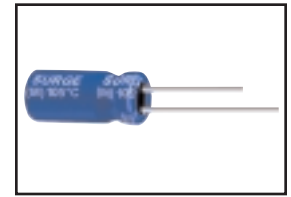




**ALUMINUM ELECTROLYTIC CAPACITORS
FOR WIDE TEMPERATURE RANGE (- 40 ~ + 105°C)**

FEATURES

- FOR USE IN INDUSTRIAL APPLICATIONS REQUIRING SUPERIOR TEMPERATURE CHARACTERISTICS
- SMALL CASE SIZE
- BROAD SELECTION OF CAPACITANCE AND VOLTAGE RATINGS FOR AUTOMATIC INSERTION
- EXCELLENT RIPPLE CURRENT RATINGS

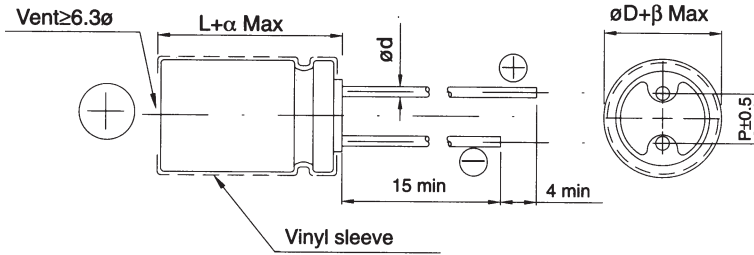


SPECIFICATIONS

Items	Performance																																																																																		
	SRG	SRGA																																																																																	
Life	AT 105°C, 1000Hrs	AT 105°C, 2000Hrs																																																																																	
Operating Temperature Range	6.3~400V -40°C~+105°C	450V -25°C~+105°C																																																																																	
Capacitance Tolerance	±20% (at 120Hz, 20°C)																																																																																		
Leakage Current (at 20 °C)	<table border="1"> <tr> <td>Rated Voltage</td> <td>≤100V</td> <td colspan="2">>100V</td> </tr> <tr> <td>Time</td> <td>after 2 minutes</td> <td colspan="2">after 5 minutes</td> </tr> <tr> <td>Leakage Current</td> <td>I=0.01CV or 3(μA) whichever is greater</td> <td>CV≤1000 I=0.03CV+15(μA)</td> <td>CV>1000 I=0.02CV+25(μA)</td> </tr> </table> <p>Where, C=rated capacitance in μF. V=rated DC working voltage in V.</p>		Rated Voltage	≤100V	>100V		Time	after 2 minutes	after 5 minutes		Leakage Current	I=0.01CV or 3(μA) whichever is greater	CV≤1000 I=0.03CV+15(μA)	CV>1000 I=0.02CV+25(μA)																																																																					
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Dissipation Factor (Tan δ at 120 Hz, 20 °C)	<table border="1"> <tr> <td>Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>Tan δ (max)</td> <td>0.23</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.12</td> <td>0.14</td> <td>0.17</td> <td>0.20</td> <td>0.25</td> <td>0.25</td> </tr> </table> <p>When the capacitance exceeds 1000μF, 0.02 shall be added every 1000 μF increase.</p>		Rated Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	Tan δ (max)	0.23	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.12	0.14	0.17	0.20	0.25	0.25																																																			
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Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <tr> <td colspan="2">Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td rowspan="4">Impedance Ratio</td> <td>Z(-25°C)</td> <td>øD<16</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>6</td> <td>8</td> <td>12</td> <td>14</td> <td>16</td> </tr> <tr> <td>Z(+20°C)</td> <td>øD≥16</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Z(-40°C)</td> <td>øD<16</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Z(+20°C)</td> <td>øD≥16</td> <td>12</td> <td>10</td> <td>8</td> <td>8</td> <td>8</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>8</td> <td>10</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>		Rated Voltage		6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	Impedance Ratio	Z(-25°C)	øD<16	4	3	3	2	2	2	2	2	3	6	8	12	14	16	Z(+20°C)	øD≥16	6	4	4	3	3	3	3	3	4	8	10	-	-	-	Z(-40°C)	øD<16	8	6	6	4	4	3	3	3	4	8	10	-	-	-	Z(+20°C)	øD≥16	12	10	8	8	8	8	6	6	4	8	10	-	-	-
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Impedance Ratio	Z(-25°C)	øD<16	4	3	3	2	2	2	2	2	3	6	8	12	14	16																																																																			
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Load Life Test	<table border="1"> <tr> <td>Test Time</td> <td>1000 Hrs/2000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>≤ ±20%</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>*The above specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage applied for 1000/2000 hrs at 105 °C.</p>		Test Time	1000 Hrs/2000 Hrs	Capacitance Change	≤ ±20%	Dissipation Factor	Less than 200% of specified value	Leakage Current	Within specified value																																																																									
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Ripple Current & Frequency Multipliers	<table border="1"> <tr> <td rowspan="4">Cap. (μF)</td> <td>Freq. (Hz)</td> <td>60</td> <td>120</td> <td>500</td> <td>1K</td> <td>10K up</td> </tr> <tr> <td>Under 100</td> <td>0.70</td> <td>1.00</td> <td>1.30</td> <td>1.40</td> <td>1.50</td> </tr> <tr> <td>100 to 1000</td> <td>0.75</td> <td>1.00</td> <td>1.20</td> <td>1.30</td> <td>1.35</td> </tr> <tr> <td>1000 up above</td> <td>0.80</td> <td>1.00</td> <td>1.10</td> <td>1.12</td> <td>1.15</td> </tr> </table>		Cap. (μF)	Freq. (Hz)	60	120	500	1K	10K up	Under 100	0.70	1.00	1.30	1.40	1.50	100 to 1000	0.75	1.00	1.20	1.30	1.35	1000 up above	0.80	1.00	1.10	1.12	1.15																																																								
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Standards	Satisfies Characteristic W of JIS C 5141																																																																																		



DIAGRAM OF DIMENSIONS



Unit: mm

LEAD SPACING AND DIAMETER

φ D	5	6.3	8	10	13	16	18	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10	12.5
φ d	0.5			0.6		0.8		1.0	
α	1.0				1.5				
β	0.5								

DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension: φ D x L (mm)
Ripple Current: mA/rms at 120 Hz, 105 °C

μF	code	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)						
		φ D X L	mA * φ D X L	mA	φ D X L	mA * φ D X L	mA	φ D X L	mA * φ D X L	mA	φ D X L	mA * φ D X L	mA				
4.7	4R7										5 x 11	25					
10	100							5 x 11	34		5 x 11	43					
22	220				5 x 11	46		5 x 11	58		5 x 11	62					
33	330	5 x 11	54		5 x 11	57		5 x 11	71		5 x 11	76					
47	470	5 x 11	64		5 x 11	76		5 x 11	85		5 x 11	97					
100	101	5 x 11	95		5 x 11	111		6.3 x 11	133	5 x 11	110	6.3 x 11	142				
220	221	6.3 x 11	160	5 x 11	140	6.3 x 11	170		8 x 11.5	215	6.3 x 11	190	8 x 11.5	236			
330	331	8 x 11.5	195	6.3 x 11	190	8 x 11.5	235	6.3 x 11	200	8 x 11.5	271		10 x 12.5	330	8 x 11.5	310	
470	471	8 x 11.5	261	6.3 x 11	230	8 x 11.5	290	6.3 x 11	250	10 x 12.5	370	8 x 11.5	310	10 x 16	440	10 x 12.5	380
1000	102	10 x 12.5	455	8 x 11.5	380	10 x 16	500	10 x 12.5	460	10 x 20	590	10 x 16	560	13 x 20	720	10 x 20	675
2200	222	10 x 20	750			13 x 20	820	10 x 20	760	13 x 25	985	13 x 20	920	16 x 25	1170	13 x 25	1110
3300	332	13 x 20	920	10 x 20	840	13 x 20	1050			16 x 25	1180	13 x 25	1170	16 x 31.5	1460	16 x 25	1440
4700	472	16 x 25	1170	13 x 20	1090	16 x 25	1300	13 x 25	1260	16 x 31.5	1500	16 x 25	1480	18 x 35.5	1780	16 x 31.5	1710

μF	code	35V(1V)			50V(1H)			63V(1J)			100V(2A)						
		φ D X L	mA * φ D X L	mA	φ D X L	mA * φ D X L	mA	φ D X L	mA * φ D X L	mA	φ D X L	mA * φ D X L	mA				
0.1	0R1				5 x 11	3.2		5 x 11	3.5		5 x 11	4					
0.22	R22				5 x 11	4.9		5 x 11	5.1		5 x 11	6					
0.33	R33				5 x 11	6		5 x 11	7.5		5 x 11	8					
0.47	R47				5 x 11	7.1		5 x 11	9		5 x 11	9					
1	010				5 x 11	10		5 x 11	15		5 x 11	15					
2.2	2R2				5 x 11	20		5 x 11	30		5 x 11	30					
3.3	3R3				5 x 11	30		5 x 11	31		5 x 11	31					
4.7	4R7	5 x 11	28		5 x 11	33		5 x 11	36		6.3 x 11	40					
10	100	5 x 11	45		5 x 11	50		5 x 11	54		8 x 11.5	66	6.3 x 11	54			
22	220	5 x 11	71		5 x 11	78		6.3 x 11	86		8 x 11.5	99	6.3 x 11	93			
33	330	6.3 x 11	88	5 x 11	75	6.3 x 11	96	5 x 11	90	8 x 11.5	114	6.3 x 11	100	10 x 16	148	8 x 11.5	120
47	470	6.3 x 11	105	5 x 11	90	6.3 x 11	130			8 x 11.5	141	6.3 x 11	120	10 x 16	175	10 x 12.5	165
100	101	8 x 11.5	166	6.3 x 11	150	8 x 11.5	188			10 x 12.5	235			13 x 20	300	10 x 20	265
220	221	10 x 12.5	290	8 x 11.5	260	10 x 20	355	10 x 16	300	10 x 20	450	10 x 16	335	16 x 25	500	13 x 20	440
330	331	10 x 20	400	10 x 12.5	350	10 x 20	445	10 x 16	410	13 x 20	520	10 x 16	490	16 x 31.5	700	13 x 25	540
470	471	10 x 20	500	10 x 16	460	13 x 25	580	10 x 16	530	13 x 25	720	10 x 20	640	18 x 35.5	830	16 x 25	715
1000	102	13 x 25	830	13 x 20	810	16 x 25	980	13 x 25	950	16 x 31.5	1190	16 x 25	930	22 x 40	1300	18 x 40	985
2200	222	16 x 31.5	1300	16 x 25	1260	18 x 35.5	2160	16 x 35.5	1470	22 x 40	1480						
3300	332	18 x 35.5	1890	16 x 35.5	1610	22 x 40	2290	18 x 35.5	1770								
4700	472	18 x 40	2690	18 x 35.5	1845			22 x 40	2430								

Case size in mark of "*" is smaller.



DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension: \varnothing D x L(mm)
Ripple Current: mA/rms at 120 Hz, 105 °C

μ F	V.DC code	160V(2C)				200V(2D)				250V(2E)			
		\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA	* \varnothing D X L	mA
0.47	R47	6.3 x 11	13			6.3 x 11	14			8 x 11.5	18		
1	010	6.3 x 11	20			6.3 x 11	21			8 x 11.5	27		
2.2	2R2	6.3 x 11	29			8 x 11.5	37			8 x 11.5	41	6.3 x 11	35
3.3	3R3	8 x 11.5	42	6.3 x 11	30	8 x 11.5	45	6.3 x 11	39	10 x 12.5	59	8 x 11.5	50
4.7	4R7	8 x 11.5	50	6.3 x 11	43	10 x 12.5	64	8 x 11.5	54	10 x 16	78	8 x 11.5	60
10	100	10 x 16	96	10 x 12.5	87	10 x 20	115	10 x 12.5	94	10 x 20	125	10 x 16	115
22	220	13 x 20	180	10 x 20	158	13 x 20	195	10 x 20	170	13 x 25	235	13 x 20	215
33	330	13 x 20	225	10 x 20	190	13 x 25	265	13 x 20	240	13 x 25	290		
47	470	13 x 25	295	13 x 20	265	16 x 25	355	13 x 25	315	16 x 25	390	13 x 25	350
100	101	16 x 25	485			16 x 35.5	565	16 x 25	485	18 x 40	685	16 x 35.5	610
220	221	18 x 35.5	750	16 x 31.5	660	18 x 40	885	18 x 35.5	835	22 x 40	945		
330	331	22 x 40	965	18 x 35.5	820								

μ F	V.DC code	350V(2V)				400V(2G)				450V(2W)			
		\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA	* \varnothing D X L	mA
0.47	R47	8 x 11.5	18	6.3 x 11	16	10 x 12.5	22	8 x 11.5	18	10 x 12.5	22	8 x 11.5	18
1	010	8 x 11.5	27	6.3 x 11	23	10 x 12.5	32	8 x 11.5	27	10 x 12.5	32	8 x 11.5	22
2.2	2R2	10 x 16	53	8 x 11.5	41	10 x 16	53	10 x 12.5	48	10 x 16	53	10 x 12.5	48
3.3	3R3	10 x 16	65	10 x 12.5	59	10 x 20	77	10 x 16	65	10 x 20	72	10 x 16	65
4.7	4R7	10 x 20	86	10 x 16	78	13 x 20	100	10 x 20	86	13 x 20	100	10 x 20	86
10	100	13 x 20	145	10 x 20	125	13 x 25	160	13 x 20	145	13 x 25	160	13 x 20	145
22	220	13 x 25	235			16 x 25	265			16 x 31.5	295	16 x 25	265
33	330	16 x 31.5	365	16 x 25	325	18 x 35.5	455	16 x 31.5	115	18 x 35.5	355	16 x 31.5	315
47	470	18 x 35.5	445	16 x 31.5	395	22 x 40	520	16 x 35.5	345	22 x 40	520	16 x 35.5	345
100	101	22 x 40	633			25 x 50	705			25 x 50	725		

Case size in mark of "*" is smaller.

*Low-Profile Size

μ F	V.DC code	6.3V(0J)		10V(1A)		16V(1C)		25V(1E)		35V(1V)		50V(1H)	
		\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA	* \varnothing D X L	mA
470	471											16 x 16	535
1000	102							13 x 16	590	16 x 16	720	16 x 20	830
2200	222			13 x 16	690	16 x 16	830	16 x 20	970	18 x 20	1110		
3300	332			16 x 16	940	16 x 20	1050	18 x 20	1220	18 x 25	1570		
4700	472	16 x 16	1010	16 x 20	1120	18 x 20	1260	18 x 25	1470				
6800	682	16 x 20	1190	18 x 20	1330	18 x 25	1560						
10000	103	18 x 20	1440	18 x 25	1700								

μ F	V.DC code	160V(2C)		200V(2D)		250V(2E)	
		\varnothing D X L	mA	* \varnothing D X L	mA	\varnothing D X L	mA
22	220					13 x 16	200
33	330			16 x 16	250	16 x 16	250
47	470	16 x 16	300	16 x 20	300	16 x 20	300
68	680	16 x 20	350	18 x 20	350	18 x 20	350
100	101	18 x 20	420	18 x 25	420		
150	151	18 x 25	510				