Messrs. THIN CHANG CORPORATION

ALUMINUM ELECTROLYTIC CAPACITORS SPECIFICATION SHEET

CUSTOMER PART No.		
Rubycon PART No.	50 YXG 4R7 M LLC 5X11	
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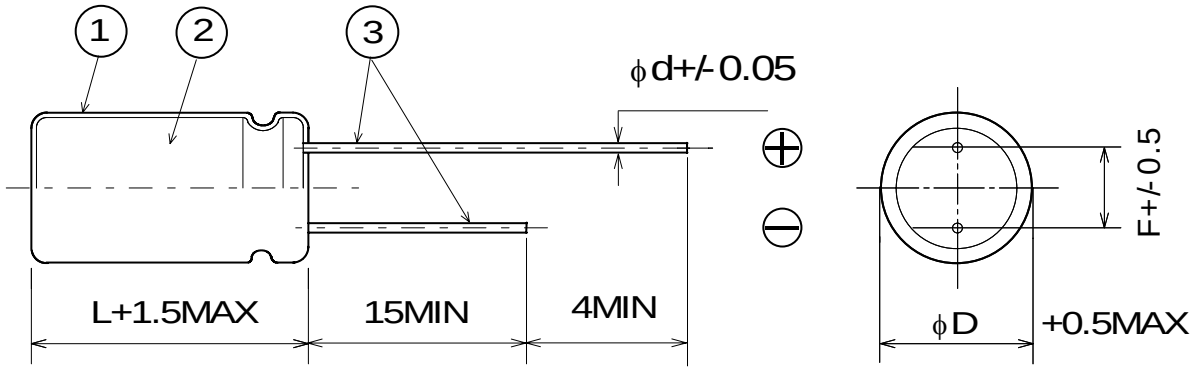
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ALUMINUM ELECTROLYTIC CAPACITORS	Style		CE 04	
	Operating Temperature Range		-40°C ~ +105°C	
	Reference Standard		JIS C 5141, JIS C 5102	
50 WV 4.7 MFD (YXG SERIES)		①Sleeve	P.E.T.	
		②Case	Aluminum	
		③Lead Wire	CP Wire	Tin plated

1.Dimensions unit : mm



2.Electrical Performance

Table-1

NOMINAL CAPACITANCE (μF)	CAPACITANCE TOLERANCE (%) 20°C, 120Hz	RATED VOLTAGE (V.DC)	SURGE VOLTAGE (V.DC)	LEAKAGE CURRENT (μA MAX) 20°C 2min	D.F. tan δ MAX 20°C 120Hz	MAX RIPPLE CURRENT (mA rms) 105°C 100kHz
4.7	-20~+20	50	63	3.00	0.10	88

IMPEDANCE (ΩMAX) 100kHz		IMPEDANCE RATIO 120Hz		DIMENSIONS (mm)			
20°C	-10°C	Z-25°C/Z20°C	Z-40°C/Z20°C	ϕD	L	F	ϕd
1.9	5.0	2	3	5	11	2.0	0.5

3.Marking : Unless otherwise specified, capacitor shall be clearly marked the following items on its body.

Sleeve color : Black

Lettering color : White

(1) Trade mark	Rubycon
(2) Rated Voltage	50 V
(3) Nominal Capacitance	4.7μF
(4) Polarity	⊟⊟ (Negative Polarity)
(5) Series	YXG
(6) Date code	
(7) Maximum Operating temperature	105°C
(8) PET sleeve mark	PET

4.Vent

On capacitors whose diameter is 6.3mm and greater, a safety vent shall be provided.

5.Load life test

Capacitors under the test shall be applied the rated voltage continuously through 1000 ohm series protective resistor (with maximum ripple current) at 105±2°C for 5000 $^{+72}_{0}$ hours. After the test and returned in standard condition for 2 hours or more, and the capacitor shall meet following requirements.

Capacitance Change : within ±25% of the initially measured value.
Dissipation Factor : less than 200% of the specified value.
Leakage Current : less than the specified value.
Appearance : notable changes shall not be found.
(except sleeve condition)

6.Shelf life test

Capacitors shall be stored at 105±2°C with no voltage applied for 1000 $^{+48}_{0}$ hours. After the test and returned in standard condition for 1 to 2 hours and the capacitor shall meet following requirements. (If any doubt arises on the judgment, the capacitors shall be subjected to voltage treatment specified in JIS C 5141,5.2.)

Capacitance Change : within ±25% of the initially measured value.
Dissipation Factor : less than 200% of the specified value.
Leakage Current : less than the specified value.
Appearance : notable changes shall not be found.

7.Correction factor for ripple current

The maximum permissible ripple current is the maximum A.C. current at 100kHz and can be applied at maximum operating temperature. The combined value of D.C. voltage and the peak A.C. voltage shall not exceed the rated voltage and shall not be reverse voltage.

< Frequency Coefficient >

Freq. (Hz)	120	1k	10k	≥100k
Multiplier	0.42	0.60	0.80	1.00

< Temperature Coefficient >

Ambient Temperature(°C)	105	85	65≥
Coefficient	1.0	1.7	2.1

◊Temperature coefficient shows a limit of ripple current exceeding the rated ripple current that can be passed through a capacitor at each temperature when the life expectancy of a capacitor becomes to be nearly equal with the lifetime at the rated maximum operating temperature.

◊ Ripple voltage with wide amplitude

Use of aluminum electrolytic capacitor under ripple voltage with wide amplitude is equivalent to quick charge-discharge operation. When ripple voltage with the amplitude over 70Vp-p is expected for the products with rated voltage over 100V, please contact us.

8. Notes on use of aluminum electrolytic capacitors

(1) Charge and discharge

Do not use for the circuit that repeats quick charge or discharge

(2) External stress

Do not apply excessive force of pushing, pulling bending, and/or twisting to the main body, lead wire and terminals.

(3) Heat resistance at soldering process

In the soldering process of PC board with Capacitors mounted, secondary shrinkage or crack of sleeve may be observed when soldering temperature is too high and /or soldering time is too long.

If lead wire of other components or pattern of double sided PC board touches the capacitor, the similar failure may be also originated at pre-heating, heating at hardening process of adhesive and soldering process.

(4) Insulation and PC board mounting

Sleeve is for marking purpose only. It is not recognized as insulation materials.

When double sided PC board is employed, note that it could cause a short circuit if lead wire of other components or pattern of double sided PC board touches capacitor. Please avoid circuit pattern runs underneath capacitor.

In addition, case and cathode terminal are not insulated.

(5) Adhesives and coating materials

Do not use the adhesives and coating materials that contain halogenated organic solvents or chloroprene as polymer.

(6) Storage

Keep at a normal temperature and humidity. During a long storage time, leakage current will be increased. To prevent heat rise or any trouble that high leakage current possibly causes, voltage treatment is recommended for the capacitors that have been stored for a long time.

<Storage Condition>

*Aluminum electrolytic capacitors should not be stored in high temperatures or where there is a high level of humidity. The suitable storage condition is 5°C-35°C and less than 75% in relative humidity.

*Aluminum electrolytic capacitors should not be stored in damp conditions such as water, saltwater spray or oil spray.

*Do not store aluminum electrolytic capacitors in an environment full of hazardous gas (hydrogen sulfide, sulfurous acid gas, nitrous acid, chlorine gas, ammonia or bromine gas).

*Aluminum electrolytic capacitors should not be stored under exposure to ozone, ultraviolet rays or radiation.

(7) Fumigation and halogenated flame retardant

It may cause corrosion of internal electrodes, aluminum cases and terminal surface when the following conditions exist.

*Fumigation of wooden pallets before shipment to disinfect vermin.

*Existence of components or parts that contain halogenated flame retardant agent (bromine etc.) together with capacitors.

*When halogenated detergents or antiseptics for preventing infection of epidemic diseases contact directly to capacitors.

(8) PC board cleaning after soldering

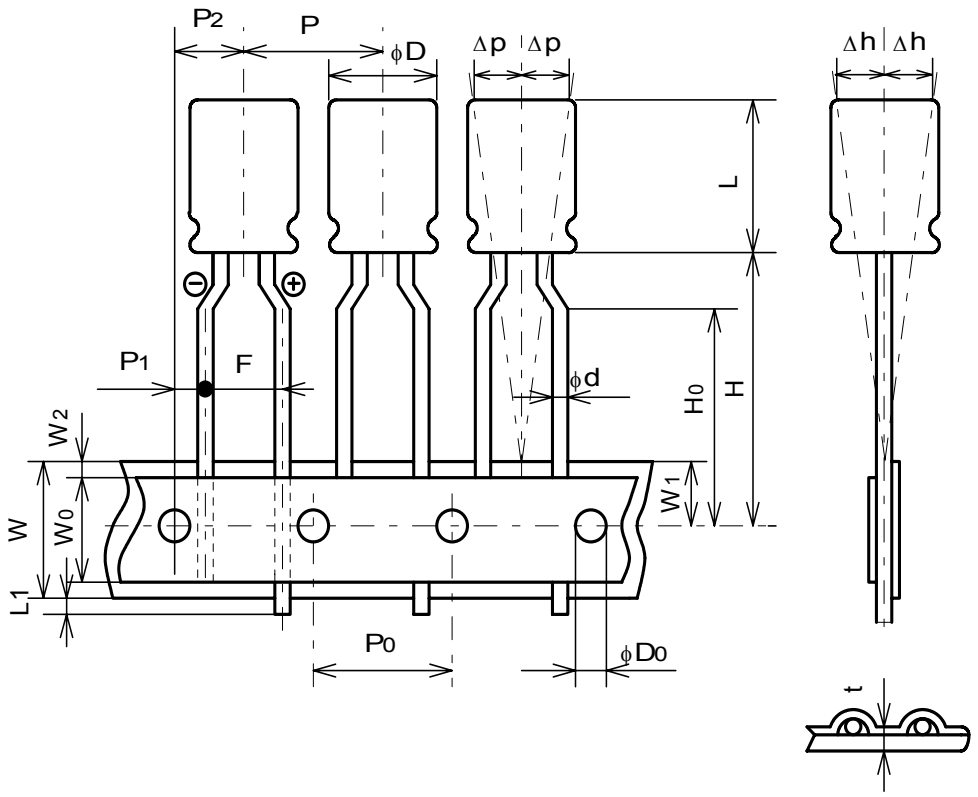
Please consult us when cleaning is subjected.

♦Guide to application except the above are described in our catalog and EIAJ RCR-2367C.

EIAJ RCR-2367C: “Safety Application Guide for fixed aluminum electrolytic capacitors for use in electronic equipment."
Published by Japan Electronics and Information Technology Industries Association.

CODE : TA (Positive leading)

LEAD TYPE (DIA. ϕ5 ~ ϕ8) < L≥9 >



Symbol	Case Dia ϕ mm		Remarks
	ϕ5,ϕ6.3	ϕ8	
ϕd	0.5±0.05	0.6±0.05	Dia of lead
L	13.0MAX	22.0MAX	Hight of body
P	12.7	±1.0	Distance from center to center of body
P_0	12.7	±0.2	Distance from center to center of driving hole
P1	3.85	±0.5	Distance between center of driving hole and lead
P2	6.35	±1.0	Distance between center of driving hole and body
F	5.0	$^{+0.8}_{-0.2}$	Lead spacing
W	18.0	±0.3	Width of mounting tape
W_0	5.0	MIN	Width of adhesive tape
W1	9.0	±0.5	Distance between center of driving hole and edge of mounting tape
W2	1.5	MAX	Max. allowable distance between mount and adhesive tape side
H	18.5±0.75	20.0±0.75	Distance between center of driving hole and bottom of body
H_0	16.0	±0.5	Distance between center of driving hole and clinch of lead
L1	0.5	MAX	Protrusion of lead
ϕD_0	4.0	±0.2	Dia. of driving hole
Δh	1.0	MAX	Off alignment of body
Δp	1.0	MAX	Off alignment of body
t	0.6	±0.3	Sum of thickness for mounting and adhesive tape without lead dia.