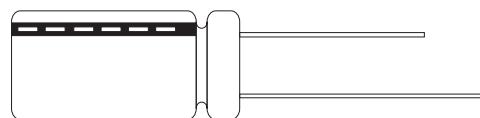


### ■ FEATURES

- 105°C, 2,000 ~ 5,000 hours assured
- Low ESR, suitable for switching power supplies
- Smaller size with large permissible ripple current
- RoHS Compliance



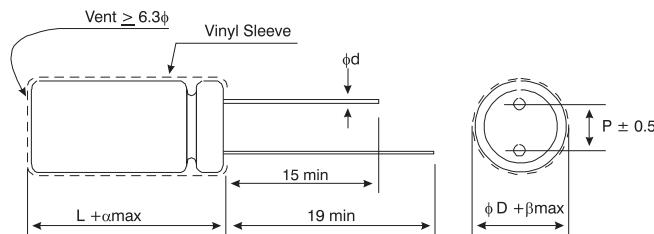
### ■ SPECIFICATIONS

Item	Performance								
Operating Temp.	-40°C ~ +105°C								
Capacitance Tolerance	$\pm 20\%$ (120Hz, 20°C)								
Leakage Current (at 20°C)	$I = 0.01CV$ or $3(A)$ whichever is greater (after 2 minutes) Where, C= rated capacitance in F. V= rated DC working voltage in V.								
Dissipation Factor Tan at 120Hz, 20°C	Rated Voltage	6.3	10	16	25	35	50	63	
	Tan (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	
When the capacitance exceeds 1000 F, 0.02 shall be added every 1000 F increase.									
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table.								
	Rated Voltage	6.3	10	16	25	35	50	63	
	Impedance Ratio	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	
		Z(-40°C)/Z(+20°C)	8	6	4	3	3	3	
Load Life Test	Test Time		2,000 hours for D = 5 ~ 8mm 4,000 hours for D = 10mm 5,000 hours for D $\geq$ 12.5mm						
	Capacitance Change		Within $\pm 25\%$ of initial value						
	Dissipation Factor		Less than 200% of specified value						
	Leakage Current		Within specified value						
*The above specifications shall be satisfied when capacitors are restored to 20°C after the rated voltage applied with rated ripple current for test time at 105°C.									
Shelf Life Test	Test Time		1,000 hours						
	Capacitance Change		Within $\pm 20\%$ 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 hours at 105°C without voltage applied.									
Ripple Current & Frequency Multipliers	Freq. (Hz)	120	1K	10K	100K				
	Cap ( $\mu$ F)	0.40	0.75	0.90	1.0				
	0.47 ~ 180	0.40	0.75	0.90	1.0				
	220 ~ 560	0.50	0.85	0.94	1.0				
	680 ~ 1,800	0.60	0.87	0.95	1.0				
	2,200 ~ 3,900	0.75	0.90	0.95	1.0				
4,700 ~		0.85	0.95	0.98	1.0				
Standards		Satisfies Characteristic JIS C 5101-4							

### ■ DIMENSIONS

Unit: mm

D	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	7.5	7.5	
d	0.5		0.6		0.8	0.8	
a	1.0		1.5				
$\beta$		0.5					



### DIMENSIONS & PERMISSIBLE RIPPLE CURRENT

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

V.DC Item μF	6.3V (0J)				10V (1A)				16V (1C)				
	D x L	Impedance ( Max/100K Hz)		Ripple Current (mA/rms, 105°C)		D x L	Impedance ( Max/100K Hz)		Ripple Current (mA/rms, 105°C)		D x L	Impedance ( Max/100K Hz)	
		20°C	-10°C	120Hz	100KHz		20°C	-10°C	120Hz	100KHz		20°C	-10°C
56											5 x 11	0.58	2.3
100						5 x 11	0.58	2.3	84	210		0.58	2.3
120											6.3 x 11	0.22	0.87
150	5 x 11	0.58	2.3	84	210								
220						6.3 x 11	0.22	0.87	170	340	8 x 11.5	0.13	0.52
330	6.3 x 11	0.22	0.87	170	340							320	640
470											8 x 16	0.087	0.35
680	8 x 11.5	0.13	0.52	384	640	8 x 16	0.087	0.35	504	840	10 x 12.5	0.08	0.32
	10 x 12.5	0.08	0.32	519	865	10 x 12.5	0.080	0.32	519	865	8 x 20	0.069	0.27
1,000	8 x 16	0.087	0.35	504	840	8 x 20	0.069	0.27	630	1,050	10 x 20	0.046	0.18
1,200	8 x 20	0.069	0.27	630	1,050	10 x 20	0.046	0.18	726	1,210	12.5 x 16	0.049	0.16
	10 x 16	0.060	0.24	726	1,210						10 x 25	0.042	0.17
1,500	10 x 20	0.046	0.18	840	1,400	10 x 25	0.042	0.17	990	1,650	10 x 30	0.031	0.12
						12.5 x 16	0.049	0.16	870	1,450	12.5 x 20	0.035	0.12
1,800	12.5 x 16	0.049	0.16	870	1,450						16 x 16	0.042	0.12
2,200	10 x 25	0.042	0.17	1,238	1,650	10 x 30	0.031	0.12	1,432	1,910	12.5 x 25	0.027	0.089
						12.5 x 20	0.035	0.12	1,425	1,900	18 x 16	0.043	0.11
2,700	10 x 30	0.031	0.12	1,432	1,910	18 x 16	0.043	0.11	1,657	2,210	12.5 x 30	0.024	0.078
	16 x 16	0.042	0.12	1,455	1,940						16 x 20	0.027	0.078
3,300	13 x 20	0.035	0.12	1,425	1,900	12.5 x 25	0.027	0.089	1,672	2,230	12.5 x 35	0.020	0.065
3,900	13 x 25	0.027	0.089	1,672	2,230	12.5 x 30	0.024	0.078	1,987	2,650	12.5 x 40	0.017	0.056
	18 x 16	0.043	0.11	1,657	2,210	16 x 20	0.027	0.078	1,897	2,530	16 x 25	0.021	0.060
4,700	12.5 x 30	0.024	0.078	2,252	2,650	12.5 x 35	0.020	0.065	2,448	2,880	16 x 31.5	0.017	0.050
											18 x 25	0.019	0.049
5,600	12.0 x 35	0.020	0.065	2,448	2,880	12.5 x 40	0.017	0.056	2,847	3,350	16 x 35.5	0.015	0.044
	16 x 20	0.027	0.078	2,150	2,530	16 x 25	0.021	0.060	2,490	2,930	18 x 31.5	0.015	0.040
6,800	12.5 x 40	0.017	0.056	2,847	3,350	16 x 31.5	0.017	0.050	2,932	3,450	16 x 40	0.013	0.038
	16 x 25	0.021	0.060	2,490	2,930	18 x 25	0.019	0.049	2,669	3,140			
8,200	18 x 20	0.026	0.067	2,431	2,860								
	16 x 31.5	0.017	0.050	2,932	3,450	16 x 35.5	0.015	0.044	3,068	3,610	18 x 35.5	0.014	0.038
10,000	16 x 35.5	0.015	0.044	3,068	3,610	16 x 40	0.013	0.038	3,468	4,080	18 x 40	0.012	0.032
	18 x 25	0.019	0.049	2,669	3,140	18 x 35.5	0.014	0.038	3,587	4,220			
12,000	16 x 40	0.013	0.038	3,468	4,080	18 x 40	0.012	0.032	3,638	4,280			
	18 x 31.5	0.015	0.040	3,544	4,170								
15,000	18 x 35.5	0.014	0.038	3,587	4,220								
18,000	18 x 40	0.012	0.032	3,638	4,280								

**DIMENSIONS & PERMISSIBLE RIPPLE CURRENT**

Dimension: φDxL (mm)

Ripple Current: mA/rms at 100Hz, 105°C

V.DC Item μF	25V (1E)				35V (1V)				50V (1H)				
	D x L	Impedance ( Max/100K Hz)		Ripple Current (mA/rms, 105°C)		D x L	Impedance ( Max/100K Hz)		Ripple Current (mA/rms, 105°C)		D x L	Impedance ( Max/100K Hz)	
		20°C	-10°C	120Hz	100KHz		20°C	-10°C	120Hz	100KHz		20°C	-10°C
0.47											5 x 11	5.50	22.0
1.0											5 x 11	4.00	16.0
2.2											5 x 11	2.50	10.0
3.3											5 x 11	2.20	8.8
4.7											5 x 11	1.90	7.6
10											5 x 11	1.50	6.0
22											5 x 11	0.70	2.8
33						5 x 11	0.58	2.3	84	210			
47	5 x 11	0.58	2.3	84	210								
56						6.3 x 11	0.22	0.87	136	340	6.3 x 11	0.30	1.2
100	6.3 x 11	0.22	0.87	136	340						8 x 11.5	0.17	0.68
120											8 x 16	0.12	0.48
150						8 x 11.5	0.13	0.52	256	640	10 x 12.5	0.12	0.48
180											8 x 20	0.091	0.36
220	8 x 11.5	0.13	0.52	320	640	8 x 16	0.0876	0.35	420	840	10 x 16	0.084	0.34
270						10 x 12.5	0.080	0.32	432	865			
330	8 x 16	0.057	0.35	420	840	10 x 16	0.06	0.24	605	1,210	10 x 25	0.055	0.22
	10 x 12.5	0.08	0.32	432.5	865								
470	8 x 20	0.069	0.27	525	1,050	10 x 20	0.046	0.18	700	1,400	10 x 30	0.043	0.17
	10 x 16	0.06	0.24	605	1,210	12.5 x 16	0.049	0.16	725	1,450	12.5 x 20	0.045	0.15
560						10 x 25	0.042	0.17	825	1,650	12.5 x 25	0.034	0.11
680	10 x 20	0.045	0.18	840	1,400	10 x 30	0.031	0.12	1,146	1,910	12.5 x 30	0.030	0.10
	12.5 x 16	0.049	0.16	870	1,450	12.5 x 20	0.035	0.12	1,140	1,900			
820	10 x 25	0.042	0.17	990	1,650						12.5 x 35	0.025	0.083
1,000	10 x 30	0.031	0.12	1,146	1,910	12.5 x 25	0.027	0.089	1,338	2,230	12.5 x 40	0.021	0.069
	12.5 x 20	0.035	0.12	1,140	1,900	18 x 16	0.043	0.11	1,326	2,210	16 x 25	0.025	0.075
	16 x 16	0.042	0.12	1,164	1,940						18 x 20	0.036	0.097
1,200	18 x 16	0.043	0.11	1,326	2,210	12.5 x 30	0.024	0.078	1,590	2,650	16 x 31.5	0.022	0.066
						16 x 20	0.027	0.078	1,518	2,530	18 x 25	0.026	0.070
1,500	12.5 x 25	0.027	0.089	1,338	2,230	12.5 x 35	0.020	0.065	1,728	2,880	16 x 35.5	0.019	0.057
1,800	12.5 x 30	0.024	0.078	1,590	2,650	12.5 x 40	0.017	0.056	2,010	3,350	16 x 40	0.016	0.048
	16 x 20	0.027	0.078	1,518	2,530	16 x 25	0.021	0.060	1,758	2,930	18 x 31.5	0.021	0.057
2,200	12.5 x 35	0.02	0.065	2,160	2,880	16 x 31.5	0.017	0.050	2,587	3,450	18 x 35.5	0.017	0.046
	18 x 20	0.026	0.067	2,145	2,860	18 x 25	0.019	0.049	2,355	3,140			
2,700	12.5 x 40	0.017	0.056	2,513	3,350	16 x 35.5	0.015	0.044	2,707	3,610	18 x 40	0.014	0.038
	16 x 25	0.021	0.06	2,198	2,930	18 x 31.5	0.015	0.040	3,127	4,170			
3,300	16 x 31.5	0.017	0.05	2,588	3,450	16 x 40	0.013	0.038	3,060	4,080			
	18 x 25	0.019	0.049	2,355	3,140	18 x 35.5	0.014	0.038	3,165	4,220			
3,900	16 x 35.5	0.015	0.044	2,708	3,610	18 x 40	0.012	0.032	3,210	4,280			
4,700	18 x 31.5	0.015	0.04	3,128	4,170								
	16 x 40	0.013	0.038	3,468	4,080								
5,600	18 x 35.5	0.014	0.038	3,587	4,220								
	18 x 40	0.012	0.032	3,638	4,280								