

### CK

#### Series

##### Wide Temperature

- Operating with wide temperature range -40 ~ +105°C
- Load life of 2000 hours
- Comply with the RoHS directive

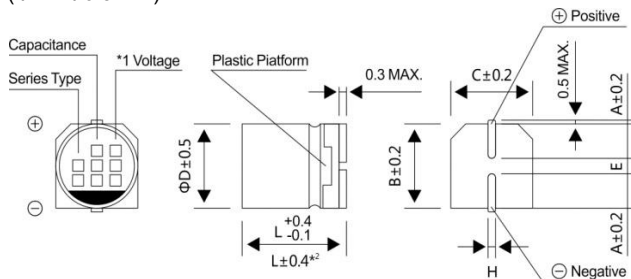


#### ■ SPECIFICATIONS

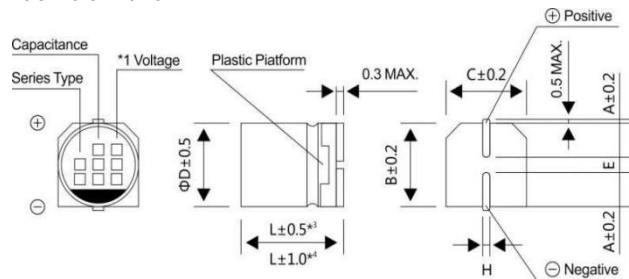
Item	Characteristics												
Operation Temperature Range	-40 ~ +105℃												
Voltage Range	4 ~ 450V												
Capacitance Range	0.1 ~ 6800μF												
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)												
Leakage Current	WV(V)	6.3 ~ 100								160 ~ 450			
	Size	Φ4 ~ 10				Φ12.5 ~ 16				Φ6.3 ~ 16			
	Time	After 2 minutes (application of rated voltage)				After 1 minutes (application of rated voltage)				After 5 minutes (application of rated voltage)			
	L.C.	I≤0.01CV or 3μA , whichever is greater				I≤0.03CV or 4μA , whichever is greater				I≤0.04CV+100μA , whichever is greater			
Dissipation Factor (MAX) (tanδ) (at 120Hz+A53, 20℃)	WV(V)		4	6.3	10	16	25	35	50	63	100	160~250	350~450
	tanδ	4~10Φ	0.42	0.30	0.26	0.22	0.16	0.14	0.12	0.10	0.10	0.20	0.25
		12.5~18Φ	0.45	0.38	0.34	0.30	0.26	0.22	0.18	0.14	0.10	0.20	0.25
Low Temp.Impedance Stability at 120Hz	WV		4	6.3	10	16	25	35	50~63	100	160~250	350~450	
	Z(-25℃)/ Z(+20℃)	Φ4 ~ 10	7	4	3	2	2	2	2	3	2	3	
	Z(-40)℃/ Z(+20℃)		15	8	6	4	4	3	3	4	3	6	
	Z(-25℃)/ Z(+20℃)	Φ12.5 ~ 18	7	5	4	3	2	2	2	2	2	4	
	Z(-40)℃/ Z(+20℃)		17	12	10	8	5	4	3	3	6	10	
Load Life	After 2000Hrs. (1000hrs. For Φ4 ~ Φ6.3x5.4) application of the rated voltage at 105℃ , they meet the characteristics listed below.												
	Capacitance change			Within ±20% of initial value for capacitors of 10V or more Within ±30% of initial value for capacitors of 4V or less									
	Dissipation Factor			200% 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

CK

Series

## ■ DIMENSIONS(Unit:mm)

ΦDxL	4x5.4	5x5.4	6.3x5.4	6.3x7.7	8x10.5	10x10.5	10x13.5	12.5x13.5	12.5x16	16x16.5	18x16.5	18x18.5
A	2.0	2.2	2.6	2.6	3.0	3.3	3.3	4.9	4.9	5.8	6.2	6.2
B	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0	19.0	19.0
C	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0	19.0	19.0
E±0.2	1.0	1.4	1.9	1.9	3.1	4.7	4.7	4.7	4.7	6.4	6.4	6.4
L	5.4	5.4	5.4	7.7	10.5	10.5	13.5	13.5	16.0	16.5	16.5	18.5

## ■ DIMENSIONS&amp;MAXIMUM PERMISSIBLE RIPPLE CURRENT

μF	WV Code	4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7							4x5.4	13	4x5.4	17
10	100							4x5.4	20	5x5.4	23
22	220	4x5.4	20	4x5.4	23	5x5.4	29	5x5.4	32	6.3x5.4	39
33	330	5x5.4	30	5x5.4	34	5x5.4	35	6.3x5.4	45	6.3x5.4	48
47	470	5x5.4	36	5x5.4	38	5x5.4	38	6.3x5.4	55	6.3x5.4	60
100	101	6.3x5.4	64	6.3x5.4	69	6.3x5.4	80	6.3x5.4	80	6.3x7.7	100
150	151	6.3x5.4	80	6.3x5.4	85	6.3x5.4	85	6.3x7.7	105	8x10.5	240
220	221	6.3x5.4	90	6.3x7.7	120	6.3x7.7	120	8x10.5	270	6.3x7.7	(120)
330	331	6.3x7.7	120	6.3x7.7	120	8x10.5	290	8x10.5	290	8x10.5	270
470	471	6.3x7.7	120	8x10.5	320	10x10.5	380	10x10.5	380	10x10.5	380
680	681	8x10.5	320	8x10.5	350	10x10.5	380	10x10.5	380	10x10.5	380
1000	102	8x10.5	320	10x10.5	410	10x10.5	410	12.5x13.5	550	10x13.5	400
1500	152	10x10.5	410	10x13.5	450	10x13.5	460	12x13.5	550	12x13.5	580
2200	222	10x13.5	440	12.5x13.5	680	12.5x13.5	680	16x16.5	900	12x13.5	580
3300	332	10x13.5	490	12.5x16	850	16x16.5	1000	16x16.5	1000	16x16.5	1050
4700	472	12.5x13.5	600	16x16.5	1000	16x16.5	1000	18x16.5	1225	18x16.5	1150
6800	682	16x16.5	950	18x16.5	1290	18x16.5	1290			18x18.5	1300
8200				18x18.5	1450	18x18.5	1450			Case size	Ripple current

μF	WV Code	35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4x5.4	2	4x5.4	2		
0.22	0R2			4x5.4	4	4x5.4	4		
0.33	0R3			4x5.4	4	4x5.4	4		
0.47	0R4			4x5.4	5	4x5.4	5		
1	010			4x5.4	8	4x5.4	8	4x5.4	8
2.2	2R2			4x5.4	12	4x5.4	12	6.3x5.4	14
3.3	3R3	4x5.4	13	4x5.4	14	5x5.4	17	5x5.4	17
4.7	4R7	4x5.4	17	5x5.4	20	5x5.4	20	6.3x7.7	55
10	100	5x5.4	27	(4x5.4)	(14)	6.3x7.7	58	(5x5.4)	(12)
22	220	6.3x5.4	44	6.3x5.4	32	6.3x5.4	(32)	6.3x7.7	50
33	330	(5x5.4)	(36)	(5x5.4)	(27)	8x10.5	100	(6.3x5.4)	(21)
47	470	6.3x5.4	50	6.3x7.7	58	(6.3x7.7)	(58)	8x10.5	126
68	680	6.3x7.7	80	8x10.5	170	10x10.5	160	10x10.5	150
		(6.3x5.4)	(58)	6.3x7.7	(70)	(8x10.5)	(170)	12.5x13.5	250
								(10x13.5)	(180)
								(10x10.5)	(160)
						Case size	Ripple current	12.5x13.5	300
								(10x13.5)	(180)

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

CK

Series

## ■ DIMENSIONS&amp;MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV μF Code		35		50		63		100		160	
		1V		1H		1J		2A		2C	
22	220									10x13.5	50
33	330									12.5x13.5	95
47	470									12.5x13.5	205
										16x16.5	(240)
100	101	8x10.5	240	10x10.5	250	12.5x13.5	400	16x16.5	450	16x16.5	250
		(6.3x7.7)	(92)	(8x10.5)	(210)	(10x13.5)	(350)				
						(10x10.5)	(310)	(12.5x13.5)	(380)		
150	151	8x10.5	240	10x10.5	300	10x13.5	350				
220	221	10x10.5	250	10x13.5	280	16x16.5	560	16x16.5	550		
		(8x10.5)	(270)	(10x10.5)	(330)	(12.5x13.5)	(470)				
330	331	10x10.5	370	16x16.5	600	16x16.5	700	18x16.5	590		
				(12.5x13.5)	(490)	(12.5x16)	(510)				
				(10x13.5)	(295)						
470	471	12.5x13.5	520	16x16.5	700	16x16.5	750	18x18.5	980		
		(10x13.5)	(400)	(12.5x16)	(550)						
		(10x10.5)	(370)	(12.5x13.5)	(470)						
680	681	12.5x13.5	530	16x16.5	750	16x16.5	790				
1000	102	16x16.5	800	18x16.5	990					Case size	Ripple current
		12.5x16	(600)								
1500	152	16x16.5	750								
2200	222	18x16.5	1050								

WV		200		250		350		400		450	
μF	Code	2D		2E		2V		2G		2W	
3.3	3R3							10x13.5	40	10x13.5	40
								(8x10.5)	(35)	(8x12.5)	(38)
4.7	4R7			10x13.5	65	10x13.5	45	10x13.5	45	10x13.5	42
								(12.5x13.5)	(48)	(12.5x13.5)	45
10	100	10x13.5	75	10x13.5	70	12.5x13.5	50	12.5x13.5	50	12.5x13.5	70
22	220	12.5x13.5	105	12.5x13.5	105	16x16.5	85	16x16.5	85	16x16.5	85
33	330	12.5x13.5	120	16x16.5	180	18x16.5	100	18x16.5	100	18x16.5	100
47	470	16x16.5	220	16x16.5	220					Case size	Ripple current
100	101	18x16.5	280	18x16.5	260						

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

## ■ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency				50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient	Φ4~Φ10	0.1~68μF		0.70	1.00	1.17	1.36	1.50
		100~3300μF		0.85	1.00	1.08	1.20	1.30
	Φ12.5~Φ18	~68μF		0.75	1.00	1.35	1.57	2.00
		100~680μF		0.80	1.00	1.23	1.34	1.50
		1000~6800μF		0.85	1.00	1.00	1.13	1.15