

规 格书 SPECIFICATION SHEET

RG	TYPE : RADIAL
330uF/63V Ф10*20	
2022-11-12	
	RG 330uF/63V Φ10*20 2022-11-12

P/N:RG063M331LO10*20TA-1A1Et P/N: PREPARED CHECKED APPROVAL PREPARED CHECKED APPROVAL 胡晓敏 张业维		BERYL		C	CUSTOMER	
(A)	P/N:RG063M33	31LO10*20TA-1.	A1Et	P/N:		
胡晓敏	PREPARED	PREPARED CHECKED APPROVAL		PREPARED	CHECKED	APPROVAL
The His of	胡晓敏	廖梅君工程部	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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Sheet NO.: 20221112 Page : 1/12



Revise record

			Prepared
2022.11.12	First issue	First issue	胡晓敏

Sheet NO.: 20221112 Page : 2 / 12



1, Application

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

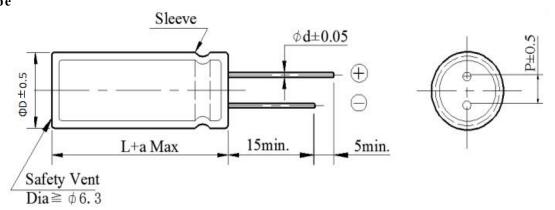
2. Table of specification and characteristics

Series	Cap(uF) 120Hz/20°C	WV(V)	Size ((mm)	Temperature (°C)	Capacitance Tolerance	Life(hours) @105(°C)	
	120112/20 C		D	L		Toterance	(W)103(C)	
RG	330	63	10	20	-40~+105	±20%	8000	

DF (%)(MAX) 120Hz/20°C	LC(μA)(MAX) 2min/20°C	ESR(Ω)(MAX) 100KHz/25°C	RC (mA rms) (MAX)105°C/100KHz	Surge voltage(V)
≪9	≤208	≤0.23	1305	72

Other: /

3. Product Dimensions Type

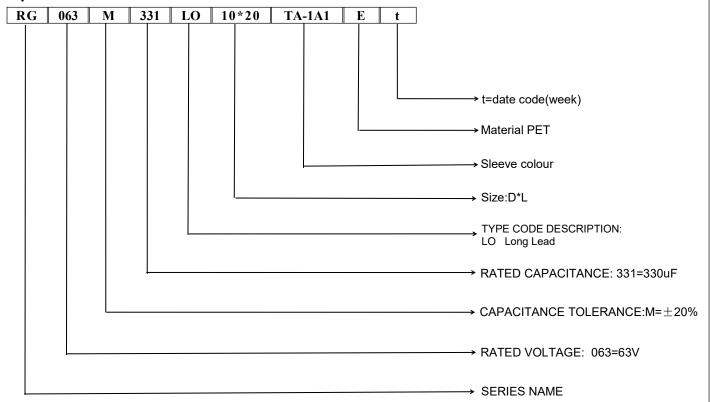


ФD	5	6.3	8	10	13	16	18	22
P	2	2.5	3.5	5	5	7.5	7.5	10
Фd	0.5	0.5	0.5/0.6	0.6	0.6	0.8	0.8	0.8
a			(L< 20)	± 1.5	(L≥2	$0) \pm 2.0$		

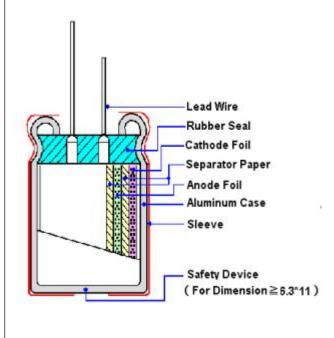
Sheet NO.: 20221112 Page: 3 / 12



4. Part Number



5, Construction



Material name	Composition	Supplier name		
Lead	Al and (Fe+Cu+Sn)	NM、RH、ZY		
Rubber	IIR	LHX、TH		
Case	Aluminum	OX、YJ、LY2、SH		
Paper	Wood / Fibrous plant materials	KE、CY		
Anode foil	$Al + Al_2O_3$	HY1、HX2、HF、 HX1、GD、FC		
Cathode foil	Aluminum	GY、LY1		
Electrolyte	Glycol + Water +Ammonium salt	XZB、JZ2		
Sleeve	PET	YL、CY		
Adhesive propylene, butyl acrylate		RK、RB、CW		

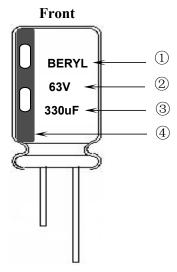
Sheet NO.: 20221112 Page: 4/12

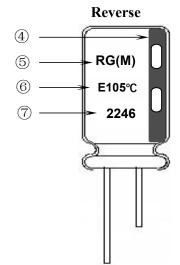
BERYL 録宝石

ALUMINUM ELECTROLYTIC CAPACITORS

6. Product Marking

Marking Sample:





Marking Details:

Capacitor shall be marked the following items:

- 1) Trademark (BERYL)
- 2) working voltage(63V)
- 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 (2246)

22: Manufactured year 2022

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

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

Sheet NO.: 20221112 Page : 5 / 12



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 $(6.3\sim100\text{WV})$ -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>

Sheet NO.: 20221112 Page: 6 / 12



	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	Acco Maxi curre exce reco <criteri< b=""> The c Lea Cap</criteri<>	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 ±25% 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 remove 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 the specified value. Capacitance Change Within ±25% 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 100k 100									

Sheet NO.: 20221112 Page: 7 / 12



	ITEM				PER	FORMAN	CE			
8 Terminal strength		seconds. Bending strength of Fixed the capacitor, applied for 2~3 seconds, and then bent it Diameter of lead wire 0.5mm and less 0.6~0.8 mm		ted force th of te ied force nt it for	force to the terminal in lead out direction for 30+5-0			r) for 90° within		
9	Temperatur e characterist ics	Criteria> a. At +105° Dissipati The leak b. In step 5 Dissipati The leak 	20 20 20 20 20 20 20 20 20 20 20 20 20 2	0±2 -25±3 0±2 5±2 0±2 npedance measured measured the with all not	ce shall bured at +: thin the li shall no ed at +20 thin the li more tha o shall no	Time to re Time to re Time to re Time to re e measured 20°C shall be mit of Item t more than °C shall be mit of Item n the specif	oe within ± 2 . 7.3 10 times of within ± 10 % 7.3 ied value.	equilibr equilibr equilibr equilibr 5% of its its speci	ium ium ium ium s origin fied va	lue. value.
10	Surge test	series for 30±5 1000 times. The before measure CR: Nomina <criteria> Leakage cu Capacitance Dissipation Appearance Attention: This test sin</criteria>	nen the capacinement I Capacitance rrent c Change Factor	Very 5± tors sha	ot more to the shall be left	han the specific be no leaked	or C.Procedu nal humidity cified value. value. cified value. age of electr	re shall for 1-2 downward	be repe hours	ated

Sheet NO.: 20221112 Page: 8 / 12



	ITEM		PERFORMANCE							
		<condition> Temperature cycle: According to IEC60384-4 N according as below:</condition>	o.4.7 methods, capacito	r shall be placed in an oven, the	e condition					
		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	nture (+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>	in an atmosphere of 90- nange shall meet the foll Not more than the specific within ±10% of initial	295%R H .at owing requirement. ecified value. al value. of the specified value.						
13	Solderabilit y test	Condition> The capacitor shall be tested Soldering temperature : 24 Dipping depth : 25 Dipping speed : 2 Dipping time : 35 Criteria> Soldering wetting time Coating quality								

Sheet NO.: 20221112 Page : 9 / 12



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°				
		<criteria> To be soldered</criteria>				
		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 to solder heat test	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		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.				
16	Vent	Condition> The following test only apply to those products with vent products at diameter ≥Ø6.3 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.				

Sheet NO.: 20221112 Page: 10 / 12

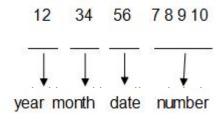


8. Packing Information

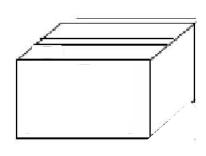
Packing Label Marked (the following items shall be marked on the label) (Inside box or bag)

(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:



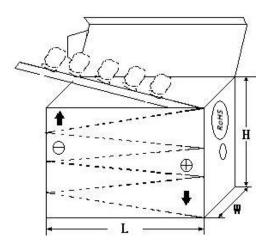
1) Bulk Packing:



3) Outer box



2) Taped Packing:



4) Outer box label:

C.S.R:		Ltd.		
C.S.R P/C):	ROHS HF		
C.S.R P/N	: 2			
S.P.R P/N		QC		
SPEC:				
QTY:	PCS	TOL:	%	
L/N:		S.P.R:		

Sheet NO.: 20221112 Page: 11 / 12



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					
	Polychlorinated biphenyls (PCB)					
0	Polychlorinated naphthalenes (PCN)					
Organic chlorin	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						

Sheet NO.: 20221112 Page : 12 / 12

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NEV100M63DE NEV220M25DD-BULK NEV.33M100AA NEV4700M50HB NEV.47M100AA NEVH1.0M250AB NEVH3.3M250BB

NEVH3.3M450CC KME50VB100M-8X11.5 SG220M1CSA-0407 ES5107M016AE1DA ESX472M16B 476CKH100MSA 477RZS050M

UVX1V101KPA1FA UVX1V222MHA1CA KME25VB100M-6.3X11 VTL100S10 VTL470S10 511D336M250EK5D 052687X ECE-A1CF471 EKXG451ELL820MM30S 686CKR050M NRE-S560M16V6.3X7TBSTF ERZA630VHN182UP54N UPL1A331MPH

NEV1000M6.3DE NEV100M16CB NEV100M50DD-BULK NEV2200M16FF NEV220M50EE NEV2.2M50AA NEV330M63EF

NEV4700M35HI NEV4.7M100BA NEV47M16BA NEV47M50CB-BULK NEVH1.0M350AB NEVH2.2M160AB NEVH3.3M350BC

TER330M50GM 477KXM035MGBWSA