Dipped, Radial Leaded, Solid Tantalum Capacitors

The Type TDL, like the Type TDC, is a low cost alternative to molded solid tantalum capacitors, and is constructed in a tough, radial dipped flame retardant plastic case. It assures the user that it is a top performer with such attributes as low DCL, Low ESR, low impedance and a great value with low in-place cost. The 0.10" and 0.20" lead spacings of the TDL are what distinguishes it from the Type TDC.

Highlights

- Tough plastic case
- Low DCL
- Low ESR and impedance
- Low cost
- Temperature stable
- UL94VO flammability rating
- Resistant to shock and vibration

Specifications

Capacitance Range: 0.10 µF to 330 µF

Voltage Range: 6 WVdc to 50 WVdc at 85 ºC

Tolerance: ±10%, ±20% (±5% by Special Order)

Operating Temperature Range: –55 ºC to +125 ºC (with proper derating)

DC Leakage:
+25 ºC - See ratings limit
+85 ºC - 10 x Ratings limit
+125 ºC - 12.5 x Ratings limit

Capacitance Change Maximum:
–10% @ –55 ºC
+10% @ +85 ºC
+12% @ +125 ºC

Reverse Voltage (Non-continuous):
15% of rated voltage @ 25 ºC
5% of rated voltage @ 85 ºC
1% of rated voltage @ 125 ºC

Reel Packaging:

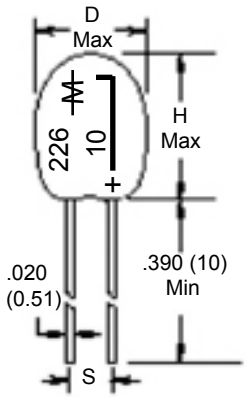
Case Code	Quantity Per Reel
A	1,500
B	1,500
C	1,500
D	1,000
E	1,000
F	1,000

RoHS Compliant:

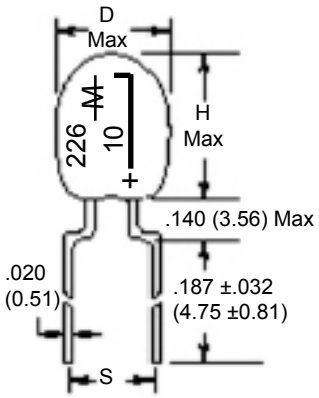
Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Type TDL Solid Tantalum Capacitors

Capacitor Outline Drawing



Lead Form Codes S1, M1



Lead Form Code M2

Dimensions - Inches (Millimeters)					
Case Code	D (Max.)	H (Max.)	Leads S	Leads Code	Quantity Per Reel
A	0180 (4.57)	.280 (7.11)	.100 (2.54) (Standard)	S1	1,500
			.200 (5.08) (Special)	M2	
B	200 (5.08)	.300 (7.62)	.100 (2.54) (Standard)	S1	1,500
			.200 (5.08) (Special)	M2	
C	.260 (6.60)	.360 (9.14)	.100 (2.54) (Standard)	S1	1,500
			.200 (5.08) (Special)	M2	
D	.340 (8.64)	.400 (10.16)	.100 (2.54) (Standard)	S1	1,000
			.200 (5.08) (Special)	M2	
E	.400 (10.16)	.560 (14.22)	.200 (5.08) (Standard)	M1	1,000
F	.440 (11.18)	.680 (17.27)	.200 (5.08) (Standard)	M1	1,000

Listed Catalog Numbers reflect standard lead forms as indicated below.
M2 lead form and lead lengths of .500 (12.7) minumum are available by special order.

Ratings

Cap (µF)	Catalog Part Number	Case Code	Lead Spacing (S)	Max. DCL @ +25ºC (µA)	Max. DF @ +25ºC 120 Hz (%)
6.3 WVdc; 8 Vdc Surge @ 85 ºC 4 WVdc; 5 Vdc Surge @ 125 ºC					
3.3	TDL335*006S1A	A	0.1	0.5	5
3.9	TDL395*006S1A	A	0.1	0.5	5
4.7	TDL475*006S1A	A	0.1	0.5	5
5.6	TDL565*006S1A	A	0.1	0.5	5
6.8	TDL685*006S1A	A	0.1	0.5	5
8.2	TDL825*006S1B	B	0.1	0.5	6
10	TDL106*006S1B	B	0.1	0.5	6
12	TDL126*006S1B	B	0.1	0.6	6
15	TDL156*006S1B	B	0.1	0.7	6
18	TDL186*006S1B	B	0.1	0.9	6
22	TDL226*006S1C	C	0.1	1.1	6
27	TDL276*006S1C	C	0.1	1.3	6
33	TDL336*006S1C	C	0.1	1.6	6
39	TDL396*006S1C	C	0.1	1.9	6
47	TDL476*006S1D	D	0.1	2.3	6
56	TDL566*006S1D	D	0.1	2.7	6
68	TDL686*006S1D	D	0.1	3.3	6
82	TDL826*006S1D	D	0.1	3.9	8
100	TDL107*006S1D	D	0.1	4.8	8
120	TDL127*006M1D	D	0.2	5.8	8
150	TDL157*006M1E	E	0.2	7.2	8
180	TDL187*006M1E	E	0.2	8.6	8
220	TDL227*006M1E	E	0.2	10	8
270	TDL277*006M1E	E	0.2	10	8
330	TDL337*006M1F	F	0.2	10	8

Cap (µF)	Catalog Part Number	Case Code	Lead Spacing (S)	Max. DCL @ +25ºC (µA)	Max. DF @ +25ºC 120 Hz (%)
10 WVdc; 13 Vdc Surge @ 85 ºC 7 WVdc; 9 Vdc Surge @ 125 ºC					
2.2	TDL225*010S1A	A	0.1	0.5	5
2.7	TDL275*010S1A	A	0.1	0.5	5
3.3	TDL335*010S1A	A	0.1	0.5	5
3.9	TDL395*010S1A	A	0.1	0.5	5
4.7	TDL475*010S1A	A	0.1	0.5	5
5.6	TDL565*010S1A	A	0.1	0.5	5
6.8	TDL685*010S1B	B	0.1	0.5	5
8.2	TDL825*010S1B	B	0.1	0.7	6
10	TDL106*010S1B	B	0.1	0.8	6
12	TDL126*010S1C	C	0.1	1.0	6
15	TDL156*010S1C	C	0.1	1.2	6
18	TDL186*010S1C	C	0.1	1.4	6
22	TDL226*010S1C	C	0.1	1.8	6
27	TDL276*010S1C	C	0.1	2.2	6
33	TDL336*010S1D	D	0.1	2.6	6
39	TDL396*010S1D	D	0.1	3.1	6
47	TDL476*010S1D	D	0.1	3.8	6
56	TDL566*010S1D	D	0.1	4.5	6
68	TDL686*010S1D	D	0.1	5.4	6
82	TDL826*010M1E	E	0.2	6.6	8
100	TDL107*010M1E	E	0.2	8.0	8
120	TDL127*010M1E	E	0.2	9.6	8
150	TDL157*010M1E	E	0.2	10.0	8
180	TDL187*010M1E	E	0.2	10.0	8
220	TDL227*010M1F	F	0.2	10.0	8

* Indicates capacitance tolerance: K = ±10%, M = ±20%, (J = ±5%, Special Order)
CDE reserves the right to substitute a tighter tolerance, higher voltage capacitor within the same case size.

Ratings

Cap (µF)	Catalog Part Number	Case Code	Lead Spacing (S)	Max. DCL @ +25ºC (µA)	Max. DF @ +25ºC 120 Hz (%)
16 WVdc; 20 Vdc Surge @ 85 ºC 10 WVdc; 12 Vdc Surge @ 125 ºC					
1.5	TDL155*016S1A	A	0.1	0.5	5
1.8	TDL185*016S1A	A	0.1	0.5	5
2.2	TDL225*016S1A	A	0.1	0.5	5
2.7	TDL275*016S1A	A	0.1	0.5	5
3.3	TDL335*016S1A	A	0.1	0.5	5
3.9	TDL395*016S1B	B	0.1	0.5	5
4.7	TDL475*016S1B	B	0.1	0.6	5
5.6	TDL565*016S1B	B	0.1	0.7	5
6.8	TDL685*016S1B	B	0.1	0.9	5
8.2	TDL825*016S1C	C	0.1	1.0	6
10	TDL106*016S1C	C	0.1	1.3	6
12	TDL126*016S1C	C	0.1	1.5	6
15	TDL156*016S1C	C	0.1	1.8	6
18	TDL186*016S1C	C	0.1	2.2	6
22	TDL226*016S1D	D	0.1	2.6	6
27	TDL276*016S1D	D	0.1	3.2	6
33	TDL336*016S1D	D	0.1	4.0	6
39	TDL396*016M1E	E	0.2	4.7	6
47	TDL476*016M1E	E	0.2	5.6	6
56	TDL566*016M1E	E	0.2	6.8	6
68	TDL686*016M1E	E	0.2	8.2	6
82	TDL826*016M1E	E	0.2	9.8	8
100	TDL107*016M1F	F	0.2	10	8
120	TDL127*016M1F	F	0.2	10	8
150	TDL157*016M1F	F	0.2	10	8
20 WVdc; 26 Vdc Surge @ 85 ºC 13 WVdc; 16 Vdc Surge @ 125 ºC					
1.5	TDL155*020S1A	A	0.1	0.5	5
1.8	TDL185*020S1A	A	0.1	0.5	5
2.2	TDL225*020S1A	A	0.1	0.5	5
2.7	TDL275*020S1A	A	0.1	0.5	5
3.3	TDL335*020S1A	A	0.1	0.5	5
3.9	TDL395*020S1B	B	0.1	0.6	5
4.7	TDL475*020S1B	B	0.1	0.8	5
5.6	TDL565*020S1B	B	0.1	0.9	5
6.8	TDL685*020S1B	B	0.1	1.1	5
8.2	TDL825*020S1B	B	0.1	1.3	6

Cap (µF)	Catalog Part Number	Case Code	Lead Spacing (S)	Max. DCL @ +25ºC (µA)	Max. DF @ +25ºC 120 Hz (%)
20 WVdc; 26 Vdc Surge @ 85 ºC 13 WVdc; 16 Vdc Surge @ 125 ºC					
1.5	TDL155*020S1A	A	0.1	0.5	5
1.8	TDL185*020S1A	A	0.1	0.5	5
2.2	TDL225*020S1A	A	0.1	0.5	5
2.7	TDL275*020S1A	A	0.1	0.5	5
3.3	TDL335*020S1A	A	0.1	0.5	5
3.9	TDL395*020S1B	B	0.1	0.6	5
4.7	TDL475*020S1B	B	0.1	0.8	5
5.6	TDL565*020S1B	B	0.1	0.9	5
6.8	TDL685*020S1B	B	0.1	1.1	5
8.2	TDL825*020S1B	B	0.1	1.3	6
10	TDL106*020S1C	C	0.1	1.6	6
12	TDL126*020S1C	C	0.1	1.9	6
15	TDL156*020S1C	C	0.1	2.4	6
18	TDL186*020S1C	C	0.1	2.9	6
22	TDL226*020S1C	C	0.1	3.5	6
27	TDL276*020M1E	E	0.2	4.3	6
33	TDL336*020M1E	E	0.2	5.3	6
39	TDL396*020M1E	E	0.2	6.2	6
47	TDL476*020M1E	E	0.2	7.5	6
56	TDL566*020M1E	E	0.2	9	6
68	TDL686*020M1E	E	0.2	10	6
82	TDL826*020M1F	F	0.2	10	8
100	TDL107*020M1F	F	0.2	10	8
25 WVdc; 32 Vdc Surge @ 85 ºC 16.5 WVdc; 21.5 Vdc Surge @ 125 ºC					
1.0	TDL105*025S1A	A	0.1	0.5	3
1.2	TDL125*025S1A	A	0.1	0.5	5
1.5	TDL155*025S1A	A	0.1	0.5	5
1.8	TDL185*025S1A	A	0.1	0.5	5
2.2	TDL225*025S1B	B	0.1	0.5	5
2.7	TDL275*025S1B	B	0.1	0.5	5
3.3	TDL335*025S1B	B	0.1	0.7	5
3.9	TDL395*025S1B	B	0.1	0.8	5
4.7	TDL475*025S1C	C	0.1	0.9	5
5.6	TDL565*025S1C	C	0.1	1.1	5
6.8	TDL685*025S1C	C	0.1	1.4	5
8.2	TDL825*025S1C	C	0.1	1.6	6

* Indicates capacitance tolerance: K = ±10%, M = ±20%, (J = ±5%, Special Order)

CDE reserves the right to substitute a tighter tolerance, higher voltage capacitor within the same case size.

Type TDL Solid Tantalum Capacitors

Ratings

Cap (µF)	Catalog Part Number	Case Code	Lead Spacing (S)	Max. DCL @ +25ºC (µA)	Max. DF @ +25ºC 120 Hz (%)
25 WVdc; 32 Vdc Surge @ 85 ºC 16.5 WVdc; 21.5 Vdc Surge @ 125 ºC					
10	TDL106*025S1C	C	0.1	2.0	6
12	TDL126*025S1C	C	0.1	2.4	6
15	TDL156*025S1D	D	0.1	3.0	6
18	TDL186*025S1D	D	0.1	3.6	6
22	TDL226*025S1D	D	0.1	4.4	6
27	TDL276*025M1E	E	0.2	5.4	6
33	TDL336*025M1E	E	0.2	6.6	6
39	TDL396*025M1E	E	0.2	7.8	6
47	TDL476*025M1E	E	0.2	9.4	6
56	TDL566*025M1E	E	0.2	10.0	6
68	TDL686*025M1E	F	0.2	10.0	6
35 WVdc; 46 Vdc Surge @ 85 ºC 23 WVdc; 28 Vdc Surge @ 125 ºC					
.10	TDL104*035S1A	A	0.1	0.5	3
.12	TDL124*035S1A	A	0.1	0.5	3
.15	TDL154*035S1A	A	0.1	0.5	3
.18	TDL184*035S1A	A	0.1	0.5	3
.22	TDL224*035S1A	A	0.1	0.5	3
.27	TDL274*035S1A	A	0.1	0.5	3
.33	TDL334*035S1A	A	0.1	0.5	3
.39	TDL394*035S1A	A	0.1	0.5	3
.47	TDL474*035S1A	A	0.1	0.5	3
.56	TDL564*035S1A	A	0.1	0.5	3
.68	TDL684*035S1A	A	0.1	0.5	3
.82	TDL824*035S1A	A	0.1	0.5	3
1.0	TDL105*035S1B	B	0.1	0.5	3
1.2	TDL125*035S1B	B	0.1	0.5	5
1.5	TDL155*035S1B	B	0.1	0.5	5
1.8	TDL185*035S1B	B	0.1	0.5	5
2.2	TDL225*035S1C	C	0.1	0.6	5
2.7	TDL275*035S1C	C	0.1	0.7	5
3.3	TDL335*035S1C	C	0.1	0.9	5
3.9	TDL395*035S1C	C	0.1	1.0	5
4.7	TDL475*035S1D	D	0.1	1.3	5
5.6	TDL565*035S1D	D	0.1	1.6	5
6.8	TDL685*035S1D	D	0.1	1.9	5
8.2	TDL825*035S1D	D	0.1	2.3	6
10	TDL106*035S1D	D	0.1	2.8	6
12	TDL126*035M1E	E	0.2	3.4	6
15	TDL156*035M1E	E	0.2	4.2	6

Cap (µF)	Catalog Part Number	Case Code	Lead Spacing (S)	Max. DCL @ +25ºC (µA)	Max. DF @ +25ºC 120 Hz (%)
35 WVdc; 46 Vdc Surge @ 85 ºC 23 WVdc; 28 Vdc Surge @ 125 ºC					
18	TDL186*035M1E	E	0.2	5.0	6
22	TDL226*035M1E	E	0.2	6.2	6
27	TDL276*035M1E	E	0.2	7.6	6
33	TDL336*035M1F	F	0.2	9.2	6
39	TDL396*035M1F	F	0.2	10.0	6
47	TDL476*035M1F	F	0.2	10.0	6
50 WVdc; 65 Vdc Surge @ 85 ºC 33 WVdc; 40 Vdc Surge @ 125 ºC					
.10	TDL104*050S1A	A	0.1	0.5	3
.12	TDL124*050S1A	A	0.1	0.5	3
.15	TDL154*050S1A	A	0.1	0.5	3
.18	TDL184*050S1A	A	0.1	0.5	3
.22	TDL224*050S1A	A	0.1	0.5	3
.27	TDL274*050S1A	A	0.1	0.5	3
.33	TDL334*050S1A	A	0.1	0.5	3
.39	TDL394*050S1A	A	0.1	0.5	3
.47	TDL474*050S1B	B	0.1	0.5	3
.56	TDL564*050S1B	B	0.1	0.5	3
.68	TDL684*050S1B	B	0.1	0.5	3
.82	TDL824*050S1B	B	0.1	0.5	3
1.0	TDL105*050S1C	C	0.1	0.5	3
1.2	TDL125*050S1C	C	0.1	0.5	5
1.5	TDL155*050S1C	C	0.1	0.6	5
1.8	TDL185*050S1C	C	0.1	0.7	5
2.2	TDL225*050S1D	D	0.1	0.9	5
2.7	TDL275*050S1D	D	0.1	1.1	5
3.3	TDL335*050S1D	D	0.1	1.3	5
3.9	TDL395*050S1D	D	0.1	1.6	5
4.7	TDL475*050S1D	D	0.1	1.9	5
5.6	TDL565*050S1D	D	0.1	2.2	5
6.8	TDL685*050M1F	F	0.2	2.7	5
8.2	TDL825*050M1F	F	0.2	3.3	6
10	TDL106*050M1F	F	0.2	4.0	6
12	TDL126*050M1F	F	0.2	4.8	6
15	TDL156*050M1F	F	0.2	6.0	6
18	TDL186*050M1F	F	0.2	7.2	6
22	TDL226*050M1F	F	0.2	8.8	6

* Indicates capacitance tolerance: K = ±10%, M = ±20%, (J = ±5%, Special Order)

Part Numbering System

TDL	106	M	050	M	1	F	–F
Series	Capacitance	Tolerance	Voltage	Lead Spacing	Lead Length	Case Code	RoHS Compliant
TDL	**104** = 0.10 µF	**J** = ±5%	**006** = 6.3 Vdc	**S** = .100	**1** = Straight .390 Long	**A**	**–F** = Compliant
	105 = 1.0 µF	**K** = ±10%	**010** = 10 Vdc	**M** = .200		**B**	
	225 = 2.2 µF	**M** = ±20%	**015** = 15 dc	**T** = Tape & Reel	**2** = Straight .187 Long	**C**	**Blank=** Not Compliant
	186 = 18 µF		**020** = 20 Vdc			**D**	
	107 = 100 µF		**025** = 25 Vdc			**E**	
			035 = 35 Vdc			**F**	
			050 = 50 Vdc				

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