



LQ High temperature and long life Series

- Features : 105°C 5000 hours , Wide temperature range for LF , Longer life than HW, Snap-in terminal, High ripple current
- Recommended Applications: Smoothing circuit, TV/Monitor, Adapter, SMPS
- Corresponding product to RoHS



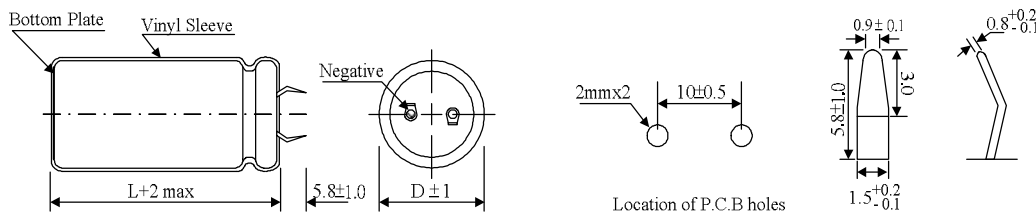
Long Life



Specifications

Item	Characteristics	
Operating Temperature Range	-25 ~ +105°C	
Rated Voltage Range	160 ~ 450VDC	
Capacitance Range	26 ~ 2200μF	
Capacitance Tolerance	± 20 % at 120Hz , 20°C	
Leakage Current (MAX) (20°C)	$I \leq 0.02CV$ or 3mA whichever is smaller (After rated voltage applied for 5 minutes) I= Leakage Current (μA) C= Nominal Capacitance (μF) V= Rated Voltage (V)	
Dissipation Factor (MAX) (tan δ) (120Hz , 20°C)	Dissipation Factor (tan δ) shall not exceed the values showed in the table of standard rating	
Endurance	After applying rated voltage with rated Ripple current for 5000hrs at 105°C , the capacitor shall meet the following requirement.	
	Capacitance Change	Within ±20% of the initial value
	Dissipation Factor	Not more than 200% of the specified value
	Leakage Current	Not more than the specified value
Shelf Life	After placed at 105°C without voltage applied for 1000 hours, the capacitor shall meet the same requirements as Endurance.	

Diagram of Dimensions



Multiplier for Ripple Current

Frequency coefficient

Freq. (Hz)	50	60	120	400	1K	2.4K	5K	10K
Coefficient	0.8	0.85	1.0	1.14	1.23	1.3	1.36	1.4



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Dimensions, Max Dissipation Factor, Max Permissible Ripple Current, Max Equivalent Series Resistance

Capacitance (μF)	Rated (Surge) Voltage										
	160(200)					180(225)					
	φ DxL Ripple Current			tan δ	ESR	φ DxL Ripple Current			tan δ	ESR	
270	22x25 0.85					0.15	0.737	22x25 0.85			
330	22x30 1.00			0.15	0.603	22x30 1.10			0.15	0.603	
390	22x30 1.15	25x25 1.15		0.15	0.51	22x35 1.32	25x25 1.25		0.15	0.51	
470	22x35 1.30	25x30 1.30		0.15	0.423	22x40 1.47	25x30 1.40		0.15	0.423	
560	22x40 1.57	25x30 1.50	30x25 1.54	0.15	0.355	22x45 1.70	25x35 1.63	30x25 1.60	0.15	0.355	
680	22x45 1.75	25x35 1.70	30x30 1.77	0.15	0.293	22x50 1.87	25x40 1.82	30x30 1.80	35x25 1.84	0.15	0.293
820	22x50 2.03	25x40 1.97	30x30 1.95	0.15	0.243	25x45 2.05	30x35 2.05	35x30 2.11	0.15	0.243	
1000		25x45 2.15	30x35 2.15	0.15	0.199	25x50 2.27	30x40 2.29	35x30 2.25	0.15	0.199	
1200			30x40 2.45	0.15	0.166		30x45 2.57	35x35 2.55	0.15	0.166	
1500			30x50 2.75	0.15	0.133			35x40 2.85	0.15	0.133	
1800			35x45 3.00	0.15	0.111			35x50 3.10	0.15	0.111	
2200			35x50 3.50	0.15	0.09						

Capacitance (μF)	Rated (Surge) Voltage										
	200(250)					250(300)					
	φ DxL Ripple Current			tan δ	ESR	φ DxL Ripple Current			tan δ	ESR	
150								22x25 0.75			
180						22x30 0.85			0.15	1.110	
220	22x25 0.85			0.15	0.905	22x30 1.00	25x25 1.00		0.15	0.905	
270	22x30 1.00			0.15	0.737	22x35 1.22	25x25 1.15		0.15	0.737	
330	22x30 1.15	25x25 1.15		0.15	0.603	22x40 1.36	25x30 1.30		0.15	0.603	
390	22x35 1.30	25x30 1.30		0.15	0.510	22x45 1.54	25x35 1.48	30x25 1.45	35x25 1.59	0.15	0.510
470	22x40 1.52	25x35 1.54	30x25 1.49	0.15	0.423	22x50 1.78	25x40 1.75	30x30 1.72	35x30 1.88	0.15	0.423
560	22x45 1.7	25x35 1.65	30x30 1.72	0.15	0.355	25x40 1.80	30x35 1.89	35x30 1.94	0.15	0.355	
680		25x45 1.97	30x35 1.97	0.15	0.293	25x50 2.10	30x40 2.10	35x35 2.18	0.15	0.293	
820		25x45 2.20	30x35 2.10	0.15	0.243		30x45 2.30	35x40 2.39	0.15	0.243	
1000			30x45 2.32	0.15	0.199		30x50 2.55	35x45 2.65	0.15	0.199	
1200			30x50 2.75	0.15	0.166			35x50 2.90	0.15	0.166	
1500			35x45 2.90	0.15	0.133						

☆Size: D φ x L (mm). ☆tan δ : 20°C, 120Hz. ☆Ripple Current: 105°C, 120Hz, (A/rms) ☆ESR: 20°C, 120Hz, (Ω).



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■ Dimensions, Max Dissipation Factor, Max Permissible Ripple Current, Max Equivalent Series Resistance

Capacitance (μF)	Rated (Surge) Voltage											
	315(365)						350(400)					
	φ DxL				tan δ	ESR	φ DxL				tan δ	ESR
	Ripple Current						Ripple Current					
82	22x25				0.15	2.426	22x25				0.15	2.426
	0.55						0.60					
100	22x30				0.15	1.989	22x30	25x25			0.15	1.989
	0.65						0.70	0.70				
120	22x30	25x25			0.15	1.658	22x35	25x30			0.15	1.658
	0.75	0.75					0.80	0.80				
150	22x35	25x30			0.15	1.326	22x40	25x35	30x25		0.15	1.326
	0.8	0.80					0.86	0.87	0.85			
180	22x40	25x35	30x25		0.15	1.105	22x45	25x40	30x30		0.15	1.105
	1.01	1.02	1.00				1.05	1.07	1.05			
220	22x45	25x40	30x30		0.15	0.905	22x50	25x45	30x35	35x25	0.15	0.905
	1.10	1.12	1.10				1.16	1.20	1.18	1.15		
270		25x45	30x35		0.15	0.737		25x50	30x40	35x30	0.15	0.737
		1.25	1.25					1.31	1.33	1.3		
330		25x50	30x40	35x30	0.15	0.603			30x45	35x35	0.15	0.603
		1.53	1.53	1.50					1.46	1.45		
390			30x45	35x30	0.15	0.510			30x50	35x40	0.15	0.510
			1.71	1.60					1.65	1.65		
470			30x50	35x35	0.15	0.423				35x45	0.15	0.423
			1.85	1.75						1.85		
560				35x40	0.15	0.355				35x50	0.15	0.355
				2.00						2.10		
680				35x45	0.15	0.293						
				2.20								

Capacitance (μF)	Rated (Surge) Voltage											
	400(450)						450(500)					
	φ DxL				tan δ	ESR	φ DxL				tan δ	ESR
	Ripple Current						Ripple Current					
56							22x25				0.25	5.921
							0.55					
68	22x25				0.15	2.926	22x30				0.25	4.876
	0.55						0.65					
82	22x30	25x25			0.15	2.426	22x35	25x25			0.25	4.044
	0.65	0.65					0.80	0.75				
100	22x35	25x25			0.15	1.989	22x40	25x30			0.25	3.316
	0.79	0.75					0.89	0.85				
120	22x40	25x30	30x25		0.15	1.658	22x45	25x35	30x25		0.25	2.763
	0.89	0.85	0.87				0.95	0.92	0.90			
150	22x45	25x35	30x30	35x25	0.15	1.326	22x50	25x40	30x30		0.25	2.210
	0.93	0.90	0.94	0.96			1.14	1.11	1.10			
180	22x50	25x40	30x30	35x25	0.15	1.105		25x45	30x35	35x25	0.25	1.842
	1.14	1.11	1.10	1.12				1.25	1.24	1.20		
220		25x45	30x35	35x30	0.15	0.905		25x50	30x40	35x30	0.25	1.507
		1.20	1.20	1.24				1.36	1.38	1.35		
270		25x50	30x40	35x30	0.15	0.737			30x45	35x35	0.25	1.228
		1.36	1.38	1.35					1.51	1.50		
330			30x45	35x35	0.15	0.603			30x50	35x40	0.25	1.005
			1.51	1.50					1.70	1.70		
390			30x50	35x40	0.15	0.510				35x45	0.25	0.850
			1.70	1.70						1.90		
470				35x45	0.15	0.423				35x50	0.25	0.705
				1.90						2.10		

☆Size: D φ x L (mm). ☆tan δ : 20°C, 120Hz. ☆Ripple Current: 105°C, 120Hz, (A/rms) ☆ESR: 20°C, 120Hz, (Ω)