

# Type TLH Wet Tantalum Capacitors



Wet Tantalum Capacitors



- Silver Case Technology
- Extended Capacitance Range
- Extremely Low DCL
- Long Operating Life
- Rugged Mechanical Construction
- Wide Operating Temperature Range

## GENERAL SPECIFICATIONS

Operating Temperature:  
-55°C to +125°C

Voltage Range:  
6 to 125 VDC @ 85°C  
4 to 85 VDC @ 125°C

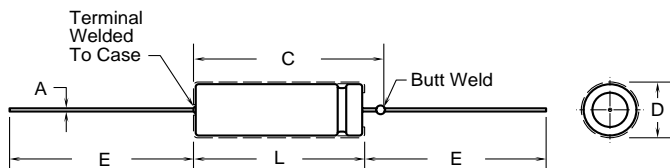
Capacitance:  
6.8 to 2200  $\mu$ F

Tolerance Range:  
 $\pm$ 20%,  $\pm$ 10%  
( $\pm$ 5% on special order)

## TYPICAL APPLICATIONS

Filtering, coupling, bypass circuits  
Critical timing circuits  
Low source impedance circuits  
High charging current circuits

### Physical Specifications



### Part Number Nomenclature

**TLH 276 K 060 C 1 A**  
(1) (2) (3) (4) (5) (6) (7)

- TLH Series - Silver Case/Extended Capacitance Ratings
- Capacitance Code (Expressed in Picofarads)  
First 2 digits: Significant Figures  
Third digit: Number of zeros (Example: 276 = 27 $\mu$ F)
- Capacitance Tolerance:  
M =  $\pm$ 20%, K =  $\pm$ 10%, J =  $\pm$ 5%
- DC Voltage Rating:  
Zeros are used to precede the voltage rating where necessary to complete the three digit block
- C = Temp Range
- 1 = Mylar Sleeve
- Case Size Code

### INCHES

### DIMENSIONS

### MILLIMETERS

Case #	MIL	Uninsulated		Insulated		C	A Lead Dia Nom	E Lead Lgth $\pm$ .250	Approximate Weight (Grams) (1 gram = .035 Oz.)	Case #	MIL	Uninsulated		Insulated		C	A Lead Dia Nom	E Lead Lgth $\pm$ 6.35
		D	L	D	L							D	L	D	L			
A	T1	.188	.453	.219	.608	.734	.025 #22	1.500	1.4	A	T1	4.78	11.51	5.56	15.45	18.64	.64 #22	38.10
B	T2	.281	.641	.312	.796	.922	.025 #22	2.250	4.2	B	T2	7.14	16.28	7.92	20.22	23.41	.64 #22	57.15
C	T3	.375	.766	.406	.921	1.047	.025 #22	2.250	7.4	C	T3	9.53	19.46	10.31	23.40	26.59	.64 #22	57.15
F	T4	.375	1.062	.406	1.217	1.343	.025 #22	2.250	7.8	F	T4	9.53	26.97	10.31	30.91	34.11	.64 #22	57.15

Cap $\mu$ F	Case Code	Catalog Number	Max DCL $\mu$ A		Max ESR $\Omega$	Max Z $\Omega$	Max % Cap Change From 25°C		
			25°C	85°C/125°C			+25°C	-55°C	+85°C
<b>6 WVDC; 7 VDC Surge @ 85°C 4 WVDC; 4.7 VDC Surge @ 125°C</b>									
220	A	TLH227*006C1A	2	9	3.2	36	-64	+13	+21
820	B	TLH827*006C1B	3	14	2.5	18	-88	+16	+21
1500	C	TLH158*006C1C	5	20	1.5	18	-90	+20	+25
2200	F	TLH228*006C1F	6	24	1.1	13	-90	+25	+30

Cap $\mu$ F	Case Code	Catalog Number	Max DCL $\mu$ A		Max ESR $\Omega$	Max Z $\Omega$	Max % Cap Change From 25°C		
			25°C	85°C/125°C			+25°C	-55°C	+85°C
<b>10 WVDC; 11.5 VDC Surge @ 85°C 7 WVDC; 8 VDC Surge @ 125°C</b>									
150	A	TLH157*010C1A	2	9	3.1	54	-55	+13	+20
560	B	TLH567*010C1B	3	16	2.4	27	-77	+16	+21
1200	C	TLH128*010C1C	5	20	1.5	18	-88	+20	+25
1500	F	TLH158*010C1F	7	25	1.0	15	-88	+25	+30

Cap $\mu$ F	Case Code	Catalog Number	Max DCL $\mu$ A		Max ESR $\Omega$	Max Z $\Omega$	Max % Cap Change From 25°C		
			25°C	85°C/125°C			+25°C	-55°C	+85°C
<b>8 WVDC; 9.2 VDC Surge @ 85°C 5 WVDC; 5.7 VDC Surge @ 125°C</b>									
180	A	TLH187*008C1A	2	9	3.3	45	-60	+13	+20
680	B	TLH687*008C1B	3	14	2.2	22	-83	+16	+21
1500	C	TLH158*008C1C	5	20	1.5	18	-90	+20	+25
1800	F	TLH188*008C1F	7	25	1.0	14	-90	+25	+30

Cap $\mu$ F	Case Code	Catalog Number	Max DCL $\mu$ A		Max ESR $\Omega$	Max Z $\Omega$	Max % Cap Change From 25°C		
			25°C	85°C/125°C			+25°C	-55°C	+85°C
<b>15 WVDC; 17.2 VDC Surge @ 85°C 10 WVDC; 11.5 VDC Surge @ 125°C</b>									
100	A	TLH107*015C1A	2	9	4.0	72	-44	+13	+16
390	B	TLH397*015C1B	3	16	2.4	31	-66	+16	+20
820	C	TLH827*015C1C	6	24	1.7	22	-77	+20	+25
1000	F	TLH108*015C1F	8	32	1.2	17	-77	+25	+30

\* Insert Proper Letter Code For Tolerance: M =  $\pm$ 20%, K =  $\pm$ 10%, J =  $\pm$ 5%

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Cap $\mu$ F	Case Code	Catalog Number	Max DCL $\mu$ A		Max ESR $\Omega$ + 25°C	Max Z $\Omega$ -55°C	Max % Cap Change From 25°C		
			25°C	85°C/ 125°C			-55°C	+85°C	+125°C

25 WVDC; 28.8 VDC Surge @ 85°C 15 WVDC; 17.2 VDC Surge @ 125°C									
68	A	TLH686*025C1A	2	9	4.1	90	-40	+12	+16
270	B	TLH277*025C1B	3	16	2.6	33	-62	+13	+16
560	C	TLH567*025C1C	7	28	1.8	24	-72	+20	+25
680	F	TLH687*025C1F	8	32	1.2	19	-72	+25	+30

30 WVDC; 34.5 VDC Surge @ 85°C 20 WVDC; 23 VDC Surge @ 125°C									
56	A	TLH566*030C1A	2	9	5.0	100	-38	+12	+15
220	B	TLH227*030C1B	3	16	2.5	36	-60	+13	+16
470	C	TLH477*030C1C	8	32	1.9	25	-65	+20	+25
560	F	TLH567*030C1F	9	36	1.3	20	-65	+25	+30

50 WVDC; 57.5 VDC Surge @ 85°C 30 WVDC; 34.5 VDC Surge @ 125°C									
33	A	TLH336*050C1A	2	9	5.0	135	-29	+10	+12
120	B	TLH127*050C1B	4	24	2.5	49	-42	+12	+15
270	C	TLH277*050C1C	8	32	1.8	29	-46	+20	+25
330	F	TLH337*050C1F	9	36	1.2	22	-46	+25	+30

Cap $\mu$ F	Case Code	Catalog Number	Max DCL $\mu$ A		Max ESR $\Omega$ + 25°C	Max Z $\Omega$ -55°C	Max % Cap Change From 25°C		
			25°C	85°C/ 125°C			-55°C	+85°C	+125°C

60 WVDC; 69 VDC Surge @ 85°C 40 WVDC; 46 VDC Surge @ 125°C									
27	A	TLH276*060C1A	3	12	5.0	144	-24	+10	+12
100	B	TLH107*060C1B	4	20	2.5	54	-36	+12	+15
220	C	TLH227*060C1C	8	32	1.8	29	-40	+16	+20
270	F	TLH277*060C1F	9	36	1.2	23	-45	+20	+25

75 WVDC; 86.2 VDC Surge @ 85°C 50 WVDC; 57.5 VDC Surge @ 125°C									
22	A	TLH226*075C1A	3	12	5.0	157	-19	+10	+12
82	B	TLH826*075C1B	4	24	2.3	63	-30	+12	+15
180	C	TLH187*075C1C	9	36	1.8	30	-35	+16	+20
220	F	TLH227*075C1F	10	40	2.2	24	-40	+20	+25

100 WVDC; VDC Surge @ 85°C 65 WVDC; VDC Surge @ 125°C									
10	A	TLH106*100C1A	3	12	6.0	200	-17	+10	+12
39	B	TLH396*100C1B	5	24	3.5	80	-20	+12	+15
68	C	TLH686*100C1C	10	40	2.2	40	-30	+14	+16
120	F	TLH127*100C1F	12	48	2.8	30	-35	+15	+17

125 WVDC; VDC Surge @ 85°C 85 WVDC; VDC Surge @ 125°C									
6.8	A	TLH685*125C1A	3	12	11.7	300	-14	+10	+12
27	B	TLH276*125C1B	5	24	3.5	90	-18	+12	+15
47	C	TLH476*125C1C	10	40	2.2	50	-26	+14	+16
82	F	TLH826*125C1F	12	48	2.8	32	-30	+15	+17

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