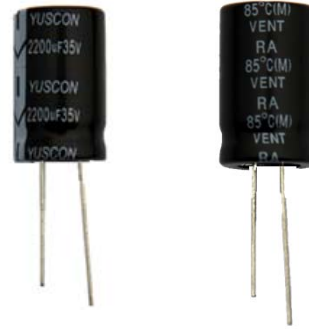


Aluminum Electrolytic Capacitors



RA Series

- Radial lead type aluminum electrolytic Capacitor for general-purpose
- Rate voltage is extended to 450V
- We guarantee operation for 2000 hours at 85°C
- Rohs compliance.

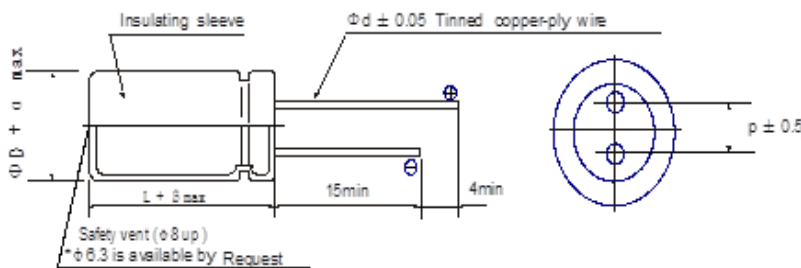


■ SPECIFICATIONS

Item	Characteristics													
Operating Temperature Range	- 40 ~ + 85°C	- 25 ~ + 85°C												
Voltage Range	6.3 ~ 350 V.DC	160~ 450 V.DC												
Nominal Cap. Range	0.1 ~ 15000 μF	0.47 ~220 μF												
Capacitance Tolerance	- 20% ~ + 20% (at 20°C, 120Hz)													
Leakage Current	WV	6.3 ~ 100	160 ~ 450											
	LC	I = 0.01CV or 3(μA) whichever is greater.(after 2 min.)												
where, I: Max Leakage Current(μA), C: Nominal Capacitance(μF), V: Rated Vo														
Dissipation Factor (tanδ) (at 120Hz, +20°C)	WV	6.3	10	16	25	35	50	63	100	160~250	350~450			
	tanδ	0.22	0.19	0.16	0.14	0.12	0.1	0.09	0.08	0.12	0.20			
0.02 is added to every 1000μF increase over 1000μF.														
Low Temp. Impedance Stability at 120Hz	Rated voltage (V.DC)	6.3	10	16	25	35	50	63	100	160	200	250	350	400, 450
	Impedance ratio	Z - 25°C / Z + 20°C	4	3	2	2			3			8	16	
		Z - 40°C / Z + 20°C	8	6	6	3			-			-	-	
High Temp. Load Test	After 2000hrs. Application of DC rated working voltage at +85°C, The capacitor shall meet the following limits. Capacitance change ... ≅ ± 20% of the initial measured value Tanδ ... ≅ 150% of the initial specified value DC leakage current ... ≅ the initial specified value													
High Temp. Non-Load Test	After storage for 1000 hours at 85°C with no voltage applied, voltage treatment of JIS-C-5102 article 4-4 is to be given and then measurement shall be made, at which time requirements specified in the table "High temperature loading" can be met.													

Note: Some cleaning solvents may adversely affect the capacitors. Consult us about the suitable type of cleaning solvents to be used.

● DRAWING



Unit: (mm)

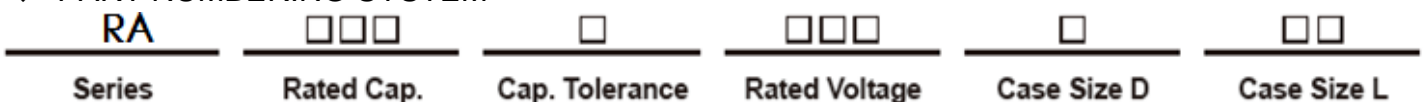
ΦD	5	6.3	8	10	13	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
Φd	0.5		0.6		0.8			
β	1.0			1.5			2.0	
α	0.5							

▼ MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

Cap(μF) \ Freq.(Hz)	60(50)	120	500	1K	10K
0.1~ 100	0.70	1.00	1.30	1.40	1.50
220 ~ 1000	0.75	1.00	1.20	1.30	1.35
2200 ~15000	0.80	1.00	1.10	1.10	1.15

◆ PART NUMBERING SYSTEM



Aluminum Electrolytic Capacitors



RA series

STANDARD RATINGS

Parameter Cap (μF)	6.3		10		16		25		35		50		63		100		
	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	
0.1											5X11	1.5			5X11	3	
0.22											5X11	3			5X11	5	
0.33											5X11	5			5X11	7	
0.47											5X11	8			5X11	11	
1											5X11	10			5X11	15	
2.2											5X11	20			5X11	25	
3.3											5X11	26			5X11	35	
4.7								5X11	27	5X11	30	5X11	33	5X11	35	5X11	45
10					5X11	40	5X11	45	5X11	50	5X11	60	5X11	60	6.3X11	70	
22			5X11	50	5X11	60	5X11	70	5X11	80	5X11	90	6.3X11	100	8X11.5	130	
33	5X11	60	5X11	65	5X11	80	5X11	90	5X11	100	6.3X11	110	6.3X11	140	10X12.5	170	
47	5X11	70	5X11	80	5X11	110	5X11	120	6.3X11	130	6.3X11	140	8X11.5	240	10X16	230	
100	5X11	120	5X11	140	6.3X11	170	6.3X11	180	8X11.5	210	8X11.5	260	10X12.5	300	10X20	370	
220	6.3X11	200	6.3X11	210	8X11.5	260	8X11.5	330	10X12.5	370	10X16	440	10X20	490	13X25	630	
330	6.3X11	240	8X11.5	290	8X11.5	350	8X11.5	410	10X16	490	10X20	610	13X21	680	16X25	860	
470	8X11.5	340	8X11.5	390	8X11.5	470	10X16	540	10X20	620	10X20	750	13X20	880	16X31.5	1100	
1000	10X12.5	590	10X16	660	10X16	790	10X20	950	13X20	1150	13X25	1,350	16X25	1,400	18X40	1,600	
2200	10X20	1050	13X20	1,000	13X20	1,350	13X25	1,550	16X25	1,700	16X35.5	2,100	18X40	2,300			
3300	13X20	1,250	13X25	1,200	13X25	1,700	16X25	1,700	18X35.5	2,250	18X35.5	2,400	22X41	2,550			
4700	13X25	1,700	16X25	1,500	16X25	2,100	16X31.5	2,400	18X35.5	2,600	22X40	2,850					
6800	16X25	1,950	16X31.5	1,700	18X31.5	2,550	18X35.5	2,700	18X40	2,650							
10000	16X31.5	2,300	18X36	1,900	18X40	2,900	22X41	3,000									
15000	18X35.5	3,650															

Parameter Cap (μF)	160		200		250		350		400		450	
	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)	ΦDxL (mm)	Ripple current (mArms)
0.47	5X11	11	6.3X11	11	6.3X11	11	8X11.5	20	8X11.5	20	8X11.5	26
1	5X11	15	6.3X11	15	6.3X11	15	8X11.5	29	8X11.5	29	10X12.5	45
2.2	5X11	24	6.3X11	24	8X11.5	27	10X12.5	50	10X12.5	50	10X16	60
3.3	8X11.5	32	8X11.5	32	10X12.5	35	10X12.5	61	10X12.5	61	10X20	78
4.7	8X11.5	40	10X12.5	40	10X12.5	45	10X12.5	73	10X16	80	13X20	134
10	10X12.5	65	10X16	88	10X16	70	10X20	128	13X20	150	16X25	240
22	10X20	105	10X20	135	13X21	110	13X20	183	13X25	242	16X31.5	322
33	13X21	140	13X21	205	13X25	155	13X25	242	16X25	329		
47	13X25	160	13X25	230	16X25	175	16X25	254	16X31.5	344		
82	16X25	243	16X25	400	18X25	255	18X31.5	360	18X31.5	430		
100	16X25	280	16X25	460	18X36	310						
220	18X36	360	16X35.5	660								

→ Rated Ripple Current (mArms) at 85°C 120Hz
 → Case Size: Φ D x L (mm)