

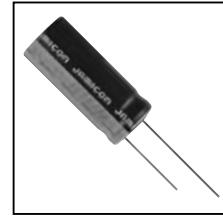
# RADIAL TYPE

# 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. 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)														

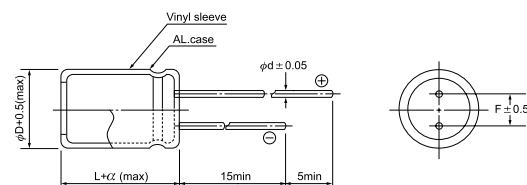
## DIMENSIONS (mm)

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



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● 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	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	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	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

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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				