

# 规格书 SPECIFICATION SHEET

Customer name:				
BERYL SERIES:	RC	TY	PE: RADIAL	1
<b>DESCRIPTION:</b>	1000uF/16V	Φ8*12		
Apply date :	2022-04-13			
		1		
BERYL			CUSTOMER	
P/N:RC016M102LO8*12TH-2B	lEt	P/N:		
PREPARED	APPROVAL	PREPARED	CHECKED	APPROVAL
董桂茹	张业维			
202001952				

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: (

FAX: (0758) 2862870

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

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



# **Revise** record

NO.	Date Revise reason		<b>Revise content</b>	Prepared		
01	2022.04.13	First issue	First issue	董桂茹		
heet	NO.: 20220413		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.

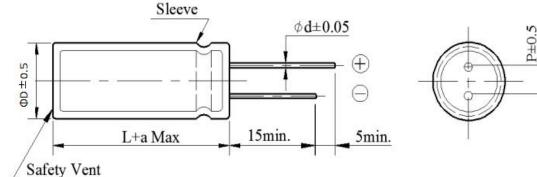
## 2. Table of specification and characteristics

Series	Cap(uF) 120Hz/20°C	WV(V)	Size	(mm)	Temperature (°C)		Capacitance Tolerance	Life(hours) @105(°C)				
	120112/20 C		D	L					( 0)		i olei allee	
RC	1000	16	8	12	-40~+105		-40~+105		-40~+105		$\pm 20\%$	2000
DF (%) 120Hz	(MAX) //20°C	LC(µA)(N 2min/2(			2)(MAX) Hz/25°C	RC (mA rms) (MAX)105°C/100KHz		Surge voltage(V)				
\$	16	≤160	)	\$	0.12	860		18				

Other: /

## 3、 Product Dimensions

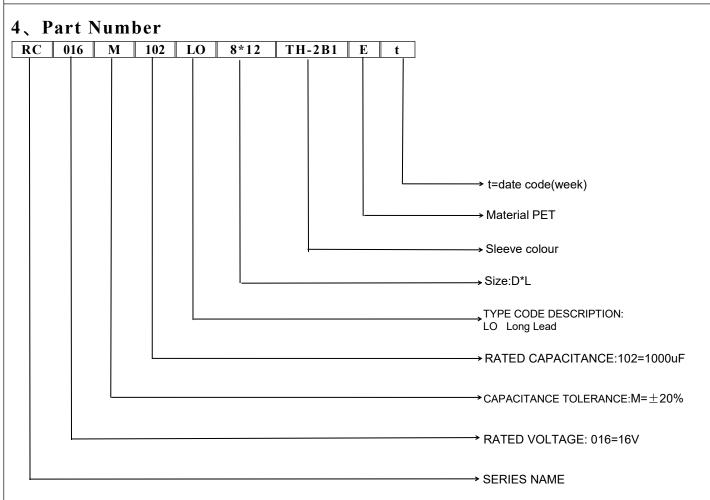
Туре



 $Dia \ge \phi 6.3$ 

ΦD	5	6.3	8	10	13	16	18	22
Р	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	$0) \pm 2.0$		





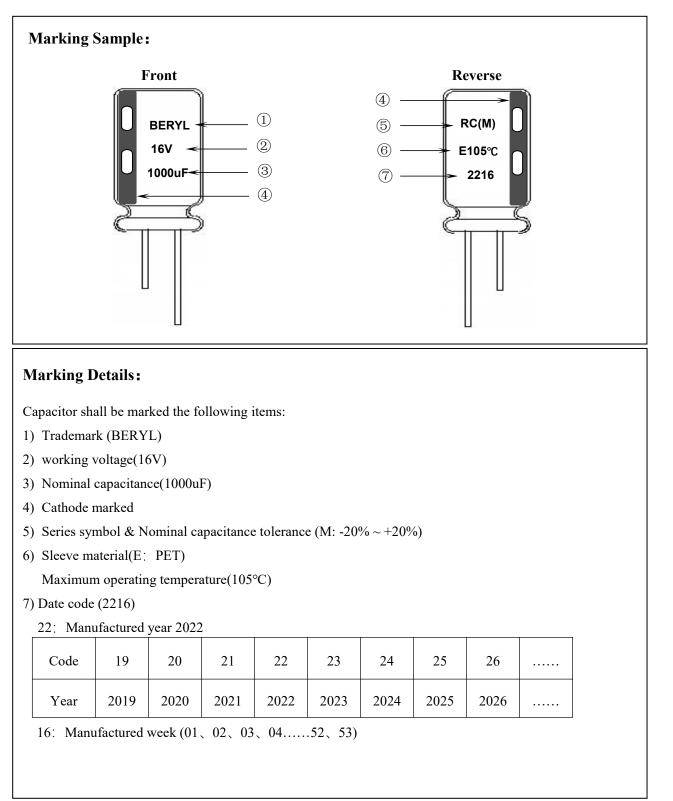
## 5、 Construction

П

1	Material name	Composition	Supplier name
	Lead	Al and (Fe+Cu+Sn)	NM、JX
Lead Wire Rubber Seal	Rubber	EPT / IIR	LHX、LA、TH、LM2
Cathode Foil	Case	Aluminum	OX、YJ、HL、LY2
Anode Foil	Paper	Wood / Fibrous plant materials	KE、DF
Aluminum Case	Anode foil	$Al + Al_2O_3$	HY1、HY2、HF、HY3、 LD、FQ
	Cathode foil	Aluminum	GY、LY1
Safety Device (For Dimension ≥ 6.3*11)	Electrolyte	Glycol + Water +Ammonium salt	XZB、LM1、JZ2、FS
	Sleeve	PET	YL、CY



## 6、Product Marking





## 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°CRelative 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 :  $20^{\circ}C \pm 2^{\circ}C$ 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  $(6.3 \sim 450 \text{WV}) - 40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$ .

#### 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	$\begin{array}{c} <\!\! \textbf{Condition}\!\!> \\ & \text{Connecting the capacitor with a protective resistor } (1k\Omega\pm10\Omega) \text{ in series for} \\ & 2 \text{ minutes, and then, measure leakage current.} \\ <\!\! \textbf{Criteria}\!\!> \\ & \text{I: Leakage current } (\mu\text{A}) \\ & \text{I} (\mu\text{A}) \leqslant 0.01\text{CVor 3 } (\mu\text{A}) \text{ whichever is greater,} \\ & \text{measurement circuit refer to right drawing.} \\ & \text{C: Capacitance } (\mu\text{F}) \\ & \text{V: Rated DC working voltage } (\text{V}) \end{array}$
3	Dissipation factor	<condition> Nominal capacitance, for measuring frequency, voltage and temperature. Must be within the parameters (See page 3)</condition>



ITEM			PERFORM	ANCE		
4 Impedance	<b>Condition&gt;</b> Measuring frequency:100kHz; Measuring temperature:20±2°C Measuring point: 2mm max. from the surface of a sealing rubber on the lead <b>Criteria&gt;</b> (20°C) Must be within the parameters (See page 3)					
Load 5 life test	Condition> According to IEC60384 Maximum operating ter- current for Rated life + exceed the rated working recovering time at atm <criteria> The characteristic shall Leakage current Capacitance Change Dissipation Factor Appearance</criteria>	mperature ±2 48/0hours. ( ng voltage) ' ospheric cor meet the fol Not mo Within = Not mo	2°C with DC The sum of I Then the prod aditions. The llowing requi ore than the sp $\pm 20\%$ of initi- re than 200%	bias voltage p DC and ripple duct should be result should p rements. pecified value	olus the rated of peak voltage e tested after 1 meet the follo ed value.	ipple shall not 6 hours
Shelf 6 life test	<condition> The capacitors are then temperature±2°C for from the test chambed leakage current <criteria> The characteristic shall n Leakage current Capacitance Change Dissipation Factor Appearance</criteria></condition>	1000+48/0 h er and be allo neet the follo Not more Within ±2 Not more	owing require than 200% of than 200% of than 200% of	ing this period ized at room ments.	d, the capacito temperature for value. value.	ors shall be re
Maximum permissible (ripple current, temperature coefficient)	<b>Condition&gt;</b> The maximum permissib applied at maximum oper Table-3 The combined value of I voltage and shall not rev <b>Frequency Multipliers:</b> Freq (Hz) Cap. (μF) 1000 <b>Temperature Coefficients</b> Temperature (6)	D.C voltage erse voltage 120 0.60	erature and the peak	A.C voltage s		



	ITEM	PERFORMANCE													
8	Terminal strength	2~3 second Diam 0.: ( Criteria>	capacitor, a Bending str capacitor, a ds, and the eter of lead 5mm and le 0.6~0.8 mm	applied rength applied <u>n bent</u> 1 wire ess n	d forc of te d forc it for	rmin ce to <u>r 90°</u> Te	hals. bent to it ensile (1) 5 (1)	the t s orig e forc (0.51) (1.02)	ginal j se N	nal (1- positional Be	$\frac{-4 \text{ mm}}{2.4}$	$\frac{1}{100} \frac{1}{100} \frac{1}$	e rubbe econds kgf)	er) for 90° w	ithin
9	Temperature characteristics	$<$ Condition>STEPTesting temperature1 $20\pm 2$ 2 $-40$ $-25\pm 3$ 3 $20\pm 2$ 4 $105\pm 2$ 5 $20\pm 2$ Capacitance, DF, and impedance $<$ Criteria>a. At +105°C, capacitance measureDissipation factor shall be with The leakage current measured sb. In step 5, capacitance measured Dissipation factor shall be with The leakage current shall not m c. At- 40°C Impedance (Z) ratio s			ce sh ured thin 1 sha ed at thin more	all b at +2 the li ll no t +20 the li e tha	Time to reach thermal equilibrium         Interval         at +20°C shall be within ±25% of its original value.         ne limit of Item 7.3         Inot more than 10 times of its specified value.         +20°C shall be within ±10% of its original value.         ne limit of Item 7.3         than the specified value.         I not exceed the value of the following table.								
10	Surge test	Z-40°C/Z+20°C8644444 <b><condition></condition></b> Applied a surge voltage to the capacitor connected w series for $30\pm 5$ seconds in every $5\pm 0.5$ minutes at $15\sim 35^\circ$ C.I 1000 times. Then the capacitors shall be left under normal he before measurement CR : Nominal Capacitance ( $\mu$ F) <b><criteria></criteria></b> Not more than the specified Capacitance ChangeWithin $\pm 15\%$ of initial value Dissipation FactorAppearanceThere shall be no leakage of Attention : This test simulates over voltage at abnormal situation on voltage as often applied.							Proced umidit value e. value f electr	ure shall   y for 1-2   olyte.	be repe hours				
She	et NO.: 20220	)413								P	age	: 8/1	L2		



	ITEM		PERFORMAN	CE					
		<condition> Temperature cycle: According to IEC60384-4 No according as below:</condition>	o.4.7 methods, capacitor	shall be placed in an oven, the conditi					
			nperature	Time					
		(1) +20°C		3 Minutes					
	Change of	(2) Rated low temperate	ure (- 40°C)(-25°C)	30±2 Minutes					
11	temperature test	(3) Rated high temperat	ture (+105°C)	30±2 Minutes					
		(1) to (3) =1 cycle, total	l 5 cycle						
		<criteria> The characteristic shall meet</criteria>	the 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	Humidity test: According to IEC60384-4 No be exposed for 500±8 hours i 40±2°C, the characteristic cha < <b>Criteria</b> >	n an atmosphere of 90~5 ange shall meet the follo	95%R H .at wing requirement.					
14	test	Leakage current	Not more than the spec						
		Capacitance Change	Within $\pm 10\%$ of initial						
			Dissipation FactorNot more than 120% of the specified value.AppearanceThere shall be no leakage of electrolyte.						
		Appearance							
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</criteria></condition>							
		Soldering wetting time	Less than 3s						



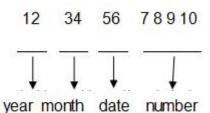
	ITEM	PERFORMANCE						
14	Vibration test	Condition> The following conditions shall be applied for 2 hours in each 3 mutually perpendicular directions. Vibration frequency range : 10Hz ~ 55Hz each to peak amplitude : 1.5mm Sweep rate : 10Hz ~ 55Hz ~ 10Hz in about 1 minute Mounting method: The capacitor with diameter greater than 12.5mm or longer than 25mm must be fixed in place with a bracket. Within 30° 4mm or less Unit for the test, the following items shall be tested: No intermittent each and a property in place.						
		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<sup>-0</sup> 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></criteria></condition>						
15	to solder heat	Leakage current Not more than the specified value.						
	test	Capacitance ChangeWithin ±5% of initial value.						
		Dissipation Factor Not more than the specified value.						
		AppearanceThere shall be no leakage of electrolyte.						
16	Vent test	<condition>         The following test only apply to those products with vent products at diameter <math>\geq \emptyset 6.3</math> 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="">         Diameter (mm)       DC Current (A)         22.4 or less       1</table></condition>						
		The vent shall operate with no dangerous conditions such as flames or dispersion of pieces of the capacitor and/or case.						



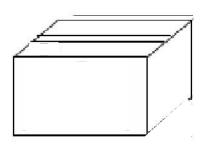
## 8、 Packing Information

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 (0) Lot number (1) Series

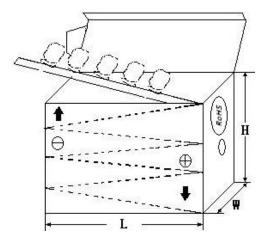
LOT Number :



#### 1) Bulk Packing:



#### 2) Taped Packing:



#### 3) Outer box



外箱

4) Outer box label:

BERYL	Zhao Qin	g Beryl Ele Ltd.	ctronic	c Technology Co.,
C.S.R:				
C.S.R P/O	9			ROHS HE
C.S.R P/N	0			
S.P.R P/N	1			QC
SPEC:				
QTY:	PCS	TOL:	%	
L/N:		S.P.R:		3



### 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.

	Cadmium and cadmium compounds						
Accord with	Lead and lead compounds						
heavy metal	Mercury and mercury compounds						
	Hexavalent chromium compounds						
	Polychlorinated biphenyls (PCB)						
Onconio chlorin	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 compo	bunds						
Triphenyltin com	pounds						
Asbestos							
Specific azo com	pounds						
Formaldehyde	· · ·						
Polyvinyl chlorid	Polyvinyl chloride (PVC) and PVC blends						
F、Cl、Br、I							
REACH	REACH						

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

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