

规格书 SPECIFICATION SHEET

Customer name:				
BERYL SERIES:	RD		TYPE:	RADIAL
DESCRIPTION:	1uF/400V	Ф6.3*9		
Apply date :	2022-04-12			

BERYL		CUSTOMER				
P/N:RD400M1R0LO6.3*9TH-2A	P/N:					
PREPARED	APPROVAL	PREPARED	CHECKED	APPROVAL		
董桂茹	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.

Zhao Qing Beryl Electronic Technology Co., Ltd.

TEL: (0758) 13428556686 FAX: (0758) 2862870

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

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

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Revise record

NO.	Date	Revise reason	Revise content	Prepared
01	2022.04.12	First issue	First issue	董桂茹

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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.

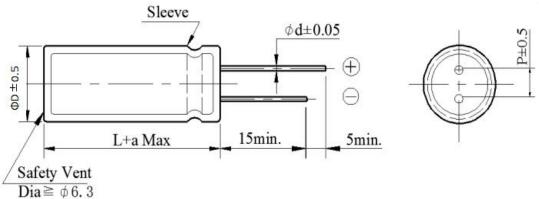
2. Table of specification and characteristics

Series	Cap(uF) 120Hz/20°C	WV(V)	Size	(mm)	Temperature (°C)		Temperature (°C)		- 1		<u> </u>				Capacitance Tolerance	Life(hours) @105(°C)
	120112/20 C		D	L			Toterance	(6)								
RD	1	400	6.3	9	-40~+105		±20%	6000								
,			MAX) 0°C	,	2)(MAX) Hz/25°C		C (mA rms) X)105°C/120Hz	Surge voltage(V)								
	≤24	≤18	3		-		-		55	440						

Other: /

3, Product Dimensions

Type

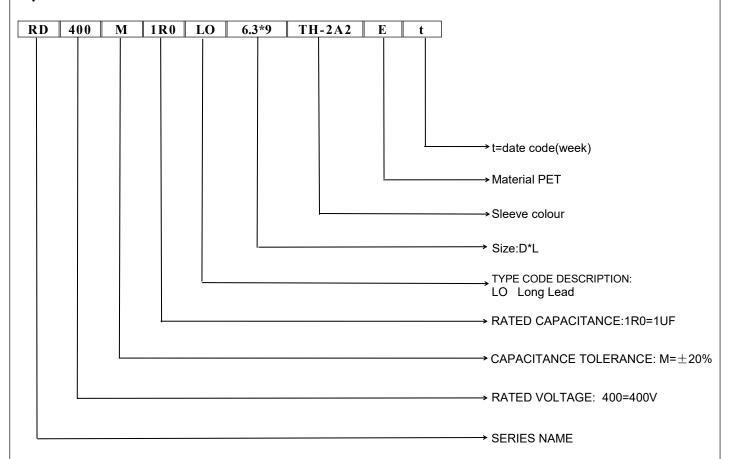


ФD	5	6.3	8	10	13	16	18	22
P	2	2.5	3.5	5	5	7.5	7.5	10
Фd	0.5	0.5	0.5/0.6	0.6	0.6	0.8	0.8	0.8
a			(L<20)	± 1.5	(L≥2	$0) \pm 2.0$		

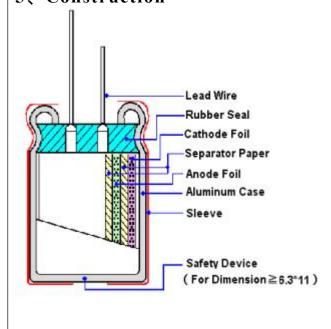
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4. Part Number



5, Construction



Material name	Composition	Supplier name
Lead	Al and (Fe+Cu+Sn)	NM、JX
Rubber	EPT / 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

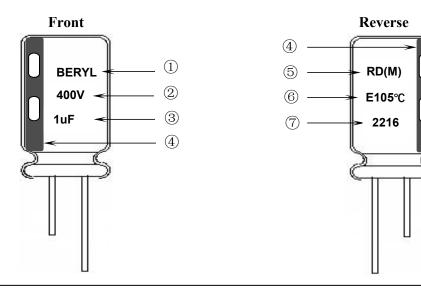
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BERYL 绿宝石

ALUMINUM ELECTROLYTIC CAPACITORS

6. Product Marking

Marking Sample:



Marking Details:

Capacitor shall be marked the following items:

- 1) Trademark (BERYL)
- 2) working voltage(400V)
- 3) Nominal capacitance(1uF)
- 4) Cathode marked
- 5) Series symbol & Nominal capacitance tolerance (M: $-20\% \sim +20\%$)
- 6) Sleeve material(E: PET)

Maximum operating temperature(105°C)

7) Date code (2216)

22: Manufactured year 2022

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

16: 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 $(160\sim400\text{WV})$ -40°C to +105°C $(450\sim500\text{WV})$ -25°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.
2	Leakage current	$ \begin{array}{l} \textbf{} \\ \textbf{Connecting the capacitor with a protective resistor } (1k\Omega\pm10\Omega) \text{ in series for} \\ \textbf{2 minutes, and then, measure leakage current.} \\ \textbf{} \\ \textbf{I: Leakage current } (\mu A) \\ \textbf{I } (\mu A) \leqslant 0.02\text{CV} + 10(\mu A) \text{ ,} \\ \textbf{measurement circuit refer to right drawing.} \\ \textbf{C: Capacitance } (\mu F) \\ \textbf{V: Rated DC working voltage } (V) \\ \end{array} $
3	Dissipation factor	Condition> Nominal capacitance, for measuring frequency, voltage and temperature. Criteria> Must be within the parameters (See page 3)

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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)								
5	Load life test	Condition> 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.					ripple shall not l 6 hours			
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)	applie Table The convoltage Frequer	naximum permissible ed at maximum opera	C voltarse volt	age an tage.	d the				

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ALUMINUM ELECTROLYTIC CAPACITORS

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	ITEM	PERFORMANCE						
8	Terminal strength	seconds. Bending strengt Fixed the capacitor, applie 2~3 seconds, and then ber Diameter of lead wire 0.5mm and less 0.6~0.8 mm		sile strength of terminals d the capacitor, applied force to the termin nds. Bending strength of terminals. d the capacitor, applied force to bent the to seconds, and then bent it for 90° to its orig Diameter of lead wire 0.5mm and less 5 (0.51) 0.6~0.8 mm 10 (1.02)		ne terminal (1~4 mm from the rubber) for 90° with original position within 2~3 seconds. Force N Bending force N (kgf) 2.5 (0.25) 5 (0.51)		er) for 90° within
9	Temperature characteristics					alue. I value.		
10	Surge test	Condition> 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) Criteria> Leakage current					eated	



	ITEM		PERFORMANCE					
		<condition> Temperature cycle: According to IEC60384-4 No according as below:</condition>	.4.7 methods, capacitor	shall be placed in an oven, the cond	ition			
	Change of temperature test		nperature	Time				
		(1) +20°C		3 Minutes				
		(2) Rated low temperatu	are (-40°C) (-25°C)	30±2 Minutes				
11		(3) Rated high temperate	ure (+105°C)	30±2 Minutes				
		(1) to (3) =1 cycle, total	5 cycle					
		Criteria> The characteristic shall meet t	he following requireme	nt.				
		Leakage current	Not more than the sp					
		Dissipation Factor	Not more than the sp	pecified value.				
		Appearance	There shall be no lea	akage of electrolyte.				
12	Damp heat test	Humidity test: According to IEC60384-4 No. be exposed for 500±8 hours in 40±2°C, the characteristic cha <criteria> Leakage current Capacitance Change Dissipation Factor Appearance</criteria>	an atmosphere of 90~9	95%R H .at wing requirement. cified value. I value. of the specified value.				
13	Solderability test 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 A minimum of 95% of the surface being							
		Coating quality	A minimum of 95%	of the surface being				

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	ITEM		PERFORMANCE
14	Vibration test	directions. Vibration from each to peak amplitude Sweep rate : 10	OHz ~ 55Hz ~ 10Hz in about 1 minute capacitor with diameter greater than 12.5mm or longer than 25mm th a bracket. Within 30° To be soldered g items shall be tested:
		Inner construction Appearance	No intermittent contacts, open or short circuiting. No damage of tab terminals or electrodes. No mechanical damage in terminal. No leakage of electrolyte or swelling of the case. The markings shall be legible.
	Resistance to	or400±10°Cfor3 ⁻⁰ seconds shall be left under the norm measurement.	shall be immersed into solder bath at 260±5°Cfor10±1seconds s to 1.5~2.0 mm from the body of capacitor. Then the capacitor nal temperature and normal humidity for 1~2 hours before
15	solder heat test	Leakage current	Not more than the specified value.
		Capacitance Change	Within ±5% of initial value.
		Dissipation Factor	Not more than the specified value. There shall be no leakage of electrolyte.
		Appearance	There shall be no leakage of electrolyte.
16	Vent	vent. D.C. test	-
	test	Diameter (mm)	DC Current (A)
		Criteria> The vent shall operate vent capacitor and/or can be shall operate vent capacitor.	with no dangerous conditions such as flames or dispersion of pieces of se.

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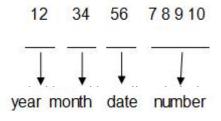


8. Packing Information

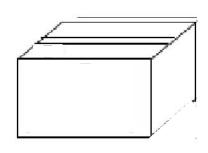
Packing Label Marked (the following items shall be marked on the label) (Inside box or bag)

(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:



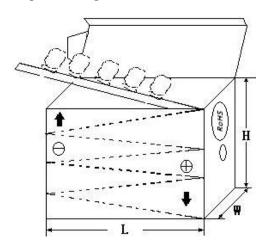
1) Bulk Packing:



3) Outer box



2) Taped Packing:



4) Outer box label:

		Ltd.		
C.S.R:				B UA HE
C.S.R P/0:				ROHS HE
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>

	1 ,			
	Cadmium and cadmium compounds			
Accord with	Lead and lead compounds			
heavy metal	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	Polybrominated biphenyls (PBB)			
bromine	Polybrominated diphenylethers (PBDE)			
compounds	Other brominated organic compounds			
Tributyltin compounds				
Triphenyltin compounds				
Asbestos				
Specific azo com	pounds			
Formaldehyde				
Polyvinyl chloride (PVC) and PVC blends				
F、Cl、Br、I				
REACH				

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NEV4700M50HB NEV.47M100AA NEVH1.0M250AB NEVH3.3M250BB NEVH3.3M450CC KM4700/16 KME50VB100M-8X11.5

SG220M1CSA-0407 ES5107M016AE1DA ESMG160ETD102MJ16S ESX472M16B 227RZS050M 476CKH100MSA 477RZS050M

UVX1V101KPA1FA UVX1V222MHA1CA KME25VB100M-6.3X11 VTL100S10 VTL470S10 VTL470S16A 511D336M250EK5D

052687X ECE-A1CF471 NRE-S560M16V6.3X7TBSTF RGA221M1CTA-0611G ERZA630VHN182UP54N UPL1A331MPH

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