

105°C High Temperature Capacitors



Features:

- For general purpose.
- Wide CV value range.
- Safety vent construction products, RH series are guaranteed for 2000 hours at 105°C.

Specifications

No.	Item	Performance																																																										
1	Operating Temperature Range	-40 to +105°C	-25 to +105°C																																																									
2	Rated Working Voltage Range	6.3 - 100V dc	160 - 450V dc																																																									
3	Nominal Capacitance Range	0.1 - 15000µF	0.47 - 330µF																																																									
4	Capacitance Tolerance	±20% (at +20°C, 120Hz)																																																										
5	Leakage Current	≤0.01CV or 3(µA) maximum	≤0.03CV + 20(µA) maximum																																																									
		Whichever is greater after 3 minutes																																																										
6	Dissipation Factor (tan δ) (120Hz \ +20°C)	<table border="1"> <thead> <tr> <th>Working 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> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Maximum tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.07</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.24</td> <td>0.24</td> </tr> </tbody> </table>														Working Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	Maximum tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.10	0.07	0.15	0.15	0.15	0.20	0.24	0.24															
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Add 0.02 per 1000µF for more than 1000µF																																																												
7	Maximum Permissible Ripple Current	Refer to standard products table (120Hz, +105°C) Correction factor for frequency																																																										
		<table border="1"> <thead> <tr> <th colspan="2" rowspan="2">Working Voltage (V dc) \ Freq. (Hz)</th> <th colspan="5">Freq. (Hz)</th> </tr> <tr> <th>60</th> <th>120</th> <th>1K</th> <th>10K</th> <th>100K</th> </tr> </thead> <tbody> <tr> <td rowspan="3">6.3-50</td> <td>0.1-330</td> <td>0.85</td> <td rowspan="3">1</td> <td>1.30</td> <td>1.40</td> <td>1.55</td> </tr> <tr> <td>470-3300</td> <td rowspan="2">0.95</td> <td>1.15</td> <td rowspan="2">1.20</td> <td>1.25</td> </tr> <tr> <td>≥4700</td> <td>1.10</td> <td>1.20</td> </tr> <tr> <td rowspan="3">63-100</td> <td>0.47-33</td> <td rowspan="2">0.75</td> <td>1.55</td> <td>1.65</td> <td>1.80</td> </tr> <tr> <td>47-220</td> <td>1.40</td> <td>1.60</td> <td>1.65</td> </tr> <tr> <td>≥330</td> <td>0.80</td> <td rowspan="2">1.30</td> <td>1.35</td> <td>1.40</td> </tr> <tr> <td>≥160</td> <td>1-220</td> <td>0.70</td> <td>1.70</td> <td>1.70</td> </tr> </tbody> </table>														Working Voltage (V dc) \ Freq. (Hz)		Freq. (Hz)					60	120	1K	10K	100K	6.3-50	0.1-330	0.85	1	1.30	1.40	1.55	470-3300	0.95	1.15	1.20	1.25	≥4700	1.10	1.20	63-100	0.47-33	0.75	1.55	1.65	1.80	47-220	1.40	1.60	1.65	≥330	0.80	1.30	1.35	1.40	≥160	1-220	0.70
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Specifications

No.	Item	Performance														
8	Characteristics at low temperature (stability at 120Hz)	Working Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
		-25°C/ +20°C	4	3	2	2	2	2	2	2	3	3	3	6	6	15
		-40°C/ +20°C	8	6	4	3	3	3	3	3	-	-	-	-	-	-
For capacitance value >1000uF, Add 0.5 per another 1000uF for -25°C / +25°C. Add 1.0 per another 1000uF for -40°C / +20°C.																
9	High Temperature Loading	After 2000 hours application of DC rated working voltage at +105°C, The capacitor shall meet the following limits: Post test requirements at +20°C														
		Leakage current	≤the initial specified value													
		Capacitance change	≤±20% of initial measured value													
10	Shelf Life	After storage for 500 hours at +105°C with no voltage applied. Post test requirements at +20°C same limits as high temperature loading														
		Dissipation Factor (tanδ) ≤200% of initial specified value														

Permissible Ripple Current

Maximum ripple current: mA (rms)

(at 105°C 120Hz)

μF	Working Voltage (SV)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
		(8)	(13)	(20)	(32)	(34)	(63)	(79)	(125)	(200)	(250)	(300)	(400)	(450)	(500)
0.1		-	-	-	-	-	7	-	8	8	8	8	9	9	10
0.22		-	-	-	-	-	7	-	8	8	8	8	9	9	10
0.33		-	-	-	-	-	7	-	8	8	8	8	9	9	10
0.47		-	-	-	-	-	8	-	10	9	9	9	10	9	18
1.0		-	-	-	-	-	12	-	15	12	12	12	18	18	18
2.2		-	-	-	-	-	17	-	23	19	19	21	30	30	30
3.3		-	-	-	-	-	21	-	29	26	26	30	37	40	43
4.7		-	-	-	26	28	30	32	34	31	36	36	48	52	56
10		-	-	35	38	41	46	50	56	59	59	64	79	79	79
22		-	49	54	57	61	68	82	96	95	95	110	130	145	150
33		54	60	64	69	75	90	100	140	125	140	140	175	185	190
47		65	70	99	82	100	110	135	180	165	165	180	230	230	-
100		95	105	125	135	170	180	223	320	270	285	310	350	-	-

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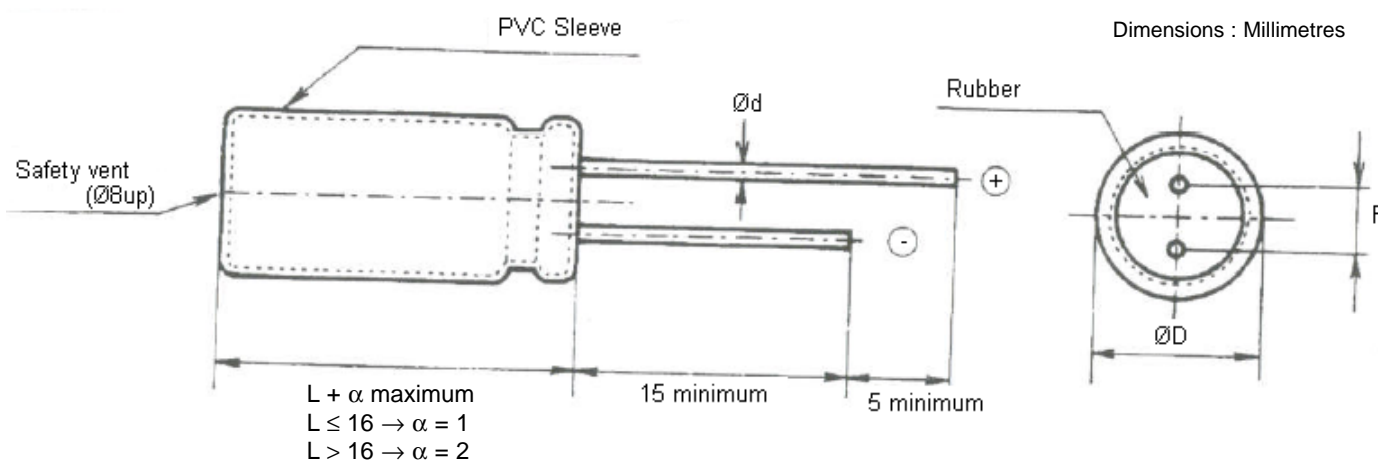
Permissible Ripple Current

Maximum ripple current: mA (rms)

(at 105°C 120Hz)

μF	Working Voltage (SV)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
		(8)	(13)	(20)	(32)	(34)	(63)	(79)	(125)	(200)	(250)	(300)	(400)	(450)	(500)
220		160	175	215	230	300	345	400	570	450	550	-	-	-	-
330		195	245	260	335	400	460	540	700	850	-	-	-	-	-
470		270	290	370	440	520	610	700	880	-	-	-	-	-	-
1000		460	550	640	770	920	1080	1210	-	-	-	-	-	-	-
2200		810	860	1000	1170	1340	1530	-	-	-	-	-	-	-	-
3300		960	1100	1300	1460	1650	1850	-	-	-	-	-	-	-	-
4700		1330	1400	1600	1780	1900	-	-	-	-	-	-	-	-	-
6800		1500	1690	1900	1950	-	-	-	-	-	-	-	-	-	-
10000		1765	1950	2000	-	-	-	-	-	-	-	-	-	-	-
15000		2075	2100	-	-	-	-	-	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-

Dimensions



ØD (+0.5 Maximum)	5	6.3	8	10	13	16	18	22
F (±0.5)	2	2.5	3.5	5	5	7.5	7.5	10
Ød (±0.02)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8

Dimensions : Millimetres

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Case Size Table

ØD x L (mm)

µF	Working Voltage (SV)	6.3	10	16	25	35	50	63	100
		(8)	(13)	(20)	(32)	(44)	(63)	(79)	(125)
0.1		-	-	-	-	→	5 x 11	-	5 x 11
0.22		-	-	-	-	→	5 x 11	-	5 x 11
0.33		-	-	-	-	→	5 x 11	-	5 x 11
0.47		-	-	-	-	→	5 x 11	-	5 x 11
1.0		-	-	-	-	→	5 x 11	-	5 x 11
2.2		-	-	-	-	→	5 x 11	-	5 x 11
3.3		-	-	-	-	→	5 x 11	-	5 x 11
4.7		-	-	-	-	→	5 x 11	-	5 x 11
10		-	-	→	5 x 11	5 x 11	5 x 11	5 x 11	6.3 x 11
22		-	-	→	5 x 11	5 x 11	5 x 11	6.3 x 11	8 x 11
33		-	→	5 x 11	5 x 11	5 x 11	6.3 x 11	6.3 x 11	10 x 13
47		→	5 x 11	5 x 11	5 x 11	6.3 x 11	6.3 x 11	8 x 11	10 x 16
100		→	5 x 11	6.3 x 11	6.3 x 11	8 x 11	8 x 11	10 x 13	13 x 21
220		→	6.3 x 11	8 x 11	8 x 11	10 x 13	10 x 16	10 x 21	16 x 26
330		6.3 x 11	8 x 11	8 x 11	10 x 13	10 x 16	10 x 21	13 x 21	16 x 26
470		8 x 11	8 x 11	10 x 13	10 x 16	10 x 21	13 x 21	13 x 26	16 x 32
1000		10 x 13	10 x 16	10 x 21	13 x 21	13 x 21	16 x 26	16 x 32	-
2200		10 x 21	13 x 21	13 x 21	13 x 26	16 x 32	18 x 36	-	-
3300		13 x 21	13 x 21	13 x 26	16 x 32	18 x 36	18 x 36	-	-
4700		13 x 26	16 x 26	16 x 32	18 x 36	18 x 42	-	-	-
6800		16 x 26	16 x 32	18 x 36	18 x 42	-	-	-	-
10000		16 x 32	18 x 36	18 x 42	-	-	-	-	-
15000		18 x 36	18 x 42	-	-	-	-	-	-

All blank voltage on sleeve marking is the same voltage as “ → ” point to.

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Case Size Table

ØD x L (mm)

µF	Working Voltage (SV)	160	200	250	350	400	450
		(200)	(250)	(300)	(400)	(450)	(500)
0.47		6.3 x 11	6.3 x 11	6.3 x 11	8 x 11	8 x 11	8 x 11
1.0		6.3 x 11	6.3 x 11	6.3 x 11	8 x 11	8 x 11	10 x 16
2.2		6.3 x 11	6.3 x 11	6.3 x 11	8 x 11	10 x 13	10 x 21
3.3		6.3 x 11	6.3 x 11	8 x 11	10 x 13	10 x 13	13 x 21
4.7		6.3 x 11	8 x 11	8 x 11	10 x 13	10 x 16	13 x 21
10		8 x 11	10 x 13	10 x 16	10 x 21	13 x 21	16 x 26
22		10 x 16	10 x 21	13 x 21	13 x 26	13 x 26	16 x 32
33		10 x 21	13 x 21	13 x 21	16 x 26	16 x 32	18 x 32
47		13 x 21	13 x 21	13 x 26	16 x 36	18 x 36	-
100		13 x 26	16 x 26	16 x 32	18 x 42	-	-
220		16 x 36	18 x 42	-	-	-	-
330		18 x 42	-	-	-	-	-

Ordering Guide

MCRH

16V

337M

8x11

Series

Voltage

Capacitance

Size

6.3 V

2 significant digits

Diameter x Length

10 V

1 digit multiplier (pico Farads)

16 V

336 = 33 µH

25 V

337 = 330 µF

35 V

338 = 3300 µH

50 V

63 V

100 V

160 V

200 V

250 V

350 V

400 V

450 V

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