

CR Series Low Impedance

CR系列

Features

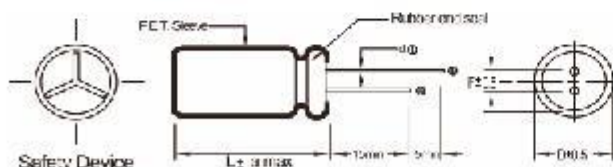
- Used in communication equipments, switching power supply, industrial measuring instruments, etc
- Load life 2000~4000 hrs at 105°C
- Safety vent construction design
- RoHS Compliant



Specifications

Item	Performance Characteristics																						
Operating Temp. Range	-40~+105℃								-25~+105℃														
Rated Voltage Range	6.3 to 100 VDC								160 to 450 VDC														
Capacitance Range	0.47 to 10000 μF								0.47 to 470 μF														
Capacitance Tolerance	± 20% (120Hz, 20℃)																						
Leakage Current	$I_L \leq 0.01CV$ or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied								$I_L \leq 0.03CV$ (μA) After 2 minutes with rated working voltage applied														
Dissipation Factor(Tan δ) (max, 120Hz, 20℃)	W.V(VDC)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450								
	D.F(%)	18	16	14	12	10	9	8	7	12	12	12	15	15	17								
	For capacitance > 1000 μF, add 2% per another 1000 μF																						
Low Temp. Characteristics (Max Impedance Ratio) (120Hz)	W.V(VDC)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450								
	$Z_{(-25℃)} / Z_{(+25℃)}$	4	3	3	3	3	3	2	2	2	2	3	5	5	6								
	$Z_{(-40℃)} / Z_{(+25℃)}$	8	6	4	3	3	3	3	3	3	6	6	6	6	-								
	For capacitance > 1000 μF, add 0.5 per another 1000 μF for $Z_{(-25℃)} / Z_{(+25℃)}$ add 0.5 per another 1000 μF for $Z_{(-40℃)} / Z_{(+25℃)}$																						
Load Life	Test conditions Duration time: as righth Ambient temperature: +105℃ Applied voltage: Rated DC working voltage After test requirements at +20℃ Capacitance change: ≤ ±20% of the initial measured value Dissipation factor: ≤ 200% of the initial specified value Leakage current: ≤ the initial specified value																						
	<table><tr><th>D-Φ</th><th>Life hous</th></tr><tr><td>5-6.3Φ</td><td>2000</td></tr><tr><td>8Φ</td><td>3000</td></tr><tr><td>≥ 10Φ</td><td>4000</td></tr></table>																D-Φ	Life hous	5-6.3Φ	2000	8Φ	3000	≥ 10Φ
D-Φ	Life hous																						
5-6.3Φ	2000																						
8Φ	3000																						
≥ 10Φ	4000																						
Shelf Life	Test conditions Duration time: 1000hrs Ambient temperature: +105℃ Applied voltage: None After test requirements at +20℃ : Same limits as Load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30minutes																						
Industrial	JIS C-5101-4(IEC30384-4)																						

Diagram of dimensions(cunt:mm)



ΦD	5	6.3	8	10	13	16	18	22
Φd	0.5			0.6		0.8		
F	2.0	2.5	3.5	5.0		7.5		10
L	L ± 1.0max			L ± 1.5max		L ± 2.0max		

Multiplier for ripple current vs frequency

Cap.(µF)	50(60)	120	400	1K	10K	100K
≤ 10	0.47	0.59	0.76	0.85	0.97	1.0
12~100	0.52	0.62	0.80	0.89	0.97	1.0
120~1000	0.58	0.72	0.84	0.90	0.98	1.0
> 1000	0.63	0.78	0.87	0.91	0.98	1.0

Multiplier for ripple current vs temperature

Temp.(°C)	45	60	70	85	95	105
Multiplier	2.10	1.90	1.65	1.40	1.25	1.00

CR Series Low Impedance

CR系列

Features

- Used in communication equipments, switching power supply, industrial measuring instruments, etc
- Load life 2000~4000 hrs at 105℃
- Safety vent construction design
- RoHS Compliant



● Case Size

WV(sv) Cap(μF)	6.3 (7.2)			10(13)			16(20)			25(32)		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
4.7										5*11	68	3.950
10							5*11	74	4.700	5*11	85	2.560
22				5*11	98	2.700	5*11	100	2.600	5*11	115	1.950
33				5*11	100	2.600	5*11	114	2.000	5*11	155	1.420
47				5*11	150	1.340	5*11	155	1.100	5*11	180	1.000
100	5*11	170	1.000	5*11	180	0.800	5*11	265	0.500	6.3*12	370	0.350
220	5*11	285	0.650	6.3*12	285	0.350	6.3*12	450	0.250	8*12	550	0.150
330	6.3*12	390	0.420	6.3*12	460	0.270	8*12	590	0.156	10*13	730	0.114
470	8*12	450	0.250	8*12	550	0.250	10*13	750	0.124	10*13	1010	0.076
680	8*12	520	0.210	10*13	765	0.110	10*15	785	0.092	10*20	1220	0.065
1000	10*13	750	0.170	10*16	1040	0.076	10*16	1200	0.065	10*20	1650	0.045
1500	10*16	830	0.140	10*20	1260	0.062	13*20	1520	0.056	13*25	2100	0.038
2200	10*20	1470	0.095	10*25	1650	0.041	13*25	1900	0.038	16*26	2100	0.036
3300	13*20	1650	0.060	13*20	1700	0.031	16*20	2410	0.030	16*26	2680	0.026
4700	13*25	2100	0.036	16*26	2100	0.030	16*31	2680	0.026	16*35	2960	0.024
6800	16*26	2450	0.032	16*31	2290	0.026	16*35	2900	0.024	18*35	3550	0.024
10000	16*35	2700	0.024	16*35	2770	0.024	18*35	3050	0.024			

Ripple Current(mA,rms) at 105℃, 100KHz Max Impedance(Ω) at 20℃, 100KHz

● Case Size

WV(sv) Cap(μF)	35 (44)			50(63)			63(72)			100(125)		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47				5*11	25	5.400	5*11	25	5.400	5*11	20	5.900
1				5*11	40	4.000	5*11	33	4.000	5*11	30	4.400
2.2				5*11	55	2.800	5*11	45	2.800	5*11	42	3.300
3.3				5*11	60	2.200	5*11	58	2.200	5*11	55	2.800
4.7	5*11	85	3.650	5*11	90	2.000	5*11	65	2.000	5*11	72	2.600
10	5*11	105	2.370	5*11	120	1.820	5*11	110	1.750	6.3*12	130	1.770
22	5*11	150	1.500	5*11	150	1.250	6.3*12	240	0.800	8*12	220	0.850
33	5*11	180	1.210	6.3*12	250	0.800	8*12	270	0.610	10*13	320	0.690
47	6.3*12	250	0.800	6.3*12	290	0.650	8*12	300	0.560	10*17	370	0.580
100	6.3*12	450	0.250	8*12	480	0.170	10*13	530	0.140	10*20	560	0.300
220	10*13	750	0.114	10*17	630	0.096	10*20	710	0.080	13*20	880	0.130
330	10*15	1050	0.079	10*25	1150	0.065	13*21	1250	0.055	13*25	1440	0.100
470	10*20	1200	0.065	13*21	1400	0.055	13*25	1620	0.053	16*26	1650	0.090
680	13*21	1570	0.056	13*25	1830	0.044	16*26	1950	0.043	16*31	1790	0.080
1000	13*25	1900	0.042	16*26	2100	0.036	16*31	2350	0.034	18*41	1930	0.066
1500	16*26	2270	0.036	16*35	2570	0.034	18*35	2550	0.032			
2200	16*31	2850	0.034	18*35	3040	0.032						
3300	18*35	2900	0.026	18*41	3100	0.025						
4700	18*41	3000	0.024									

Ripple Current(mA,rms) at 105℃, 100KHz Max Impedance(Ω) at 20℃, 100KHz

CR Series Low Impedance

CR系列

Features

- Used in communication equipments, switching power supply, industrial measuring instruments, etc
- Load life 2000~4000 hrs at 105°C
- Safety vent construction design
- RoHS Compliant

● Case Size



WV(SV) Cap(µF)	160(200)			200(250)			250(300)			350(400)		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47	5*11	36	9.440	5*11	36	9.380	5*11	40	8.850	6.3*12	14	8.820
1	6.3*12	45	7.850	6.3*12	45	7.760	6.3*12	50	6.540	8*12	20	6.350
2.2	6.3*12	55	5.210	6.3*12	55	5.180	8*12	72	4.120	8*12	36	4.020
3.3	8*12	70	4.310	8*12	71	4.250	8*12	75	3.850	8*12	47	3.520
4.7	8*12	72	4.160	8*12	85	4.120	10*13	100	2.950	8*12	60	2.770
6.8	8*12	110	3.120	10*13	115	2.710	10*13	140	1.860	10*13	80	1.650
10	8*12	120	2.690	10*16	132	2.020	10*17	160	1.400	10*16	85	1.350
22	10*13	205	1.300	10*20	205	1.200	10*20	185	1.300	13*21	145	1.220
33	10*17	260	1.100	13*21	330	0.620	13*21	260	0.900	13*25	250	0.860
47	10*20	320	0.910	13*25	400	0.510	13*25	405	0.450	16*26	430	0.620
68	13*21	410	0.560	13*25	540	0.350	16*26	490	0.380	16*31	475	0.560
100	16*21	500	0.470	16*26	700	0.190	16*26	675	0.250	18*31	513	0.550
120	16*26	520	0.350	16*31	820	0.170	16*31	730	0.240	18*36	560	0.520
150	16*31	660	0.260	16*35	840	0.160	18*31	750	0.230			
220	16*35	820	0.190	18*41	1080	0.140	18*36	910	0.200			
330	18*41	1000	0.160									

Ripple Current(mA,rms) at 105°C, 100KHz Max Impedance(Ω) at 20°C, 100KHz

● Case Size

WV(SV) Cap(µF)	400(450)			450(500)		
	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47	6.3*12	14	23.100	6.3*12	30	23.200
1	8*12	20	16.500	8*12	41	17.350
2.2	8*12	36	9.580	8*12	60	10.250
3.3	8*12	47	5.010	10*13	89	5.650
4.7	8*12	65	4.820	10*13	105	5.010
6.8	10*13	82	3.550	10*17	122	4.050
10	10*17	88	3.320	10*20	140	3.780
22	13*21	165	2.650	13*25	160	2.800
33	13*25	250	2.210	16*26	205	2.200
47	16*26	258	0.920	16*31	352	1.020
68	18*26	276	0.750	18*31	430	0.780
100	18*31	372	0.520			
120	18*35	420	0.450			
150	18*41	550	0.420			

Ripple Current(mA,rms) at 105°C, 100KHz Max Impedance(Ω) at 20°C, 100KHz

- For special designing requirement, please contact us.