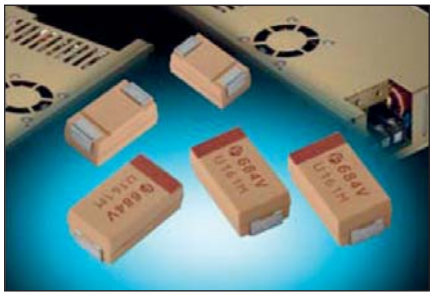
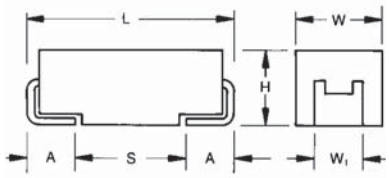
TAW Series

Tantalum Solid Electrolytic Fused Capacitors





FEATURES

- Thin film fuse connected in series with capacitor
- Protection from possible damaging from high DC leakage current (short circuit failure)
- CV range: 6.8-100µF / 10-50V
- Application: servers

APPLICATIONS

- Server power supplies

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

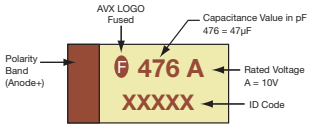
RoHS COMPLIANT

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) –0.10 (0.004)	W_1±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
D	2917	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
W_1 dimension applies to the termination width for A dimensional area only.								

MARKING

D CASE



HOW TO ORDER

TAW	D	476	*	010	R	0500
Type	**Case Size** See table above	**Capacitance Code** pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** K=±10% M=±20%	**Rated DC Voltage** 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 035=35Vdc 050=50Vdc	**Packaging** R = Pure Tin 7" Reel S = Pure Tin 13" Reel	**ESR in mΩ**

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C						
Capacitance Range:	6.8 µF to 100 µF						
Capacitance Tolerance:	±10%; ±20%						
Rated Voltage (V_R)	≤ +85°C:	10	16	20	25	35	50
Category Voltage (V_C)	≤ +125°C:	7	10	13	17	23	33
Surge Voltage (V_S)	≤ +85°C:	13	20	26	32	46	65
Surge Voltage (V_S)	≤ +125°C:	8	13	16	20	28	40
Fuse Off	I > 4A in 1s, insulating resistance > 10MΩ						
Fuse Continuous Current Capability	0.75A						
Temperature Range:	-55°C to +125°C						
Reliability:	1% per 1000 hours at 85°C, Vr with 0.1Ω/V series impedance, 60% confidence level						

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Tantalum Solid Electrolytic Fused Capacitors

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R) to 85°C					
µF	Code	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
1.0	105						
2.2	225						
4.7	475						
6.8	685					D(600)	D(700)
10	106				D(600)	D(600)	D(700)
22	226			D(500)	D(600)		
33	336		D(600)	D(500)			
47	476	D(500)	D(800)				
100	107	D(500)					

Available Ratings (ESR ratings in mOhms in brackets)

Engineering samples - please contact manufacturer

*Codes under development – subject to change

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @ 100kHz	MSL	100kHz RMS Current (mA)		
											25°C	85°C	125°C
10 Volt @ 85°C													
TAWD476*010#0500	D	47	10	85	7	125	4.7	6	500	1	548	493	219
TAWD107*010#0500	D	100	10	85	7	125	10	8	500	1	548	493	219
16 Volt @ 85°C													
TAWD336*016#0600	D	33	16	85	10	125	5.3	6	600	1	500	450	200
TAWD476*016#0800	D	47	16	85	10	125	7.5	7	800	1	433	390	173
20 Volt @ 85°C													
TAWD226*020#0500	D	22	20	85	13	125	4.4	6	500	1	548	493	219
TAWD336*020#0500	D	33	20	85	13	125	6.6	6	500	1	548	493	219
25 Volt @ 85°C													
TAWD106*025#0600	D	10	25	85	17	125	2.5	6	600	1	500	450	200
TAWD226*025#0600	D	22	25	85	17	125	5.5	6	600	1	500	450	200
35 Volt @ 85°C													
TAWD685*035#0600	D	6.8	35	85	23	125	2.4	6	600	1	500	450	200
TAWD106*035#0600	D	10	35	85	23	125	3.5	6	600	1	500	450	200
50 Volt @ 85°C													
TAWD685*050#0700	D	6.8	50	85	33	125	3.4	6	700	1	463	417	185
TAWD106*050#0700	D	10	50	85	33	125	5	6	700	1	463	417	185

Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalogue limit post mounting.

For typical weight and composition see page 202.

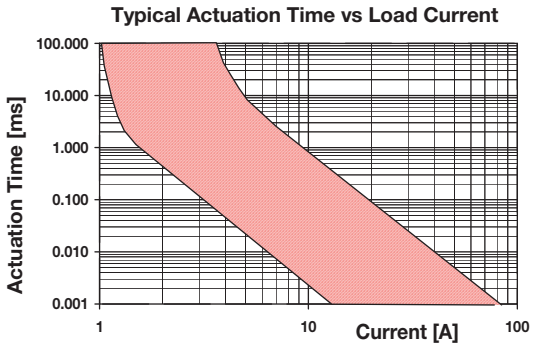
NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

QUALIFICATION TABLE

<table>
<tr><th rowspan="2">TEST</th><th colspan="9">TAW series (Temperature range -55ºC to +125ºC)</th></tr>
<tr><th colspan="3">Condition</th><th colspan="6">Characteristics</th></tr>
<tr><td>Endurance</td><td colspan="3" rowspan="5">Determine after application of rated voltage for 2000 +48/-0 hours at 85±2ºC and then leaving 1-2 hours at room temperature. Also determine of 125ºC temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V.</td><td>Visual examination</td><td colspan="5">no visible damage</td></tr>
<tr><td></td><td></td><td></td><td>DCL</td><td colspan="5">initial limit</td></tr>
<tr><td></td><td></td><td></td><td>ΔC/C</td><td colspan="5">within ±10% of initial value</td></tr>
<tr><td></td><td></td><td></td><td>DF</td><td colspan="5">initial limit</td></tr>
<tr><td></td><td></td><td></td><td>ESR</td><td colspan="5">1.25 x initial limit</td></tr>
<tr><td>Humidity</td><td colspan="3" rowspan="5">Determine after storage without applied voltage at 65±2ºC and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature.</td><td>Visual examination</td><td colspan="5">no visible damage</td></tr>
<tr><td></td><td></td><td></td><td>DCL</td><td colspan="5">initial limit</td></tr>
<tr><td></td><td></td><td></td><td>ΔC/C</td><td colspan="5">within ±10% of initial value</td></tr>
<tr><td></td><td></td><td></td><td>DF</td><td colspan="5">1.2 x initial limit</td></tr>
<tr><td></td><td></td><td></td><td>ESR</td><td colspan="5">1.25 x initial limit</td></tr>
<tr><td rowspan="8">Temperature Stability</td><td>Step</td><td>Temperature°C</td><td>Duration(min)</td><td></td><td>+20ºC</td><td>-55ºC</td><td>+20ºC</td><td>+85ºC</td><td>+125ºC</td><td>+20ºC</td></tr>
<tr><td>1</td><td>+20±2</td><td>15</td><td>DCL</td><td>IL*</td><td>n/a</td><td>IL*</td><td>10 x IL*</td><td>12.5 x IL*</td><td>IL*</td></tr>
<tr><td>2</td><td>-55+0/-3</td><td>15</td><td>ΔC/C</td><td>n/a</td><td>+0/-10%</td><td>±5%</td><td>+10/-0%</td><td>+12/-0%</td><td>±5%</td></tr>
<tr><td>3</td><td>+20±2</td><td>15</td><td>DF</td><td>IL*</td><td>1.5 x IL*</td><td>IL*</td><td>1.5 x IL*</td><td>2 x IL*</td><td>IL*</td></tr>
<tr><td>4</td><td>+85+3/-0</td><td>15</td><td rowspan="2">ESR</td><td rowspan="2">1.25 x IL*</td><td rowspan="2">2.5 x IL*</td><td rowspan="2">1.25 x IL*</td><td rowspan="2">1.25 x IL*</td><td rowspan="2">1.25 x IL*</td><td rowspan="2">1.25 x IL*</td></tr>
<tr><td>5</td><td>+125+3/-0</td><td>15</td></tr>
<tr><td>6</td><td>+20±2</td><td>15</td></tr>
<tr><td>Surge Voltage</td><td colspan="3">Test temperature: 125ºC+3/0ºC
Test voltage: Category voltage at 125ºC
Surge voltage: 1.3 x category voltage at 125ºC
Series protection resistance 1000±100Ω
Discharge resistance: 1000Ω
Number of cycles: 1000x
Cycle duration: 6 min; 30 sec charge,
5 min 30 sec discharge</td><td>Visual examination</td><td colspan="5">no visible damage</td></tr>
<tr><td></td><td></td><td></td><td>DCL</td><td colspan="5">initial limit</td></tr>
<tr><td></td><td></td><td></td><td>ΔC/C</td><td colspan="5">within ±5% of initial value</td></tr>
<tr><td></td><td></td><td></td><td>DF</td><td colspan="5">initial limit</td></tr>
<tr><td></td><td></td><td></td><td>ESR</td><td colspan="5">1.25 x initial limit</td></tr>
</table>

*Initial Limit

TYPICAL FUSE ACTUATION



Note: for a different fuse characteristic requirements please contact manufacturer