

# 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	50	63	100	160	200	250	350	400	450
	-25°C / +20°C	4		3	2	2	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. at +105°C, the capacitor shall meet the following limits.															
	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)															

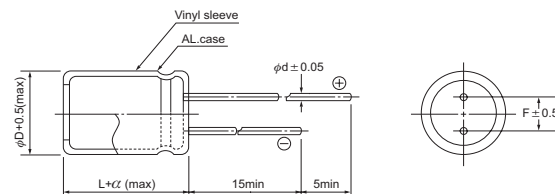
### DIMENSIONS (mm)

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	2.0	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	Code	V(Code) Item	6.3 (0J)		10 (1A)		16 (1C)	
			DxL	R.C.	DxL	R.C.	DxL	R.C.
47	470				→	5x11	75	
100	101		5x11	95	5x11	100	5x11	110
220	221		5x11	140	5x11	150	6.3x11	190
330	331		6.3x11	200	6.3x11	210	8x11.5	270
470	471		6.3x11	230	6.3x11	260	8x11.5	320
1000	102		8x11.5	400	10x12.5	460	10x16	550
2200	222		10x16	660	10x20	790	12.5x20	910
3300	332		10x20	860	12.5x20	990	12.5x25	1170
4700	472		12.5x20	1040	12.5x25	1230	16x25	1310
6800	682		12.5x25	1300	16x25	1390	16x31.5	1620
10000	103		16x25	1450	16x35.5	1780	18x35.5	1970
15000	153		16x35.5	1860	18x35.5	2060	20x40	2210
22000	223		18x40	2250	20x40	2460	22x50	2940
33000	333		22x50	2950	22x50	3020	25x50	3300

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

μF	Code	V(Code) Item	25 (1E)		35 (1V)		50 (1H)	
			DxL	R.C.	DxL	R.C.	DxL	R.C.
0.1	0R1				→	5x11	5	
0.22	R22				→	5x11	7	
0.33	R33				→	5x11	8	
0.47	R47				→	5x11	10	
1	010				→	5x11	15	
2.2	2R2				→	5x11	22	
3.3	3R3				→	5x11	27	
4.7	4R7				→	5x11	32	
10	100		5x11	38	5x11	42	5x11	46
22	220		5x11	55	5x11	65	5x11	70
33	330		5x11	70	5x11	75	5x11	85
47	470		5x11	80	5x11	90	6.3x11	110
100	101		6.3x11	140	6.3x11	150	8x11.5	190
220	221		8x11.5	240	8x11.5	260	10x12.5	300
330	331		8x11.5	290	10x12.5	340	10x16	410
470	471		10x12.5	360	10x16	450	10x20	540
1000	102		10x20	650	12.5x20	770	12.5x25	930
2200	222		12.5x25	1060	16x25	1180	16x35.5	1480
3300	332		16x25	1240	16x35.5	1570	18x35.5	1790
4700	472		16x31.5	1520	18x35.5	1840		
6800	682		18x35.5	1890				
10000	103		20x40	2270				
15000	153		22x50	2840				
22000	223		25x50	3210				

● 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	5
0.22	R22			→	5x11	8
0.33	R33			→	5x11	9
0.47	R47			→	5x11	11
1	010			→	5x11	16
2.2	2R2			→	5x11	24
3.3	3R3			→	5x11	30
4.7	4R7			→	5x11	35
10	100		5x11	46	6.3x11	55
22	220		5x11	70	6.3x11	85
33	330		6.3x11	95	8x11.5	120
47	470		6.3x11	110	10x12.5	160
100	101		10x12.5	200	10x20	280
220	221		10x16	340	12.5x25	490
330	331		10x20	460	12.5x25	600
470	471		12.5x20	580	16x25	720
1000	102		16x25	940	18x40	1380
2200	222				22x50	2260

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	9	6.3x11	10	6.3x11	11
1	010		6.3x11	14	6.3x11	15	6.3x11	16
2.2	2R2		6.3x11	20	6.3x11	22	6.3x11	24
3.3	3R3		6.3x11	25	6.3x11	26	8x11.5	34
4.7	4R7		6.3x11	29	8x11.5	37	8x11.5	40
10	100		8x11.5	50	10x12.5	55	10x16	70
22	220		10x16	85	10x20	100	12.5x20	120
33	330		10x20	120	12.5x20	130	12.5x20	150
47	470		12.5x20	150	12.5x20	160	12.5x25	190
100	101		12.5x25	240	16x25	260	16x31.5	310
220	221		16x35.5	420	18x40	510		
330	331		18x40	580				
470	471		22x40	770				
1000	102		25x50	1330				

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	11	8x11.5	11	10x12.5	11
1	010		8x11.5	16	8x11.5	16	10x12.5	17
2.2	2R2		8x11.5	24	10x12.5	26	10x20	30
3.3	3R3		10x12.5	30	10x12.5	31	12.5x20	40
4.7	4R7		10x12.5	36	10x16	42	12.5x20	47
10	100		10x20	65	12.5x20	70	16x25	75
22	220		12.5x25	110	12.5x25	120	16x31.5	130
33	330		16x25	140	16x31.5	160	18x35.5	170
47	470		16x35.5	190	18x35.5	210		
100	101		18x40	320	20x40	350		
220	221		22x50	580				