



**FHS SERIES**

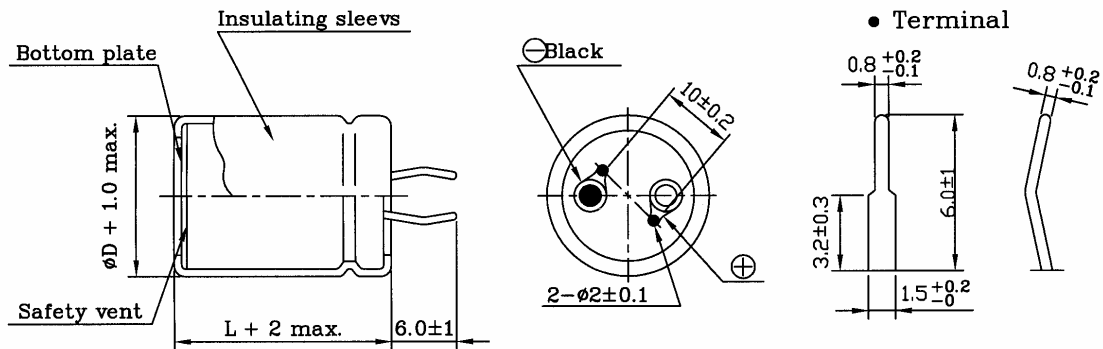
85°C, Standard, PCB Mounting

- Directly mountable on printed circuit board without holders.
- Smaller low profile sizes than ordinary capacitors.
- Terminal spacing fixed at 10mm for PC board plug in.
- Aluminum case designed explosion-proof vent.

**Characteristics**

<b>Voltage Range</b>	16 ~ 100V	160 ~ 450V					
<b>Capacitance Range</b>	470 ~ 47000uF	47 ~ 2200uF					
<b>Temperature Range</b>	-40 ~ +85°C	-25 ~ +85°C					
<b>Capacitance Tolerance</b>	±20% at 120Hz, 20°C (10% Tol. is available upon request)						
<b>Leakage Current</b>	$I=3\sqrt{CV}$ uA max C: Capacitance, V:W.V. (After 5 minutes)						
<b>Dissipation Factor(tan δ)</b>	Less than the value under table (%)						
<b>( at 20°C, 120Hz)</b>	uF \\\ W.V.	10 ~ 16	25 ~ 35	50 ~ 63	80 ~ 100	160 ~ 250	350 ~ 450
	47 ~ 390	-	-	-	-	15	20
	470 ~ 3900	25	20	20	20	15	20
	4700 ~ 8200	35	30	30	25		
	10000 ~ 22000	40	35	30			
	27000 ~ 47000	45	40	35			
<b>Stability at Low Temperature</b>	Impedance ratio at 120Hz between the -25°C or -40°C value and 20°C value shall not exceed :						
	$Z_{-25°C}/Z_{20°C}$				3		
	$Z_{-40°C}/Z_{20°C}$				12		
<b>Load Life</b>	The following specifications shall satisfied when the capacitors are restored to 20°C after rated working voltage applied for 2,000 hours at max. operating temperature with the rated ripple current applied.						
	Capacitance change	$\leq \pm 20\%$ of the initial value.					
	Dissipation factor	$\leq \pm 200\%$ of the initial specified value					
	Leakage current	$\leq$ The initial specified value.					
<b>Shelf Life</b>	After storage for 1000 hours at 85°C with no voltage applied, the capacitor shall meet the specified limit in load life.						

**Diagram of dimensions**



**Multiplier for R.C. vs Temperature**

Temp.(°C)	45	60	70	85
<b>Multiplier</b>	1.55	1.3	1.2	1.00

**Multiplier for Ripple Current VS Frequency**

Cap.(uF) \\\ (Hz)	60	120	1K	10K	50K - 100K
<b>10 &lt; Cap. ≤ 100</b>	0.8	1	1.36	1.48	1.53
<b>100 &lt; Cap. ≤ 1000</b>	0.8	1	1.25	1.35	1.38
<b>1000 &lt; Cap.</b>	0.8	1	1.17	1.25	1.28



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**Standard Products Table**

W.V(DC)	CAP. (μF)	Ripple Current A max. 85°C, 120Hz	Dimensions A		Dimensions B		Dimensions C	
			D φ	L	D φ	L	D φ	L
<b>16 (1C)</b>	4700	2.4	22	25	-		-	
	6800	2.84	22	25	-		-	
	10000	3.06	22	30	25	25	-	
	15000	3.94	22	35	25	30	-	
	22000	4.80	22	45	25	35	30	30
	33000	8.2	25	50	30	40	-	
	47000	8.96	30	50	35	40	-	
<b>25 (1E)</b>	3300	2.46	22	25	-		-	
	4700	2.64	22	25	25	25	-	
	6800	2.93	22	30	25	25	-	
	10000	3.43	22	40	25	35	-	
	15000	4.39	22	50	25	40	30	35
	22000	5.40	25	50	30	40	-	
<b>35 (1V)</b>	2200	2.18	22	25	-		-	
	3300	2.46	22	25	-		-	
	4700	2.68	22	30	25	25	-	
	6800	3.06	22	35	25	30	-	
	10000	3.60	25	45	30	35	-	
	15000	3.92	25	50	30	40	-	
	22000	5.45	30	45	35	40	-	
<b>50 (1H)</b>	2200	2.04	22	25	-		-	
	3300	2.64	22	30	25	25	-	
	4700	2.88	22	40	25	35	30	30
	6800	3.24	22	50	25	40	-	
	10000	3.96	25	50	35	40	-	
<b>63 (1J)</b>	1000	1.58	22	25	-		-	
	2200	2.52	22	25	25	25	-	
	3300	3.12	22	40	25	30	-	
	4700	3.28	25	45	30	35	-	
	6800	4.32	25	50	30	40	-	
	10000	4.77	35	50	-		-	
<b>80 (1K)</b>	1000	1.62	22	25	-		-	
	2200	2.52	22	40	25	30	-	
	3300	3.24	22	50	25	40	30	30
	4700	3.60	25	50	30	40	-	
	6800	4.60	30	50	35	40	-	
	10000	5.04	35	55	-		-	
<b>100 (2A)</b>	470	1.34	22	25	-		-	
	680	1.53	22	25	-		-	
	1000	1.62	22	30	25	25	-	
	1500	1.85	22	40	25	35	30	30
	2200	2.64	22	50	25	40	30	30
	3300	3.42	25	50	30	40	-	
	4700	3.72	30	50	35	40	-	
	6800	4.10	35	50	-		-	



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W.V(DC)	CAP. (μF)	Ripple Current A max. 85°C, 120Hz	Dimensions A		Dimensions B		Dimensions C	
			D φ	L	D φ	L	D φ	L
160 (2C)	220	1.20	22	25	-		-	
	330	1.44	22	25	-		-	
	470	1.76	22	30	25	25	-	
	680	2.36	22	40	25	30	-	
	1000	3.13	25	45	30	35	-	
	1500	3.96	25	45	35	35	-	
	2200	4.65	35	45	-		-	
200 (2D)	150	0.96	22	25	-		-	
	220	1.36	22	25	-		-	
	330	1.89	22	30	25	25	-	
	470	2.23	22	35	25	30	-	
	680	2.98	22	45	25	40	30	30
	1000	3.26	25	50	30	40	-	
	1500	4.99	30	50	35	40	-	
250 (2E)	2200	6.07	35	50	-		-	
	150	0.98	22	25	-		-	
	220	1.36	22	30	25	25	-	
	330	1.87	22	35	25	30	-	
	470	2.38	22	45	25	40	30	30
	680	3.11	25	50	30	40	-	
	1000	4.00	30	50	35	40	-	
350 (2V)	1500	5.34	35	50	-		-	
	100	0.90	22	30	-		-	
	150	1.00	22	35	25	30	-	
	220	1.40	22	45	25	35	30	30
	330	1.90	25	50	30	40	-	
	470	2.41	30	45	35	35	-	
400 (2G)	680	3.20	35	50	-		-	
	47	0.42	22	25	-		-	
	68	0.51	22	25	-		-	
	100	1.03	22	30	25	25	-	
	150	1.26	22	40	25	30	-	
	220	1.75	22	45	25	40	30	30
	330	2.26	30	40	35	35	25	50
	470	2.80	30	50	35	40	-	
450 (2W)	680	3.69	40	50	-		-	
	47	0.36	22	25	-		-	
	68	0.50	22	25	22	30	-	
	100	1.03	22	35	25	30	-	
	150	1.39	22	45	25	35	30	30
	220	1.76	25	50	30	40	30	30
	330	2.29	30	45	35	40	-	
470	2.89	35	45	40	40	-		