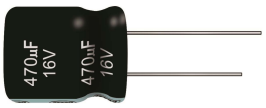
TD Series

- **High-temperature 130℃, high reliability**
- **Load life 1,000~ 4,000 hours at 130℃**
- **For automotive electronics and lighting equipment and other high temperature applications**



◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +130℃	-25 ~ +130℃
Working Voltage Range	10 ~ 100Vdc	200 ~ 450Vdc
Capacitance Range	4.7 ~ 4,700 μF	3.3~ 100 μF
Capacitance Tolerance	±20% (at 25℃ and 120Hz)	

Dissipation Factor (tanδ) (at 25℃, 120Hz)

Rated Voltage (V)	10	16	25	35	50	63	100	200	250	400	420	450
tanδ(Max)	0.20	0.16	0.14	0.12	0.10	0.10	0.09	0.20	0.20	0.24	0.24	0.24

The above values should be increased by 0.02 for every additional 1000μF

Leakage Current

I≦0.01CV or 2μA whichever is greater（10 ~ 100V）
I≦0.03CV +10μA（200 ~ 450V）
I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V)
Impress the rated voltage for 2 minutes

Low Temperature Characteristics Impedance Ratio(MAX)

Rated voltage (V)	10	16	25	35	50	63	100	200 ~ 250	350	400 ~ 450
Z(-40℃)/Z(+20℃)	6	4	4	4	4	4	4	—	—	—
Z(-25℃)/Z(+20℃)	—	—	—	—	—	—	—	3	6	6

(at 120Hz)

Endurance

The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 1,000~4,000 hours at 130°C

	10~100 Vdc	200~450Vdc
Capacitance change	≦±30% of the initial value	≦±20% of the initial value
Dissipation factor(tanδ)	≦±300% of the specified value	≦±200% of the specified value
Leakage curren	≦Specified value	

Case Size	Life time (hours)	
	10~100V	200~450
ΦD=6.3	—	1,000
ΦD=8,10	2,000	2,000
ΦD≧12.5	4,000	3,000

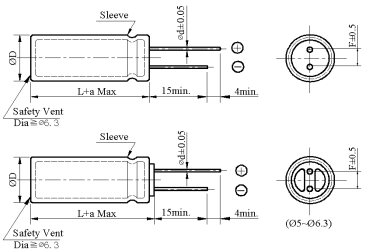
Shelf Life

The following requirements shall be satisfied when the capacitor are restored to 25℃ after the rated voltage applied for 1,000 hours at 130℃ without voltage applied.
After test : UR to be applied for 30 minutes, 24 to 48 hours before measurement.

	10~100 Vdc	200~450Vdc
Capacitance change	≦ ±30% of the initial value	≦ ±20% of the initial value
Dissipation factor(tanδ)	≦ ±300% of the specified value	≦ ±200% of the specified value
Leakage curren	≦Specified value	

Others Conforms to JIS-C-5101-4 (1998), characteristic W

◆ DIMENSIONS (mm)



ΦD	6.3	8	10	12.5 L< 35	12.5 ≥ 35	16	18
ΦD	ΦD + 0.5 Max						
Φd	0.5	0.6	0.6	0.6	0.8	0.8	0.8
F	2.5	3.5	5.0	5.0		7.5	7.5
a	L + 1.5 Max			≤ 35 L+1.5Max ≥ 40 L+2.0 Max		L + 1.5Max	

◆ PART NUMBER SYSTEM(Example : 10V 1000μF)

T	D	1	A	1	0	2	M	N	N	1	0	2	0						

- Special Request
- Size code(1020 : 10×20)
- Lead length code
- Lead forming Type code
- Capacitance tolerance code(M:±20%)
- Capacitance code (1000μF)
- Voltage code (10V)
- Series code (TD)

TD Series

◆ **Case size & Permissible rated ripple current: (mA rms) at 130℃ / 100KHz**

Vdc / uF	10		16		25	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
220					8×11.5	360
330	8×11.5	360	8×11.5	360	10×12.5	620
470	10×12.5	620	10×12.5	620	10×16	800
1000	10×20	960	10×20	960	12.5×20	1100
2200	12.5×25	1430	12.5×25	1430	16×31.5	2300
3300	16×25	1900	16×31.5	2300	16×35.5	2550
4700	16×31.5	2300	16×35.5	2550		

Vdc / uF	35		50		63	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
4.7			8×11.5	100		
10			8×11.5	200		
22			8×11.5	260		
33			8×11.5	300	8×11.5	250
47			8×11.5	300	10×12.5	400
100	8×11.5	360	10×12.5	520	10×16	450
220	10×12.5	620	10×20	890	12.5×25	820
330	10×16	800	12.5×20	1000	12.5×30	1000
470	10×25	960	12.5×25	1200	16×25	1500
1000	12.5×30	1430	16×31.5	2180	18×35.5	1850
1500	16×31.5	1800	18×35.5	2450	18×45	2350
2200	16×35.5	2550	18×40	2800		
3300	18×35.5	2800				

Vdc / uF	100		200		250	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
4.7			6.3×11	100	8×11.5	115
5.6			8×11.5	130	8×11.5	140
6.8			8×11.5	130	8×11.5	140
10	8×16	200	8×16	200	8×16	220
15	8×16	210	8×16	220	8×20	245
22	8×16	220	8×20	300	10×16	320
33	10×12.5	260	10×20	320	10×25	350
47	10×16	330	10×25	345	12.5×20	375
56	10×20	350	10×30	370	12.5×25	400
68	10×25	400	12.5×25	450	16×20	480
82	10×30	435	12.5×30	485	16×25	505
100	12.5×25	670	16×25	600		
220	16×25	1100				
330	16×31.5	1300				
470	16×40	1650				

TD Series

◆ **Case size & Permissible rated ripple current: (mA rms) at 130℃ / 100KHz**

uF \ Vdc	400		420		450	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
3.3	8×16	110	8×16	120	8×20	135
4.7	8×20	120	8×20	130	10×12.5	150
5.6	10×16	130	10×16	140	10×16	160
6.8	10×20	150	10×20	155	10×20	170
10	10×25	220	10×25	240	12.5×20	260
15	10×30	240	10×30	255	12.5×25	300
22	12.5×20	270	12.5×25	300	16×20	345
33	12.5×25	305	12.5×30	340		
47	16×25	400	16×31.5	445		
56	16×31.5	435				
68	16×35.5	480				

◆ **RIPPLE CURRENT MULTIPLIERS**

Frequency Multipliers:(10 to 100Vdc）

Vdc	Cap(uF)	Frequency (Hz)			
		120K	1K	10K	⩾100K
10 ~ 100	＜100	0.40	0.75	0.90	1.00
	100 ~ 470	0.50	0.85	0.94	1.00
	＞470	0.60	0.87	0.95	1.00

（200 to 450Vdc）

Vdc	Cap(uF)	Frequency (Hz)			
		120	1K	10K	100K
200 ~ 450	3.3~15	0.30	0.60	0.90	1.00
	22~100	0.50	0.80	0.90	1.00