

KL5 Large Capacitance Miniature Aluminum Electrolytic Capacitors

PC Board Plug-in Ultra miniaturized Capacitors, Series KL5.

Increased in allowed ripple current by 5 to 40%

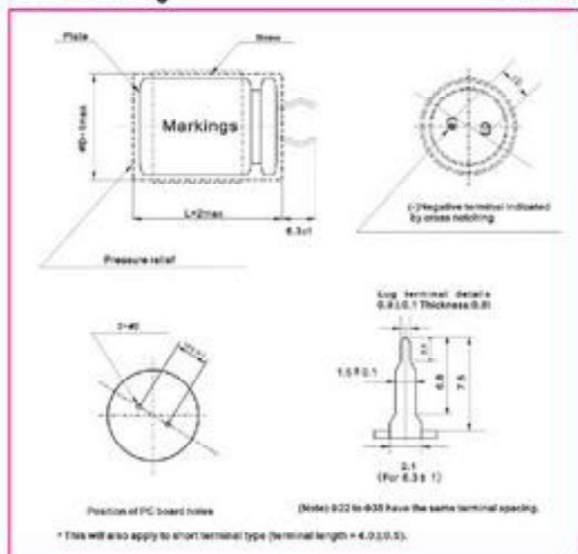
20mm-tall products for every diameter of $\Phi 22$ to $\Phi 35$ are now offered in series

As many as 4 case sizes available for the same rating

RoHS

Outline Drawing

Unit: mm



Photo



Marking color: White print on black sleeve

Specifications

No.	Item	Performance								
1	Temperature range(℃)	-40 to +85 (10V～100V)				-25 to +85 (160V～500V)				
2	Leakage current(μ A)	Less than 0.02CV or 3mA whichever is smaller (after five minutes) C: Rated Capacitance(μ F); V: Rated voltage(V) 20℃								
3	Capacitance tolerance (%)	±20 (20℃, 120Hz)								
4	Tangent of the loss angle (Tan δ)	Rated voltage (V)	10	16	25-35	50,63	80,100	160-500	20℃	
		Tan δ (max)	0.45	0.35	0.30	0.25	0.20	0.15	120Hz	
5	Low temperature characteristics	Rated voltage (V)	10	16-35	50-100	160-200	250-400	450-500	120Hz	
		Impedance ratio (max)	$Z_{(-25℃)}/Z_{(+20℃)}$	5	4	3	3	4		4
			$Z_{(-40℃)}/Z_{(+20℃)}$	18	15	10	6	8		-
6	Endurance (85℃) (Applied ripple current)	Test time	2000hours							
		Leakage current	The initial specified value or less							
		Percentage of capacitance change	Within ±20% of initial value							
		Tangent of the loss angle	200% or less of the initial specified value							
7	Max Storage temp (85℃)	Test time	1000hours							
		Leakage current	The initial specified value or less							
		Percentage of capacitance change	Within ±20% of initial value							
		Tangent of the loss angle	200% or less of the initial specified value							
8	Applicable standards	JIS-C-5102 and JIS-C- 5141								

Coefficient of Frequency for Ripple Current

Frequency (Hz)	50 ~ 60	120	1K	10K	50K-100K
Capacitance(μF)					
CAP ≤ 100	0.80	1.00	1.36	1.48	1.53
100 < CAP ≤ 1000	0.80	1.00	1.25	1.35	1.38
1000 < CAP	0.80	1.00	1.17	1.25	1.28

Coefficient of Temperature for Ripple Current

Temperature(°C)	45	60	70	85
Coefficient	1.55	1.30	1.20	1.00

Large capacitance Type

KL5 Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μ F	10V								16V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
4700	22X20	2.40							22X20	2.40						
6800	22X25	2.84							22X25	2.84						
8200	22X25	2.90							22X25	2.90						
10000	22X30	3.06	25X25	3.06					22X30	3.06	25X25	3.06				
12000	22X30	3.43	25X25	3.43					22X30	3.43	25X25	3.43				
15000	22X35	3.94	25X30	3.94					22X35	3.94	25X30	3.94				
18000	22X40	4.34	25X30	4.34					22X40	4.34	25X30	4.34				
22000	22X45	4.80	25X35	4.80	30X30	4.80			22X45	4.80	25X35	4.80	30X30	4.80		
27000			25X45	7.57	30X35	7.57					25X45	7.57	30X35	7.57		
33000			25X50	8.20	30X40	8.20	35X30	8.20			25X50	8.20	30X40	8.20	35X30	8.20
39000					30X45	8.33	35X35	8.33					30X45	8.33	35X35	8.33
47000					30X50	8.96	35X40	8.96					30X50	8.96	35X40	8.96
56000							35X45	10.5							35X45	10.5
68000							35X50	10.8							35X50	10.8

V.DC Contents μ F	25V								35V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
2200									22X25	2.18						
3300									22X25	2.46						
3900									22X30	2.64						
4700	22X25	2.64							22X30	2.68	25X25	2.68				
5600	22X30	2.78														
6800	22X30	2.93	25X25	2.93					22X35	3.06	25X30	3.06				
8200	22X30	3.05	25X25	3.05												
10000	22X35	3.43	25X30	3.43	30X25	3.43			22X45	3.60	25X40	3.60	30X30	3.60		
12000	22X40	3.84	25X35	3.84	30X30	3.84					25X45	4.08	30X35	4.08	35X30	4.08
15000	22X50	4.39	25X40	4.39	30X35	4.39					25X50	3.92	30X40	3.92	35X30	3.92
18000			25X45	4.80	30X35	4.80							30X45	4.70	35X35	4.70
22000			25X50	5.40	30X40	5.40							30X50	5.45	35X40	5.45
27000					30X45	5.97	35X35	5.97							35X45	5.78
33000					30X50	6.24	35X40	6.24							35X50	6.36
39000							35X45	7.10								
47000							35X50	7.60								

KL5 Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μ F	50V								63V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
1000									22X25	1.58						
1500	22X25	1.44							22X25	1.68						
2200	22X25	2.04							22X30	2.52	25X25	2.52				
2700	22X30	2.30							22X35	2.82	25X30	2.82				
3300	22X30	2.64							22X40	3.12			30X25	3.12		
3900									22X45	3.21	25X35	3.21	30X30	3.21		
4700			25X30	2.88	30X25	2.88			22X50	3.28	25X40	3.28			35X25	3.28
5600			25X35	3.06	30X30	3.06					25X45	3.86	30X35	3.86	35X30	3.86
6800			25X40	3.24	30X30	3.24					25X50	4.32	30X40	4.32	35X30	4.32
8200			25X45	3.48	30X35	3.48							30X45	4.44	35X35	4.44
10000			25X50	3.96	30X40	3.96	35X30	3.96							35X50	4.77
12000					30X45	4.10	35X35	4.10								
15000					30X50	4.70	35X40	4.70								
18000							35X45	5.31								
22000							35X50	5.85								

V.DC Contents μ F	80V								100V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
470									22X20	1.34						
680	22X20	1.34							22X25	1.53						
1000	22X25	1.62							22X30	1.62	25X25	1.62				
1200									22X35	1.74	25X30	1.74				
1500	22X30	1.76	25X25	1.76					22X40	1.85	25X35	1.85	30X30	1.85		
1800	22X35	1.82	25X30	1.82					22X45	2.20	25X40	2.20	30X30	2.20		
2200	22X40	2.52	25X30	2.52	30X25	2.52			22X50	2.64	25X40	2.64	30X30	2.64		
2700	22X45	2.76			30X30	2.76					25X45	3.16	30X35	3.16		
3300	22X50	3.24	25X40	3.24	30X30	3.24					25X50	3.42	30X40	3.42		
3900			25X45	3.40	30X35	3.40							30X45	3.58	35X35	3.58
4700			25X50	3.60	30X40	3.60							30X50	3.72	35X40	3.72
5600					30X40	3.78	35X35	3.78							35X45	3.72
6800					30X50	4.60	35X40	4.60							35X50	4.10
8200							35X50	4.92								

KL5 Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	160V								200V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
150									22X20	0.96						
180	22X20	1.12														
220									22X25	1.36						
270	22X25	1.35							22X25	1.50						
330									22X30	1.89	25X25	1.89				
390	22X30	1.66	25X25	1.66					22X30	1.92	25X25	1.92				
470	22X30	1.76	25X25	1.76					22X35	2.23	25X30	2.23	30X25	2.23		
560	22X35	2.03	25X30	2.03	30X25	2.03			22X40	2.57	25X35	2.57	30X25	2.57		
680	22X40	2.36	25X35	2.36	30X25	2.36	35X20	2.36	22X45	2.98	25X35	2.98	30X30	2.98		
820	22X45	2.72	25X40	2.72	30X35	2.72					25X45	3.26	30X35	3.26	35X25	3.26
1000			25X45	3.13	30X35	3.13	35X30	3.13			25X50	3.92	30X35	3.92	35X30	3.92
1200			25X50	3.44	30X35	3.44	35X30	3.44					30X45	4.25	35X35	4.25
1500			25X50	3.96	30X45	3.96	35X30	3.96					30X50	4.99	35X40	4.99
1800					30X50	4.47	35X40	4.47							35X45	5.84
2200							35X45	4.65							35X50	6.07
2700							35X50	4.76								

V.DC Contents μF	250V								350V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
100									22X25	0.76						
120	22X20	0.85							22X30	0.89	25X25	0.89				
150	22X25	0.98							22X35	0.99	25X30	0.99	30X25	0.99		
180	22X25	1.12							22X40	1.15	25X35	1.15	30X25	1.15		
220	22X25	1.36	25X25	1.36					22X45	1.40	25X40	1.40	30X30	1.40	35X25	1.40
270	22X30	1.50	25X25	1.50							25X45	1.63	30X35	1.63	35X25	1.63
330	22X35	1.89	25X30	1.89	30X25	1.89					25X50	1.88	30X40	1.88	35X30	1.88
390	22X40	1.92	25X35	1.92	30X25	2.04							30X45	2.12	35X35	2.12
470	22X45	2.23	25X40	2.23	30X30	2.38							30X50	2.41	35X40	2.41
560			25X45	2.57	30X35	2.81	35X25	2.81							35X45	2.90
680			25X50	2.98	30X40	3.11	35X30	3.11							35X50	3.20
820					30X45	3.55	35X35	3.55								
1000					30X50	4.00	35X40	4.00								
1200							35X45	4.55								
1500							35X50	5.34								

KL5 Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	400V								450V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
47	22X20	0.42							22X25	0.36						
68	22X25	0.51														
82	22X25	0.83							22X30	0.89	25X25	0.89				
100	22X30	1.03	25X25	1.03					22X35	1.03	25X30	1.03				
120	22X30	1.07	25X25	1.07					22X40	1.19	25X35	1.19				
150	22X35	1.26	25X30	1.26	30X25	1.26			22X50	1.39	25X40	1.39	30X30	1.39		
180	22X40	1.46	25X35	1.46	30X30	1.46			22X50	1.52			30X35	1.52		
220	22X50	1.75	25X40	1.75	30X35	1.75					25X50	1.76	30X35	1.76	35X35	1.76
270			25X45	1.96	30X35	1.96	35X30	1.96								
330			25X50	2.26	30X40	2.26	35X35	2.26					30X45	2.29	35X35	2.29
390					30X45	2.50	35X40	2.50							35X40	2.54
470							35X45	2.80							35X45	2.89
560							35X50	3.16								

V.DC Contents μF	500V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
100					30X25	0.90		
120					30X30	1.00	35X25	1.00
150					30X35	1.20		
180					30X40	1.40	35X30	1.30
220					30X45	1.60	35X35	1.50
270					30X50	1.80	35X40	1.70
330							35X45	2.00
390							35X50	2.30

K3J Large Capacitance Miniature Aluminum Electrolytic Capacitors

105°C, Standard Capacitors, Series K3J.

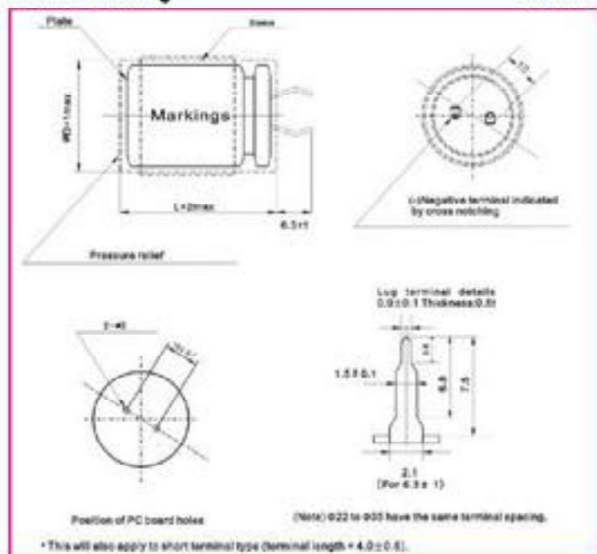
Guarantees 2000 hours at 105°C

Best fitted to switching power supplies

Three size options for the same rating

Outline Drawing

Unit: mm



Photo

RoHS



Marking color: White print on black sleeve

Specifications

No.	Item	Performance										
1	Temperature range (°C)	-40 to +105 (10V~100V)					-25 to +105 (160V~500V)					
2	Leakage current (μA)	Less than 0.02CV or 3mA whichever is smaller (after 5 minutes), C: Capacitance(μF), V: Rated voltage (V) 20°C										
3	Capacitance tolerance (%)	±20 (20°C,120Hz)										
4	Tangent of the loss angle (Tanδ)	Rated voltage (V)	10	16	25	35	50	63-100	160-200	250-500	(20°C,120Hz)	
		Tanδ (max)	0.45	0.35	0.30	0.25	0.20	0.15	0.15	0.15		
5	Low temperature characteristics	Rated voltage (V)	10	16	25	35	50,63	80,100	160-200	250-500	(120Hz)	
		Impedance ratio (max)	$Z_{(-25^{\circ}C)} / Z_{(+20^{\circ}C)}$	4	4	3	3	2	2	3		4
			$Z_{(-40^{\circ}C)} / Z_{(+20^{\circ}C)}$	15	15	10	8	6	5	6		-
6	Endurance (105°C) (Applied ripple current)	Test time	2000hours									
		Leakage current	The initial specified value or less									
		Percentage of capacitance change	Within ±20% of initial value									
		Tangent of the loss angle	200% or less of the initial specified value									
7	Max Storage temp (105°C)	Test time	1000hours									
		Leakage current	The initial specified value or less									
		Percentage of capacitance change	Within ±20% of initial value									
		Tangent of the loss angle	200% or less of the initial specified value									
8	Applicable standards	Pretreatment performed JIS-C-5102 JIS-C-5102 and JIS-C- 5141										

Coefficient of Frequency for Ripple Current

Frequency (Hz)	50-60	120	400	1K	10K	50K-100K
Capacitance(μF)						
CAP ≤ 100	0.80	1.00	1.23	1.36	1.48	1.53
100 < CAP ≤ 1000	0.80	1.00	1.16	1.25	1.35	1.38
1000 < CAP	0.80	1.00	1.11	1.17	1.25	1.28

Coefficient of Temperature for Ripple Current

Temperature(°C)	45	60	85	95	105
Coefficient	2.10	1.90	1.40	1.25	1.00

K3J Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μ F	10V								16V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
4700	22X25	1.24							22X25	1.53						
6800	22X25	1.56	25X25	1.56					22X30	2.02	25X25	2.02	30X25	2.02		
8200	22X25	2.04							22X30	2.20						
10000	22X30	2.20	25X25	2.20	30X25	2.20			22X35	2.79	25X30	2.79	30X25	2.79		
12000	22X35	2.34							22X35	3.06	25X30	3.06	30X25	3.06		
15000	22X35	2.76	25X30	2.76	30X25	2.76			22X50	3.24	25X40	3.24	30X35	3.24	35X30	3.24
18000	22X35	2.94	25X30	2.94					22X50	3.51	25X45	3.51	30X35	3.51	35X30	3.51
22000	22X40	3.12	25X35	3.12	30X30	3.12	35X25	3.12			25X50	4.08	30X40	4.08	35X30	4.08
27000	22X45	3.48	25X35	3.48	30X30	3.48	35X25	3.48			25X50	4.30	30X45	4.30	35X35	4.30
33000			25X45	3.72	30X35	3.72	35X30	3.72					30X45	4.83	35X35	4.83
39000			25X50	4.10	30X40	4.10	35X30	4.10					30X50	5.78	35X40	5.78
47000					30X45	4.38	35X35	4.38							35X45	6.32
56000					30X50	4.64	35X40	4.64							35X50	7.02
68000							35X50	4.80								

V.DC Contents μ F	25V								35V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
1500									22X20	1.26						
2200									22X25	1.35	25X25	1.35				
3300	22X20	1.48	25X25	1.48					22X30	1.84	25X25	1.84	30X25	1.84		
3900									22X30	2.23						
4700	22X25	1.92	25X25	1.92					22X35	2.42	25X30	2.42	30X25	2.42		
5600	22X30	2.25							22X35	2.89	25X30	2.89	30X25	2.89		
6800	22X30	2.60	25X25	2.60	30X25	2.60			22X40	3.24	25X35	3.24	30X30	3.24	35X25	3.24
8200	22X35	3.04	25X30	3.04	30X25	3.04			22X50	3.57	25X40	3.57	30X30	3.57	35X25	3.57
10000	22X40	3.50	25X35	3.50	30X30	3.50	35X25	3.50			25X45	3.96	30X35	3.96	35X30	3.96
12000	22X45	4.02	25X40	4.02	30X30	4.02	35X25	4.02			25X50	4.21	30X40	4.21	35X35	4.21
15000			25X45	4.58	30X35	4.58	35X30	4.58					30X45	4.69	35X35	4.69
18000			25X50	4.82	30X40	4.82	35X35	4.82							35X40	5.07
22000					30X45	5.12	35X35	5.12							35X50	5.50
27000							35X45	5.47								
33000							35X50	6.09								

K3J Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μ F	50V								63V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
680									22X20	0.70						
1000	22X20	0.84							22X25	0.85	25X25	0.85				
1200									22X25	0.98						
1500	22X30	1.10	25X25	1.10					22X30	1.10	25X25	1.10	30X25	1.10		
1800	22X30	1.54							22X30	1.40	25X25	1.40				
2200	22X30	1.65	25X25	1.65	30X25	1.65			22X35	1.65	25X30	1.65	30X25	1.65		
2700	22X35	1.94	25X30	1.94					22X40	2.07	25X35	2.07	30X25	2.07		
3300	22X35	2.24	25X30	2.24	30X25	2.24			22X50	2.48	25X40	2.48	30X30	2.48	35X25	2.48
3900	22X40	2.54	25X35	2.54	30X30	2.54					25X45	3.05	30X35	3.05	35X30	3.05
4700	22X45	2.95	25X40	2.95	30X30	2.95	35X25	2.95			25X50	3.43	30X40	3.43	35X30	3.43
5600	22X50	3.10	25X45	3.10	30X40	3.10	35X30	3.10					30X45	3.86	35X35	3.86
6800			25X50	3.26	30X40	3.26	35X30	3.26					30X50	4.64	35X40	4.64
8200					30X45	3.58									35X45	5.05
10000					30X50	4.11	35X40	4.11							35X50	5.75
12000							35X45	4.62								
15000							35X50	5.05								

V.DC Contents μ F	80V								100V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
330									22X20	0.54						
470	22X20	0.63							22X25	0.79	25X25	0.79				
560											25X25	0.96				
680	22X25	0.84	25X25	0.84					22X30	1.02	25X25	1.02	30X25	1.02		
820	22X30	1.02							22X30	1.24	25X25	1.24				
1000	22X35	1.16	25X30	1.15	30X25	1.16			22X35	1.38	25X30	1.38	30X25	1.38		
1200	22X35	1.46	25X30	1.46					22X40	1.65	25X35	1.65	30X30	1.65		
1500	22X40	1.74	25X35	1.74	30X30	1.74			22X45	1.83	25X40	1.83	30X30	1.83	35X25	1.83
1800	22X45	1.95	25X40	1.95	30X30	1.95					25X40	2.52	30X35	2.52	35X30	2.52
2200	22X50	2.25	25X45	2.25	30X35	2.25	35X30	2.25			25X50	3.03	30X40	3.03	35X30	3.03
2700			25X50	2.68	30X40	2.68	35X35	2.68					30X45	4.10	35X35	4.10
3300					30X50	3.30	35X40	3.30							35X45	4.59
3900					30X50	3.85	35X40	3.85							35X45	4.98
4700					30X50	4.29	35X40	4.29							35X50	5.43
5600							35X45	5.10								
6800							35X50	5.66								

K3J Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	160V								200V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
100									22X20	0.38						
150									22X25	0.54	25X25	0.54				
220	22X25	0.65							22X30	0.92	25X25	0.92	30X25	0.92		
270	22X25	0.74							22X30	1.03	25X25	1.03				
330	22X30	0.98	25X25	0.98	30X25	0.98			22X35	1.21	25X30	1.21	30X25	1.21		
390	22X35	1.10	25X30	1.10					22X40	1.39	25X35	1.39	30X30	1.39		
470	22X35	1.21	25X30	1.21					22X45	1.62	25X40	1.62	30X30	1.62	35X25	1.62
560	22X40	1.40	25X35	1.40	30X30	1.40			22X50	1.85	25X40	1.85	30X35	1.85		
680	22X45	1.64	25X40	1.64	30X35	1.64	35X30	1.64			25X50	2.04	30X35	2.04		
820			25X45	1.85	30X35	1.85	35X30	1.85					30X40	2.34	35X35	2.34
1000			25X50	2.15	30X40	2.15							30X50	2.70	35X40	2.70
1200					30X45	2.46							30X50	3.00	35X40	3.00
1500					30X50	2.80	35X40	2.80							35X50	3.43
1800							35X40	3.13							35X50	4.01
2200							35X50	3.39								

V.DC Contents μF	250V								350V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
56									22X25	0.37						
68	22X20	0.27									25X25	0.43				
82									22X30	0.47						
100	22X25	0.44	25X25	0.44					22X35	0.53	25X30	0.54	30X25	0.57		
120									22X40	0.60	25X35	0.61				
150	22X30	0.60	25X25	0.60	30X25	0.60							30X30	0.72	35X25	0.72
180	22X30	0.69	25X25	0.69					22X50	0.78	25X40	0.78	30X35	0.78		
220	22X35	1.00	25X30	1.00	30X25	1.00					25X50	0.89	30X40	0.89	35X30	0.89
270	22X40	1.16			30X30	1.16									35X35	1.10
330	22X45	1.28	25X35	1.28	30X30	1.28	35X25	1.28					30X50	1.20	35X40	1.20
390	22X45	1.48	25X35	1.48	30X30	1.48										
470			25X45	1.76	30X35	1.76	35X30	1.76							35X50	1.60
560			25X50	1.93	30X40	1.93	35X30	1.93								
680					30X45	2.22	35X35	2.22								
820					30X50	2.48	35X40	2.48								
1000							35X45	2.80								
1200							35X50	3.17								

K3J Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μ F	400V								450V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
33	22X20	0.39							22X20	0.40						
47	22X20	0.56	25X25	0.56					22X25	0.60	25X25	0.60				
56	22X25	0.68							22X30	0.70	25X25	0.70				
68	22X30	0.72	25X25	0.72	30X25	0.72			22X35	0.80	25X30	0.80	30X25	0.80		
82	22X35	0.82							22X35	0.88			30X25	0.88		
100	22X35	0.82	25X30	0.82	30X25	0.82			22X40	0.90	25X30	0.90	30X30	0.90		
120	22X35	0.90	25X30	0.90	30X25	0.90			22X45	1.00	25X40	1.00	30X30	1.00		
150	22X45	0.98	25X40	0.98	30X30	0.98			22X50	1.05	25X40	1.05	30X35	1.05		
180			25X45	1.14	30X35	1.14	35X30	1.14			25X50	1.14	30X40	1.14	35X30	1.14
220			25X50	1.21	30X40	1.21	35X30	1.21					30X45	1.24	35X35	1.24
270					30X45	1.40	35X35	1.40					30X50	1.48	35X40	1.48
330					30X50	1.57	35X40	1.57							35X45	1.64
390							35X45	1.74							35X50	1.86
470							35X50	1.98								
560							35X50	2.23								

V.DC Contents μ F	500V							
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
39	22X30	0.35						
47	22X35	0.41						
56	22X40	0.47						
68	22X45	0.54						
82			25X40	0.62				
100			25X45	0.67				
120			25X50	0.77			35X30	0.72
150					30X40	0.85		
180					30X50	1.01		
220							35X45	1.12
270							35X50	1.29

Koshin

K4L Large Capacitance Miniature Aluminum Electrolytic Capacitors

PC Board Plug-in 4 Terminals Ultra miniaturized Capacitors, Series K4L.

Increased in allowed ripple current by 5 to 40%

20mm-tall products for every diameter of $\Phi 3.5$ to $\Phi 4.0$ are now offered in series

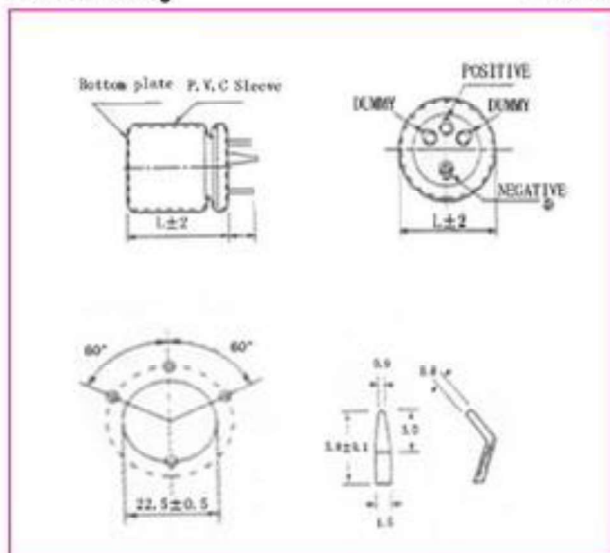
As many as 4 case sizes available for the same rating

RoHS

Outline Drawing

Unit: mm

Photo



Marking color: White print on black sleeve

Specifications

No.	Item	Performance											
1	Temperature range(°C)	-40 to +85 (16V~100V)						-25 to +85 (160V~450V)					
2	Leakage current(μ A)	Less than 0.02CV or 3mA whichever is smaller (after five minutes) C: Rated Capacitance(μ F); V: Rated voltage(V) 20℃											
3	Capacitance tolerance(%)	±20 (20℃, 120Hz)											
4	Tangent of the loss angle (Tan δ)	Rated voltage (V)	16	25	35	50	63	80	100	160-250	400-450	20℃	
		Tan δ (max)	0.35	0.30	0.30	0.25	0.25	0.20	0.20	0.15	0.15	120Hz	
5	Low temperature characteristics	Rated voltage (V)	16	25	35	50	63	80	100	160-250	400-450	120Hz	
		Impedance ratio (max)	Z(-25℃)/Z(+20℃)		5	3	3	3	3	3	3		7
6	Endurance (85℃) (Applied ripple current)	Test time		2000hours									
		Leakage current		The initial specified value or less									
		Percentage of capacitance change		Within ±20% of initial value									
		Tangent of the loss angle		200% or less of the initial specified value									
7	Max Storage temp (85℃)	Test time		1000hours									
		Leakage current		The initial specified value or less									
		Percentage of capacitance change		Within ±20% of initial value									
		Tangent of the loss angle		200% or less of the initial specified value									
8	Applicable standards	JIS-C-5102 and JIS-C- 5141											

Coefficient of Frequency for Ripple Current

Frequency (Hz)	50~ 60	120	1K	10K	50K-100K
Capacitance(μF)					
CAP≤1000	0.80	1.00	1.25	1.35	1.38
1000<CAP	0.80	1.00	1.17	1.25	1.28

Coefficient of Temperature for Ripple Current

Temperature(°C)	45	60	70	85
Coefficient	1.55	1.30	1.20	1.00

Large capacitance Type

K4L Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	16V				25V				35V				50V			
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
15000													35X50	4.53		
18000													35X60	5.07	40X50	5.07
22000									35X50	4.98			35X80	5.74	40X60	5.74
27000									35X60	5.82					40X60	6.16
33000					35X50	5.76			35X80	6.00	40X60	6.38				
39000					35X60	6.24	40X50	6.24	35X80	6.91	40X60	7.00				
47000	35X30	5.88			35X80	7.08	40X60	7.08			40X80	7.52				
56000	35X60	6.48	40X50	6.48			40X80	7.40								
68000	35X80	7.20	40X60	7.20			40X80	8.55								
82000			40X80	8.16												

V.DC Contents μF	63V				80V				100V				160V			
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
1800													35X50	2.46		
2200													35X60	2.77	40X50	2.77
2700													35X80	3.00	40X60	3.00
3300															40X80	3.26
4700					35X50	3.20										
5600					35X50	3.62			35X60	3.64	40X50	3.64				
6800					35X60	3.92	40X50	3.92	35X80	3.94	40X60	3.94				
8200					35X80	4.42	40X60	4.42			40X80	4.47				
10000							40X80	5.10								
12000	35X60	4.65	40X50	5.00			40X80	5.58								
15000	35X80	4.90	40X60	5.20												
18000	35X80	5.86	40X80	6.12												

V.DC Contents μF	200V				250V				400V				450V			
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
330													35X50	1.16		
390													35X60	1.22		
470									35X60	1.36			35X80	1.38	40X50	1.38
560									35X80	1.44	40X50	1.44	35X80	1.50	40X60	1.50
680									35X80	1.59	40X60	1.59			40X80	1.64
820					35X50	1.18					40X80	1.78				
1000	35X50	2.02			35X60	2.10										
1200	35X50	2.24			35X60	2.24	40X50	2.24								
1500	35X60	2.44			35X80	2.37	40X60	2.37								
1800	35X80	2.65	40X60	2.65			40X80	2.79								
2700			40X80	3.03												

Koshin

K4H Large Capacitance Miniature Aluminum Electrolytic Capacitors

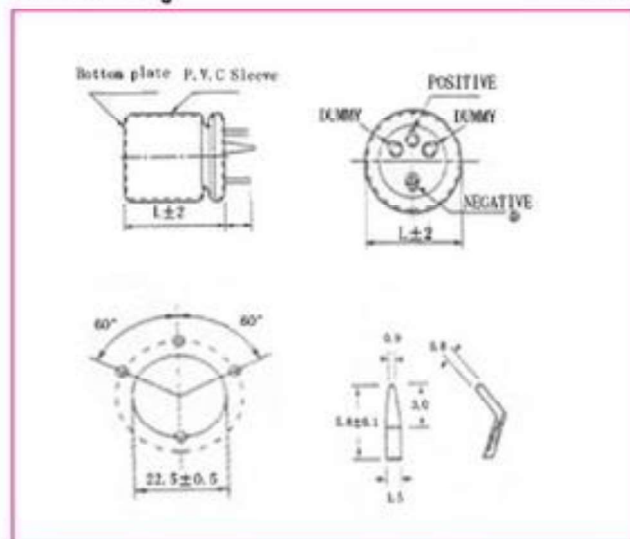
PC Board Plug-in 4 Terminals, Ultra miniaturized Capacitors, Series K4H.

Long life 2000 hours at +105°C with ripple current applied.

Expected life:75000 hours at +65°C with ripple current applied.

Outline Drawing

Unit: mm



Photo

RoHS



Marking color: White print on black sleeve

Specifications

No.	Item	Performance					
1	Temperature range(°C)	-25 to +105					
2	Leakage current(μ A)	Less than 0.02CV or 3mA whichever is smaller (after five minutes) C: Rated Capacitance(μ F); V: Rated voltage(V) 20℃					
3	Capacitance tolerance (%)	±20 (20℃, 120Hz)					
4	Tangent of the loss angle (Tan δ)	Rated voltage (V)	160	200	250	400	20℃
		Tan δ (max)	0.15	0.15	0.15	0.15	120Hz
5	Low temperature characteristics	Rated voltage (V)	160	200	250	400	120Hz
		Impedance ratio (max) $Z_{(-25℃)}/Z_{(+20℃)}$	4	4	4	8	
6	Endurance (105℃) (Applied ripple current)	Test time	2000hours				
		Leakage current	The initial specified value or less				
		Percentage of capacitance change	Within ±20% of initial value				
		Tangent of the loss angle	200% or less of the initial specified value				
7	Max Storage temp (105℃)	Test time	1000hours				
		Leakage current	The initial specified value or less				
		Percentage of capacitance change	Within ±20% of initial value				
		Tangent of the loss angle	200% or less of the initial specified value				
8	Applicable standards	JIS-C-5102 and JIS-C- 5141					

Large capacitance Type

Coefficient of Frequency for Ripple Current

Frequency (Hz)	50	60	120	1K	10K	50K-100K
Capacitance(μ F)						
CAP≤100	0.80	1.00	1.36	1.48	1.53	
100<CAP≤1000	0.80	1.00	1.25	1.35	1.38	
1000<CAP	0.80	1.00	1.17	1.25	1.28	

Coefficient of Temperature for Ripple Current

Temperature(°C)	45	60	70	85	95	105
Coefficient	1.55	1.30	1.20	1.40	1.25	1.00

K4H Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC μ F Contents	160				200			
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
220					30X25	1.15		
330	30X25	1.39			30X30	1.33		
390	30X25	1.47			30X30	1.47	35X25	1.47
470	30X30	1.64			30X35	1.54	35X30	1.54
560	30X30	1.76			30X40	1.69	35X30	1.69
680	30X35	1.98	35X30	1.98	30X45	1.90	35X35	1.90
820	30X40	2.36	35X30	2.36	30X50	2.24	35X40	2.24
1000	30X50	2.60	35X35	2.60				
1200	30X55	2.73						

V.DC μ F Contents	250				400			
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
82					30X25	0.73		
100					30X30	0.82		
120					30X35	0.87	35X25	0.87
150					30X40	1.00	35X30	1.00
180	30X25	0.98			30X45	1.06	35X35	1.06
220	30X30	1.10			30X50	1.18	35X40	1.18
270	30X30	1.22						
330	30X35	1.38	35X30	1.38				
390	30X40	1.47	35X30	1.47				
470	30X40	1.58	35X35	1.58				
560	30X50	1.76	35X40	1.76				