



Aluminum Electrolytic Capacitors

XR Series

Features

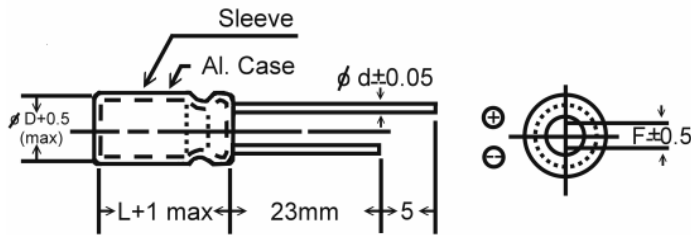
- Low Impedance, High Ripple Current
- Long Life of 2000 Hours at 105°C

Specification

Items	Performance																											
Capacitance Tolerance	±20% (at 120Hz, 25°C)																											
Rated Voltage Range	6.3 to 100 VDC																											
Capacitance Range	22 to 4700 uF																											
Operating Temperature Range	-40 to + 105																											
Leakage Current (at 25°C)	$I \leq 0.01 CV$ or 3 (uA), whichever is greater.																											
	After 3 minutes application of working voltage. I= Leakage current (uA), C= Rated capacitance (uF), V= Rated voltage (V)																											
Dissipation Factor (Tan δ at 120Hz, 25°C)	<table border="1"> <thead> <tr> <th>Rate Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Tan δ (max)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.1</td> <td>0.1</td> <td>0.10</td> </tr> </tbody> </table>	Rate Voltage	6.3	10	16	25	35	50	63	100	Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.1	0.1	0.10									
	Rate Voltage	6.3	10	16	25	35	50	63	100																			
	Tan δ (max)	0.22	0.19	0.16	0.14	0.12	0.1	0.1	0.10																			
For capacitance > 1000uF, add 0.02 per 1000uF increase.																												
Low Temperature characteristics (at 120Hz)	Impedance ration max.																											
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	Rate Voltage	6.3	10	16	25	35	50	63	100																			
-25°C/25°C	4	3	2	2	2	2	2	2																				
-40°C/25°C	8	6	4	4	3	3	3	3																				
Load Life	Application of W.V. at +105 , the capacitor shall meet the following limits.																											
	Capacitance change : ±25% of initial value																											
	Dissipation factor : 200% of initial specified value																											
	Leakage Current : Initial specified value																											
Life Time : 2000 hours for $\phi D \ 8$																												
Shelf Life	After storage for 500 hours at 105°C, with no voltage applied and being stabilixed at + 25 , Capacitor shall meet the limit specified in load life.																											
Ripple Current & Frequency Multipliers	<table border="1"> <thead> <tr> <th>Freq.(Hz)</th> <th>120</th> <th>1K</th> <th>10K</th> <th>100Kup</th> </tr> </thead> <tbody> <tr> <td>6.3 to 10</td> <td>0.60</td> <td>0.75</td> <td>0.90</td> <td>0.90</td> </tr> <tr> <td>16 to 25</td> <td>0.50</td> <td>0.70</td> <td>0.80</td> <td>0.90</td> </tr> <tr> <td>35 up</td> <td>0.40</td> <td>0.60</td> <td>0.80</td> <td>0.90</td> </tr> </tbody> </table>	Freq.(Hz)	120	1K	10K	100Kup	6.3 to 10	0.60	0.75	0.90	0.90	16 to 25	0.50	0.70	0.80	0.90	35 up	0.40	0.60	0.80	0.90							
	Freq.(Hz)	120	1K	10K	100Kup																							
	6.3 to 10	0.60	0.75	0.90	0.90																							
	16 to 25	0.50	0.70	0.80	0.90																							
35 up	0.40	0.60	0.80	0.90																								
Ripple Current & Temperature Multipliers	<table border="1"> <thead> <tr> <th>Temperature (°C)</th> <th>85</th> <th>105</th> </tr> </thead> <tbody> <tr> <td>Multiplier</td> <td>1.10</td> <td>0.90</td> </tr> </tbody> </table>	Temperature (°C)	85	105	Multiplier	1.10	0.90																					
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Multiplier	1.10	0.90																										
Standards	Satisfied Characteristic W of JIS C																											

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D	6.3	8	10	13
P	2.5	3.5	5.0	5.0
d	0.5		0.6	

DIMENSION & PERMISSIBLE RIPPLE CURRENT

VDC uF	6.3V			VDC uF	10V		
	DxL (mm)	Ripple Current (mA/rms, 105 °C)	Impedance (Ω) 25 °C, 100KHz		DxL (mm)	Ripple Current (mA/rms, 105 °C)	Impedance (Ω) 25 °C, 100KHz
470	8x11	390	0.200	330	8x11	490	0.200
680	8x14	490	0.200	470	8x14	500	0.100
820	10x13	500	0.080	680	8x16	650	0.095
1000	8x12	500	0.090	1000	8x14	800	0.070
	8x14	600	0.090		10x16	1000	0.060
1000	8x20	850	0.070	1200	10x16	1000	0.060
	10x13	700	0.060		10x20	1200	0.045
1200	8x20	600	0.100	1500	10x20	1200	0.045
	10x16	1000	0.060		10x25	1500	0.040
1500	8x20	800	0.070	2200	10x25	1500	0.040
	10x16	1000	0.060		13x21	1800	0.035
	10x20	1100	0.045		2700	13x26	2100
2200	10x20	1100	0.045	3300	10x30	1800	0.035
	10x25	1600	0.040		13x26	1800	0.030
2700	10x21	1100	0.040	3900	13x31	2100	0.030
3300	10x25	1500	0.045	4700	13x36	2200	0.030
	10x30	1800	0.035				
	13x31	1800	0.035				
3900	13x26	2100	0.035				
4700	13x30	2400	0.030				

DIMENSION & PERMISSIBLE RIPPLE CURRENT

VDC uF	16V			VDC uF	25V		
	DxL (mm)	Ripple Current (mA/rms,105)	Impedance (Ωmax.) 25 ,100KHz		DxL (mm)	Ripple Current (mA/rms,105)	Impedance (Ωmax.) 25 ,100KHz
220	8x11	400	0.350	220	8x14	600	0.085
330	8x14	400	0.300	330	8x14	600	0.090
470	8x14	600	0.100		8x20	650	0.090
	8x20	750	0.095	10x13	720	0.090	
680	10x13	750	0.095	470	10x13	700	0.075
	10x16	1000	0.075	10x16	1000	0.075	
820	10x20	1100	0.060	680	10x20	1200	0.045
1000	10x20	1250	0.060		10x25	1500	0.045
	10x25	1500	0.040	10x25	1800	0.045	
1200	10x25	1400	0.040	1000	10x30	1800	0.035
1500	10x30	1800	0.035		13x21	1800	0.030
	13x21	1800	0.035	1200	13x21	1800	0.030
2200	10x25	2000	0.040	1500	13x26	2100	0.030
	13x26	2000	0.040	2200	13x36	2600	0.030
2700	13x30	2400	0.030	2700	13x36	2600	0.030
3300	13x36	2600	0.030				

VDC uF	35V			VDC uF	50V		
	DxL (mm)	Ripple Current (mA/rms,105)	Impedance (Ωmax.) 25 ,100KHz		DxL (mm)	Ripple Current (mA/rms,105)	Impedance (Ωmax.) 25 ,100KHz
100	8x11	450	0.130	47	8x11	200	0.400
220	8x14	600	0.100	100	8x14	440	0.140
	10x13	700	0.090	220	10x20	850	0.140
330	10x16	1000	0.060	330	10x25	1100	0.055
470	10x25	1500	0.045		10x30	1150	0.055
560	10x25	1600	0.040	470	10x30	1500	0.045
680	10x30	1800	0.040		13x21	1500	0.045
1000	13x26	2100	0.035	560	13x26	1800	0.040
1200	13x31	2400	0.030	680	13x30	2000	0.040
1500	13x36	2600	0.030	820	13x36	2200	0.040
				1000	16x26	2200	0.040

VDC uF	63V			VDC uF	100V		
	DxL (mm)	Ripple Current (mA/rms,105)	Impedance (Ωmax.) 25 ,100KHz		DxL (mm)	Ripple Current (mA/rms,105)	Impedance (Ωmax.) 25 ,100KHz
47	8x11	200	0.650	22	8x11	180	0.750
100	10x13	350	0.450	33	8x14	210	0.600
120	8x20	350	0.400	47	8x20	300	0.450
	10x16	360	0.350		10x16	310	0.350
150	10x16	500	0.210	100	10x25	400	0.300
220	10x20	680	0.200		13x21	450	0.300
	10x25	680	0.200	220	13x31	800	0.200
330	13x26	900	0.200	270	13x36	900	0.095
470	13x26	1200	0.070				