

Aluminum Electrolytic Capacitors

HR Series - High Temperature Type 105°C



Specifications

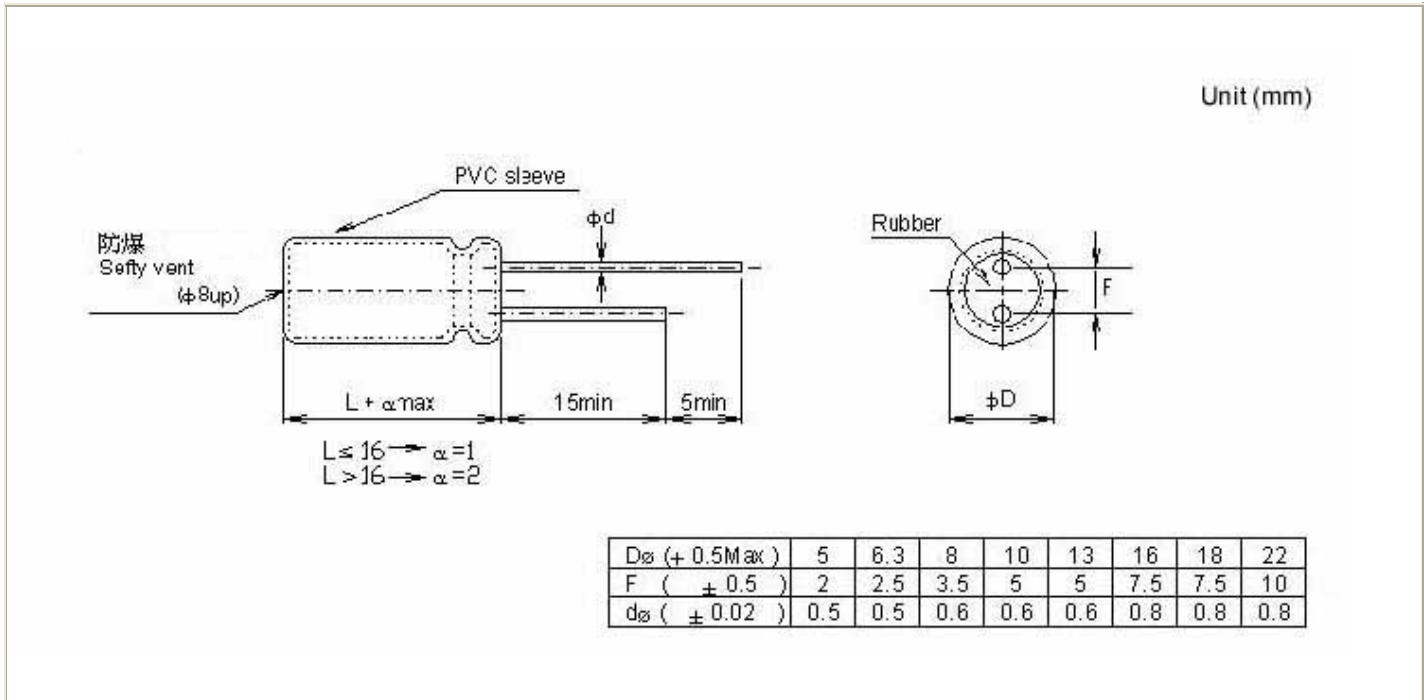
Item	Performance																																														
Operating Temperature Range	-40 to +105° c	-25 to +105° c																																													
Rated Working Voltage Range	6.3 - 100v.DC	160 - 450v.DC																																													
Nominal Capacitance Range	0.47 - 10000µ F	0.47 - 220µ F																																													
Capacitance Tolerance	± 20% (at +20° c , 120Hz)																																														
Leakage Current	$I \leq 0.01CV$ or $3(\mu A)$ max, Whichever is greater after 3 minutes	$I \leq 0.03CV + 20(\mu A)$ max Whichever is greater after 3 minutes																																													
Dissipation Factor ($\tan \delta$) (120Hz \ +20° c)	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="text-align: left;">Working Vol.</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 style="text-align: left;">$\tan \delta$ max</td> <td>0.22</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>0.15</td><td>0.15</td><td>0.20</td><td>0.20</td><td>0.24</td><td>0.24</td> </tr> </table> <p>Add 0.02 per 1000 µ F for more than 1000µ F.</p>		Working Vol.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	$\tan \delta$ max	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.15	0.20	0.20	0.24	0.24															
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Characteristics at low temperature (stability at 120 Hz)	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="text-align: left;">Work Volt</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 style="text-align: left;">-25°/+25° c</td> <td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>3</td><td>3</td><td>3</td><td>6</td><td>6</td><td>15</td> </tr> <tr> <td style="text-align: left;">-40c/+20° c</td> <td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td> </tr> </table> <p>For capacitance value >1000 µ F, Add 0.5 per another 1000 µ F for -25° c/+25° c. Add 1.0 per another 1000µ F for -40° c/+20° c.</p>		Work Volt	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	-25°/+25° c	4	3	2	2	2	2	2	2	3	3	3	6	6	15	-40c/+20° c	8	6	4	3	3	3	3	3	-	-	-	-	-	-
Work Volt	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450																																	
-25°/+25° c	4	3	2	2	2	2	2	2	3	3	3	6	6	15																																	
-40c/+20° c	8	6	4	3	3	3	3	3	-	-	-	-	-	-																																	
Load life	<p>After 2000hrs. application of DC rated working voltage at +105° c, The capacitor shall meet the following limits: Post test requirements at +20° c.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 60%;">Leakage current</td> <td>the initial specified value</td> </tr> <tr> <td>Capacitance change</td> <td>±20% of initial measured value</td> </tr> <tr> <td>Dissipation Factor($\tan \delta$)</td> <td>150% of initial specified value</td> </tr> </table>		Leakage current	the initial specified value	Capacitance change	±20% of initial measured value	Dissipation Factor($\tan \delta$)	150% of initial specified value																																							
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Shelf Life	<p>After storage for 1000hrs. at +105° c with no voltage applied. Post test requirements at +20° c, same limits as high temperature loading.</p>																																														

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Diagram of Dimensions



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Case Size

W.V μ F	øD x L(mm)													
	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
0.47						5x11	5x11	5x11	5x11	5x11	5x11	6.3x11	6.3x11	6.3x11
1						5x11	5x11	5x11	6.3x11	6.3x11	6.3x11	6.3x11	8x12	8x12
2.2						5x11	5x11	5x11	6.3x11	6.3x11	8x12	8x12	10x13	10x13
3.3						5x11	5x11	5x11	6.3x11	8x12	8x12	10x13	10x13	10x16
4.7						5x11	5x11	5x11	8x12	8x12	10x13	10x16	10x16	10x21
10			5x11	5x11	5x11	5x11	5x11	6.3x11	10x13	10x16	10x16	10x21	10x21	13x26
22			5x11	5x11	5x11	5x11	6.3x11	8x12	10x16	10x16	10x21	13x21	13x26	16x26
33			5x11	5x11	5x11	6.3x11	6.3x11	10x13	10x21	13x21	13x21	16x26	16x26	16x36
47		5x11	5x11	5x11	6.3x11	6.3x11	8x12	10x16	13x21	13x26	13x26	16x32	16x32	16x36
100	5x11	5x11	5x11	6.3x11	8x12	8x12	10x13	13x21	13x26	16x26	16x32	18x36	18x36	---
220	5x11	6.3x11	6.3x11	8x12	10x13	10x16	10x21	13x26	16x36	18x36	22x36	---	---	---
330	6.3x11	8x12	8x12	10x13	10x16	10x21	13x21	16x26	18x36	---	---	---	---	---
470	6.3x11	8x12	8x12	10x13	10x21	10x21	13x26	16x32	18x41	---	---	---	---	---
1,000	10x13	10x13	10x16	10x21	13x26	16x26	16x32	---	---	---	---	---	---	---
2,200	10x21	10x21	13x21	13x26	16x26	16x36	18x36	---	---	---	---	---	---	---
3,300	13x21	13x21	16x26	16x26	16x36	18x36	---	---	---	---	---	---	---	---
4,700	13x26	13x26	16x26	16x36	18x36	22x41	---	---	---	---	---	---	---	---
6,800	13x26	16x26	16x32	18x36	---	---	---	---	---	---	---	---	---	---
10,000	16x26	16x36	18x36	---	---	---	---	---	---	---	---	---	---	---

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Permissible Ripple Current

Max ripple current: mA (rms) (at 105°C, 120Hz)

W.V μ F	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
0.47	---	---	---	---	---	8	8	10	12	12	12	13	14	14
1	---	---	---	---	---	12	12	15	17	17	17	20	20	20
2.2	---	---	---	---	---	20	20	23	25	25	29	35	35	35
3.3	---	---	---	---	---	25	28	32	32	35	42	47	47	54
4.7	---	---	---			30	34	37	42	50	50	55	55	60
10	---	---	35	38	41	46	50	56	59	60	64	79	80	87
22	---		54	57	61	68	82	96	105	105	110	130	145	165
33			64	69	75	90	100	120	125	140	140	195	195	210
47		70	100	105	110	125	135	160	165	165	180	230	250	260
100	95	105	125	135	170	180	225	245	270	285	365	375	360	---
220	160	175	215	230	300	345	400	450	480	550	550	---	---	---
330	195	245	260	335	400	460	540	690	705	---	---	---	---	---
470	230	290	310	410	520	600	700	860	860	---	---	---	---	---
1,000	460	550	590	710	920	1080	1210	---	---	---	---	---	---	---
2,200	810	860	1000	1090	1290	1530	1610	---	---	---	---	---	---	---
3,300	960	1100	1300	1460	1650	1750	---	---	---	---	---	---	---	---
4,700	1330	1350	1600	1780	1900	2500	---	---	---	---	---	---	---	---
6,800	150	1690	1900	1950	---	---	---	---	---	---	---	---	---	---
10,000	1680	1900	2060		---	---	---	---	---	---	---	---	---	---