

## Features

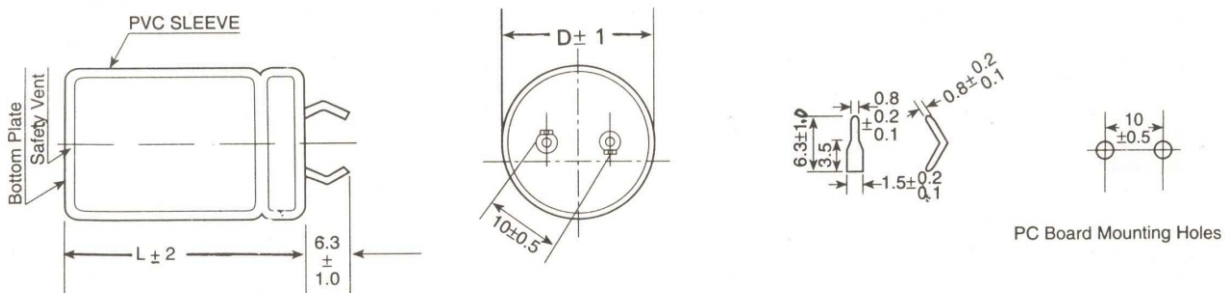
- Load life of 2,000 hours at 85°C.
- Snap-in terminal type.
- Applications: audio, video and other filtering applications.
- Having safety vents.



## Specifications

Item	Characteristics										
Operating temperature range	-40~+85°C (for 10V to 250V) -25~+85°C (for 315V to 450V)										
Rated voltage range	10~450V										
Capacitance range	47-82,000 μ F										
Capacitance tolerance (at 20°C, 120Hz)	±20%(M)										
Leakage current (I) (at 20°C)	After 1 minute application of rated voltage. $I \leq 0.02CV$ or 5mA, whichever is smaller. Where C: Nominal capacitance in μ F, V: Rated voltage in V.										
Dissipation factor (Tan δ) (at 20°C, 120Hz)	W.V.(V)	10	16	25	35	50	63	80~100	160~350	400~450	
	Tan δ (max.)	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.20	
For capacitance of more than 10,000 μ F, add 0.02 for every increase of 1,000 μ F.											
Low temperature characteristics (at 120Hz)	W.V.(v)					6.3	10~16	25~100	160~450		
	impedance ratio ZT/Z+20°C(max)		Z-25°C/Z+20°C		Z-40°C/Z+20°C		4	3	2	6	
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 at 85°C										
	Capacitance change					≤20% of the initial value					
	tan δ					≤200% of the initial specified value					
	I					≤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 1,000 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



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

W.V.(V)		10						35									
Cap.(μF)	D	22		25		30		35		22		25		30		35	
8,200										22×25	2.08						
10,000		22×28	2.18							22×30	2.48	25×25	2.48				
12,000		22×30	2.58							22×35	2.90	25×30	2.93				
15,000		22×30	2.88	25×25	2.88					22×40	3.44	25×30	3.27	30×25	3.40		
18,000		22×35	3.37	25×30	3.40					22×45	3.97	25×35	3.83	30×30	4.00		
22,000		22×40	3.95	25×35	4.01	30×25	3.90			22×50	4.60	25×40	4.48	30×30	4.42	35×25	4.53
27,000		22×45	4.61	25×40	4.71	30×30	4.64					25×45	5.22	30×35	5.21	35×30	5.37
33,000				25×45	5.48	30×35	5.47	35×25	5.26					30×40	6.09	35×30	5.94
39,000				25×50	6.24	30×35	5.94	35×25	6.13					30×45	6.96	35×35	6.86
47,000						30×40	6.89	35×30	6.73					30×50	8.00	35×40	7.95
56,000						30×45	7.91	35×35	7.80							35×45	9.12
68,000								35×40	9.07								
82,000								35×45	10.46								

W.V.(V)		25						35									
Cap.(μF)	D	22		25		30		35		22		25		30		35	
3,300										22×25	1.50						
3,900										22×30	1.76						
4,700										22×30	1.93	25×25	1.93				
5,600		22×25	1.83							22×35	2.25	25×30	2.27				
6,800		22×30	2.17	25×25	2.17					22×40	2.63	25×30	2.50	30×25	2.59		
8,200		22×35	2.55	25×30	2.57					22×45	3.04	25×35	2.93	30×30	3.06		
10,000		22×40	2.98	25×30	2.84	30×25	2.94			22×50	3.52	25×40	3.42	30×30	3.38	35×25	3.46
12,000		22×45	3.44	25×35	3.31	30×30	3.46					25×45	3.95	30×35	3.94	35×30	4.06
15,000		22×50	4.03	25×40	3.92	30×30	3.87	35×25	3.96			25×50	4.62	30×40	4.66	35×30	4.54
18,000				25×45	4.52	30×35	4.51	35×30	4.65					30×45	5.36	35×35	5.29
22,000						30×40	5.27	35×30	5.15							35×40	6.17
27,000						30×45	6.14	35×35	6.06							35×45	7.18
33,000								35×40	7.07								
39,000								35×45	8.07								

W.V.(V)		50						63									
Cap.(μF)	D	22		25		30		35		22		25		30		35	
1,500										22×25	1.20						
1,800										22×30	1.41						
2,200										22×30	1.67	25×25	1.41				
2,700		22×25	1.32							22×35	1.96	25×30	1.68				
3,300		22×30	1.58	25×25	1.58					22×40	2.28	25×30	1.86	30×25	1.93		
3,900		22×35	1.87	25×30	1.88					22×50	2.60	25×35	2.20	30×30	2.30		
4,700		22×40	2.15	25×30	2.04	30×25	2.32					25×40	2.53	30×30	2.50	35×25	2.81
5,600		22×45	2.49	25×35	2.39	30×30	2.73					25×45	2.92	30×35	2.92	35×30	3.28
6,800		22×50	2.84	25×40	2.77	30×35	3.20	35×25	3.08			25×50	3.34	30×40	3.37	35×35	3.84
8,200				25×45	3.21	30×40	3.72	35×30	3.63					30×45	3.90	35×40	4.46
10,000				25×50	3.69	30×45	4.32	35×35	4.26					30×50	4.48	35×45	5.17
12,000						30×50	4.95	35×40	4.92							35×50	5.92
15,000								35×45	5.78								
18,000								35×50	6.62								

W.V.(V)		80						100								
Cap.( $\mu$ F)	D	22	25		30	35		22	25		30	35				
680								22×25	0.90							
820								22×30	1.07							
1,000		22×25	1.09					22×30	1.18	25×25	1.18					
1,200		22×30	1.29					22×35	1.38	25×30	1.39					
1,500		22×35	1.54	25×25	1.44			22×40	1.63	25×35	1.66	30×25	1.61			
1,800		22×40	1.79	25×30	1.70			22×50	1.97	25×40	1.92	30×30	1.90			
2,200		22×50	2.42	25×35	2.01	30×25	1.95			25×45	2.24	30×35	2.23	35×25	2.15	
2,700				25×40	2.35	30×30	2.32	35×25	2.38		25×50	2.60	30×40	2.61	35×30	2.55
3,300				25×45	2.74	30×35	2.73	35×30	2.82				30×45	3.04	35×35	2.99
3,900				25×50	3.12	30×40	3.14	35×30	3.06				30×50	3.46	35×40	3.44
4,700						30×45	3.62	35×35	3.57						35×45	3.96
5,600						30×50	4.14	35×40	4.12						35×50	4.52
6,800								35×45	4.76							
8,200								35×50	5.47							

W.V.(V)		160						180								
Cap.( $\mu$ F)	D	22	25		30	35		22	25		30	35				
180								22×25	0.53							
220		22×25	0.59					22×30	0.64							
270		22×30	0.71	25×25	0.71			22×30	0.71	25×25	0.71					
330		22×30	0.83	25×30	0.84			22×35	0.83	25×30	0.84					
390		22×35	0.91	25×30	0.91			22×40	0.96	25×35	0.98	30×25	0.95			
470		22×40	1.06	25×35	1.07	30×25	1.04	22×45	1.11	25×45	1.07	30×30	1.12			
560		22×50	1.27	25×40	1.24	30×30	1.22			25×40	1.24	30×30	1.22	35×25	1.25	
680				25×45	1.44	30×35	1.43	35×25	1.38		25×50	1.50	30×35	1.43	35×30	1.48
820				25×50	1.65	30×35	1.57	35×30	1.62				30×40	1.66	35×30	1.62
1,000						30×40	1.84	35×35	1.90				30×45	1.93	35×35	1.90
1,200						30×50	2.21	35×35	2.09						35×40	2.20
1,500								35×45	2.58						35×50	2.70
1,800								35×50	2.96							

W.V.(V)		200						250								
Cap.( $\mu$ F)	D	22	25		30	35		22	25		30	35				
120								22×25	0.44							
150								22×30	0.53							
180		22×25	0.53					22×30	0.58	25×25	0.58					
220		22×30	0.64	25×25	0.64			22×35	0.68	25×30	0.69					
270		22×35	0.75	25×30	0.76			22×40	0.80	25×30	0.76	30×25	0.79			
330		22×40	0.88	25×30	0.84			22×45	0.93	25×35	0.90	30×30	0.94			
390		22×45	1.01	25×35	0.98	30×25	0.95	22×50	1.07	25×40	1.03	30×30	1.02	35×25	1.04	
470		22×50	1.17	25×40	1.13	30×30	1.12			25×45	1.19	30×35	1.19	35×30	1.23	
560				25×45	1.30	30×35	1.30	35×25	1.25				30×40	1.37	35×30	1.34
680				25×50	1.50	30×40	1.51	35×30	1.48				30×45	1.59	35×35	1.57
820						30×45	1.75	35×35	1.72				30×50	1.83	35×40	1.82
1,000						30×50	2.02	35×40	2.01						35×45	2.11
1,200								35×45	2.31						35×50	2.41
1,500								35×50	2.70							

W.V.(V) Cap.(μF) \ D		315						350									
		22		25		30		35		22		25		30		35	
82										22×25	0.36						
100	22×25	0.40								22×30	0.43						
120	22×30	0.47	25×25	0.47						22×30	0.47	25×25	0.47				
150	22×35	0.56	25×30	0.57						22×35	0.56	25×30	0.57				
180	22×40	0.65	25×30	0.62	30×25	0.64				22×40	0.65	25×35	0.66	30×25	0.64		
220	22×45	0.76	25×35	0.73	30×30	0.77				22×50	0.80	25×40	0.78	30×30	0.77		
270	22×50	0.88	25×40	0.86	30×30	0.86	35×25	0.90				25×45	0.90	30×35	0.90	35×25	0.87
330			25×45	1.00	30×35	1.00	35×30	1.00				25×50	1.05	30×40	1.05	35×30	1.03
390					30×40	1.15	35×30	1.10						30×40	1.15	35×35	1.19
470					30×45	1.32	35×35	1.30						30×50	1.39	35×35	1.30
560					30×50	1.51	35×40	1.50								35×40	1.50
680							35×45	1.70								35×50	1.82
820							35×50	2.00									

W.V.(V) Cap.(μF) \ D		400						450									
		22		25		30		35		22		25		30		35	
47										22×25	0.24						
56	22×25	0.26								22×30	0.28						
68	22×30	0.31								22×30	0.31	25×25	0.31				
82	22×30	0.34	25×25	0.34						22×35	0.36	25×30	0.36				
100	22×35	0.40	25×30	0.40						22×40	0.42	25×30	0.40	30×25	0.42		
120	22×40	0.46	25×30	0.44	30×25	0.46				22×50	0.49	25×35	0.47	30×30	0.49		
150	22×45	0.54	25×35	0.52	30×30	0.55						25×40	0.55	30×30	0.55	35×25	0.56
180			25×40	0.61	30×30	0.60	35×25	0.61				25×45	0.64	30×35	0.64	35×30	0.66
220			25×50	0.74	30×35	0.71	35×30	0.73						30×40	0.75	35×30	0.73
270					30×40	0.83	35×30	0.81						30×45	0.87	35×35	0.86
330					30×45	0.96	35×35	0.95						30×50	1.01	35×40	1.00
390					30×45	0.96	35×35	0.95								35×45	1.14
470							35×45	1.25								35×50	1.31

## Ripple Current Multipliers

### Frequency multiplying factor

Cap.(μF) \ Freq(Hz)	50	120	300	1k	10~50K
10~100	0.88	0.90	1.00	1.15	1.15
160~350	0.85	0.88	1.00	1.15	1.20
400~450	0.88	0.90	1.00	1.10	1.15

### Temperature multiplying factor

Temperature(°C)	45	60	70	85
Factor	1.46	1.42	1.3	1.00