Wet Tantalum Capacitors With Hermetic Seal



FEATURES

- All tantalum, hermetically sealed case
- Terminations: axial leaded
- Utilizes proven Vishay SuperTan® technology
- High and stable capacitance
- High reliability, rugged design
- 150 µF to 4700 µF
- 6 V_{DC} to 15 V_{DC}
- -55 °C to +125 °C

LINKS TO ADDITIONAL RESOURCES

3D Models

Vishay STA represents a major breakthrough in Wet Tantalum capacitor technology. Its unique cathode system, also used in the ST, provides the highest capacitance per unit volume available. The STA combines the inherent reliability of wet tantalum with the capacitance stability of solid tantalum, and there are no circuit impedance restrictions. The range is exceptionally well suited for low voltage filtering and energy storage applications.

APPLICATIONS NOTES

a) No continuous reverse voltage permissible.

b) Transient reverse voltage surges are acceptable under the following conditions:

The peak reverse voltage does not exceed 1.5 V and the peak current times the duration of the reverse transient does not exceed 0.05 As. In addition, the repetition frequency of the reverse voltage surge is less than 10 Hz.

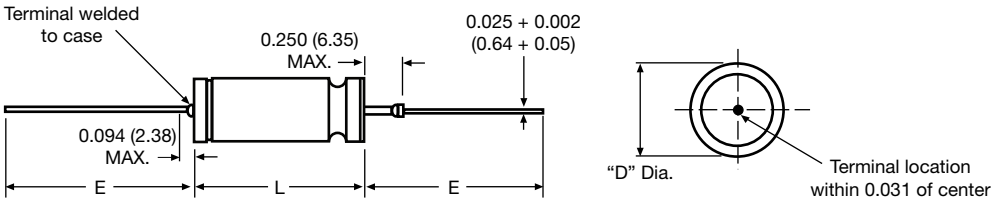
c) The peak of the applied AC ripple and the applied DC voltage must not exceed the DC voltage rating of the capacitor.

d) Ripple current ratings by part number at 85 °C and 40 kHz are included in the table. Ripple current correction factors for other temperatures and frequencies are given on the next page.

ORDERING INFORMATION

STA	2700	15	T4	M	I
STYLE	CAPACITANCE µF	85 °C RATED DC VOLTAGE	CASE CODE	CAPACITANCE TOLERANCE	INSULATING SLEEVE
				M = ± 20 % K = ± 10 %	I = insulated X = uninsulated

DIMENSIONS in inches [millimeters]



CASE CODE	D MAX. INSULATED	D ± 0.016 [0.41] UNINSULATED	L + 0.031/- 0.016 [+ 0.79/- 0.41]	E ± 0.250 [6.35]
T1	0.219 [5.56]	0.188 [4.78]	0.453 [11.51]	1.500 [38.10]
T2	0.312 [7.92]	0.281 [7.14]	0.641 [16.28]	2.250 [57.15]
T3	0.406 [10.31]	0.375 [9.52]	0.766 [19.46]	2.250 [57.15]
T4	0.406 [10.31]	0.375 [9.52]	1.062 [26.97]	2.250 [57.15]

Notes

- Material at egress is tantalum
- Insulation sleeving will lap over the ends of the capacitor case
- Tinned nickel leads, solderable and weldable
- Approx. weight
  T1: 2.3 g, T2: 5.7 g
  T3: 9.4 g, T4: 14.8 g

For technical questions, contact: tantalum@vishay.com

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RATINGS AND CASE CODES

µF	6 V	10 V	15 V
150			T1
330		T1	
470	T1		
680			T2
1000		T2	
1500	T2		T3
2200		T3	
2700			T4
3300	T3	T4	
4700	T4		

STANDARD RATINGS

CAPACITANCE AT 25 °C 120 Hz (µF)	CASE CODE	MAX. ESR (Ω)		MAX. DCL (µA)		MAX. DF AT 120 Hz (%)	MAX. IMP AT - 55 °C AND 120 Hz (Ω)	MAX. CAPACITANCE CHANGE (%)		AC RIPPLE 85 °C 40 kHz (mA) RMS	PART NUMBER [1]
		120 Hz	140 Hz	25 °C	85 °C			-55 °C	85 °C		
6 V_{DC} AT 85 °C											
470	T1	0.9	0.4	1	3	46	12	-75	+10	1500	STA470-6T1MI
1500	T2	0.7	0.3	3	8	101	9	-80	+10	2200	STA1500-6T2MI
3300	T3	0.5	0.2	8	30	150	7	-90	+18	2800	STA3300-6T3MI
4700	T4	0.3	0.2	10	35	155	5	-90	+18	3500	STA4700-6T4MI
10 V_{DC} AT 85 °C											
330	T1	1.0	0.5	1	3	35	15	-70	+8	1400	STA330-10T1MI
1000	T2	0.8	0.3	3	10	70	8	-80	+10	2200	STA1000-10T2MI
2200	T3	0.5	0.3	5	30	109	6	-85	+15	2800	STA2200-10T3MI
3300	T4	0.4	0.2	8	30	119	3	-85	+18	3500	STA3300-10T4MI
15 V_{DC} AT 85 °C											
150	T1	1.1	0.5	1	3	16	25	-45	+8	1400	STA150-15T1MI
680	T2	0.8	0.3	2	10	49	10	-65	+10	2200	STA680-15T2MI
1500	T3	0.6	0.2	5	25	81	9	-80	+10	2700	STA1500-15T3MI
2700	T4	0.4	0.2	4	25	109	4	-80	+15	3400	STA2700-15T4MI

Note

[1] Part numbers shown are for units with ± 20 % capacitance tolerance and insulated capacitors.
For units with ± 10 % capacitance tolerance change the letter “M” to “K”.
For units without insulation, substitute “X” for “I”.
For RoHS-compliant add the “E3” for suffix

RIPPLE CURRENT MULTIPLIERS VS. FREQUENCY, TEMPERATURE, AND APPLIES PEAK VOLTAGE

FREQUENCY OF APPLIED RIPPLE CURRENT		120 Hz				800 Hz				1 kHz				10 kHz				40 kHz				100 kHz			
AMBIENT STILL AIR TEMP. IN °C		≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125	≤ 55	85	105	125
% of 85 °C rated peak voltage	100 %	0.60	0.39	-	-	0.71	0.43	-	-	0.72	0.46	-	-	0.88	0.55	-	-	1.0	0.63	-	-	1.1	0.69	-	-
	90 %	0.60	0.46	-	-	0.71	0.55	-	-	0.72	0.55	-	-	0.88	0.67	-	-	1.0	0.77	-	-	1.1	0.85	-	-
	80 %	0.60	0.52	0.35	-	0.71	0.62	0.42	-	0.72	0.62	0.42	-	0.88	0.76	0.52	-	1.0	0.87	0.59	-	1.1	0.96	0.65	-
	70 %	0.60	0.58	0.44	-	0.71	0.69	0.52	-	0.72	0.70	0.52	-	0.88	0.85	0.64	-	1.0	0.97	0.73	-	1.1	1.07	0.80	-
	66 2/3 %	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32	0.88	0.88	0.68	0.40	1.0	1.0	0.77	0.45	1.1	1.1	0.85	0.50

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