RP Series 85℃

Features

Long useful life

Applications

- ◆ Professional power supplies
- ◆ Frequency converters
- ◆ Uninterruptible power supplies

Construction

- ◆ Charge-discharge proof, polar
- ◆ Aluminum case with insulating sleeve
- ◆ Poles with screw terminal connections
- ◆ Mounting with ring clips, clamps or threaded stud

Features

- ◆ WLong useful life
- ◆ High reliability
- ◆ All-welded construction ensures reliable electrical contact
- ◆ Version with low-inductance design available
- ◆ Self-extinguishing electrolyte
- ◆ RoHS-compatible

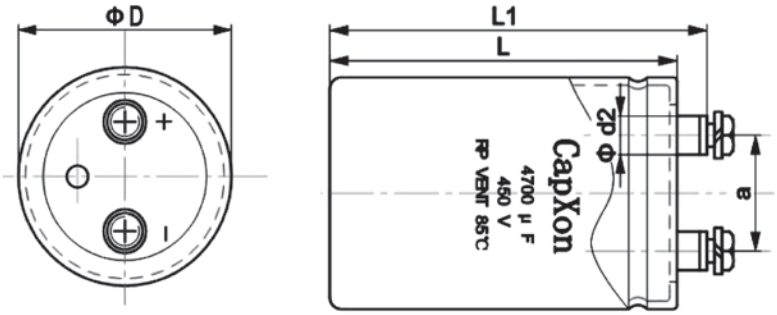
Specifications

<table>
<tr><th>Item</th><th colspan="2">Performance Characteristics</th></tr>
<tr><td>Rated voltage V_R</td><td colspan="2">160... 450 V DC</td></tr>
<tr><td>Surge voltage V_S</td><td colspan="2">1.15 VR（for VR ≤ 315 V） or 1.10 VR（for VR ＞ 315 V）</td></tr>
<tr><td>Rated capacitance C_R</td><td colspan="2">680 ⋯68000 μF</td></tr>
<tr><td>Capacitance tolerance</td><td colspan="2">±20%</td></tr>
<tr><td>tan δ (at 20℃，120Hz)</td><td colspan="2">Less than the value under table(%)
<table>
<tr><th>ΦD / WV</th><th>35</th><th>51</th><th>63.5</th><th>76.2</th><th>89</th></tr>
<tr><td>160~250</td><td>15</td><td>15</td><td>20</td><td>20</td><td>20</td></tr>
<tr><td>350~450</td><td>20</td><td>20</td><td>25</td><td>25</td><td>25</td></tr>
</table></td></tr>
<tr><td>Leakage Current I_{leak} (20 ℃, 5 min)</td><td colspan="2">$I_{leak} \leq 0.3\mu A * (C*V)^{0.7} + 4\mu A$</td></tr>
<tr><td rowspan="4">Self-inductance ESL</td><td colspan="2">d = 51 mm: approx. 17 nH</td></tr>
<tr><td colspan="2">d ³ ≥ 63.5 mm: approx. 20 nH</td></tr>
<tr><td colspan="2">Capacitors with low-inductance design:</td></tr>
<tr><td colspan="2">d ³ ≥ 63.5 mm: approx. 15 nH</td></tr>
<tr><td>Useful life 85 ℃; V_R,I_{AC}'R</td><td>> 10000 h</td><td>Requirements:
Δ C/C ≤ ±50% of initial value
ESR ≤ 5 times initial specified limit
Ileak ≤ initial specified limit</td></tr>
<tr><td>Voltage Endurance test
85 ℃; V_R</td><td>2000 h</td><td>Post test requirements:
Δ C/C ≤ ±20% of initial value
ESR ≤ 2 times initial specified limit
Ileak ≤ initial specified limit</td></tr>
<tr><td>Vibration Resistance test</td><td colspan="2">To IEC 60068-2-6, test Fc:
Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3X2 h.
Capacitor mounted by its body which is rigidly clamped to the work surface.</td></tr>
<tr><td>Low Temperature Characteristics</td><td colspan="2">Max. impedance ratio at 120 Hz
<table>
<tr><th>V_R</th><th>≤ 400 V</th><th>≥ 450 V</th></tr>
<tr><td>$Z_{-25℃}$ / $Z_{20℃}$</td><td>4</td><td>3</td></tr>
<tr><td>$Z_{-40℃}$ / $Z_{20℃}$</td><td>16</td><td>12</td></tr>
</table></td></tr>
<tr><td>Sectional specification</td><td colspan="2">IEC 60384-4 and JIS-C-5101</td></tr>
</table>

Screw Terminal

Dimensional drawings

Ring clip/clamp mounting:



M5:Min.reach of screw = 8mm
M6:Min.reach of screw = 12mm

Dimensions

Terminal	Dimensions(mm) with insulating sleeve				
	D±2	L±3	L_1±3	$d_2$max.	a±0.5
M5	35	50~120	56.5~126.5	10.3	12.7
M5	51	80~140	86.5~146.5	10.3	22
M5	63.5	80~140	86.5~146.5	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	17.5	31.8

Packing

Diameter D(mm)	Length L(mm)	Packing (pcs.)
35	≤70mm >70mm	120 60
42	≤70mm >70mm	120 60
51	≤70mm >70mm	70 35
63.5	all	24
76.2	all	15
89	all	12
100	all	6

Accessories

The following items are included in the delivery package, but are not fastened to the capacitors.

	Thread	Maximum torque
For terminal	M5	2 Nm
	M6	2.5 Nm

CapXon

RP Series

Case Size

ϕ DxL(mm)

WV(V) / Cap(μ F)	160		200		250	
	Size	Ripple	Size	Ripple	Size	Ripple
680					35x60	2.5
1000	35x60	2.8	35x60	3.0	35x80	3.1
1500	35x60	3.1	35x80	3.5	35x80	3.8
2200	35x80	4.2	35x100	4.8	35x120	5.3
	35x100	4.7			51x80	5.4
2700			35x120	5.5	51x80	5.8
3300	35x100	6.0	35x120	6.2	51x100	6.8
	35x120	6.8	51x80	6.3	51x120	7.5
3900	51x80	7.2	51x80	6.8	51x115	8.0
4700	51x80	7.5	51x100	7.8	51x120	8.5
					51x140	9.1
					63.5x100	8.8
6800	51x100	10.0	51x120	9.0	51x140	9.5
	51x120	11.5	51x140	9.8	63.5x120	9.8
					76.2x100	10.0
8200	51x120	12.0	63.5x100	11.0	63.5x115	11.5
10000	51x140	13.4	63.5x100	12.0	76.2x120	12.5
	63.5x100	13.0	63.5x120	13.0	76.2x140	13.3
12000			76.2x100	14.4	76.2x115	14.0
15000	63.5x120	13.5	76.2x120	16.0	76.2x150	16.0
	63.5x140	14.8	76.2x140	17.0	76.2x160	16.5
	76.2x100	14.0			89x120	16.0
22000	76.2x120	17.6	76.2x160	19.6	89x160	21.0
	76.2x140	18.9	89x120	18.8		
27000			89x130	21.5		
33000	76.2x160	22.0	89x160	25.0	89x220	23.0
	89x140	23.0				
47000	89x170	25.0	89x220	27.0	100x240	25.0
68000	89x230	27.0				

Ripple Current(A,rms) at 85℃ 120Hz

Screw Terminal

Case Size

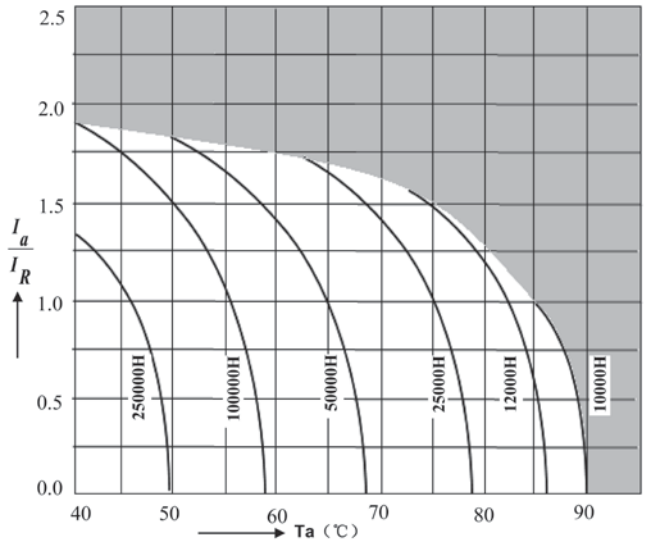
ϕ DxL(mm)

WV(V) / Cap(μ F)	350		400		450	
	Size	Ripple	Size	Ripple	Size	Ripple
1000			35x120	5.0	51x80	4.6
			51x80	5.0	51x105	5.0
1500	51x80	5.3	51x80	6.2	51x100	6.2
			51x100	6.8	51x120	6.7
			51x105	6.9	63.5x80	6.4
2200	51x100	6.9	51x100	7.3	51x120	7.5
	51x105	7.1	51x120	8.0	63.5x100	7.8
	51x120	7.4	51x140	8.5	63.5x105	8.0
					63.5x120	8.5
2700	63.5x80	8.0	63.5x105	9.3	76.2x105	9.2
3300	51x120	8.5	51x130	9.8	63.5x120	10.3
	51x140	9.0	63.5x100	10.0	63.5x140	11.0
	63.5x100	8.7	63.5x120	10.8	76.2x120	11.3
3900	63.5x105	10.2	76.2x100	11.5	76.2x120	12.0
			76.2x105	11.8	76.2x140	12.8
4700	63.5x120	11.5	76.2x100	12.0	76.2x120	13.0
	63.5x140	12.0	76.2x120	13.0	76.2x140	14.0
	76.2x100	11.5			76.2x160	14.8
5600	63.5x140	13.0	76.2x140	14.5	76.2x160	15.0
6800	76.2x120	15.0	76.2x140	16.0	76.2x160	16.0
	76.2x140	16.0	76.2x160	17.0		
	89x100	15.0				
8200	76.2x160	17.5	76.2x160	18.0	76.2x220	19.0
10000	76.2x160	18.0	76.2x160	19.5	76.2x220	21.0
	89x120	16.5	89x130	19.5	89x170	20.0
12000	76.2x180	22.0	89x160	22.0		
	76.2x220	25.0	89x220	25.0		
15000	89x160	26.5	76.2x230	27.0		
	89x220	30.0	89x180	26.0		
			89x220	28.5		
18000	89x220	33.0	89x240	33.0		
22000	89x230	35.0	100x240	36.0		

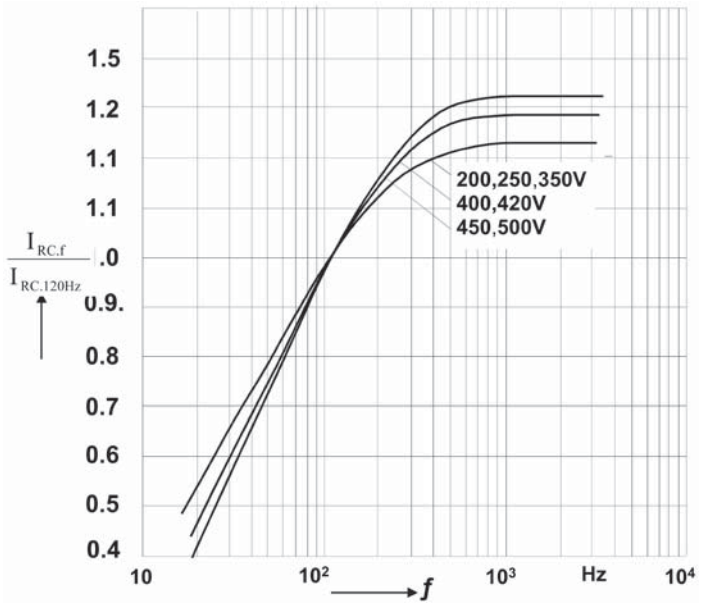
Ripple Current(A,rms) at 85℃ 120Hz

Useful life

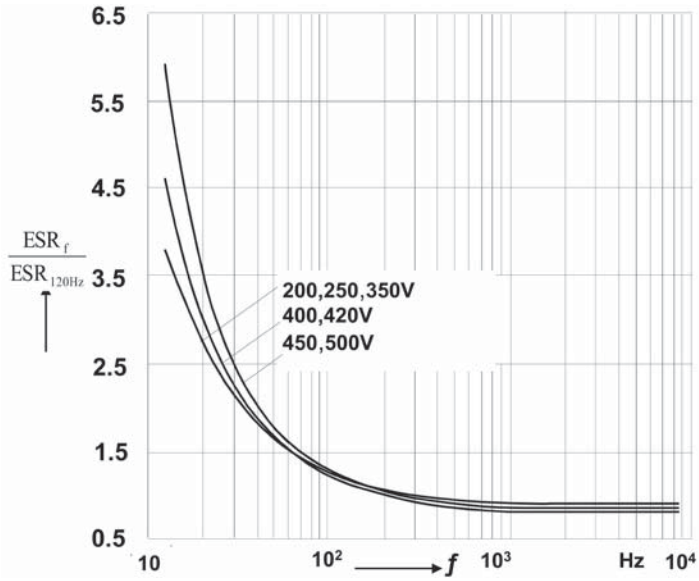
depending on ambient temperature T_a versus under ripple current operating conditions



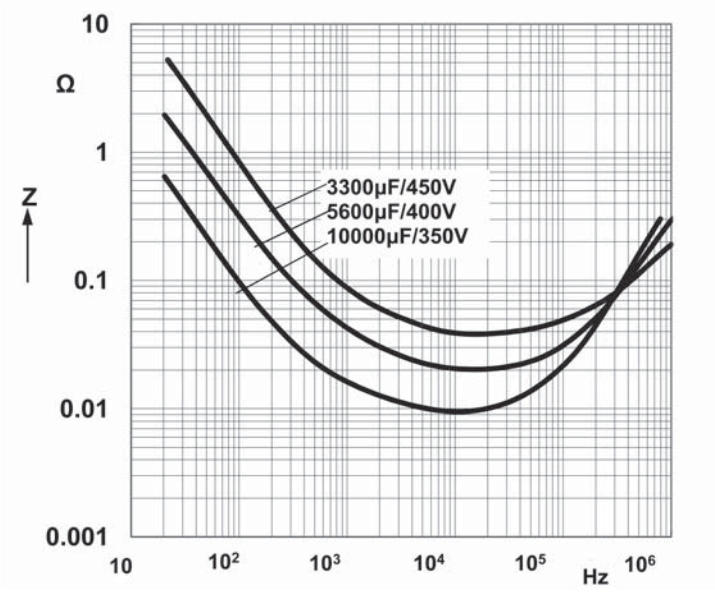
Frequency factor of permissible ripple current I_{RC} versus frequency f



Frequency characteristics of ESR Typical behavior



Impedance Z versus frequency f



Screw Terminal