

## Wet Tantalum Capacitors with Hermetic Seal



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.

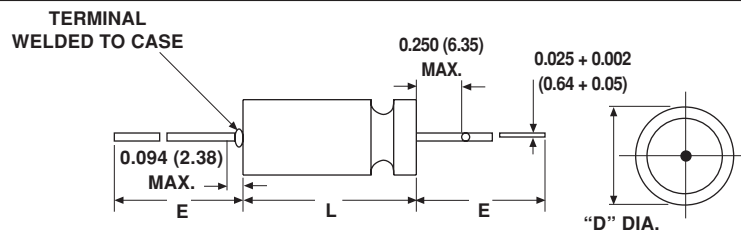
### FEATURES

- Very High Capacitance
- 150 to 4700 $\mu$ F
- 6 to 15VDC
- - 55°C to + 85°C

### APPLICATION NOTES

- No continuous reverse voltage permissible.
- Transient reverse voltage surges are acceptable under the following conditions:  
The peak reverse voltage does not exceed 1.5 volts and the peak current times the duration of the reverse transient does not exceed 0.05 ampere seconds. In addition, the repetition frequency of the reverse voltage surge is less than 10Hz.
- The peak of the applied AC ripple and the applied DC voltage must not exceed the DC voltage rating of the capacitor.
- Ripple current ratings by part number at 85 °C and 40kHz are included in the table. Ripple current correction factors for other temperatures and frequencies are given on the next page.

### DIMENSIONS in inches (millimeters)



CASE CODE	D MAX. INSULATED	D $\pm$ 0.016 (0.41) UNINSULATED	L + 0.031 - 0.016 (- 0.41)	E $\pm$ 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)	0.250 (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)

Approx. Weight T1: 2.3 grams, T2: 5.7 grams  
T3: 9.4 grams, T4: 14.8 grams

### NOTES:

- Material at egress is tantalum.
- Insulation sleeving will lap over the ends of the capacitor case.
- Tinned nickel leads, solderable and weldable

### ORDERING INFORMATION

STA	2700	15	T4	M	I
STYLE	CAPACITANCE $\mu$ F	85°C RATED DC VOLTAGE	CASE CODE	CAPACITANCE TOLERANCE	INSULATING SLEEVE
				M = $\pm$ 20% K = $\pm$ 10%	I = Insulated X = Uninsulated

<b>RATINGS AND CASE CODES</b>											
CAP. at 25°C & 120Hz $\mu\text{F}$	CASE CODE	Max. ESR $\Omega$		Max. DCL $\mu\text{A}$		Max. DF at 120Hz %	Max. IMP at -55°C & 120Hz $\Omega$	Max. CAPACITANCE CHANGE %		AC RIPPLE 85°C 40kHz mA rms	PART NUMBER
		120Hz	40kHz	25°C	85°C			-55°C	85°C		
<b>6 VDC at 85°C</b>											
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
<b>10 VDC at 85°C</b>											
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
<b>15 VDC at 85°C</b>											
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

<b>RIPPLE CURRENT MULTIPLIERS VERSUS FREQUENCY, TEMPERATURE AND APPLIES PEAK VOLTAGE</b>																									
FREQUENCY OF APPLIED RIPPLE CURRENT		120Hz				800Hz				1kHz				10kHz				40kHz				100kHz			
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	0.45	-	-	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