

规格书 SPECIFICATION SHEET

Customer name:		
BERYL SERIES:	RF	TYPE: RADIAL
DESCRIPTION:	150uF/100V	Ф10*20
Apply date :	2022-04-13	

BERYL			CUSTOMER	
P/N:RF100M151LO10*20TA-1E	31Et	P/N:		
PREPARED	APPROVAL	PREPARED	CHECKED	APPROVAL
董桂茹工程部	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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Revise record

NO.	Date	Revise reason	Revise content	Prepared
01	2022.04.13	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.

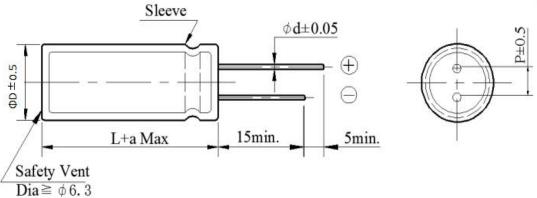
2. Table of specification and characteristics

Series	es Cap(uF) 120Hz/20°C WV(V) Size (mm) Temperature (°C)		Capacitance Tolerance	Life(hours) @105(°C)				
	120112/20 C		D	L	()	1 oler ance		(W103(C)
RF	150	100	10	20	-40~+10	05 $\pm 20\%$		5000
,	⁄₀)(MAX) Hz/20°C	LC(μA)(N 2min/20		,	Ω)(MAX) KHz/25°C	1	RC (mA rms) X)105°C/100KHz	Surge voltage(V)
≤8 ≤150 ≤0.15		€0.15		910	115			

Other: /

3. Product Dimensions

Type

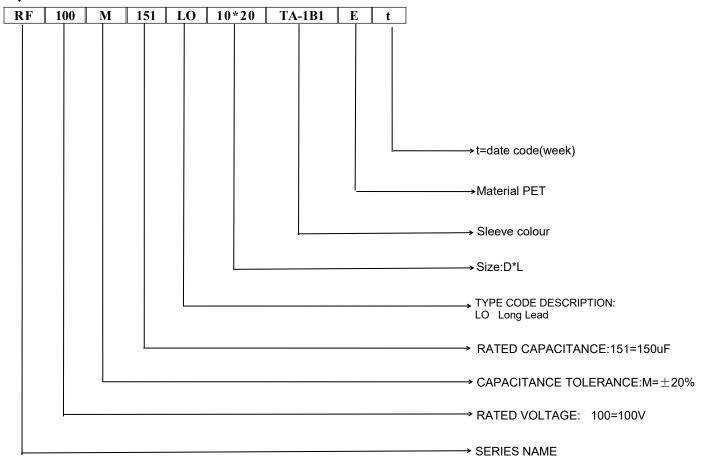


ФD	5	6.3	8	10	13	16	18	22
P	2	2.5	3.5	5	5	7.5	7.5	10
Фd	0.5	0.5	0.5/0.6	0.6	0.6	0.8	0.8	0.8
а			(L< 20)	± 1.5	(L≥2	$0) \pm 2.0$		

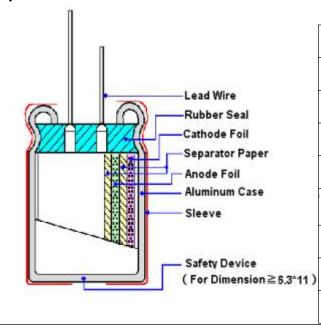
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4. Part Number



5. Construction



34		
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 Details:

Capacitor shall be marked the following items:

- 1) Trademark (BERYL)
- 2) working voltage(100V)
- 3) Nominal capacitance(150uF)
- 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 (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 $(6.3\sim100 \text{WV})$ -40°C to +105°C . (450 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	 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)

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	ITEM			PERF	ORMANO	C E		
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 100k 100k Temperature Coefficient: Temperature Coefficient: Temperature (°C) 60 85 95 105 Factor 2.23 1.73 1.41 1.00						

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	ITEM	PERFORMANCE											
		Condition> Tensile str Fixed the seconds. Fixed the 2~3 secon	capacitor Bending capacitor	r, applied strength r, applied	l force t of term l force t	inals. o ben	t the t	ermina	al (1~	4 mm	from t	he rubb	per) for 90° within
8	Terminal strength	Diameter of lead wire				Fensil ()	e forc kgf)	e N	Ber	ding 1	force N	l (kgf)	
		0.	5mm and	l less			(0.51))		2.5	(0.25)		
			0.6~0.8 n	nm		10 (1.02)			5 (0.51)		
		<criteria> No notice</criteria>	able char	nges sha	ll be fou	ınd, no	brea	kage o	or loos	seness	at the	termina	ıl.
		<condition></condition>											_
		STEP	Testir	ng tempe	rature (°C)				Гіте			
		1		20±	2		Tim	e to re	ach th	nerma	l equili	brium	
		2		5±3		Tim	e to re	ach th	nermal	l equili	brium		
		3		2		Tim	e to re	each thermal equilibrium					
		4		-2		Tim	e to re	ach th	nerma	l equili	brium		
Temperature characteristics		5	5 20±2				Tim	e to re	ach th	nerma	l equili	brium	
		Dissipa The lea b. In step Dissipa The lea c. At- 40%	5°C, capa tion facto kage curr 5, capacition facto kage curr C Imped	or shall be rent mea tance me or shall be rent shall be rent shall ance (Z)	measure be within sured she casured be within I not mo	d at + n the l nall no at +20 n the l ore tha	20°C imit of the transfer of transfer of the t	shall be than all be f Item specified the	7.3 10 tir within 7.3 ied value	hin ±2 mes of n ±109 tlue. e of th	its spe % of its	ecified vecified vecified wing ta	al value.
			(V) 6										
		Z-40℃/Z+	20℃	3 3	3	3	3	3	3	3	3	3	
10	Surge test	series for 30± 1000 times. To before measure CR: Nomine Criteria> Leakage con Capacitane	E5 second Then the corement al Capaci urrent ce Chang	ls in ever capacitor itance (µ	ry 5±0.5 rs shall l aF) Not mo Within	be left be that $\pm 15\%$	n the	15~35 r norm	5°C.Pral hus	rocedi midity	ire shal	ll be rep	
		Dissipatio			Not mo						vte		
		Appearance Attention:			i nere s	siiali D	e 110 I	сакад	c 01 e	iccirol	yıe.		
					ltage at	abnor	mal s	ituatio	on onl	y. It i	s not a	pplicab	le to such over

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	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 condition				
			mperature	Time				
		(1) +20°C		3 Minutes				
	Change of	(2) Rated low temperat	cure (-40°C)(-25°C)	30±2 Minutes				
11	temperature test	(3) Rated high tempera	ture (+105°C)	30±2 Minutes				
		(1) to (3) =1 cycle, total	l 5 cycle					
		Criteria> The characteristic shall meet Leakage current	the following requirem Not more than the					
		Dissipation Factor	Not more than the	specified value.				
				Appe	Appearance	There shall be no le	eakage of electrolyte.	
12	Damp heat test	Humidity test: According to IEC60384-4 No be exposed for 500±8 hours	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°C, the characteristic change shall meet the following requirement. **Criteria** Leakage current Not more than the specified value. Capacitance Change Within ±10% of initial value. Dissipation Factor Not more than 120% of the specified value.					
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°							
		Critaria> To be soldered							
		Criteria> To be soldered 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 ≥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.							

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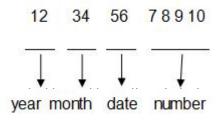


8. Packing Information

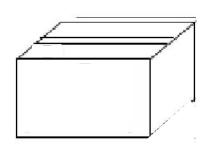
Packing Label Marked (the following items shall be marked on the label) (Inside box or bag)

(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:



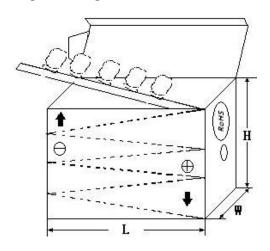
1) Bulk Packing:



3) Outer box



2) Taped Packing:



4) Outer box label:

C.S.R:		Ltd.		
C.S.R P/O:				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	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 compounds				
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

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