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%

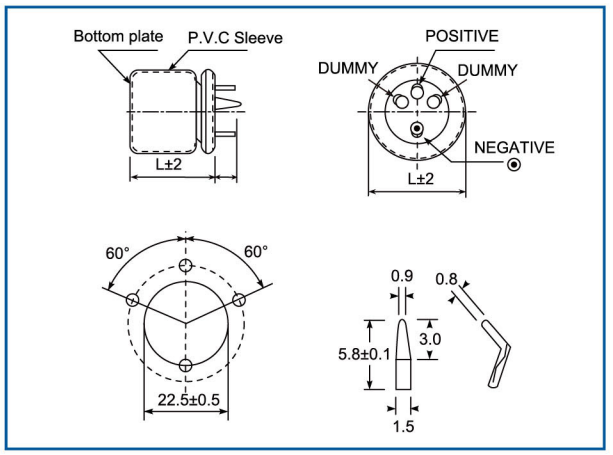
20mm–tall products for every diameter of Φ35 to Φ40 are now offered in series

As many as 4 case sizes available for the same rating

Guarantees 2000 hours at 105℃

RoHS

Outline Drawing Unit: mm



Photo

Marking color: White print on black sleeve

Specifications

No.	Item	Performance										
1	Temperature range(℃)	-40 to +85 (16V～100V)							-25 to +85 (160V～450V)			
2	Leakage current (μA)	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℃ 120Hz
		Tanδ(max)		0.35	0.30	0.30	0.25	0.25	0.20	0.20	0.15	0.15	
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	15	
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	Shelf life (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-5101-4(IEC60384)										

Coefficient of Frequency for Ripple Current

Frequency (Hz) / Capacitance (μ F)	50•60	120	1K	10K	50K-100K
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(℃)	45	60	70	85
Coefficient	1.55	1.30	1.20	1.00

ES France - Département Composants & Modules
127 rue de Buzenval BP 26 - 92380 Garches
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Site Web : www.es-france.com

Koshin

K4L Large Capacitance Miniature Aluminum Electrolytic Capacitors

Dimension:ΦDXL(mm)
Ripple Current: A/rms at 120Hz,85℃

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC / Contents μF	16V				25V				35V				50V			
	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	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			
	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	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			
	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	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												

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Koshin

K4H Large Capacitance Miniature Aluminum Electrolytic Capacitors

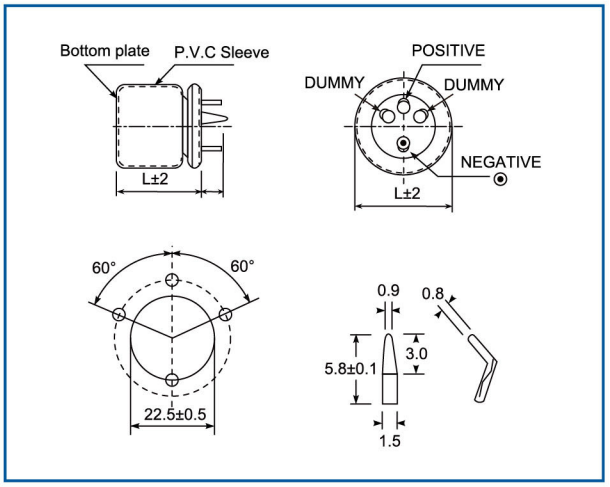
PC Board Plug–in 4 Terminals, Ultra miniaturized Capacitors, Series K4H.

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

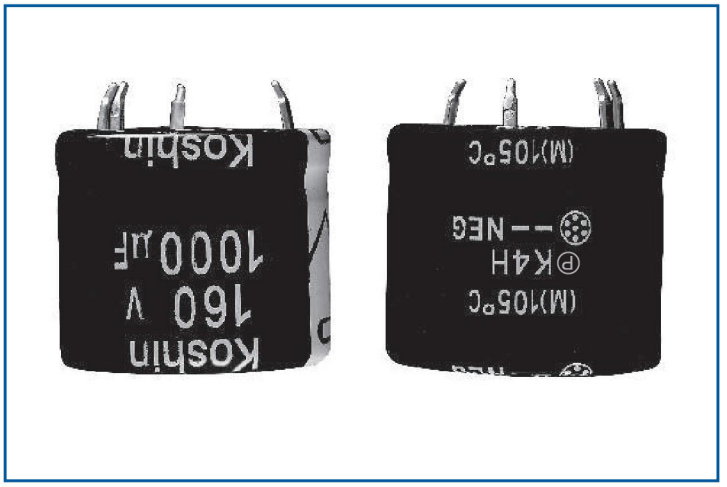
Expected life:75000 hours at +65℃ with ripple current applied.

RoHS

Outline Drawing Unit: mm



Photo



Marking color: White print on black sleeve

Specifications

No.	Item	Performance					
1	Temperature range(℃)	-25 to +105					
2	Leakage current (μA)	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℃ 120Hz
		Tanδ(max)	0.15	0.15	0.15	0.15	
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	Shelf life (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–5101–4(IEC60384)					

Coefficient of Frequency for Ripple Current

Frequency (Hz) / Capacitance (μ F)	50•60	120	1K	10K	50K-100K
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(℃)	45	60	70	85	95	105
Coefficient	1.55	1.30	1.20	1.40	1.25	1.00

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DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension:ΦDXL(mm)
Ripple Current: A/rms at 120Hz,105℃

V.DC / Contents μF	160				200			
	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	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 / Contents μF	250				400			
	ΦDXL	A	ΦDXL	A	ΦDXL	A	ΦDXL	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	1.36	35X30	1.36				
390	30X40	1.47	35X30	1.47				
470	30X40	1.58	35X35	1.58				
560	30X50	1.76	35X40	1.76				