KOME

KSH Series

Snap-in Aluminium Electrolytic Capacitors



Features

- 2000 hours at 105°C
- Standard 105°C series
- For general industrial use

TEMPERATURE RANGE	RATED VOLTAGE	CAPACITANCE	ENDURANCE
–40 / –25°C … +105°C	**10 – 500 V**	**39 – 56000 μF**	**105°C 2000 h**

Specifications

Operating temperature range	10 ~ 100 V: –40 ~ +105°C 160 ~ 500 V: –25 ~ +105°C
Rated voltage range	10 ~ 100 V 160 ~ 500 V
Capacitance range	39 ~ 47000 μF
Capacitance tolerance	±20% (at 20°C, 120 Hz)
Leakage current	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5 mA, whichever is smaller. C: nominal capacitance (μF), V: rated voltage (V)
Load life	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2000 hours at 105°C.
	Capacitance change: within ±20% of the initial value
	D.F. (tan δ): not more than 200% of the specified value
	Leakage current: not more than the specified value
Shelf life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.
	Capacitance change: within ±20% of the initial value
	D.F. (tan δ): not more than 200% of the specified value
	Leakage current: not more than the specified value

Low-temperature characteristics

Rated voltage (V)	10 ~ 100	160 ~ 200	250 ~ 500
Z(–25°C) / Z(+20°C)	4	4	6
Z(–40°C) / Z(+20°C)	15	—	—

Impedance ratio at 120 Hz, max.

Ripple current frequency correction factor

Frequency	50 / 60 Hz	120 Hz	1 kHz	10 kHz	100 kHz
10 ~ 100 V	0.95	1.00	1.10	1.15	1.15
160 ~ 250 V	0.87	1.00	1.11	1.18	1.20
315 ~ 450 V	0.80	1.00	1.14	1.14	1.20

Dissipation factor (tan δ) at 20°C, 120 Hz

Rated voltage (V)	10	16	25	35	50	63 ~ 100	160 ~ 400	450 ~ 500
tan δ (max.)	0.55	0.50	0.40	0.35	0.30	0.20	0.15	0.20

Ripple current temperature coefficient

Ambient temperature (°C)	+40	+55	+70	+85	+105
< 160 V	2.7	2.5	2.1	1.7	1.0

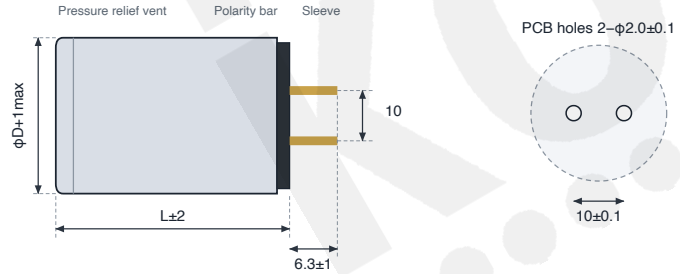
Standard ratings

μF \ V	10	16	25	35	50	63	80	100	160	200	250	350	400	450	500
39															22×30
47															22×35
56														22×25	22×40
68												22×25	22×25	22×30 25×25	22×45
82													22×30 25×25	22×35	25×40
100												22×30 25×25	22×30	22×40 25×30 30×25	25×45
120												22×35	22×35 25×30 30×25	22×45 25×35	25×50 35×30
150												22×40 25×30 30×25	22×40 25×35	22×50 25×40 30×30 35×25	30×40
180											22×25	22×45 25×35 30×30	22×50 25×40 30×30 35×25	25×45 30×35	30×50
220										22×25	22×30 25×25	22×50 25×40 35×25	25×45 30×35	25×50 30×40 35×30	35×45
270										22×30	22×35	25×50 30×35 35×30	25×50 30×40 35×30	30×45 35×35	35×50
330									22×25	22×30 25×25	22×40 25×30 30×25	30×45 35×35	30×45 35×35	30×50 35×40	
390									22×30	22×35	22×45 25×35	30×50 35×40	30×50 35×40	35×45	
470									22×35 25×25	22×40 25×30 30×25	22×50 25×40 30×30 35×25	35×45	35×45	35×50	
560								22×25	22×40 25×30	22×45 25×35	25×45 30×35 35×30	35×50	35×50		
680									22×45 25×35 30×25	22×50 25×40 30×30 35×25	25×50 30×40				
820							22×25	22×30 25×25	22×50 25×40 30×30 35×25	25×50 30×35 35×30	30×45 35×35				
1000							22×25	22×35 25×30	25×45 30×35	30×45 35×35	30×50 35×40				
1200						22×25	22×30 25×25	22×40 25×35 30×25	25×50 30×40 35×30	30×50 35×40	35×45				
1500							22×35 25×30	22×45 25×40 30×30 35×25	30×45 35×35	35×45					
1800					22×25	22×30 25×25	22×40 30×25	25×45 30×35	35×45	35×50					
2200					22×30	22×35 25×30	22×45 25×35 30×30 35×25	25×50 30×40 35×30	35×50						
2700					22×30 25×25	22×40 25×35 30×25	25×45 30×35	30×45 35×35							
3300				22×25	22×35 25×30	22×50 25×40 30×30 35×25	25×50 30×40 35×30	30×50 35×40							
3900				22×30	22×40 25×35 30×25	25×45 30×35	30×45 35×35	35×45							
4700			22×25	25×25	22×45 30×30 35×25	25×50 30×40 35×30	30×50 35×40	35×50							

μF \ V	10	16	25	35	50	63	80	100	160	200	250	350	400	450	500
5600				22×35 25×30 30×25	22×50 25×40 30×35	30×45 35×35	35×45								
6800		22×25	22×30 25×25	22×40 25×35	25×50 30×40 35×30	30×50 35×40	35×50								
8200	22×25		22×35 25×30 30×25	22×50 25×40 30×30 35×25	30×45 35×35	35×45									
10000	22×30	22×30 25×25	22×40 25×35	25×45 30×35	30×50 35×40	35×50									
12000	22×35 25×25	22×35 25×30 30×25	22×45 25×40 30×30 35×25	25×50 30×40 35×30	35×45										
15000	22×40 25×30 30×25	22×40 25×35	25×45 30×35 35×30	30×45 35×35											
18000	22×45 25×35	22×45 25×40 30×30 35×25	25×50 30×40	35×40											
22000	25×40 30×30	25×45 30×35	30×45 35×35	35×50											
27000	25×45 30×35 35×30	25×50 30×40 35×30	35×45												
33000	25×50 30×40 35×35	30×45 35×35	35×50												
39000	30×45 35×40	30×50 35×40													
47000	30×50 35×45	35×45													
56000	35×50														

Case size ΦD × L (mm). Full ratings in the characteristics list.

Dimensions



Item	Value
Terminal pitch	10
Terminal length	6.3±1
Terminal thickness	0.8 +0.2/−0.1
Terminal width	1.5 +0.2/−0.1
P.C.B hole pitch	10±0.1
P.C.B mounting holes	2−ϕ2.0±0.1
Case	ϕD+1 max × L±2

Unit: mm

How to order

KSH	4	102	M	101	B	22X35
Series code	Number of characters for capacitance 47μF = 2, 470μF = 3, 4700μF = 4	Capacitance 47μF = 470, 3300μF = 332, 33000μF = 333	Capacitance tolerance M = ±20%, K = ±10%	Voltage code 6.3V = 060, 10V = 100, 25V = 250, 35V = 350, 50V = 500, 63V = 630, 80V = 800, 100V = 101, 160V = 161	Package B: bulk pack, A: ammo pack	Size code

Example: KSH4102M101B22X35

Characteristics list

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
10	8200	89	1360	22×25	
10	10000	73	1650	22×30	
10	12000	61	1850	22×35	
10	12000	61	1820	25×25	

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
10	15000	49	2120	22×40	
10	15000	49	2110	25×30	
10	15000	49	2140	30×25	
10	18000	41	2400	22×45	
10	18000	41	2320	25×35	
10	22000	33	2590	25×40	
10	22000	33	2730	30×30	
10	27000	27	3010	25×45	
10	27000	27	3130	30×35	
10	27000	27	3050	35×30	
10	33000	22	3430	25×50	
10	33000	22	3530	30×40	
10	33000	22	3490	35×35	
10	39000	19	3780	30×45	
10	39000	19	3960	35×40	
10	47000	16	4580	30×50	
10	47000	16	4600	35×45	
10	56000	13	5060	35×50	
16	6800	98	1600	22×25	
16	10000	66	1990	22×30	
16	10000	66	1990	25×25	
16	12000	55	2280	22×35	
16	12000	55	2300	25×30	
16	12000	55	2380	30×25	
16	15000	44	2640	22×40	
16	15000	44	2680	25×35	
16	18000	37	2980	22×45	
16	18000	37	3040	25×40	
16	18000	37	3000	30×30	
16	18000	37	3100	35×25	
16	22000	30	3400	25×45	
16	22000	30	3390	30×35	
16	27000	25	3810	25×50	
16	27000	25	3830	30×40	
16	27000	25	3740	35×30	
16	33000	20	4300	30×45	
16	33000	20	4240	35×35	
16	39000	17	4740	30×50	
16	39000	17	4720	35×40	
16	47000	14	5270	35×45	
25	4700	113	1550	22×25	
25	6800	78	1910	22×30	
25	6800	78	1910	25×25	
25	8200	65	2140	22×35	
25	8200	65	2160	25×30	
25	8200	65	2250	30×25	
25	10000	53	2400	22×40	
25	10000	53	2440	25×35	
25	12000	44	2690	22×45	
25	12000	44	2740	25×40	
25	12000	44	2700	30×30	
25	12000	44	2800	35×25	
25	15000	35	3150	25×45	
25	15000	35	3130	30×35	
25	15000	35	3220	35×30	
25	18000	30	3540	25×50	
25	18000	30	3540	30×40	
25	22000	24	4240	30×45	
25	22000	24	3960	35×35	
25	27000	20	4750	35×45	
25	33000	16	5390	35×50	
35	3300	141	1430	22×25	

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
35	3900	119	1650	22×30	
35	4700	99	1780	25×25	
35	5600	83	2020	22×35	
35	5600	83	2040	25×30	
35	5600	83	2120	30×25	
35	6800	68	2280	22×40	
35	6800	68	2310	25×35	
35	8200	57	2670	22×50	
35	8200	57	2600	25×40	
35	8200	57	2560	30×30	
35	8200	57	2780	35×25	
35	10000	46	2920	25×45	
35	10000	46	2920	30×35	
35	12000	39	3260	25×50	
35	12000	39	3280	30×40	
35	12000	39	3200	35×30	
35	15000	31	3740	30×45	
35	15000	31	3690	35×35	
35	18000	26	4160	35×40	
35	22000	21	4920	35×50	
50	1800	221	1310	22×25	
50	2200	181	1450	22×30	
50	2700	147	1700	22×30	
50	2700	147	1700	25×25	
50	3300	121	1980	22×35	
50	3300	121	2000	25×30	
50	3900	102	2250	22×40	
50	3900	102	2280	25×35	
50	3900	102	2220	30×25	
50	4700	85	2560	22×45	
50	4700	85	2580	30×30	
50	4700	85	2670	35×25	
50	5600	71	2890	22×50	
50	5600	71	2810	25×40	
50	5600	71	2950	30×35	
50	6800	59	3370	25×50	
50	6800	59	3390	30×40	
50	6800	59	3310	35×30	
50	8200	49	3710	30×45	
50	8200	49	3660	35×35	
50	10000	40	4090	30×50	
50	10000	40	4070	35×40	
50	12000	33	4500	35×45	
63	1200	221	1250	22×25	
63	1800	147	1520	22×30	
63	1800	147	1520	25×25	
63	2200	121	1730	22×35	
63	2200	121	1750	25×30	
63	2700	98	1970	22×40	
63	2700	98	1990	25×35	
63	2700	98	1930	30×25	
63	3300	80	2320	22×50	
63	3300	80	2270	25×40	
63	3300	80	2240	30×30	
63	3300	80	2410	35×25	
63	3900	68	2540	25×45	
63	3900	68	2550	30×35	
63	4700	57	2880	25×50	
63	4700	57	2900	30×40	
63	4700	57	2830	35×30	
63	5600	47	3280	30×45	
63	5600	47	3240	35×35	

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
63	6800	39	3730	30×50	
63	6800	39	3710	35×40	
63	8200	32	4160	35×45	
63	10000	27	4690	35×50	
80	820	324	1110	22×25	100
80	1000	266	1250	22×25	100
80	1200	221	1390	22×30	100
80	1200	221	1390	25×25	100
80	1500	177	1610	22×35	100
80	1500	177	1620	25×30	100
80	1800	147	1830	22×40	100
80	1800	147	1810	30×25	100
80	2200	121	2090	22×45	100
80	2200	121	2010	25×35	100
80	2200	121	2100	30×30	100
80	2200	121	2170	35×25	100
80	2700	98	2430	25×45	100
80	2700	98	2430	30×35	100
80	3300	80	2760	25×50	100
80	3300	80	2780	30×40	100
80	3300	80	2710	35×30	100
80	3900	68	3120	30×45	100
80	3900	68	3070	35×35	100
80	4700	57	3560	30×50	100
80	4700	57	3500	35×40	100
80	5600	47	3870	35×45	100
80	6800	39	4190	35×50	100
100	560	474	1070	22×25	125
100	820	324	1350	22×30	125
100	820	324	1350	25×25	125
100	1000	265	1540	22×35	125
100	1000	265	1560	25×30	125
100	1200	221	1740	22×40	125
100	1200	221	1760	25×35	125
100	1200	221	1710	30×25	125
100	1500	177	1990	22×45	125
100	1500	177	2030	25×40	125
100	1500	177	2000	30×30	125
100	1500	177	2070	35×25	125
100	1800	147	2280	25×45	125
100	1800	147	2270	30×35	125
100	2200	121	2570	25×50	125
100	2200	121	2590	30×40	125
100	2200	121	2520	35×30	125
100	2700	98	2940	30×45	125
100	2700	98	2900	35×35	125
100	3300	80	3320	30×50	125
100	3300	80	3310	35×40	125
100	3900	68	3690	35×45	125
100	4700	57	4140	35×50	125
160	330	603	1160	22×25	200
160	390	510	1430	22×30	200
160	470	424	1520	22×35	200
160	470	424	1550	25×25	200
160	560	355	1620	22×40	200
160	560	355	1730	25×30	200
160	680	293	1700	22×45	200
160	680	293	1810	25×35	200
160	680	293	1820	30×25	200
160	820	243	1810	22×50	200
160	820	243	1980	25×40	200
160	820	243	1980	30×30	200

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
160	820	243	1930	35×25	200
160	1000	199	2040	25×45	200
160	1000	199	2140	30×35	200
160	1200	166	2120	25×50	200
160	1200	166	2220	30×40	200
160	1200	166	2400	35×30	200
160	1500	133	2460	30×45	200
160	1500	133	2530	35×35	200
160	1800	111	2980	35×45	200
160	2200	91	3100	35×50	200
200	220	905	1080	22×25	250
200	270	737	1200	22×30	250
200	330	603	1300	22×30	250
200	330	603	1350	25×25	250
200	390	510	1410	22×35	250
200	470	424	1500	22×40	250
200	470	424	1470	25×30	250
200	470	424	1560	30×25	250
200	560	355	1580	22×45	250
200	560	355	1650	25×35	250
200	680	293	1680	22×50	250
200	680	293	1800	25×40	250
200	680	293	1820	30×30	250
200	680	293	1960	35×25	250
200	820	243	1870	25×50	250
200	820	243	1990	30×35	250
200	820	243	2070	35×30	250
200	1000	199	2170	30×45	250
200	1000	199	2220	35×35	250
200	1200	166	2220	30×50	250
200	1200	166	2420	35×40	250
200	1500	133	2590	35×45	250
200	1800	111	2700	35×50	250
250	180	1106	940	22×25	300
250	220	905	1100	22×30	300
250	220	905	1150	25×25	300
250	270	737	1130	22×35	300
250	330	603	1200	22×40	300
250	330	603	1300	25×30	300
250	330	603	1300	30×25	300
250	390	510	1260	22×45	300
250	390	510	1410	25×35	300
250	470	424	1370	22×50	300
250	470	424	1520	25×40	300
250	470	424	1360	30×30	300
250	470	424	1400	35×25	300
250	560	355	1590	25×45	300
250	560	355	1570	30×35	300
250	560	355	1560	35×30	300
250	680	293	1660	25×50	300
250	680	293	1760	30×40	300
250	820	243	1830	30×45	300
250	820	243	1820	35×35	300
250	1000	199	1870	30×50	300
250	1000	199	1990	35×40	300
250	1200	166	2100	35×45	300
350	68	2927	560	22×25	400
350	100	1990	700	22×30	400
350	100	1990	700	25×25	400
350	120	1659	730	22×35	400
350	150	1327	790	22×40	400
350	150	1327	820	25×30	400

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
350	150	1327	820	30×25	400
350	180	1106	810	22×45	400
350	180	1106	890	25×35	400
350	180	1106	900	30×30	400
350	220	905	930	22×50	400
350	220	905	970	25×40	400
350	220	905	980	35×25	400
350	270	737	1010	25×50	400
350	270	737	1050	30×35	400
350	270	737	1010	35×30	400
350	330	603	1160	30×45	400
350	330	603	1160	35×35	400
350	390	510	1260	30×50	400
350	390	510	1260	35×40	400
350	470	424	1350	35×45	400
350	560	355	1510	35×50	400
400	68	2927	470	22×25	450
400	82	2427	560	22×30	450
400	82	2427	650	25×25	450
400	100	1990	600	22×30	450
400	120	1659	640	22×35	450
400	120	1659	700	25×30	450
400	120	1659	780	30×25	450
400	150	1327	700	22×40	450
400	150	1327	730	25×35	450
400	180	1106	780	22×50	450
400	180	1106	820	25×40	450
400	180	1106	830	30×30	450
400	180	1106	860	35×25	450
400	220	905	870	25×45	450
400	220	905	960	30×35	450
400	270	737	940	25×50	450
400	270	737	950	30×40	450
400	270	737	910	35×30	450
400	330	603	1110	30×45	450
400	330	603	1130	35×35	450
400	390	510	1150	30×50	450
400	390	510	1260	35×40	450
400	470	424	1310	35×45	450
400	560	355	1500	35×50	450
450	56	4739	470	22×25	500
450	68	3903	560	22×30	500
450	68	3903	650	25×25	500
450	82	3237	640	22×35	500
450	100	2654	700	22×40	500
450	100	2654	700	25×30	500
450	100	2654	780	30×25	500
450	120	2212	730	22×45	500
450	120	2212	730	25×35	500
450	150	1769	780	22×50	500
450	150	1769	820	25×40	500
450	150	1769	830	30×30	500
450	150	1769	860	35×25	500
450	180	1474	870	25×45	500
450	180	1474	860	30×35	500
450	220	1206	940	25×50	500
450	220	1206	950	30×40	500
450	220	1206	910	35×30	500
450	270	983	1110	30×45	500
450	270	983	1130	35×35	500
450	330	804	1150	30×50	500
450	330	804	1260	35×40	500

UR (V)	Rated Capacitance (μF)	Max ESR 20°C 120Hz (mΩ)	Rated Ripple Current 105°C 120Hz (mA rms)	Size ΦD×L (mm)	Surge Voltage (V)
450	390	681	1310	35×45	500
450	470	565	1500	35×50	500
500	39	6805	350	22×30	550
500	47	5647	410	22×35	550
500	56	4739	470	22×40	550
500	68	3903	540	22×45	550
500	82	3237	620	25×40	550
500	100	2654	670	25×45	550
500	120	2212	770	25×50	550
500	120	2212	720	35×30	550
500	150	1769	850	30×40	550
500	180	1474	1010	30×50	550
500	220	1206	1120	35×45	550
500	270	983	1290	35×50	550

Capacitance range: the original specification table gives 39 ~ 47000 μF, while the original ratings list also includes 56000 μF at 10 V (35×50) — subject to manufacturer confirmation.
Leakage current: the original item heading gives the unit as μA, while the text states 0.01CV or 1.5 mA, whichever is smaller — subject to manufacturer confirmation.
Ripple current frequency correction: the original prints bands 10 ~ 100 / 160 ~ 250 / 315 ~ 450 WV only; no factor is given for 251 ~ 314 V or 451 ~ 500 V, and the ratings list has no 315 V (250 V is followed by 350 V) — subject to manufacturer confirmation.
Ripple current temperature coefficient: the original gives one row (< 160 V) only; no values are printed for 160 V and above.
Surge voltage: printed in the original only for 80 V and above (in brackets under the rated voltage); not printed for 10 ~ 63 V.
Max ESR, ripple current and sizes as printed; the same ESR is printed for every size of a given capacitance and voltage.
Voltage code for 6.3 V is 060 as specified by the manufacturer (2026-11-03).