CapXon

RG series

RG Series 85℃

Features

Standard capacitors

Applications

- Frequency converters
- Uninterruptible power supplies

Features

- All-welded construction ensures reliable electrical contact
- Self-extinguishing electrolyte
- RoHS-compatible

Construction

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

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃(160Vdc~450Vdc) -25 to +85℃(500Vdc~630Vdc)
Rated voltage V_R	160 to 630 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R VR > 315V 1.10 V_R
Rated capacitance C_R	390 to 39000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

Working Voltage(VDC)	160~450	500~550	⩾600
D.F. (%)max.	15	20	25

Self-inductance ESL	d = 51 mm: approx. 17 nH
	d ⩾ 63.5 mm: approx. 20 nH
	Capacitors with low-inductance design:
	d ⩾ 63.5 mm: approx. 15 nH

Useful life 85 °C; V_R,$I_{AC,R}$	>6000 h	Requirements: △C/C ⩽15% of initial value ESR ⩽1.75 times initial specified limit I_{leak} ⩽ initial specified limit Failure rate :⩽1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: DC/C ⩽ 10% of initial value ESR ⩽ 1.3 times initial specified limit I_{leak} ⩽ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc: Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	

Characteristics at lowtemperature — Max. impedance ratioat 120 Hz

V_R(V)	160~450	⩾500
$Z_{-25℃}$ / $Z_{20℃}$	4	4
$Z_{-40℃}$ / $Z_{20℃}$	10	-

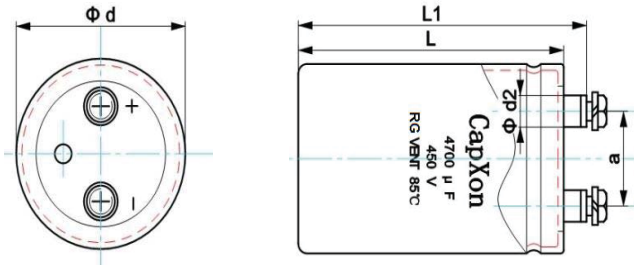
Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	⩾3K
Multiplier	0.8	1	1.2	1.3	1.4

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
M6	100	100~240	110~250	17.5	41.5

Packing

Capacitor diameter d(mm)	length l(mm)	Packing units (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

Packing of screw

Accessories

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

	Thread	Maximum torque
For terminals	M5	2 Nm
	M6	2.5 Nm
For mounting	M12	10 Nm

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
160	1000	35×60	2.8	120	200
160	1500	35×60	3	76	130
160	2200	35×100	4	53	90
160	3300	35×100	4.7	35	60
160	3900	51×75	5.3	30	51
160	4700	51×75	6	25	42
160	5600	51×96	7	21	36
160	6800	51×96	8.5	17	29
160	8200	51×115	9.2	14	24
160	10000	51×120	10.5	12	20
160	10000	63.5×96	10.5	12	20
160	12000	51×120	11.5	10	17
160	12000	63.5×100	11.7	10	17
160	15000	63.5×120	14.3	8	13
160	18000	63.5×130	15.6	7	11
160	22000	76.2×120	16.7	5	9
160	27000	76.2×130	20.2	4	7
160	33000	89×130	23.8	4	6
160	39000	89×157	27.9	3	5
200	1000	35×60	3	120	200
200	1500	35×80	3.3	76	130
200	2200	35×100	4.2	53	90
200	2700	35×120	4.7	43	74
200	3300	35×120	4.8	35	60
200	3300	51×80	4.9	35	60
200	3900	51×75	5.5	30	51
200	4700	51×96	6.4	25	42
200	5600	51×115	7.6	21	36
200	6800	51×130	8.8	17	29
200	8200	63.5×96	9.4	14	24
200	10000	63.5×120	11.2	12	20
200	10000	63.5×96	10.4	12	20
200	15000	76.2×96	14.4	8	13
200	18000	76.2×130	16.5	7	11
200	22000	76.2×155	19.6	5	9
200	22000	89×120	19.2	5	9
200	27000	89×130	21.5	4	7
200	33000	89×157	25.3	4	6
250	680	35×60	1.8	170	290
250	1000	35×80	3.3	120	200
250	1500	35×80	3.5	76	130
250	1800	35×100	3.5	65	110
250	2200	35×120	3.8	53	90
250	2200	51×75	4	53	90
250	2700	51×75	4.4	43	74
250	3300	51×96	5.4	35	60
250	3900	51×115	6.3	30	51
250	4700	51×120	7	25	42
250	4700	63.5×96	7.3	25	42
250	5600	63.5×96	7.8	21	36
250	6800	51×140	8.5	17	29
250	6800	63.5×115	9.1	17	29
250	6800	76.2×100	9.5	17	29
250	8200	63.5×115	10	14	24
250	10000	63.5×130	11.7	12	20
250	10000	76.2×115	12.2	12	20
250	12000	76.2×115	12.9	10	17
250	15000	76.2×130	15.1	8	13
250	15000	89×120	15.9	8	13
250	18000	76.2×155	17.7	7	11

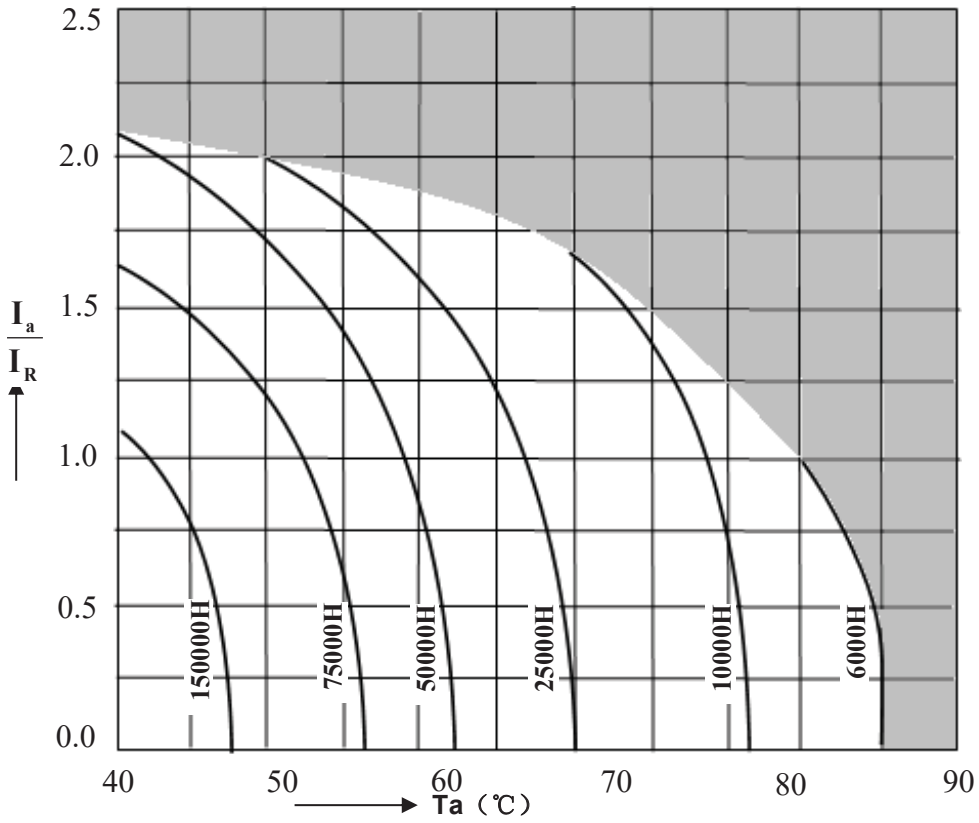
WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
250	22000	89×157	20.9	5	9
350	390	35×50	1.7	300	510
350	470	35×80	2.2	250	420
350	560	35×80	2.4	210	360
350	680	35×80	2.6	170	290
350	820	35×100	3.1	140	240
350	1000	35×100	3.5	120	200
350	1200	51×75	3.8	100	170
350	1500	51×75	4.3	76	130
350	1800	51×80	6.98	65	110
350	2200	51×96	8	53	90
350	2700	51×105	9.1	43	74
350	2700	63.5×80	9.2	43	74
350	3300	51×115	10.3	35	60
350	3300	63.5×96	10.9	35	60
350	3900	51×130	11.5	30	51
350	3900	63.5×100	11.7	30	51
350	4700	63.5×100	15.1	25	42
350	5600	63.5×115	17.5	21	36
350	5600	76.2×96	18.2	21	36
350	6800	63.5×140	20.5	17	29
350	6800	76.2×100	20.1	17	29
350	8200	76.2×115	23.4	14	24
350	10000	76.2×135	27.7	12	20
350	10000	89×120	28.7	12	20
350	12000	76.2×168	30.1	10	17
350	12000	89×125	28.9	10	17
350	15000	89×150	34.9	8	13
400	1000	51×75	3.5	120	200
400	1200	51×75	3.85	100	170
400	1500	51×80	6.59	76	130
400	1800	51×96	7.49	65	110
400	2200	51×105	8.5	53	90
400	2200	63.5×80	8	53	90
400	2700	51×118	9.73	43	74
400	2700	63.5×96	10	43	74
400	3300	63.5×96	12.6	35	60
400	3900	63.5×100	13.7	30	51
400	4700	63.5×115	16	25	42
400	4700	76.2×96	16.7	25	42
400	5600	63.5×130	18.4	21	36
400	5600	76.2×105	18.6	21	36
400	6800	76.2×110	20.9	17	29
400	8200	76.2×130	24.7	14	24
400	10000	76.2×160	26.9	12	20
400	10000	89×125	26.4	12	20
400	12000	76.2×190	31.8	10	17
400	12000	89×145	30.8	10	17
400	15000	89×236	38.2	8	13
450	1000	51×75	3.5	120	200
450	1200	51×80	5.36	100	170
450	1500	51×96	6.22	76	130
450	1500	63.5×80	6.25	76	130
450	1800	51×96	7.91	65	110
450	2200	51×118	8	53	90
450	2200	63.5×96	8.26	53	90
450	2700	63.5×100	11.4	43	74
450	3300	63.5×105	12.9	35	60
450	3900	63.5×115	14.6	30	51
450	3900	76.2×100	15.2	30	51

Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/85℃ /120Hz)	Typ. ESR 20'C 120Hz mΩ	MAX ESR 20'C 120Hz mΩ
450	4700	63.5×135	17.2	25	42
450	4700	76.2×105	17	25	42
450	5600	76.2×115	19.3	21	36
450	6800	76.2×135	22.8	17	29
450	10000	76.2×190	29	12	20
450	10000	89×150	28.5	12	20
450	12000	89×236	33	10	17
500	1000	51×115	4.6	160	270
500	1000	51×85	4.02	160	270
500	1200	51×96	4.22	130	220
500	1500	51×115	5.14	110	180
500	1500	63.5×96	5.42	110	180
500	1800	51×130	5.94	88	150
500	1800	63.5×96	5.95	88	150
500	2200	63.5×115	7.1	71	120
500	2200	76.2×96	7.3	71	120
500	2700	63.5×130	8.31	58	98
500	3300	76.2×115	9.65	47	80
500	3900	76.2×130	11.1	40	68
500	4700	76.2×155	13.1	33	56
500	5600	89×145	13.8	28	47
500	6800	89×155	15.9	23	39
500	8200	89×180	17.2	19	32
500	10000	89×236	22.1	16	27
550	1200	51×115	4.6	130	220
550	1500	63.5×96	5.42	110	180
550	1800	76.2×80	6.12	88	150
550	2200	76.2×96	7.3	71	120
550	2700	76.2×115	8.73	58	98
550	3300	76.2×130	10.2	47	80
550	3900	76.2×155	12.1	40	68
550	4700	76.2×180	15.1	33	56
550	5600	89×155	14.5	28	47
600	1200	63.5×96	7.7	160	280
600	1500	63.5×115	8.3	130	220
600	1500	76.2×96	8.5	130	220
600	1800	63.5×130	10.3	110	180
600	1800	76.2×96	10.1	110	180
600	2200	76.2×115	12	88	150
600	2700	76.2×130	12.1	71	120
600	3000	76.2×155	15.6	65	110
600	3300	76.2×155	16.4	59	100
600	3300	89×130	16.57	59	100
600	3900	76.2×190	17.7	50	85
600	3900	89×145	17.4	50	85
600	4700	89×157	21	41	71
600	5600	89×190	22.8	35	59
600	6800	89×220	24.4	29	49
630	1000	63.5×130	6	190	330
630	1200	76.2×115	6.7	160	280
630	1500	76.2×130	8.1	130	220
630	1800	76.2×155	9.8	110	180
630	2200	89×130	10.7	88	150
630	2700	89×157	12.8	71	120
630	3300	89×171	14.7	59	100
630	3900	89×196	17.9	50	85
630	4700	100×220	21.6	41	71
630	5600	100×250	24.9	35	59

Useful life

depending on ambient temperature T_a versus under ripple current operating conditions



CapXon

RP series

RP Series 85℃

Features

Extremely Long useful life

Applications

- Professional power supplies
- Frequency converters
- Uninterruptible power supplies

Features

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

Construction

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

Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +85℃(160Vdc~450Vdc) -25 to +85℃(500Vdc~630Vdc)
Rated voltage V_R	160 to 630 V DC
Surge voltage V_S	V_R<=315V 1.15 V_R V_R > 315V 1.10 V_R
Rated capacitance C_R	100 to 68000 μF
Capacitance tolerance	±20%(120Hz,+20℃)
Leakage Current I_{leak} (+20℃.max.)	$I_{leak} = 0.018*(C*V)^{0.85} + 4$ or 5mA, whichever is smaller (after 5 minutes) Where, I_{leak}: Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)
Dissipation Factor (tanδ,at 20℃,120Hz)	Less than the value under table(%)

Working Voltage(VDC)	160~450	500~550	≥600
D.F. (%)max.	15	20	25

Self-inductance ESL	d = 51 mm: approx. 17 nH
	d ≥ 63.5 mm: approx. 20 nH
	Capacitors with low-inductance design:
	d ≥ 63.5 mm: approx. 15 nH

Useful life 85 °C; V_R, $I_{AC,R}$	>10000 h	Requirements: △C/C ≤15% of initial value ESR ≤1.75 times initial specified limit I_{leak} ≤ initial specified limit Failure rate :≤1%/1000 hour
Voltage Endurance test 85 °C; V_R	2000 h	Post test requirements: DC/C ≤ 10% of initial value ESR ≤ 1.3 times initial specified limit I_{leak} ≤ initial specified limit
Vibration Resistance test	To IEC 60068-2-6, test Fc:	
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3×2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.	
Characteristics at lowtemperature	Max. impedance ratioat 120 Hz	

V_R(V)	160~450	≥500
$Z_{-25℃}$ / $Z_{20℃}$	4	4
$Z_{-40℃}$ / $Z_{20℃}$	10	-

Sectional specification	IEC 60384-4 and JIS-C-5101

Multiplier for Ripple Current vs. Frequency

Frequency(Hz)	50	120	300	1K	≧3K
Multiplier	0.8	1	1.2	1.3	1.4