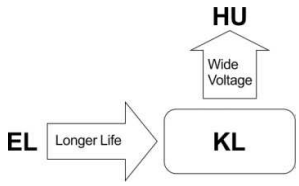
KL Series

5000 Hours Long Life Assurance

- Wide temperature range -55 ~ +105℃
- Load life of 3000~5000 hours
- RoHS Compliance



■SPECIFICATIONS

Item	Characteristics							
Operation Temperature Range	-55 ~ +105℃							
Voltage Range	6.3 ~ 100V							
Capacitance Range	0.1 ~ 1500μF							
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)							
Leakage Current	WV(V)	6.3~100						
	Size	Φ4 ~ 10				Φ12.5 ~ 16		
	Time	After 2 minutes (application of rated voltage)				After 1 minutes (application of rated voltage)		
	L.C.	I≤0.01CV or 3μA , whichever is greater				I≤0.03CV or 4μA , whichever is greater		

Dissipation Factor (MAX) (tanδ) (at 120Hz ,20℃)	WV(V)	6.3	10	16	25	35	50~100
	tanδ Φ4~10	0.28	0.24	0.20	0.16	0.13	0.12
	tanδ Φ12.5~16	0.38	0.34	0.30	0.26	0.22	0.18

Low Temp.Impedance Stability at 120Hz	WV(V)		6.3	10	16	25	35	50~100
	Z(-25℃)/ Z(+20℃)	Φ4~10	3	3	2	2	2	2
	Z(-55)℃/ Z(+20℃)	Φ4~10	8	5	4	3	3	3
	Z(-25℃)/ Z(+20℃)	Φ12.5~16	5	4	3	2	2	2
	Z(-55)℃/ Z(+20℃)	Φ12.5~16	12	10	8	5	4	3

Load Life	After 5000hrs. (3000hrs. For Φ4~Φ6.3x5.8) application of the rated voltage at 105℃,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

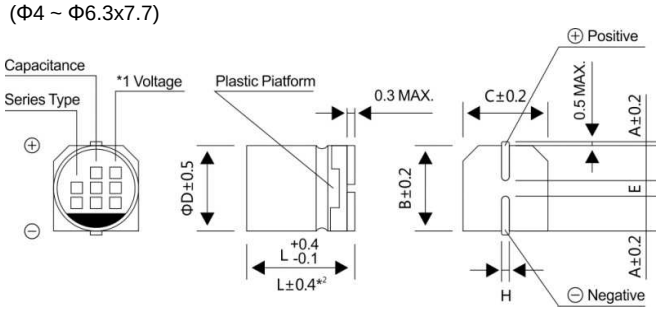
Shelf Life	After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life characteristics listed above.	

Resistance to Soldering Heat	After reflow soldering and restored at room temperature, they meet the characteristics listed below.	
	Capacitance change	Within ±10% of initial value
	Dissipation Factor	initial specified value or less
	Leakage Current	initial specified value or less

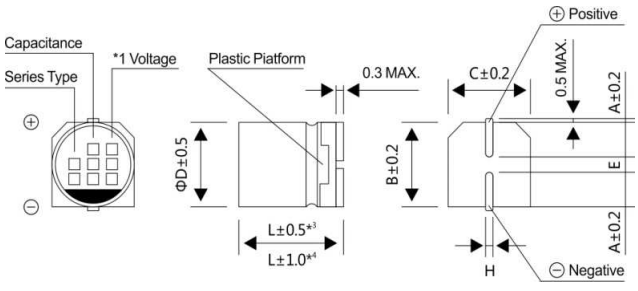
Marking	Black print on the case top

■ 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

KL 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 / μF \ Code		6.3		10		16		25	
		0J		1A		1C		1E	
10	100					4x5.8	18	5x5.8	27
22	220	4x5.8	22	5x5.8	30	5x5.8	30	6.3x5.8	44
33	330	5x5.8	35	5x5.8	36	6.3x5.8	48	6.3x5.8	50
47	470	5x5.8	38	6.3x5.8	50	6.3x5.8	50	6.3x7.7	63
100	101	6.3x5.8	69	6.3x7.7	81	6.3x7.7	81	8x10.5	116
150	151	6.3x7.7	85	8x10.5	125	8x10.5	125	10x10.5	320
220	221	6.3x7.7	120	8x10.5	141	10x10.5	216	10x10.5	320
330	331	8x10.5	290	10x10.5	290	10x10.5	290	10x10.5	320
470	471	10x10.5	320	10x10.5	320	10x10.5	320	12.5x13.5	400
								(10x13.5)	(350)
680	681	10x10.5	320	10x10.5	320	10x13.5	420	12.5x13.5	415
1000	102	10x10.5	410	10x13.5	390	12.5x13.5	550	12.5x13.5	460
1500	152	10x13.5	450	12.5x13.5	480	12.5x13.5	650	12.5x16	700
2200	222	12.5x13.5	680	12.5x16	750	16x16.5	800		
				(12.5x13.5)	(510)				
3300	332	12.5x16	850	16x16.5	800			Case size	Ripple current
		(12.5x13.5)	(800)						

WV / μF \ Code		6.3		10		16		25	
		0J		1A		1C		1E	
0.10	0R1			4x5.8	1.0				
0.22	R22			4x5.8	2.6				
0.33	R33			4x5.8	3.2				
0.47	R47			4x5.8	5				
1	010			4x5.8	8				
2.2	2R2			4x5.8	12				
3.3	3R3			4x5.8	17			6.3x7.7	30
4.7	4R7	4x5.8	16	5x5.8	22			8x10.5	50
10	100	5x5.8	27	6.3x5.8	32	6.3x7.7	45	8x10.5	55
22	22R	6.3x5.8	44	6.3x7.7	58	8x10.5	65	10x10.5	70
33	33R	6.3x7.7	57	8x10.5	140	10x10.5	80	10x10.5	80
47	47R	8x10.5	92	10x10.5	310	10x10.5	90	12.5x13.5	250
								(10x13.5)	(150)
100	101	10x10.5	151	10x10.5	310	10x13.5	150	12.5x13.5	300
150	151	10x10.5	290	10x10.5	310			16x16.5	600
								(12.5x16)	(420)
								（12.5x13.5）	(380)
220	221	10x10.5	375	12.5x13.5	340	12.5x13.5	470		
				(10x13.5)	(320)				
330	331	12.5x13.5	380	12.5x16	600	16x16.5	650		
		(10x13.5)	(375)	(12.5x13.5)	(500)	(12.5x16)	(550)		
470	471	12.5x13.5	520	16x16.5	700				
680	681	12.5x13.5	550						
1000	102	16x16.5	750					Case size	Ripple current
		(12.5x16)	(600)						

·Case size ΦDxL (mm), ripple current (mA rms) at 105℃, 120Hz

KL Series

■ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency			50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient	Φ4~Φ10		0.70	1.00	1.17	1.36	1.50
	Φ12.5~Φ16	~68μF	0.75	1.00	1.35	1.57	2.00
		100~470μF	0.80	1.00	1.23	1.34	1.50
		680~3300μF	0.85	1.00	1.10	1.13	1.15