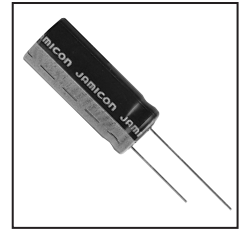


- High temperature 105°C and high reliability
- Corresponding product to RoHS



**SPECIFICATION**

Item	Characteristic															
Operation Temperature Range	-55 ~ +105°C					-40 ~ +105°C					-25 ~ +105°C					
Rated Working Voltage	6.3 ~ 100VDC					160 ~ 400VDC					450VDC					
Capacitance Tolerance (120Hz 20°C)	±20%(M)															
Leakage Current (20°C)	6.3~100 VDC I ≤ 0.01CV or 4 (μA)					160~450 VDC I ≤ 0.03CV + 40 (μA)max										
	*Whichever is greater after 3 minutes I : Leakage Current(μA) C : Rated Capacitance(μF) V : Working Voltage(V)															
Surge Voltage (20°C)	W.V.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	S.V.	8	13	20	32	44	63	79	125	200	250	300	400	450	500	
Dissipation Factor (tan δ) (120Hz 20°C)	Add 0.02 per 1000 μF for more than 1000 μF															
	W.V.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.08	0.15	0.15	0.15	0.20	0.20	0.20	
Low Temperature Stability	Impedance ratio at 120Hz															
	Rated Voltage (V)	6.3		10		16		25		35~100		160~250		350~400		450
	-25°C / +20°C	4		3		2		2		2		3		6		15
	-40°C / +20°C	10		8		6		4		3		4		10		—
Load Life	After 2000 hours application of W.V. and +105°C ripple current value, the capacitor shall meet the following limits. (DC + ripple peak voltage ≤ rate working voltage)															
	Capacitance Change	≤ ±25% of initial value for 6.3~16 W.V., ≤ ±20% of initial value for 25~450 W.V.														
	Dissipation Factor	≤ 200% of initial specified value														
	Leakage current	≤ initial specified value														
Shelf Life	At +105°C no voltage application after 1000 hours the capacitor shall meet the limits for load life characteristics. (with voltage treatment)															

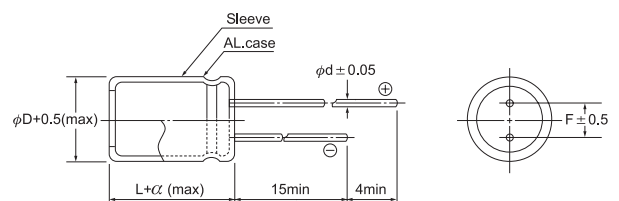
**DIMENSIONS (mm)**

φD	5	6.3	8	10	12.5	16	18	20	22	25
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.0
α	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0

**RIPPLE CURRENT COEFFICIENTS**

Temperature(°C)	65	85	105
Multiplier	1.75	1.40	1.00

Frequency(Hz)	60	120	1k	≥10k
W.V.	Multiplier			
6.3~25V	0.85	1.00	1.10	1.20
35~100V	0.80	1.00	1.15	1.25
160~250V	0.75	1.00	1.25	1.40
350~450V	0.70	1.00	1.30	1.80



● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)  
Max ripple current : mA(rms) 105°C 120Hz

μF	V(DC) Item	6.3		10		16	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
47					→	5x11	90
100		5x11	110	5x11	120	5x11	130
220		5x11	160	5x11	180	6.3x11	220
330		6.3x11	220	6.3x11	250	6.3x11	270
						8x11	310
470		6.3x11	270	6.3x11	290	8x11	370
1000		8x11	460	10x12.5	560	10x12.5	600
						10x16	670
2200		10x16	810	10x16	880	12.5x20	1180
				10x20	970		
3300		10x20	1050	12.5x20	1280	12.5x25	1510
4700		12.5x20	1350	12.5x25	1590	16x25	1830
6800		12.5x25	1680	16x25	1940	16x25	2040
						16x32	2120
10000		16x25	2020	16x32	2210	16x36	2430
				16x36	2330	18x36	2590
15000		16x32	2200	16x36	2540	18x40	2960
		16x36	2320	18x36	2710	20x40	3040
22000		18x36	2660	18x40	3050	22x40	3390
		18x40	2810	20x40	3130	22x50	3740
33000		22x40	3230	22x50	3840	25x50	4200
		22x50	3560				
47000		22x50	3700	25x50	4260		
68000		22x50	3820				

μF	V(DC) Item	25		35		50	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
1					→	5x11	17
2.2					→	5x11	25
3.3					→	5x11	31
4.7					→	5x11	36
10		5x11	43	5x11	49	5x11	55
22		5x11	65	5x11	70	5x11	80
33		5x11	80	5x11	90	5x11	95
47		5x11	95	5x11	110	6.3x11	130
68		5x11	110	6.3x11	140	6.3x11	160
100		5x11	140	6.3x11	170	8x11	220
		6.3x11	160				
220		6.3x11	230	8x11	300	10x12.5	370
		8x11	270				
330		8x11	330	10x12.5	410	10x16	500
470		10x12.5	440	10x16	550	10x20	660
1000		10x16	710	12.5x20	1000	12.5x25	1210
		10x20	790				
2200		12.5x25	1370	16x25	1640	16x32	1850
						16x36	1950
3300		16x25	1730	16x32	1960	18x36	2360
				16x36	2070		
4700		16x32	1990	16x36	2260		
				18x36	2410		
6800		16x36	2330	18x40	2780	22x50	3490
		18x36	2480				
10000		18x40	2820	22x50	3540	25x50	3930
		20x40	2890				
15000		22x50	3620	22x50	3750		
22000		25x50	4080				

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

RADIAL TYPE

● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)  
 Max ripple current : mA(rms) 105°C 120Hz

μF	V(DC) Item	63		100	
		DxL	R.C.	DxL	R.C.
10		5x11	55	5x11	60
				6.3x11	65
22		5x11	80	6.3x11	100
33		6.3x11	110	8x11	140
47		6.3x11	130	8x15	190
				10x12.5	190
68		8x11	180	10x12.5	230
100		8x11	220	10x16	310
		10x12.5	250	10x20	340
220		10x16	410	12.5x20	570
				12.5x25	630
330		10x20	550	12.5x25	780
470		12.5x20	750	16x25	950
1000		16x25	1310	18x36	1630
				18x40	1720
2200		18x36	2080	22x50	2730
4700		22x50	3220		
6800		25x50	3740		

μF	V(DC) Item	160		200		250	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
1		6.3x11	18	6.3x11	19	6.3x11	21
2.2		6.3x11	26	6.3x11	28	6.3x11	31
3.3		6.3x11	32	6.3x11	34	6.3x11	37
						8x11	44
4.7		6.3x11	38	6.3x11	41	8x11	50
				8x11	48		
10		8x11	65	8x11	70	10x12.5	85
				10x12.5	80	10x16	95
22		10x12.5	110	10x16	130	10x20	150
		10x16	120	10x20	140	12.5x20	170
33		10x16	150	10x20	170	10x25	210
		10x20	160	12.5x20	200	12.5x20	210
47		10x20	190	12.5x20	240	12.5x20	260
		12.5x20	220			12.5x25	280
68		12.5x20	260	12.5x25	310	16x25	350
100		12.5x25	350	16x25	390	16x25	420
						16x32	440
220		16x32	560	16x36	640	18x36	740
		16x36	590	18x40	720		
330		18x36	770	18x40	880	20x40	980
		18x40	820				
470		18x40	970	22x40	1130	22x50	1360
		22x40	1050				
1000		25x50	1820				

RADIAL TYPE

● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)  
 Max ripple current : mA(rms) 105°C 120Hz

μF	V(DC) Item	350		400		450	
		DxL	R.C.	DxL	R.C.	DxL	R.C.
1		8x11	21	8x11	21	10x12.5	22
2.2		8x11	31	8x11	32	8x11	29
				10x12.5	35	10x20	39
3.3		8x11	37	8x11	39	10x16	44
		10x12.5	42	10x12.5	43	12.5x20	55
4.7		8x11	45	8x11	46	10x16	50
		10x12.5	50	10x16	55	12.5x20	65
10		10x16	80	10x16	85	10x20	85
		10x20	90	12.5x20	100	16x25	110
22		12.5x20	150	12.5x25	170	12.5x25	160
		12.5x25	170			16x32	170
33		12.5x20	180	16x25	220	16x32	200
		16x25	210	16x32	220	18x36	230
47		16x25	250	16x25	270	16x36	260
		16x36	270	18x36	300		
68		16x32	310	16x32	320	18x36	330
100		18x36	430	18x36	440	18x40	420
		18x40	450	20x40	480		
220		22x50	820	25x50	880	25x50	800
330		25x50	1080				