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

FEATURES

Pb-free Available

RoHS* Available

Vishay SuperTan® Extended (STE) 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 STE 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. Ideal for designs targeting the military and aerospace industry.

The SuperTan® Extended (STE) is housed in an all tantalum, hermetically sealed case and is manufactured to withstand high stress and hazardous environments.

- Axial through-hole terminations: Standard tin/lead (Sn/Pb) 100 % tin (RoHS compliant) available
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Note

* This datasheet provides information about parts that are RoHS-compliant and/or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information/tables in this datasheet for details.

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.

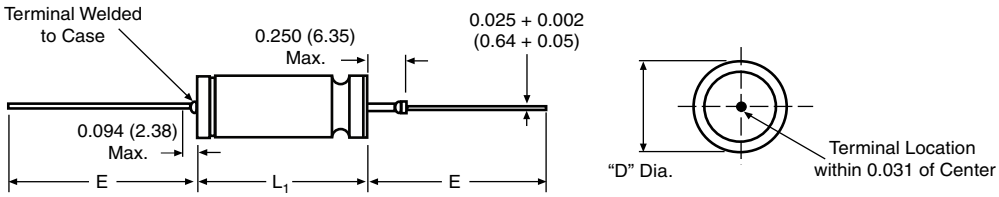
ORDERING INFORMATION

STE	6000	16	T4	M	I	E3
TYPE	CAPACITANCE µF	DC VOLTAGE RATING AT + 85 °C	CASE SIZE	CAPACITANCE TOLERANCE	INSULATING SLEEVE	RoHS COMPLIANT
				M = ± 20 % K = ± 10 %	I = Insulated X = Uninsulated	E3 = 100 % tin termination (RoHS compliant) Blank = SnPb termination (standard design)

Note

- Packaging: The use of formed plastic trays for packaging this type of axial lead component is standard. Tape and reel is not recommended due to the unit weight.

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 (µF)	VOLTAGE	CASE CODE	PART NUMBER	MAX. ESR AT + 25 °C 120 Hz (Ω)	TYP. ESR AT + 25 °C 1 kHz (Ω)	MAX. DCL AT		MAX. CAPACITANCE CHANGE AT			MAX. IMP. AT - 55 °C 120 Hz (Ω)	AC RIPPLE 85 °C 40 kHz mA RMS
						+ 25 °C (µA)	+ 85 °C/ + 125 °C (µA)	- 55 °C (%)	+ 85 °C (%)	+ 125 °C (%)		
10 V_{DC} at + 85 °C; 7 V_{DC} at + 125 °C												
680	***10***	***T1***	***Preliminary value, contact marketing***									
2000	***10***	***T2***	***Preliminary value, contact marketing***									
4700	10	T3	STE4700-10T3MI	0.35	< 0.200	16	100	- 80	10	20	3.50	4000
10 000	10	T4	STE10000-10T4MI	0.25	< 0.100	25	150	- 85	20	35	3.00	5000
16 V_{DC} at + 85 °C; 11 V_{DC} at + 125 °C												
430	***16***	***T1***	***Preliminary value, contact marketing***									
1200	***16***	***T2***	***Preliminary value, contact marketing***									
3300	16	T3	STE3300-16T3MI	0.35	< 0.200	16	100	- 80	10	15	3.50	4000
6000	16	T4	STE6000-16T4MI	0.30	< 0.150	25	150	- 80	15	20	3.00	4500
25 V_{DC} at + 85 °C; 15 V_{DC} at + 125 °C												
270	***25***	***T1***	***Preliminary value, contact marketing***									
1000	***25***	***T2***	***Preliminary value, contact marketing***									
2200	***25***	***T3***	***Preliminary value, contact marketing***									
4000	25	T4	STE4000-25T4MI	0.35	< 0.150	25	125	- 80	15	20	5.00	4250
30 V_{DC} at + 85 °C; 20 V_{DC} at + 125 °C												
220	***30***	***T1***	***Preliminary value, contact marketing***									
820	***30***	***T2***	***Preliminary value, contact marketing***									
1800	***30***	***T3***	***Preliminary value, contact marketing***									
3300	30	T4	STE3300-30T4MI	0.35	< 0.200	25	125	- 80	20	25	4.00	2750
35 V_{DC} at + 85 °C; 22 V_{DC} at + 125 °C												
180	***35***	***T1***	***Preliminary value, contact marketing***									
680	***35***	***T2***	***Preliminary value, contact marketing***									
1500	***35***	***T3***	***Preliminary value, contact marketing***									
2800	35	T4	STE2800-35T4MI	0.35	< 0.200	25	125	- 80	20	30	4.50	4000

STANDARD RATINGS

CAPACITANCE (µF)	VOLTAGE	CASE CODE	PART NUMBER	MAX. ESR AT + 25 °C 120 Hz (Ω)	TYP. ESR AT + 25 °C 1 kHz (Ω)	MAX. DCL AT		MAX. CAPACITANCE CHANGE AT			MAX. IMP. AT - 55 °C 120 Hz (Ω)	AC RIPPLE 85 °C 40 kHz mA RMS
						+ 25 °C (µA)	+ 85 °C/ + 125 °C (µA)	- 55 °C (%)	+ 85 °C (%)	+ 125 °C (%)		
50 V_{DC} at + 85 °C; 30 V_{DC} at + 125 °C												
110	50	T1	STE110-50T1MI	1.60	< 1.000	2	7.5	- 40	10	15	40.00	1500
350	***50***	***T2***	***Preliminary value, contact marketing***									
900	50	T3	STE900-50T3MI	0.90	< 0.300	15	125	- 75	20	20	10.00	2500
1500	50	T3	STE1500-50T3MI	1.00	< 0.300	25	130	- 85	25	30	8.00	2400
1500	50	T4	STE1500-50T4MI	0.35	< 0.215	15	110	- 70	20	20	6.00	3500
2200	50	T4	STE2200-50T4MI	0.60	< 0.400	25	125	- 80	25	30	4.50	3000
60 V_{DC} at + 85 °C; 40 V_{DC} at + 125 °C												
68	***60***	***T1***	***Preliminary value, contact marketing***									
220	***60***	***T2***	***Preliminary value, contact marketing***									
560	60	T3	STE560-60T3MI	0.90	< 0.300	20	120	- 70	12	15	10.00	2500
1000	60	T4	STE1000-60T4MI	0.50	< 0.300	20	120	- 40	10	15	5.50	3500
75 V_{DC} at + 85 °C; 50 V_{DC} at + 125 °C												
56	***75***	***T1***	***Preliminary value, contact marketing***									
180	75	T2	STE180-75T2MI	1.50	< 0.500	5	25	- 35	15	20	30.00	2000
470	75	T3	STE470-75T3MI	0.60	< 0.325	25	100	- 45	10	25	10.00	3000
750	75	T4	STE750-75T4MI	0.50	< 0.400	20	120	- 35	10	15	6.50	3500
100 V_{DC} at + 85 °C; 65 V_{DC} at + 125 °C												
27	***100***	***T1***	***Preliminary value, contact marketing***									
86	***100***	***T2***	***Preliminary value, contact marketing***									
220	100	T3	STE220-100T3MI	1.40	< 0.200	5	25	- 55	10	15	18.00	2500
400	100	T4	STE400-100T4MI	0.70	< 0.400	10	120	- 40	6	12	15.00	3000
125 V_{DC} at + 85 °C; 85 V_{DC} at + 125 °C												
18	***125***	***T1***	***Preliminary value, contact marketing***									
56	***125***	***T2***	***Preliminary value, contact marketing***									
150	***125***	***T3***	***Preliminary value, contact marketing***									
240	125	T4	STE240-125T4MI	0.80	< 0.600	15	150	- 35	6	12	20.00	2500

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