Data Sheet

Customer:

Product: Aluminum Electrolytic Capacitors – ECR Series

Size : 5x11mm ~ 25x41mm

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Edition: Ver. 1

Record of change

Date	Ver.	Description	Page
15-Jun-2016	1		

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15-Jun-2016	15-Jun-2016	15-Jun-2016	
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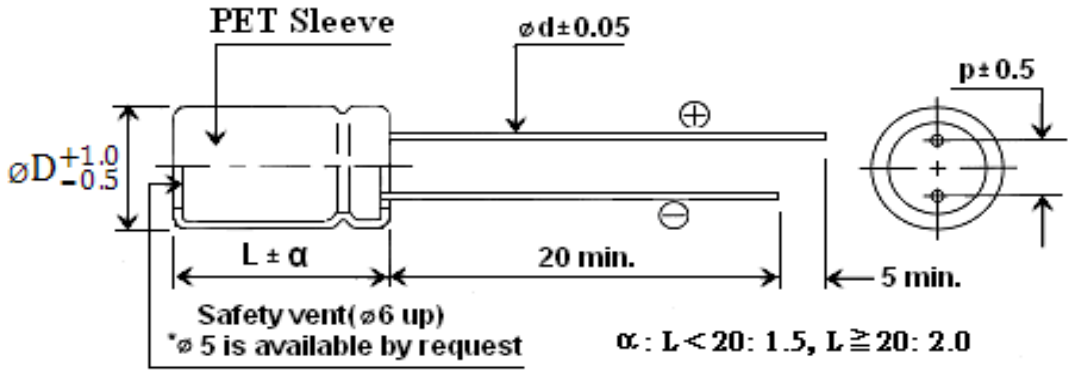
- Life 2000 hours at 85℃
- Small size allows wider choice of capacitance and voltage for automatic insertion.

Characteristics

Voltage Range	6.3 to 100 VDC			160 to 450 VDC				
Capacitance Range	0.47 to 10000uF			0.47 to 470uF				
Temperature Range	-40 to +85℃			-25 to +85℃				
Capacitance Tolerance	±20% at 120Hz , 20℃(10% Tol. is available upon request)							
Leakage Current	I≤0.01CV or 3uA, whichever is greater 2 minutes after Rated Voltage applied			I≤0.03CV or 3uA, whichever is greater 3 minutes after Rated Voltage applied				
Dissipation Factor (tanδ)	Rated Voltage (V)	6.3	10	16	25	35	50	63
	Dissipation Factor(tanδ)max	0.22	0.19	0.16	0.14	0.12	0.10	0.09
	Rated Voltage (V)	100	160	200	250	350	400	450
	Dissipation Factor(tanδ)max	0.08	0.16	0.18	0.18	0.20	0.20	0.20
	For capacitance > 1000uF, add 0.02 for every 1000uF, (at 20℃, 120Hz)							

Stability at Low Temperature (For Cap.＞1000uF, add 0.5 per 1000uF(-25℃/+20℃) add 1.0 per 1000uF(-40℃/+20℃)	Impedance ration at 120Hz							
	Rated Voltage (V)	6.3	10	16	25	35	50	63	100
	Z-25℃/Z 20℃	4	3	2	2	2	2	2	2
	Z-40℃/Z 20℃	8	6	4	4	3	3	3	3
	Rated Voltage (V)	160	200	250	350	400	450		
	Z-25℃/Z 20℃	2	2	3	5	15	15		

Load Life	After the rated voltage has been applied for 2000 hours at 85℃	Capacitance change	Within ±20% of initial value
		D.F. tanδ	200% or less of initial specified value
		Leakage current	Less than Initial specified value
Shelf Life	After storage for 1000 hours at 85℃ with no voltage applied, the capacitor shall meet the specified limit in load life. Pre-treatment for measurement shall be conducted after application of DC working voltage for 30 minutes.		



Drawing

Dϕ	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
dϕ	0.5	0.5	0.5	0.6	0.6	0.8	0.8	0.8

Ripple Current Coefficients

Frequency (Hz)	**50(60)**	**120**	**400**	**1K**	**10K**	**100K**
Cap.(uF) / Hz	**Multiplier**					
Cap. ≦ 10	0.8	1	1.30	1.45	1.65	1.70
10＜Cap.≦100	0.8	1	1.23	1.36	1.48	1.53
100＜Cap.≦1000	0.8	1	1.16	1.25	1.35	1.38
1000＜Cap.	0.8	1	1.11	1.17	1.25	1.28

Case Size & Maximum Ripple Current (mA rms 85℃ 120Hz)

Cap. \ WV	6.3V		10V		16V		25V		35V		50V		63V	
uF	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.
0.47										→	5x11	10	5x11	10
1		ALL BLANK VOLTAGE ON SLEEVE MARKING IS SAME VOLTAGE "→" POINT TO								→	5x11	17	5x11	17
2.2										→	5x11	25	5x11	28
3.3										→	5x11	35	5x11	35
4.7										→	5x11	42	5x11	45
10				→	5x11	60	5x11	60	5x11	60	5x11	65	5x11	70
22				→	5x11	75	5x11	90	5x11	95	5x11	100	6.3x11	115
33				→	5x11	85	5x11	95	5x11	121	5x11 6.3X11	120 125	6.3x11	140
47				→	5x11	130	5x11	130	5x11 6.3x11	143 154	6.3x11	150	6.3x11 8x12	180 190
68				→	5x11	149	6.3x11	176	6.3x11	198	8x12	220	8x12	253
100	5x11	143	5x11	198	5x11	176	6.3x11	209	6.3x11 8x12	231 253	8x12	275	10x13	300
150	5x11	198	5x11	231	6.3x11	253	6.3x11	275	8x12	308	10x13	363	10x16	462
220	5x11	242	6.3x11	294	6.3x11	308	6.3x11 8x12	310 363	8x14 10x13	385 407	10x13 10x16	425 440	10x16 10x21	490 500
330	6.3x11	330	6.3x11	363	8x12	407	8x12	451	10x13	528	10x16	649	10x21	690
470	6.3x11	385	6.3x11 8x12	418 440	8x12	517	8x14 10x13	561 594	10x16	693	10x21 13x21	750 780	13x21 13x26	930 968
680	8x12	539	8x12	572	8x16	640	10x16	792	10x21	891	13x21	1056	16x26	1265
1000	8x12	649	8x14 10x13	730	10x16	869	10x21	1050	13x21	1265	13x26 16x26	1350 1400	16x26	1550
1500	10x16	935	10x16	1001	10x21	1100	13x21	1353	13x26	1570	16x31.5	1848	16x36	2090
2200	10x16	1135	10x16	1100	13x21	1485	13x21 13x26	1300 1705	16x26	1870	16x36	2100	18x36	2200
3300	10x21	1430	13x21	1540	13x26	1870	16x26	1870	16x31.5	2365	18x36	2400	22x41	2550
4700	13x21	1672	13x26	1980	16x26	2310	16x31.5	2640	18x36	2860	22x41	2981	25x41	2950
6800	13x26	2002	16x26	2475	16x31.5	2805	18x36	2970	18x41	2915	25x41	3250		
10000	13x35 16x26	2180 2332	16x36	2640	18x36	2970	18x41 22x36	2981 3212	22x41	3960	25x50	3600		

Case Size & Maximum Ripple Current (mA rms 85℃ 120Hz)

Cap. \ WV	100V(2A)		160V(2C)		200V(2D)		250V(2E)		350V(2V)		400V(2G)		450V(2W)	
uF	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.	Size	R.C.
0.47	5x11	12	5x11	12	5x11	12	5x11	12	6.3x11	15	6.3x11	12	6.3x11	12
1	5x11	22	5x11	17	6.3x11	17	6.3x11	17	6.3x11	22	6.3x11 8x12	20 22	8x12	22
2.2	5x11	33	6.3x11	30	6.3x11	30	6.3x11	20	8x12	30	8x12 10x13	32 35	8x12 10x13	32 35
3.3	5x11	40	6.3x11	36	6.3x11	36	8x12	43	8x12 10x13	46 51	8x12 10x13	45 53	10x13 10x16	37 40
4.7	5x11	48	6.3x11 8x12	40 48	8x12	51	8x12 10x13	48 51	8x12 10x13	55 63	10x13 10x16	66 70	10x16 10x21	50 56
10	5x11 6.3x11	85 92	8x12 10x13	80 83	10x13 10x16	83 88	10x13 10x16	88 90	10x16 10x21	115 125	10x21 13x21	115 120	13x21 13x26	105 110
22	6.3x11 8x12	130 135	10x13 10x16	135 170	10x21	135	10x21 13x21	135 142	13x21	180	13x21 13x26	190 200	13x26 16x26	150 165
33	8x12	170	10x16 10x21	180 198	13x21	205	13x21	210	13x21 13x26	225 250	13x26 16x26	230 250	16x26 16x31.5	190 210
47	10x13	230	10x21 13x21	230 253	13x21	250	13x21 13x26	240 260	16x26 16x31.5	290 310	16x26 16x31.5	270 290	16x31.5 16x36	260 280
68	10x16	348	13x21	360	13x26	370	13x26 16x26	340 390	16x31.5	400	16x36 18x31.5	410 420	18x31.5 18x36	370 390
100	10x21	390	13x26 16x26	430 450	16x26	460	16x26 16x31.5	410 450	18x31.5 18x41	430 460	18x36 18x41	430 450	18x41	420
150	13x21	629	16x26	560	16x31.5	580	18x31.5	600	18x41	570				
220	13x26	720	16x31.5 16x36	850 890	16x36	750	18x41 22x30	800 870						
330	13x26 16x26	880 920	18x36 18x41	890 920	18x36 18x41	940 1000								
470	16x26	1150	18x36 18x41	1180 1250	18x41	1330								
680	16x36	1634												
1000	18x41	1600												

Part Numbering System

ECR	101	M	25	A	–	T1
SERIES	CAPACITANCE	TOL.	W.V.	PACKAGE	SIZE	LEAD SPACE
	IN 3DIGITS	M= ± 20%	0J= 6.3V	B= Bulk	Omit if only	Omit if Bulk
	010= 1.0uF		10= 10V	C5= Cut 5mm	one size	T1= L/S 2.5mm Taped
	4R7= 4.7 uF		25= 25V	AC5= Smaller Size cut 5mm	A= Smaller Size	TA= Lead forming space 5mm Taped
	101= 100uF		63= 63V			
	102= 1000uF		2A= 100V	A= Ammo Pack		T35= L/S 3.5mm Taped
	103= 10000uF		(Refer to	R= Tape&Reel		T2=L/S 5mm Taped
			voltage code	F5= Lead formed & cut 5mm		T3= L/S 7.5mm Taped
			in table)			