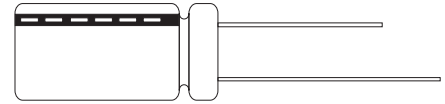


FEATURES

- Long life, 105°C, 4,000 ~ 10,000 hours assured
- Low Impedance, suitable for switching power supplies
- Smaller size with large permissible ripple current



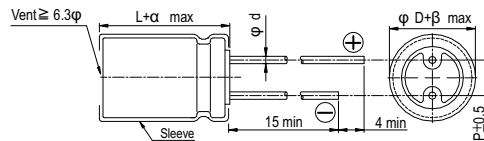
SPECIFICATIONS

Items	Performance								
Life	at 105 °C 4,000 ~ 10,000 Hours								
Operating Temp.	-55 °C ~ +105 °C								
Capacitance Tolerance	±20% (at 120Hz, 20 °C)								
Leakage Current (at 20 °C)	I = - 0.1CV or 3 (µA) whichever is greater (after 2 minutes) Where C = rated capacitance in µF. V = rated DC working voltage in V.								
Dissipation Factor (Tan φ at 120Hz, 20 °C)	Rated Voltage	6.3	10	16	25	35	50	63	
	Tan φ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.								
	Rated Voltage		6	10	16	25	35	50	63
	Impedance Ratio	Z (-25°C) / Z (+20 °C)	3	3	3	3	3	3	3
Load Life Test	Test Time	6.3 ~ 10V	4,000 Hrs for D = 5 ~ 6.3mm						
			6,000 Hrs for D = 8 ~ 10mm						
			8,000 Hrs for D ≥ 12.5mm						
	16 ~ 63V	5,000 Hrs for D = 5 ~ 6.3mm							
		7,000 Hrs for D = 8 ~ 10mm							
		10,000 Hrs for D ≥ 12.5mm							
	Capacitance Change	Within ± 25% of initial value							
Dissipation Factor	Less than 200% of specified value								
Leakage Current	Within specified value								
* The above specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage applied with rated ripple current for 4,000 ~ 10,000hrs at 105 °C.									
Shelf Life Test	Test Time	1,000 hours							
	Capacitance Change	Within ± 25% of initial value							
	Dissipation Factor	Less than 200% of specified value							
	Leakage Current	Within specified value							
* The above specifications shall be satisfied when the capacitors are restored to 20 °C after exposing them for 1,000 hrs at 105 °C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements. (Refer to JIS C 5101-4 4.1).									
Ripple Current & Frequency Multipliers	Freq. (Hz)	Cap. (µF)	120	1K	10K	100K up			
			under ~ 33	0.42	0.70	0.90	1.0		
	39 ~ 270	0.50	0.73	0.92	1.0				
	330 ~ 680	0.55	0.77	0.94	1.0				
	820 ~ 1,800	0.60	0.80	0.96	1.0				
	2,200 ~ 18,000	0.70	0.85	0.98	1.0				
Other Standards	JIS C 5101-4								

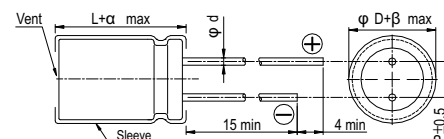
DIMENSIONS

Unit: mm

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5		0.6		0.8		
α	1.0		L < 20:1.5, L ≥ 20:2.0				
β	0.5						



The case size of 12.5×16, 16×16, 16×20, 18×16, 18×20 and 18×25 are suitable for below diagram:



DIMENSIONS & PERMISSIBLE RIPPLE CURRENT AND MAX IMPEDANCE

Dimension: φD x L(mm)
Ripple Current: mA/rms at 100Hz, 105°C

μ F	Contents	6.3V (0J)				10V (1A)				16V (1C)				25V (1E)			
		φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA / rms, 105°C) 100k Hz	φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA / rms, 105°C) 100k Hz	φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA / rms, 105°C) 100k Hz	φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA / rms, 105°C) 100k Hz
			20°C	-10°C			20°C	-10°C			20°C	-10°C			20°C	-10°C	
47	470												5 x 11	0.58	1.16	210	
56	560																
100	101				5 x 11	0.58	1.16	210					6.3 x 11	0.22	0.44	340	
120	121								6.3 x 11	0.22	0.44	340					
150	151	5 x 11	0.58	1.16	210												
220	221				6.3 x 11	0.22	0.44	340					8 x 11.5	0.11	0.22	640	
330	331	6.3 x 11	0.22	0.44	340				8 x 11.5	0.11	0.22	640	8 x 15	0.083	0.166	840	
470	471				8 x 11.5	0.11	0.22	640	8 x 15	0.083	0.166	840	8 x 20	0.064	0.128	1,050	
680	681	8 x 12	0.11	0.22	640	8 x 15	0.083	0.166	840	8 x 20	0.064	0.128	1,050	10 x 20	0.046	0.092	1,400
820	821	10 x 12.5	0.080	0.16	865	10 x 12.5	0.080	0.160	865	10 x 16	0.060	0.120	1,210	12.5 x 16	0.049	0.098	1,450
1,000	102	8 x 15	0.087	0.174	840	8 x 20	0.064	0.128	1,050	10 x 20	0.046	0.092	1,400	10 x 30	0.031	0.062	1,910
1,200	122	8 x 20	0.069	0.128	1,050	10 x 16	0.060	0.120	1,210	10 x 25	0.042	0.084	1,650	12.5 x 20	0.035	0.070	1,900
1,500	152	10 x 20	0.046	0.092	1,400	10 x 20	0.046	0.092	1,400	10 x 30	0.031	0.062	1,910	16 x 16	0.042	0.084	1,940
1,800	182	12.5 x 16	0.045	0.090	1,450	12.5 x 16	0.049	0.090	1,450	12.5 x 20	0.035	0.070	1,900	12.5 x 25	0.027	0.054	2,230
2,200	222	10 x 25	0.042	0.084	1,650	10 x 25	0.042	0.084	1,650	10 x 30	0.031	0.062	1,910	16 x 16	0.042	0.084	1,940
2,700	272	10 x 30	0.031	0.062	1,910	12.5 x 16	0.049	0.090	1,450	12.5 x 30	0.024	0.048	2,650	12.5 x 30	0.024	0.048	2,650
3,300	332	12.5 x 20	0.035	0.070	1,900	18 x 16	0.043	0.086	2,210	12.5 x 20	0.035	0.070	1,900	16 x 20	0.042	0.084	1,940
3,900	392	12.5 x 25	0.027	0.054	2,230	12.5 x 25	0.027	0.054	2,530	12.5 x 35	0.020	0.040	2,880	12.5 x 35	0.027	0.054	2,530
4,700	472	18 x 16	0.043	0.086	2,210	16 x 20	0.042	0.084	1,940	16 x 25	0.031	0.062	1,910	16 x 25	0.031	0.062	1,910
5,600	562	12.5 x 30	0.024	0.048	2,650	12.5 x 30	0.024	0.048	2,650	12.5 x 40	0.017	0.034	3,350	12.5 x 40	0.017	0.034	3,350
6,800	682	12.5 x 35	0.02	0.040	2,880	12.5 x 35	0.027	0.054	2,530	12.5 x 40	0.017	0.034	3,350	12.5 x 40	0.017	0.034	3,350
8,200	822	16 x 20	0.027	0.054	2,530	16 x 20	0.027	0.054	2,530	16 x 25	0.021	0.042	2,930	16 x 25	0.021	0.042	2,930
10,000	103	16 x 25	0.019	0.038	3,140	16 x 25	0.019	0.038	3,140	16 x 30	0.015	0.030	3,610	16 x 30	0.015	0.030	3,610
12,000	123	16 x 30	0.017	0.034	3,350	16 x 30	0.017	0.034	3,350	16 x 35	0.013	0.026	4,080	16 x 35	0.013	0.026	4,080
15,000	153	16 x 35.5	0.015	0.030	3,610	16 x 35.5	0.015	0.030	3,610	16 x 40	0.011	0.022	4,280	16 x 40	0.011	0.022	4,280
18,000	183	18 x 25	0.019	0.038	3,140	18 x 25	0.019	0.038	3,140	18 x 30	0.015	0.030	3,610	18 x 30	0.015	0.030	3,610
		18 x 40	0.012	0.024	4,280	18 x 40	0.012	0.024	4,280	18 x 45	0.011	0.022	4,280	18 x 45	0.011	0.022	4,280

Note: Case size in mark of "*" is downsize

DIMENSIONS & PERMISSIBLE RIPPLE CURRENT AND MAX IMPEDANCE

Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 100Hz, 105°C

V. DC		35V (1V)				50V (1H)				63V (1J)			
Contents		$\phi D \times L$	Impedance (Ω , Max / 100kHz)		Ripple Current (mA / rms, 105°C)	$\phi D \times L$	Impedance (Ω , Max / 100kHz)		Ripple Current (mA / rms, 105°C)	$\phi D \times L$	Impedance (Ω , Max / 100kHz)		Ripple Current (mA / rms, 105°C)
F			20°C	-10°C			100k Hz	20°C			-10°C	100k Hz	
2.2	2R2					5 x 11	3.3	6.6	43				
3.3	3R3					5 x 11	2.9	5.8	53				
4.7	4R7					5 x 11	2.5	5.0	95				
10	101					5 x 11	2	4.0	130				
15	151									5 x 11	1.2	2.4	165
22	220					5 x 11	0.91	1.82	180				
33	330	5 x 11	0.58	1.16	210					6.3 x 11	0.49	0.98	265
56	560	6.3 x 11	0.22	0.44	340	6.3 x 11	0.39	0.78	295	8 x 12	0.31	0.62	500
82	820									8 x 15	0.22	0.44	665
										10 x 12.5	0.150	0.3	690
100	101					8 x 12	0.220	0.440	555				
120	121					8 x 15	0.150	0.300	730	8 x 20.0	0.170	0.340	820
										10 x 16.0	0.110	0.220	950
150	151	8 x 11.5	0.110	0.220	640	10 x 12.5	0.160	0.320	760				
180	181					8 x 20	0.118	0.236	910	10 x 20.0	0.078	0.156	1,150
										12.5 x 16.0	0.101	0.202	1,150
220	221	8 x 15	0.083	0.166	840	10 x 16	0.110	0.220	1,050	10 x 25	0.064	0.128	1,350
		10 x 12.5	0.080	0.160	865								
270	271	8 x 20	0.064	0.128	1,050	10.0 x 20	0.078	0.156	1,220	12.5 x 20	0.057	0.114	1,500
						12.5 x 60	0.079	0.158	1,260				
330	331	10 x 16	0.060	0.120	1,210	10 x 25	0.072	0.144	1,440				
390	391												
470	471	10 x 20	0.046	0.092	1,400	10 x 30	0.056	0.112	1,690	12.5 x 20	0.057	0.114	1,500
		12.5 x 16	0.049	0.098	1,450	12.5 x 20	0.059	0.118	1,660	12.5 x 30	0.039	0.078	2,300
						16 x 16	0.072	0.144	1,690	16 x 20	0.04	0.090	2,000
560	561	10 x 25	0.042	0.084	1,650	12.5 x 25	0.044	0.088	1,950	12.5 x 35	0.034	0.068	2,500
						18 x 16	0.070	0.140	1,930				
680	681	10 x 25	0.030	0.060	2,200					12.5 x 40	0.029	0.058	2,800
		10 x 30	0.031	0.062	2,200					16 x 25	0.035	0.070	2,600
		12.5 x 20	0.035	0.070	1,900	12.5 x 30	0.039	0.078	2,310	18 x 20	0.042	0.084	2,500
		16 x 16	0.042	0.084	1,940								
820	821	10 x 25	0.03	0.060	2,200	12.5 x 35	0.033	0.066	2,510	16 x 31.5	0.029	0.058	2,850
						16 x 20	0.044	0.088	2,210	18 x 25	0.034	0.068	2,800
1,000	102	12.5 x 25	0.027	0.054	2,230	12.5 x 40	0.027	0.054	2,920				
		18 x 16	0.043	0.086	2,210	16 x 25	0.033	0.066	2,555	16 x 35.5	0.027	0.054	2,900
						18 x 20	0.047	0.094	2,490				
1,200	122	12.5 x 30	0.024	0.048	2,650	16 x 31.5	0.027	0.054	3,010	16 x 40	0.025	0.050	3,400
		16 x 20	0.027	0.054	2,530	18 x 25	0.028	0.056	2,740	18 x 31.5	0.028	0.056	3,300
1,500	152	13 x 25	0.024	0.040	2,530	16 x 35.5	0.024	0.048	3,150	18 x 35.5	0.025	0.050	3,400
1,800	182	13 x 40	0.017	0.034	3,350	16 x 40	0.021	0.042	3,710				
		16 x 25	0.021	0.042	2,930	18 x 31.5	0.024	0.048	3,635	18 x 40	0.024	0.048	3,500
		18 x 20	0.026	0.052	2,860								
2,200	222	16 x 31.5	0.017	0.034	3,450	18 x 35.5	0.022	0.044	3,680				
		18 x 25	0.019	0.038	3,140								
2,700	272	16 x 35.5	0.015	0.030	3,610								
		18 x 31.5	0.015	0.030	4,170	18 x 40	0.018	0.036	3,800				
3,300	332	16 x 40	0.013	0.026	4,080								
		18 x 35.5	0.014	0.028	4,220								
3,900	392	18 x 40	0.012	0.024	4,280								

Note: Case size in mark of * is downsize

PART NUMBER EXAMPLE RZW 102 M 1C BK 100 200