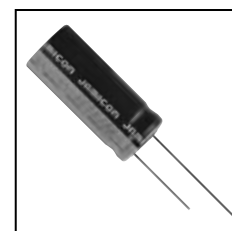


# RADIAL TYPE

# TK Series

## Wide Temperature Range

- High temperature 105°C and high reliability



## SPECIFICATION

Item	Characteristic														
Operation Temperature Range	-55 ~ +105°C					-40 ~ +105°C					-25 ~ +105°C				
Rated Working Voltage	6.3 ~ 100VDC					160 ~ 400VDC					450VDC				
Capacitance Tolerance (120Hz 20°C)	±20%(M)														
Leakage Current (20°C)	6.3~100 VDC I ≤ 0.01CV or 4 (μA)					160~450 VDC I ≤ 0.03CV + 40 (μA) max									
	*Whichever is greater after 3 minutes I : Leakage Current(μA) C : Rated Capacitance(μF) V : Working Voltage(V)														
Surge Voltage (20°C)	W.V.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	S.V.	8	13	20	32	44	63	79	125	200	250	300	400	450	500
Dissipation Factor (tan δ) (120Hz 20°C)	Add 0.02 per 1000 μF for more than 1000 μF														
	W.V.	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	tan δ	0.24	0.20	0.17	0.15	0.12	0.10	0.10	0.08	0.15	0.15	0.15	0.20	0.20	0.20
Low Temperature Stability	Impedance ratio at 120Hz														
	Rated Voltage (V)	6.3		10	16	25	35~100	160~250	350~400	450					
	-25°C / +20°C	4		3	2	2	2	3	6	15					
	-40°C / +20°C	10		8	6	4	3	4	10	—					
Load Life	After 2000 hours application of W.V. and +105°C ripple current value, the capacitor shall meet the following limits. (DC + ripple peak voltage ≤ rate working voltage)														
	Capacitance Change	≤ ±25% of initial value for 6.3~16 W.V., ≤ ±20% of initial value for 25~450 W.V.													
	Dissipation Factor	≤ 200% of initial specified value													
	Leakage current	≤ initial specified value													
Shelf Life	At +105°C no voltage application after 1000 hours the capacitor shall meet the limits for load life characteristics. (with voltage treatment)														

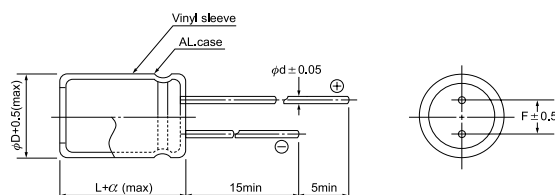
## DIMENSIONS (mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.0
α	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0

## RIPPLE CURRENT COEFFICIENTS

Temperature(°C)	65	85	105
Multiplier	1.75	1.40	1.00

Frequency(Hz)	60	120	1k	≥10k
W.V.	Multiplier			
6.3~25V	0.85	1.00	1.10	1.20
35~100V	0.80	1.00	1.15	1.25
160~250V	0.75	1.00	1.25	1.40
350~450V	0.70	1.00	1.30	1.80



● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)  
 Max ripple current : mA(rms) 105°C 120Hz

μF	V(Code)		6.3 (0J)		10 (1A)		16 (1C)	
	Code	Item	DxL	R.C.	DxL	R.C.	DxL	R.C.
47	470					→	5x11	90
100	101		5x11	110	5x11	120	5x11	130
220	221		5x11	160	5x11	180	6.3x11	220
330	331		6.3x11	220	6.3x11	250	8x11.5	310
470	471		6.3x11	270	6.3x11	290	8x11.5	370
1000	102		8x11.5	460	10x12.5	530	10x16	630
2200	222		10x16	760	10x20	910	12.5x20	1050
3300	332		10x20	990	12.5x20	1140	12.5x25	1340
4700	472		12.5x20	1200	12.5x25	1420	16x25	1510
6800	682		12.5x25	1500	16x25	1600	16x31.5	1860
10000	103		16x25	1660	16x35.5	2040	18x35.5	2270
15000	153		16x35.5	2140	18x35.5	2370	20x40	2550
22000	223		18x40	2590	20x40	2830	22x50	3380
33000	333		22x50	3390	22x50	3470	25x50	3790

All blank voltage on sleeve marking is the same voltage as " → "point to.

μF	V(Code)		25 (1E)		35 (1V)		50 (1H)	
	Code	Item	DxL	R.C.	DxL	R.C.	DxL	R.C.
0.1	0R1					→	5x11	5
0.22	R22					→	5x11	8
0.33	R33					→	5x11	10
0.47	R47					→	5x11	12
1	010					→	5x11	17
2.2	2R2					→	5x11	25
3.3	3R3					→	5x11	31
4.7	4R7					→	5x11	36
10	100		5x11	43	5x11	49	5x11	55
22	220		5x11	65	5x11	70	5x11	80
33	330		5x11	80	5x11	90	5x11	95
47	470		5x11	95	5x11	110	6.3x11	130
100	101		6.3x11	160	6.3x11	170	8x11.5	220
220	221		8x11.5	270	8x11.5	300	10x12.5	350
330	331		8x11.5	330	10x12.5	390	10x16	480
470	471		10x12.5	420	10x16	520	10x20	630
1000	102		10x20	740	12.5x20	890	12.5x25	1070
2200	222		12.5x25	1220	16x25	1350	16x35.5	1700
3300	332		16x25	1420	16x35.5	1810	18x35.5	2060
4700	472		16x31.5	1740	18x35.5	2110		
6800	682		18x35.5	2170				
10000	103		20x40	2610				
15000	153		22x50	3270				
22000	223		25x50	3690				

● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)  
 Max ripple current : mA(rms) 105°C 120Hz

μF	V(Code)		63 (1J)		100 (2A)	
	Code	Item	DxL	R.C.	DxL	R.C.
0.1	0R1			→	5x11	6
0.22	R22			→	5x11	9
0.33	R33			→	5x11	11
0.47	R47			→	5x11	13
1	010			→	5x11	19
2.2	2R2			→	5x11	28
3.3	3R3			→	5x11	34
4.7	4R7			→	5x11	41
10	100		5x11	55	6.3x11	65
22	220		5x11	80	6.3x11	100
33	330		6.3x11	110	8x11.5	140
47	470		6.3x11	130	10x12.5	180
100	101		10x12.5	240	10x20	320
220	221		10x16	390	12.5x25	560
330	331		10x20	520	12.5x25	690
470	471		12.5x20	670	16x25	830
1000	102		16x25	1080	18x40	1580
2200	222				22x50	2590

All blank voltage on sleeve marking is the same voltage as" → "point to.

μF	V(Code)		160 (2C)		200 (2D)		250 (2E)	
	Code	Item	DxL	R.C.	DxL	R.C.	DxL	R.C.
0.47	R47		6.3x11	12	6.3x11	13	6.3x11	14
1	010		6.3x11	18	6.3x11	19	6.3x11	21
2.2	2R2		6.3x11	26	6.3x11	28	6.3x11	31
3.3	3R3		6.3x11	32	6.3x11	34	8x11.5	44
4.7	4R7		6.3x11	38	8x11.5	48	8x11.5	50
10	100		8x11.5	65	10x12.5	75	10x16	90
22	220		10x16	110	10x20	130	12.5x20	160
33	330		10x20	150	12.5x20	180	12.5x20	190
47	470		12.5x20	190	12.5x20	210	12.5x25	250
100	101		12.5x25	310	16x25	340	16x31.5	410
220	221		16x35.5	540	18x40	660		
330	331		18x40	750				
470	471		22x40	1000				
1000	102		25x50	1730				

μF	V(Code)		350 (2V)		400 (2G)		450 (2W)	
	Code	Item	DxL	R.C.	DxL	R.C.	DxL	R.C.
0.47	R47		8x11.5	14	8x11.5	15	10x12.5	15
1	010		8x11.5	21	8x11.5	21	10x12.5	22
2.2	2R2		8x11.5	31	10x12.5	33	10x20	39
3.3	3R3		10x12.5	39	10x12.5	41	12.5x20	50
4.7	4R7		10x12.5	47	10x16	55	12.5x20	60
10	100		10x20	85	12.5x20	90	16x25	100
22	220		12.5x25	150	12.5x25	150	16x31.5	160
33	330		16x25	180	16x31.5	210	18x35.5	230
47	470		16x35.5	250	18x35.5	280		
100	101		18x40	410	20x40	450		
220	221		22x50	760				