

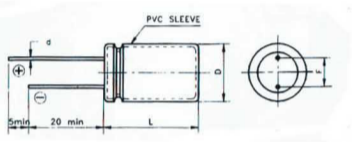
**Features**

- Load life of 1,000 hours(for capacitors of case dia. 8mm or less) or 2,000 hours(for case dia. 10mm or more)at 85°C.
- Wide operating temperature range.
- Suitable to use for industrial equipment.
- Case Size larger than 5mm diameter has safety vents.

**Characteristics**

Item	Characteristics										
Operating temperature range	-40~+85°C (for 6.3V to 250V) -25~+85°C (for 350V to 450V)										
Rated voltage range	6.3~450V										
Capacitance range	0.1-15,000 μF										
Capacitance tolerance (at 20°C, 120Hz)	±20%(M)										
Leakage current(I) (at 20°C)	After 2 minute application of rated voltage. I≤0.01CV or 3 μA, whichever is greater (for 6.3v to 100V).					After 2 minute application of rated voltage. I≤0.02CV±20 μA(for 160v to 450V).					
	Where C: Nominal capacitance in μF; V: Rated voltage in V.										
Dissipation factor(Tan δ) (at 20°C, 120Hz)	W.V.(V)	6.3	10	16	25	35	50	63	100	160-250	350-450
	Tan δ (max.)	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20
For capacitance of more than 1,000 μF, add 0.02 for every increase of 1,000 μF.											
Low temperature characteristics (at 120Hz)	W.V.(v)	6.3		10		16~100		160~250		350~450	
	impedance ratio Z-25°C/Z+20°C	4		3		2		4		6	
	ZT/Z+20°C(max)	8		6		4		8		-	
Load life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage has been applied for 2,000 hours (1,000 hours for case dia. 8 mm or less)at 85°C										
	Capacitance change	≤20% of the initial value									
	tan δ	≤200% of the initial specified value									
Shelf life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 85°C for 500 hours without voltage applied										
	Capacitance change	≤20% of the initial value									
	tan δ	≤150% of the initial specified value									
	I	≤200% of the initial specified value									
Others	Satisfies characteristic W of JIS C5141										

**Dimensions**



D±0.5	5	6.3	8	10	13	16	18	22
L	±1.0			±2.0				
	11	11	12	12	16	20	20	25
F±0.5	2.0	2.5	3.5	5.0	7.5	10.0	10.0	10.0
d±0.05	0.5		0.6		0.8			

**Ripple Current Multipliers**

Frequency multiplying factor

W.V.(v)	Cap.(μF)	Freq(Hz)				
		50	120	300	1k	≥10k
6.3~100	0.1~47	0.75	1.00	1.35	1.57	2.00
	100~470	0.80	1.00	1.23	1.34	1.50
	1,000~15,000	0.85	1.00	1.10	1.13	1.15
160~450	0.47~470	0.80	1.00	1.25	1.40	1.60

Temperature multiplying factor

Temperature (°C)	70	85	105
Factor	1.78	1.40	1.00

**Case Size DxL(mm) and Maximum Ripple current (mA rms/at 85°C, 120Hz)**

W.V.(v) / Cap.(μF)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
0.1						5×11 1.3		5×11 2.6						
0.22						5×11 2.6		5×11 5.8						
0.33						5×11 4.3		5×11 8.7						
0.47						5×11 6.2		5×11 11	5×11 8.2	5×11 8.2	5×11 8.2	8×12 8.6	8×12 8.6	8×12 8.6
1						5×11 13		5×11 16	5×11 12	5×11 12	6.3×11 14	8×12 13	8×12 13	8×12 13
2.2						5×11 22		5×11 24	6.3×11 20	6.3×11 20	6.3×11 20	8×12 19	8×12 20	10×12 20
3.3						5×11 27		5×11 30	6.3×11 25	6.3×11 25	8×12 26	10×12 24	10×16 28	10×16 28
4.7				5×11 27	5×11 29	5×11 32	5×11 34	5×11 36	6.3×11 32	6.3×11 32	8×12 34	10×12 33	10×16 33	10×16 33
10			5×11 37	5×11 39	5×11 42	5×11 47	5×11 49	5×11 59	6.3×11 49	6.3×11 49	8×12 49	10×12 55	10×16 53	10×20 61
22		5×11 49	5×11 55	5×11 58	5×11 63	5×11 69	5×11 83	6.3×11 94	6.3×11 82	8×12 91	10×12 91	10×16 91	13×20 100	13×25 113
33	5×11 55	5×11 60	5×11 67	5×11 71	5×11 77	6.3×11 96	6.3×11 101	8×12 122	10×16 111	10×12 111	13×20 128	13×20 128	16×25 138	16×30 140
47	5×11 65	5×11 71	5×11 80	5×11 85	6.3×11 105	6.3×11 115	8×12 129	10×16 164	13×20 153	13×20 153	13×25 169	16×30 176	16×35 191	16×40 191
100	5×11 95	5×11 104	5×11 116	6.3×11 142	8×12 163	8×12 178	10×12 200	10×16 264	16×25 277	16×25 277	16×30 300	18×40 315	22×35 333	22×40 353
220	5×11 141	6.3×11 176	6.3×11 196	8×12 224	10×12 257	10×16 318	10×20 370	13×25 501	18×35 509	18×40 540	22×35 570			
330	6.3×11 196	6.3×11 215	8×12 256	10×12 291	10×16 356	10×20 430	13×20 525	16×25 690	22×35 698	22×35 698				
470	6.3×11 234	8×12 273	8×12 306	10×12 348	10×16 424	13×20 594	13×25 690	16×30 891	22×40 883					
1,000	8×12 364	10×12 424	10×16 536	10×20 632	13×20 791	13×25 955	16×30 1,225	22×35 1,664						
2,200	10×16 624	10×20 748	13×20 958	13×25 1,120	16×25 1,346	16×35 1,686	22×35 2,104							
3,300	10×20 812	13×20 1,016	13×25 1,227	16×25 1,454	16×35 1,788	22×35 2,284	22×40 2,513							
4,700	13×20 1,067	13×25 1,230	16×25 1,535	16×35 1,863	18×40 2,219	22×40 2,622								
6,800	13×25 1,331	16×25 1,590	16×35 1,976	18×40 2,327	22×40 2,712									
10,000	16×25 1,657	16×30 1,886	18×40 2,289	22×40 2,788										
15,000	16×35 2,115	18×35 2,350	22×35 2,747											

Note: 10×12 can also be 8×15 as per customer's request.