

## TD SERIES

### INTRODUCTION

The TD Series, due to its good electrical characteristics, is recommended for professional and industrial applications. The extremely stable oxide layer of the TD solid tantalum capacitor allows only a very low leakage current even after long storage. The solid electrolyte provides stable electrical performance over wide ranges and long time periods.

### FEATURES:

- HIGH TEMPERATURE RANGE OF -55 TO +125°C
- LOW LEAKAGE CURRENT AND DISSIPATION FACTOR
- COMPACT SIZE FOR SPACE SAVING DESIGN
- NO DEGRADATION EVEN AFTER PROLONGED STORAGE
- HUMIDITY, SHOCK AND VIBRATION RESISTANT SELF INSULATING ENCAPSULATION
- DECREASING FAILURE RATE INDICATING ABSENCE OF "WEAR-OUT" MECHANISM

### GENERAL SPECIFICATIONS

**CAPACITANCE:** 0.1  $\mu$ F to 330  $\mu$ F.

**VOLTAGE RANGE:** 6.3VDC to 50VDC.

**CAPACITANCE TOLERANCE:**  $\pm$ 20%,  $\pm$ 10%, ( 5% upon request).

**TEMPERATURE RANGE:** -55°C to +125°C with Derating above 85°C as per Table 4.

**DISSIPATION FACTOR:** 0.1 to 1.5 $\mu$ F  $\leq$ 4%, 2.2 to 6.8 $\mu$ F  $\leq$ 6%, 10 to 68 $\mu$ F  $\leq$ 8%, >68 $\mu$ F  $\leq$ 10% at 120Hz.

**LEAKAGE CURRENT:** Not More Than 0.01CV  $\mu$  Amps or 0.5  $\mu$ A which ever is greater.

**FAILURE RATE:** 1% per 1000 Hrs.

### LIFE TEST DETAILS

Capacitors shall withstand rated DC Voltage applied at 85°C for 2,000 Hours. After the test:

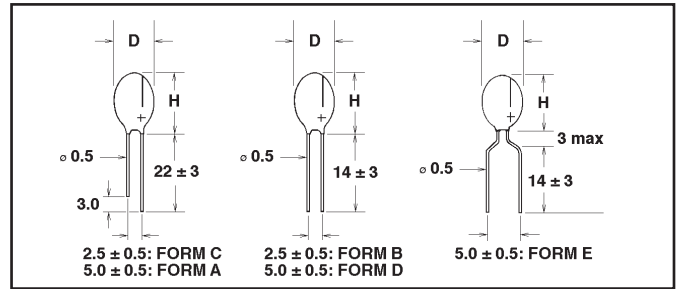
1. Capacitance change shall not exceed  $\pm$ 10% of the initial value.
2. Dissipation factor shall be within the normal specified limits.
3. Leakage current shall be within the normal specified limit.
4. No remarkable change in the appearance. Marking shall remain legible.

**TABLE 4**

**VOLTAGE DERATING (85°C - 125°C)**

VR	6.3	10	16	20	25	35	50
VO	4	6.3	10	13	16	22	32
VS	5	8	13	16	20	28	40

VR - Rated Voltage, VO - Operating Voltage, VS - Surge Voltage



### Case Dimensions TD Series

Case Code	Dimensions in mm		Dimensions in Inches	
	D max.	H max.	D max.	H max.
A	4.5	8.5	0.177	0.335
B	4.5	9.0	0.177	0.354
C	5.0	10.0	0.197	0.394
D	5.0	10.5	0.197	0.413
E	5.5	10.5	0.217	0.413
F	6.0	11.5	0.236	0.453
G	6.5	11.5	0.256	0.453
H	7.0	12.0	0.276	0.472
J	8.0	13.0	0.315	0.512
K	8.5	14.0	0.335	0.551
L	9.0	14.0	0.354	0.551
M	9.0	14.5	0.354	0.571
N	9.0	16.0	0.354	0.630
P	10.0	17.0	0.394	0.669
R	10.0	18.5	0.394	0.728

### Case Codes TD Series

Capacitance		Rated Voltage V DC						
$\mu$ F	Code	6.3	10	16	20	25	35	50
0.1	104						A	A
0.15	154						A	A
0.22	224						A	A
0.33	334						A	A
0.47	474						A	A
0.68	684						A	B
1	105				A	A	A	C
1.5	155			A	A	A	A	D
2.2	225		A	A	A	A	B	E
3.3	335	A	A	A	B	B	C	F
4.7	475	A	A	B	C	C	E	G
6.8	685	A	B	C	D	D	F	H
10	106	B	C	D	E	E	F	J
15	156	C	D	E	F	F	H	K
22	226	D	E	F	H	H	K	L
33	336	E	F	F	J	J	M	
47	476	F	G	J	K	M	N	
68	686	G	H	L	N	N		
100	107	H	K	N	N			
150	157	K	N	N				
220	227	M	P					
330	337	P						



**TD SERIES SPECIFICATIONS**

**6.3 VDC RATED VOLTAGE**

*SURGE VOLTAGE 8 VDC at 85°C and 5 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA335K06CB	3.3	335	A	6	0.5
TDA475K06CB	4.7	475	A	6	0.5
TDA685K06CB	6.8	685	A	6	0.5
TDB106K06CB	10	106	B	8	0.5
TDC156K06CB	15	156	C	8	0.7
TDD226K06CB	22	226	D	8	1.1
TDE336K06CB	33	336	E	8	1.6
TDF476K06CB	47	476	F	8	2.3
TDG686K06CB	68	686	G	8	3.4
TDH107K06CB	100	107	H	10	5.0
TDK157K06CB	150	157	K	10	7.5
TDM227K06CB	220	227	M	10	11.0
TDP337K06CB	330	337	P	10	16.6

**10 VDC RATED VOLTAGE**

*SURGE VOLTAGE 13 VDC at 85°C and 8 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA225K10CB	2.2	225	A	6	0.5
TDA335K10CB	3.3	335	A	6	0.5
TDA475K10CB	4.7	475	A	6	0.5
TDB685K10CB	6.8	685	B	8	0.5
TDC106K10CB	10	106	C	8	0.8
TDD156K10CB	15	156	D	8	1.2
TDE226K10CB	22	226	E	8	1.7
TDF336K10CB	33	336	F	8	2.6
TDG476K10CB	47	476	G	8	3.7
TDH686K10CB	68	686	H	10	5.4
TDK107K10CB	100	107	K	10	8.0
TDN157K10CB	150	157	N	10	12.0
TDP227K10CB	220	227	P	10	17.6

**16 VDC RATED VOLTAGE**

*SURGE VOLTAGE 20 VDC at 85°C and 13 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA155K16CB	1.5	155	A	4	0.5
TDA225K16CB	2.2	225	A	6	0.5
TDA335K16CB	3.3	335	A	6	0.5
TDB475K16CB	4.7	475	B	6	0.6
TDC685K16CB	6.8	685	C	6	0.8
TDD106K16CB	10	106	D	8	1.2
TDE156K16CB	15	156	E	8	1.9
TDF226K16CB	22	226	F	8	2.8
TDF336K16CB	33	336	F	8	4.2
TDJ476K16CB	47	476	J	8	6.0
TDL686K16CB	68	686	L	10	8.7
TDN107K16CB	100	107	N	10	12.8
TDN157K16CB	150	157	N	10	19.2

**20 VDC RATED VOLTAGE**

*SURGE VOLTAGE 25 VDC at 85°C and 16 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA105K20CB	1	105	A	4	0.5
TDA155K20CB	1.5	155	A	4	0.5
TDA225K20CB	2.2	225	A	6	0.5
TDB335K20CB	3.3	335	B	6	0.5
TDC475K20CB	4.7	475	C	6	0.7
TDD685K20CB	6.8	685	D	6	1.0
TDE106K20CB	10	106	E	8	1.6
TDF156K20CB	15	156	F	8	2.4
TDH226K20CB	22	226	H	8	3.5
TDJ336K20CB	33	336	J	8	5.2
TDK476K20CB	47	476	K	8	7.5
TDN686K20CB	68	686	N	8	10.8
TDN107K20CB	100	107	N	10	16.0

**25 VDC RATED VOLTAGE**

*SURGE VOLTAGE 32 VDC at 85°C and 20 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA105K25CB	1	105	A	4	0.5
TDA155K25CB	1.5	155	A	4	0.5
TDA225K25CB	2.2	225	A	6	0.5
TDB335K25CB	3.3	335	B	6	0.6
TDC475K25CB	4.7	475	C	6	0.9
TDD685K25CB	6.8	685	D	6	1.3
TDE106K25CB	10	106	E	8	2.0
TDF156K25CB	15	156	F	8	3.0
TDH226K25CB	22	226	H	8	4.4
TDJ336K25CB	33	336	J	8	6.6
TDM476K25CB	47	476	M	8	9.4
TDN686K25CB	68	686	N	8	13.6

**35 VDC RATED VOLTAGE**

*SURGE VOLTAGE 44 VDC at 85°C and 28 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA104K35CB	0.1	104	A	4	0.5
TDA154K35CB	0.15	154	A	4	0.5
TDA224K35CB	0.22	224	A	4	0.5
TDA334K35CB	0.33	334	A	4	0.5
TDA474K35CB	0.47	474	A	4	0.5
TDA684K35CB	0.68	684	A	4	0.5
TDA105K35CB	1	105	A	4	0.5
TDA155K35CB	1.5	155	A	4	0.5
TDB225K35CB	2.2	225	B	6	0.6
TDC335K35CB	3.3	335	C	6	0.9
TDE475K35CB	4.7	475	E	6	1.3
TDF685K35CB	6.8	685	F	6	1.9
TDF106K35CB	10	106	F	8	2.8

**35 VDC RATED VOLTAGE (Continued)**

*SURGE VOLTAGE 44 VDC at 85°C and 28 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDH156K35CB	15	156	H	8	4.2
TDK226K35CB	22	226	K	8	6.1
TDM336K35CB	33	336	M	8	9.2
TDN476K35CB	47	476	N	8	10.0

**50 VDC RATED VOLTAGE**

*SURGE VOLTAGE 63 VDC at 85°C and 40 VDC at 125°C*

PartNumber	Cap Value μ F	Cap Code	Case Size	DF % (max) @25 °C	DCL (max) μ A
TDA104K50CB	0.1	104	A	4	0.5
TDA154K50CB	0.15	154	A	4	0.5
TDA224K50CB	0.22	224	A	4	0.5
TDA334K50CB	0.33	334	A	4	0.5
TDA474K50CB	0.47	474	A	4	0.5
TDB684K50CB	0.68	684	B	4	0.5
TDC105K50CB	1	105	C	4	0.5
TDD155K50CB	1.5	155	D	4	0.6
TDE225K50CB	2.2	225	E	6	0.8
TDF335K50CB	3.3	335	F	6	1.3
TDG475K50CB	4.7	475	G	6	1.8
TDH685K50CB	6.8	685	H	6	2.7
TDJ106K50CB	10	106	J	8	4.0
TDK156K50CB	15	156	K	8	6.0
TDL226K50CB	22	226	L	8	8.8

Note: Part numbers indicated are for 10% tolerance parts with straight uneven leads and 2.5mm lead spacing. Please refer to ordering information for details of other tolerances and lead styles.