aluminum	GY、LY1		
Electrolyte	Glycol + Water +Ammonium salt	XZB、LM1、JZ2、FS		
Sleeve	PET	YL, CY		
Adhesive tape	propylene, butyl acrylate	RK、RB		

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BERYL 绿宝石

ALUMINUM ELECTROLYTIC CAPACITORS

6. Product Marking



Marking Details:

Capacitor shall be marked the following items:

- 1) Trademark (BERYL)
- 2) working voltage(25V)
- 3) Nominal capacitance(330uF)
- 4) Cathode marked
- 5) Series symbol & Nominal capacitance tolerance (M: -20% ~ +20%)
- 6) Sleeve material(E: PET)

Maximum operating temperature(105°C)

7) Date code (2222)

22: Manufactured year 2022

Code	19	20	21	22	23	24	25	26	
Year	2019	2020	2021	2022	2023	2024	2025	2026	

22: Manufactured week (01, 02, 03, 04......52, 53)

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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 : $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 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 $(6.3\sim450WV)$ -40°C to +105°C.

Table

	ITEM	PERFORMANCE
1	Nominal capacitance (Tolerance)	<condition> Measuring Frequency: 120Hz±12Hz Measuring Voltage: Not more than 0.5Vrms +1.5~2.0V.DC Measuring Temperature: 20±2°C <criteria> Shall be within the specified capacitance tolerance.</criteria></condition>
2	Leakage current	 Condition> Connecting the capacitor with a protective resistor (1kΩ±10Ω) in series for 2 minutes, and then, measure leakage current. Criteria> I: Leakage current (μA) I (μA) ≤0.01CVor 3 (μA) whichever is greater, measurement circuit refer to right drawing. C: Capacitance (μF) V: Rated DC working voltage (V)
3	Dissipation factor	<condition> Nominal capacitance, for measuring frequency, voltage and temperature. <criteria> Must be within the parameters (See page 3)</criteria></condition>

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	ITEM		PERFORMANCE					
4	Impedance	<condition> Measuring frequency:100kHz; Measuring temperature:20±2°C Measuring point: 2mm max. from the surface of a sealing rubber on the lead wire. <criteria> (20°C) Must be within the parameters (See page 3)</criteria></condition>						
5	Load life test	According to IEC60384-4No. 4.13 methods, the capacitor is stored at a temperature of Maximum operating temperature ±2°C with DC bias voltage plus the rated ripple current for Rated life +48/0hours. (The sum of DC and ripple peak voltage shall not exceed the rated working voltage) 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. Leakage current Not more than the specified value. Capacitance Change Within ±20% of initial value. Dissipation Factor Not more than 200%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°C 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. Leakage current Not more than 200% of the specified value. Capacitance Change Within ±20% of initial value. Dissipation Factor Not more than 200% of the specified value. Appearance There shall be no leakage of electrolyte.						
7	Maximum permissible (ripple current, temperature coefficient)	Condition> The maximum permissible ripple current is the maximum A.C current at 100kHz and can be applied at maximum operating temperature Table-3 The combined value of D.C voltage and the peak A.C voltage shall not exceed the rated voltage and shall not reverse voltage. Frequency Multipliers: Freq (Hz) 120 1k 10k 50~100k Cap. (μF) 330 0.55 0.77 0.94 1.00 Temperature Coefficient: Temperature (°C) 60 85 95 105 Factor 2.23 1.73 1.41 1.00						

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ALUMINUM ELECTROLYTIC CAPACITORS

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	ITEM				PFD	FORMA	NCF					
8	Terminal strength	Condition> Tensile strength of terminals Fixed the capacitor, applied force to bent the terminal (1~4 mm from the rubber) for 90° 2~3 seconds, and then bent it for 90° to its original position within 2~3 seconds. Diameter of lead wire					er) for 9	90° within				
9	Temperature characteristics											
10	Surge test	series for 30± 1000 times. T before measur CR: Nomina <criteria> Leakage cr Capacitance Dissipation Appearanc Attention: This test si</criteria>	hen the capacerement al Capacitancerrent ee Change	every 5± citors sha e (µF) Not r With Not r There	more than in ±15% more than e shall be	the spec of initial the spec e no leaka	ified value	value. e. value. f electrol	lyte.	hall be rep	eated	



	ITEM	PERFORMANCE						
		<condition> Temperature cycle: According to IEC60384-4 N according as below:</condition>	Temperature cycle: According to IEC60384-4 No.4.7 methods, capacitor shall be placed in an oven					
		Te	mperature	Time				
		(1) +20°C		3 Minutes				
	Change of	(2) Rated low tempera	ture (- 40°C) (-25°C)	30±2 Minutes				
11	temperature test	(3) Rated high tempera	ature (+105°C)	30±2 Minutes				
		(1) to $(3) = 1$ cycle, total	al 5 cycle					
		Criteria> The characteristic shall meet Leakage current	the following requirem Not more than the s					
		Dissipation Factor	Not more than the s	specified value.				
			Appearance	There shall be no le	eakage of electrolyte.			
12	Damp heat test	Humidity test: According to IEC60384-4 N be exposed for 500±8 hours 40±2°C, the characteristic ch <criteria> Leakage current Capacitance Change Dissipation Factor Appearance</criteria>	95%R H .at					
13	Solderability test	Condition> The capacitor shall be tested under the following conditions: Soldering temperature : 245 ±5°C Dipping depth : 2mm Dipping speed : 25±2.5mm/s Dipping time : 3±0.5s Criteria> Soldering wetting time Less than 3s Coating quality A minimum of 95% of the surface being immersed						

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	ITEM	PERFORMANCE						
14	Vibration test	Condition> 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. Within 30°						
		<pre> </pre> <pre> </pre> <pre> To be soldered</pre>						
		After the test, the following items shall be tested:						
		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.						
	Resistance	Condition> Terminals of the capacitor shall be immersed into solder bath at 260±5°Cfor10±1seconds or400±10°Cfor3 ⁻⁰ 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. Criteria>						
15	to solder heat	Leakage current Not more than the specified value.						
	test	Capacitance Change Within ±5% of initial value.						
		Dissipation Factor Not more than the specified value.						
		Appearance There shall be no leakage of electrolyte.						
16	Vent	Condition> The following test only apply to those products with vent products at diameter ≥∅6.3 with vent. D.C. test The capacitor is connected with its polarity reversed to a DC power source. Then a current selected from Table 2 is applied. Table 2>						
10	test	Diameter (mm) DC Current (A)						
		22.4 or less 1						
		<criteria> The vent shall operate with no dangerous conditions such as flames or dispersion of pieces of the capacitor and/or case.</criteria>						

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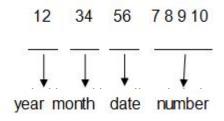


8. Packing Information

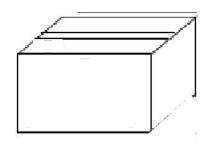
Packing Label Marked (the following items shall be marked on the label) (Inside box or bag)

(1)Clint 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:



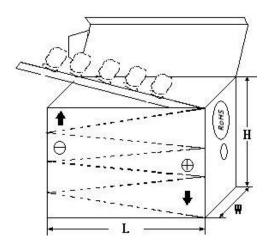
1) Bulk Packing:



3) Outer box



2) Taped Packing:



4) Outer box label:

C.S.R:		Ltd.			
C.S.R P/0:				ROHS HF	
C.S.R P/N:					
S.P.R P/N:				QC	
SPEC:					
QTY:	PCS	TOL:	%		
L/N:		S.P.R:			

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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>

Cadmium and cadmium compounds				
Accord with	1			
	Lead and lead compounds			
heavy metal	Mercury and mercury compounds			
	Hexavalent chromium compounds			
	Polychlorinated biphenyls (PCB)			
Organic chlorin	Polychlorinated naphthalenes (PCN)			
compounds	Polychlorinated terphenyls (PCT)			
compounds	Chlorinated paraffins (CP)			
	Other chlorinated organic compounds			
Organic	Polybrominated biphenyls (PBB)			
bromine	Polybrominated diphenylethers (PBDE)			
compounds	Other brominated organic compounds			
Tributyltin compounds				
Triphenyltin compounds				
Asbestos				
Specific azo compounds				
Formaldehyde				
Polyvinyl chloride (PVC) and PVC blends				
F、Cl、Br、I				
REACH				

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Approve: 廖梅君

ALUMINUM ELECTROLYTIC CAPACITORS

Test Report

Series	RC	_ Spec.	330uF/25V	Size(mm)	8*12
Cap tolerance	±20%	Work temperature	105°C	Color of Tube	Dark green
Test date	2022-07-09	Test humidity	62%	Test temperature	24.8°C

Items	Cap (μF)	D.F (%)	L.C (μA)	ESR (Ω)	Appearance
NO. SPEC	264~396 (120Hz)	≤14 (120Hz)	≤83 (2min)	≤0.17 (100KHz)	No abnormalities
1	316.4	5.32	6.0	0.0860	ОК
2	311.8	4.78	4.0	0.0850	ОК
3	312.1	4.90	5.2	0.0854	ОК
4	314.7	5.30	5.4	0.0858	OK
5	315.6	5.23	4.8	0.0847	ОК
6	313.5	5.06	4.7	0.0845	ОК
7	313.4	5.21	4.6	0.0897	ОК
8	313.2	4.85	4.9	0.0852	ОК
9	314.9	4.94	4.7	0.0864	ОК
10	316.1	4.98	5.1	0.0870	ОК
Opinion After 2 minutes application of rated voltage					
	I				

Test: 黄敏华

Audit: 胡晓敏

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NEVH1.0M250AB NEVH3.3M250BB NEVH3.3M450CC KME50VB100M-8X11.5 SG220M1CSA-0407 ES5107M016AE1DA

ESMG160ETD102MJ16S ESX472M16B 227RZS050M 476CKH100MSA 477RZS050M B41793A9108Q1 UVX1V101KPA1FA

UVX1V222MHA1CA KME25VB100M-6.3X11 VTL100S10 VTL470S10 VTL470S16A 511D336M250EK5D 052687X ECE-A1CF471

NRE-S560M16V6.3X7TBSTF RGA221M1CTA-0611G ERZA630VHN182UP54N UPL1A331MPH NEV1000M6.3DE NEV100M16CB

NEV100M50DD-BULK NEV2200M16FF NEV220M50EE NEV2.2M50AA NEV330M63EF NEV4700M35HI NEV4.7M100BA

NEV47M16BA NEV47M50CB-BULK NEVH1.0M350AB