

SuperTan® Extended (10004) Capacitors, Wet Tantalum Capacitors with Hermetic Seal



FEATURES

- Ultra high capacitance
- All tantalum, hermetically sealed case
- Utilizes proven Vishay SuperTan® technology
- High and stable capacitance
- High reliability, rugged design
- Axial through-hole terminations: Standard tin/lead (Sn/Pb)

PERFORMANCE CHARACTERISTICS

Operating Temperature: - 55 °C to + 85 °C (to + 125 °C with voltage derating)

Capacitance Tolerance: At 120 Hz, + 25 °C. ± 20 % standard. ± 10 % available as special.

DC Leakage Current (DCL Max.): At + 25 °C and above: Leakage current shall not exceed the values listed in the Standard Ratings tables.

Life Test: Capacitors are capable of withstanding a 2000 h life test at a temperature of + 85 °C at the applicable rated DC working voltage.

ORDERING INFORMATION			
<u>10004</u>	<u>-29</u>	<u>K</u>	<u>S</u>
DSCC DRAWING NUMBER	DASH NUMBER	CAPACITANCE TOLERANCE	
		K = ± 10 % M = ± 20 %	S = Sleeved U = Unsleeved

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO	Drawing no. 10004
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DIMENSIONS in inches [millimeters]				
CASE CODE	D ± 0.016 [0.41]	MAX. INSULATED (DIA.)	L ₁ + 0.031 [0.79] UNINSULATED	E ± 0.250 [6.35] MAX.
T1	0.188 [4.78]	0.219 [5.56]	0.453 [11.51]	1.500 [38.10]
T2	0.281 [7.14]	0.312 [7.92]	0.641 [16.28]	2.250 [57.15]
T3	0.375 [9.52]	0.406 [10.31]	0.766 [19.46]	2.250 [57.15]
T4	0.375 [9.52]	0.406 [10.31]	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



STANDARD RATINGS															
CAPACITANCE (μ F)	VOLTAGE	CASE CODE	MAX. ESR AT		TYP. ESR AT		MAX. DCL AT			MAX. CAPACITANCE CHANGE AT			Z - 55 °C (Ω)	AC RIPPLE 85 °C 40 kHz mA RMS	PART NUMBER
			120 Hz (Ω)	1 kHz (Ω)	1 kHz (Ω)	1 kHz (Ω)	+ 25 °C (μ A)	+ 85 °C/ + 125 °C (μ A)	- 55 °C (%)	+ 85 °C (%)	+ 125 °C (%)	- 55 °C (%)			
10 V _{DC} AT + 85 °C, SURGE = 11.5 V _{DC} ; 7 V _{DC} AT + 125 °C															
4700	10	T3	0.35	< 0.200	16	100	- 80	10	20	3.50	4000	10004-01(1)(2)			
10 000	10	T4	0.25	< 0.100	25	150	- 85	20	35	3.00	5000	10004-02(1)(2)			
16 V _{DC} AT + 85 °C, SURGE = 18.4 V _{DC} ; 11 V _{DC} AT + 125 °C															
3300	16	T3	0.35	< 0.200	16	100	- 80	10	15	3.50	4000	10004-03(1)(2)			
6000	16	T4	0.30	< 0.150	25	150	- 80	15	20	3.00	4500	10004-04(1)(2)			
25 V _{DC} AT + 85 °C, SURGE = 28.8 V _{DC} ; 15 V _{DC} AT + 125 °C															
4000	25	T4	0.35	< 0.200	25	125	- 80	15	20	5.00	4250	10004-05(1)(2)			
30 V _{DC} AT + 85 °C, SURGE = 34.5 V _{DC} ; 20 V _{DC} AT + 125 °C															
3300	30	T4	0.35	< 0.200	25	125	- 80	20	25	4.00	2750	10004-06(1)(2)			
35 V _{DC} AT + 85 °C, SURGE = 40.3 V _{DC} ; 22 V _{DC} AT + 125 °C															
2800	35	T4	0.35	< 0.200	25	125	- 80	20	30	4.50	4000	10004-07(1)(2)			
50 V _{DC} AT + 85 °C, SURGE = 57.5 V _{DC} ; 30 V _{DC} AT + 125 °C															
1500	50	T4	0.35	< 0.215	15	110	- 70	20	20	6.00	3500	10004-08(1)(2)			
2200	50	T4	0.60	< 0.400	25	125	- 80	25	30	4.50	3000	10004-15(1)(2)			
60 V _{DC} AT + 85 °C, SURGE = 69 V _{DC} ; 40 V _{DC} AT + 125 °C															
1000	60	T4	0.50	< 0.300	20	120	- 40	10	15	5.50	3500	10004-09(1)(2)			
75 V _{DC} AT + 85 °C, SURGE = 86.3 V _{DC} ; 50 V _{DC} AT + 125 °C															
180	75	T2	1.50	< 0.500	5	25	- 35	15	20	30.00	2000	10004-10(1)(2)			
470	75	T3	0.60	< 0.325	25	100	- 45	10	25	10.00	3000	10004-11(1)(2)			
750	75	T4	0.50	< 0.400	20	120	- 35	10	15	6.50	3500	10004-12(1)(2)			
100 V _{DC} AT + 85 °C, SURGE = 115 V _{DC} ; 65 V _{DC} AT + 125 °C															
400	100	T4	0.70	< 0.400	10	120	- 40	6	12	15.00	3000	10004-13(1)(2)			
125 V _{DC} AT + 85 °C, SURGE = 144 V _{DC} ; 85 V _{DC} AT + 125 °C															
240	125	T4	0.80	< 0.600	15	150	- 35	6	12	20.00	2500	10004-14(1)(2)			

Note

- Part number definitions:
 - (1) K = 10 %
 - M = 20 %
 - (2) S = Sleeved or insulated
 - U = Unsleeved

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				
	≤ 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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