ELCON

Surface Mount Aluminum Electrolytic Capacitors

KH Series

High reliability

- High temperature range up to +125℃
- Suitable for automotive equipment
- Load life of 1000~5000 hours
- RoHS Compliance

EL → High Reliability → KH

■SPECIFICATIONS

Item	Characteristics
Operation Temperature Range	-40 ~ +125℃
Voltage Range	10 ~ 450V
Capacitance Range	3.3 ~ 2200μF
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)

Leakage Current

	10 ~ 100	160 ~ 450
WV(V)		
Time	After 2 minutes (application of rated voltage)	After 2 minutes (application of rated voltage)
L.C.	I≤0.03CV or 4μA , whichever is greater	I≤0.04CV or 100μA , whichever is greater

Dissipation Factor (MAX) (tanδ) (at 120Hz ,20℃)

WV(V)		10	16	25	35	50	63	100	160~250	400,450
tanδ	Φ4 ~ 10	0.24	0.20	0.16	0.14	0.14	0.18	0.18	--	--
	Φ12.5 ~ 16	0.22	0.18	0.16	0.14	0.12	0.14	0.10	0.20	0.2

Low Temp.Impedance Stability at 120Hz

WV		10	16	25	35~100	160~250	400,500
Z(-25℃)/ Z(+20℃)	Φ4~10	4	3	2	2	--	--
Z(-40)℃/ Z(+20℃)		10	8	6	4	--	--
Z(-25℃)/ Z(+20℃)	Φ12.5~16	4	3	2	2	3	6
Z(-40℃)/ Z(+20℃)		8	6	4	3	6	10

Load Life

After 5000hrs. application of the rated voltage for Φ12.5~16 (10~100V), and 2000hrs. for Φ8x10.5~Φ10(10V~100V), and 1000 hrs. for Φ6.3, as well as 2000 hrs. application of the rate voltage for Φ12.5~16 (160V~450V) at 125℃, They meet the characteristics listed below

Capacitance change	Within ±30% of initial value
Dissipation Factor	300% or less of initial specified value
Leakage Current	initial specified value or less

Shelf Life

After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life characteristics listed above.

Resistance to Soldering Heat

After reflow soldering and restored at room temperature, they meet ther characteristics listed below.

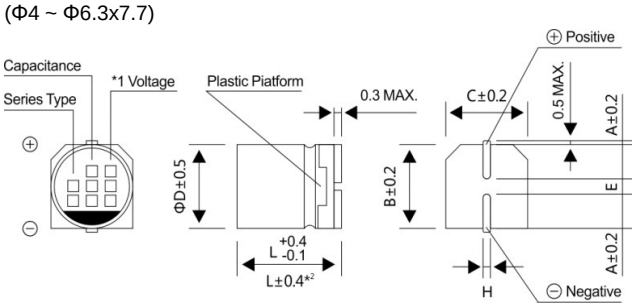
Capacitance change	Within ±10% of initial value
Dissipation Factor	initial specified value or less
Leakage Current	initial specified value or less

Marking

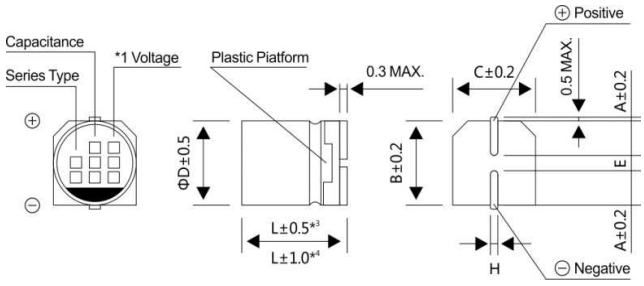
Black print on the case top

■ DRAWING (Unit: mm)

(Φ4 ~ Φ6.3x7.7)



Φ8x10.5 ~ Φ16



*1 Voltage mark for 6.3V is 【6V】

*2 Applicable to Φ6.3x7.7

*3 Applicable to Φ8x10.5 ~ Φ10

*4 Applicable to Φ12.5 ~ Φ16

KH Series

■ DIMENSIONS(Unit:mm)

ΦDxL	4x5.8	5x5.8	6.3x5.8	6.3x7.7	8x10.5	10x10.5	10x13.5	12.5x13.5	12.5x16	16x16.5
A	2.0	2.2	2.6	2.6	3.0	3.3	3.3	4.9	4.9	5.8
B	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
E±0.2	1.0	1.4	1.9	1.9	3.1	4.7	4.7	4.7	4.7	6.4
L	5.8	5.8	5.8	7.7	10.5	10.5	13.5	13.5	16.0	16.5
H	0.5~0.8	0.5~0.8	0.5~0.8	0.5~0.8	0.8~1.2	0.8~1.2	0.8~1.2	0.8~1.2	0.8~1.2	0.8~1.2

■ DIMENSIONS&MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV / Parameter / μF		10（1A）				16(1C)				25(1E)			
		Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) -40℃, 120Hz	Ripple current (mA rms) at 125℃, 100KHz	Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) - 40℃,120Hz	Ripple current (mA rms) at 125℃, 100KHz	Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) -40℃, 120Hz	Ripple current (mA rms) at 125℃, 100KHz
33	330									6.3x5.8	3.3	66	45
47	470					6.3x5.8	3.3	66	43	6.3x7.7	2.3	46	68
100	101	6.3x7.7	2.3	46	72	8x10.5	1.0	20	115	8x10.5	1.0	20	126
220	221	8x10.5	1.0	20	136	10x10.5	0.7	13.4	175	10x10.5	0.7	13.4	211
330	331	10x10.5	0.7	13.4	188	10x13.5	0.5	9.5	280	12.5x13.5	0.14	2.1	750
										(10x13.5)	(0.5)	(9.5)	(270)
470	471	10x13.5	0.5	9.5	300	12.5x13.5	0.14	2.1	750	12.5x13.5	0.14	2.1	750
680	681					16x16.5	0.10	1.5	1000	16x16.5	0.10	1.5	1000
						(12.5x13.5)	(0.14)	(2.1)	(750)				
1000	102	12.5x16	0.11	1.5	900								
		(12.5x13.5)	(0.14)	(2.1)	(750)								
2200	222	16x16.5	0.10	1.5	1000								

WV / Parameter / μF		35（1V）				50(1H)			
		Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) -40℃,120Hz	Ripple current (mA rms) at 125℃, 100KHz	Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) -40℃,120Hz	Ripple current (mA rms) at 125℃, 100KHz
10	100	6.3x5.8	3.3	66	38	6.3x7.7	2.3	46	50
						(6.3x5.8)	(3.3)	(66)	(38)
22	220	6.3x5.8	3.3	66	39	6.3x7.7	2.3	46	50
33	330	6.3x7.7	2.3	46	62	8x10.5	1.0	20	83
47	470	8x10.5	1.0	20	92	10x10.5	0.7	13.4	111
100	101	10x10.5	0.7	13.4	151	12.5x13.5	0.23	3.5	550
220	221	12.5x13.5	0.1	2.1	750	16x16.5	0.15	2.3	850
		(10x13.5)	(0.5)	(9.5)	(260)	(12.5x13.5)	(0.23)	(3.5)	(550)
330	331	12.5x13.5	0.14	2.1	750	16x16.5	0.15	2.3	850
						(12.5x16)	(0.18)	(2.7)	(700)
470	471	16x16.5	(0.10)	1.5	1000				
		(12.5x16)	0.11	(1.5)	(900)				

WV / Parameter / μF		63（1J）				100(2A)			
		Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) -40℃,120Hz	Ripple current (mA rms) at 125℃, 100KHz	Case size ΦDxL (mm)	E.S.R. (Ω) 20℃, 120Hz	E.S.R. (Ω) -40℃,120Hz	Ripple current (mA rms) at 125℃, 100KHz
10	100	6.3x7.7	2.3	115	42	8x10.5	1.00	50	53
22	220	8x10.5	1.0	50	56	10x10.5	0.70	35	63
33	330	10x10.5	0.7	35	77	10x13.5	0.45	22.5	130
47	470	10x13.5	0.45	22.5	150	12.5x13.5	0.33	16.5	450
68	680					12.5x16	0.26	13	550
100	101	12.5x13.5	0.25	12.5	500	16x16.5	0.24	12	650
220	221	12.5x16	0.20	10	600				
330	331	16x16.5	0.18	9	820				

KH Series

■ DIMENSIONS&MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV / Code / μF		160		200		250		400		450	
		2C		2D		2E		2G		2W	
3.3	4R7									12.5x16	65
4.7	4R7							12.5x13.5	70	16x16.5	85
6.8	6R8							16x16.5	100		
10	100	12.5x13.5	100	12.5x13.5	100	12.5x16	110			Case size	Ripple current
22	220	16x16.5	180	16x16.5	180						

·Case size ΦDxL (mm), ripple current (mA rms) at 125℃, 120Hz

■ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency			50Hz	120Hz	1KHz	10KHz~	100KHz~
Coefficient	10~100V	10~100μF	0.35	0.40	0.75	0.90	1.00
		220~470μF	0.35	0.50	0.85	0.94	1.00
		680~2200μF	0.40	0.60	0.85	0.95	1.00

Frequency		50Hz	120Hz	300Hz	1KHz~	10KHz~	100KHz~
Coefficient	160~450V	0.75	1.00	1.25	1.50	1.75	1.80