

RT Series 105°C

Features

Extremely Long useful life

Applications

- ◆ Frequency converters
- ◆ Professional power supplies
- ◆ Traction

Features

- ◆ Outstanding reliability
- ◆ Wide temperature range
- ◆ Extra long useful life
- ◆ 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

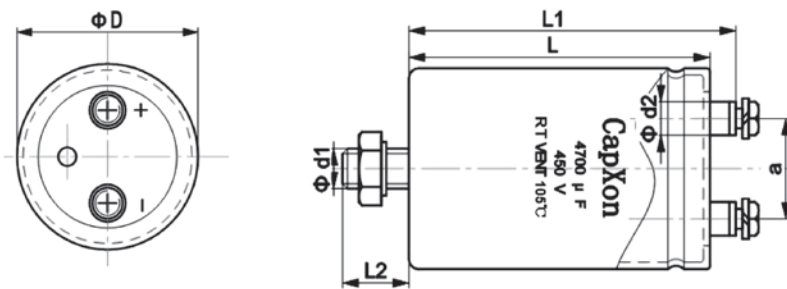


Specifications

Item	Performance Characteristics					
Rated voltage V_R	160... 450 V DC					
Surge voltage V_S	1.15 V_R (for $V_R \leq 315$ V) or 1.10 V_R (for $V_R > 315$ V)					
Rated capacitance C_R	220 ... 47000 μ F					
Capacitance tolerance	$\pm 20\%$					
tan δ (at 20°C · 120Hz)	Less than the value under table(%)					
	Φ D	35	51	63.5	76.2	89
	WV	15	15	20	20	20
Leakage Current I_{leak} (20 °C, 5 min)	$I_{leak} \leq 0.3\mu A * (C*V)^{0.7} + 4\mu A$					
Self-inductance ESL	d = 51 mm: approx. 17 nH					
	d \geq 63.5 mm: approx. 20 nH					
	Capacitors with low-inductance design:					
	d \geq 63.5 mm: approx. 15 nH					
Useful life 105 °C; V_R, I_{AC1R}	> 8000 h	Requirements: $\Delta C/C \leq \pm 40\%$ of initial value ESR \leq 4 times initial specified limit $I_{leak} \leq$ initial specified limit				
Voltage Endurance test 105 °C; V_R	2000 h	Post test requirements: $\Delta C/C \leq \pm 20\%$ of initial value ESR \leq 2 times initial specified limit $I_{leak} \leq$ 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 3X2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.					
Low Temperature Characteristics	Max. impedance ratio at 120 Hz					
	V_R	≤ 400 V	≥ 450 V			
	$Z_{-25^\circ C} / Z_{20^\circ C}$	4	4			
	$Z_{-40^\circ C} / Z_{20^\circ C}$	10	10			
Sectional specification	IEC 60384-4 and JIS-C-5101					

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						
	$D \pm 2$	$L \pm 3$	$L_1 \pm 3$	$L_2 \pm 1$	d_1	$d_2 \text{ max.}$	$a \pm 0.5$
M5	63.5	80~140	86.5~146.5	16	M12	10.3	28.6
M5	76.2/89	100~240	106.4~246.5	16	M12	10.3	31.8
M6	76.2/89	100~240	106.4~246.5	16	M12	17.5	31.8

Packing

Diameter D(mm)	Length L(mm)	Packing (pcs.)
63.5	all	24
76.2	all	15
89	all	12

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
For mounting	M12	10 Nm

Case Size

φ D×L(mm)

WV(V) Cap(μF)	160		200		250	
	Size	Ripple	Size	Ripple	Size	Ripple
3300					63.5×100	8.3
4700			63.5×100	9.7	63.5×120	10.5
6800	63.5×100	12.0	63.5×120	13.5	76.2×120	14.5
10000	63.5×120	13.8	76.2×120	15.0	76.2×160	16.5
					89×140	17.5
15000	76.2×120	17.0	76.2×140	17.5	89×170	22.0
			76.2×160	18.5		
22000	76.2×140	22.0	76.2×160	24.0	89×220	27.0
	89×130	23.0	89×140	26.0		
33000	89×140	24.0				
47000	89×220	31.0				

Ripple Current(A,rms) at 105°C 120Hz

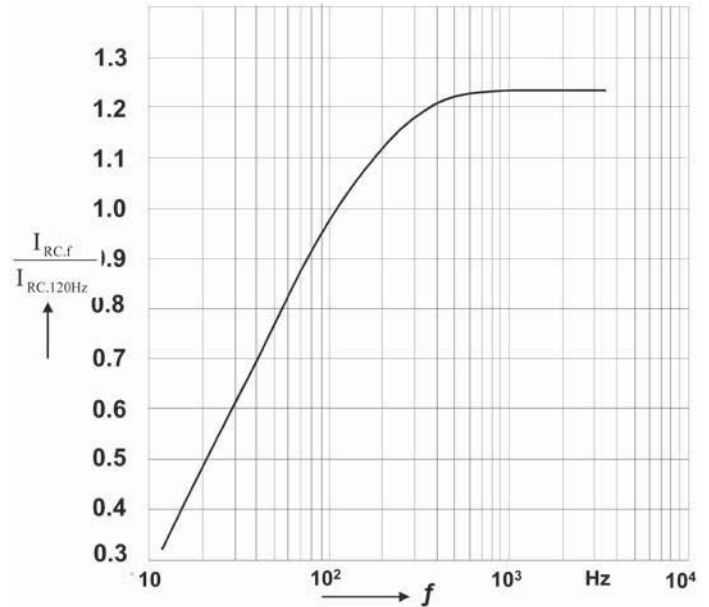
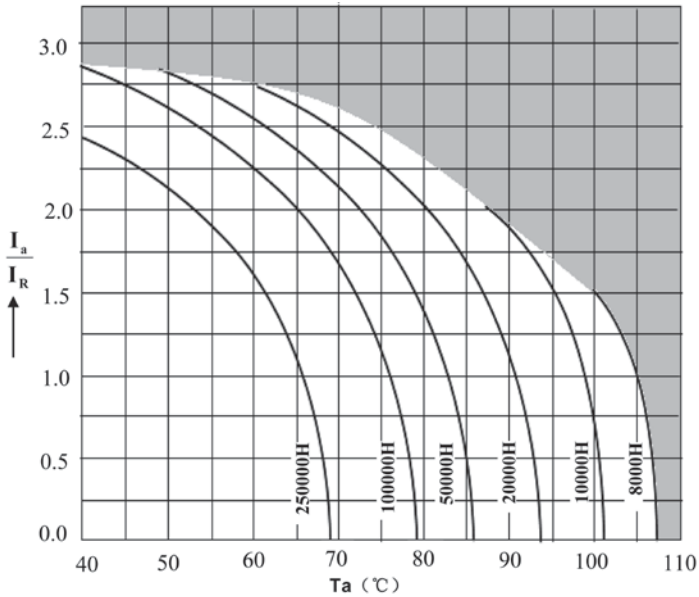
WV(V) Cap(μF)	350		400		450	
	Size	Ripple	Size	Ripple	Size	Ripple
2200			63.5×100	14.8	63.5×100	15.0
					63.5×120	16.0
2700	63.5×80	17.5	63.5×105	18.2	63.5×130	18.5
3300	63.5×100	18.0	63.5×130	19.3	63.5×145	21.5
	63.5×120	19.0	76.2×105	22.0	76.2×120	22.0
3900			76.2×120	23.0		
	63.5×120	19.5	76.2×120	24.0	76.2×145	25.5
4700	63.5×145	20.5	76.2×120	25.8	76.2×120	24.3
	76.2×105	24.6	76.2×130	27.0	76.2×160	26.5
5600	76.2×130	26.5	76.2×145	30.0	76.2×160	27.3
					89×145	35.0
6800	76.2×140	28.5	76.2×160	31.5	76.2×160	30.7
			89×145	36.0	76.2×220	35.0
8200	76.2×160	33.0	89×160	38.5	89×180	48.0
	89×145	39.0				
10000	76.2×160	33.5	89×160	43.0	89×200	50.0
	76.2×190	36.0				
12000	89×140	42.0	89×180	44.0		
	76.2×220	38.0				
15000	89×170	40.0	89×200	46.0		
	89×190	42.0				
18000	89×220	51.0				

Ripple Current(A,rms) at 105°C 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

