

Solid Tantalum Chip Capacitors TANTAMOUNT[®], Hi-Rel COTS, Ultra-Low ESR, Conformal Coated Case


FEATURES

- High reliability; Weibull failure rate grading available
- Surge current testing per MIL-PRF-55365 options available
- Ultra-low ESR
- Tin/lead (SnPb) termination available
- Compliant to RoHS directive 2002/95/EC


RoHS*
COMPLIANT

PERFORMANCE CHARACTERISTICS
Operating Temperature: - 55 °C to + 85 °C

(To + 125 °C with voltage derating)

Capacitance Range: 10 µF to 1500 µF

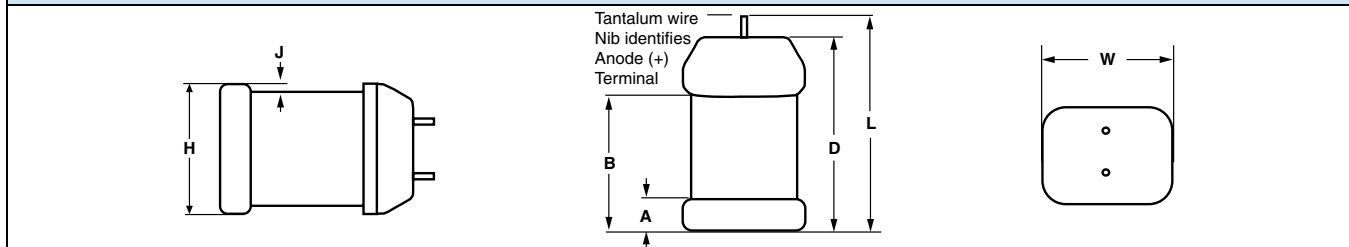
Capacitance Tolerance: ± 10 %, ± 20 % standard

Voltage Rating: 4 WVDC to 63 WVDC

ORDERING INFORMATION

T97	R	227	K	020	E	S	A
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	TERMINATION/PACKAGING (Available options are series dependent)	RELIABILITY LEVEL	SURGE CURRENT
See Ratings and Case Code Table.	This is expressed in pF. The first two digits are the significant figures. The third is the number of zeros to follow.	K = ± 10 % M = ± 20 %	This is expressed in V. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 V).	E = Sn/Pb Solder/7" (178 mm) reel L = Sn/Pb Solder/7" (178 mm), 1/2 reel C = 100 % Tin/7" (178 mm), reel H = 100 % Tin/7" (178 mm), 1/2 reel	A = 1.0 % Weibull B = 0.1 % Weibull ⁽¹⁾ S = 40 h Burn-in Z = Non-Established Reliability	A = 10 cycles at + 25 °C B = 10 cycles at - 55 °C / + 85 °C S = 3 cycles at 25 °C	

Note
⁽¹⁾ Available on select ratings. See ratings table on page 2.

DIMENSIONS in inches [millimeters]


CASE CODE	L	W	H	A	B	D (REF.)	J (MAX.)
E	0.287 ± 0.012 [7.3 ± 0.3]	0.173 ± 0.016 [4.4 ± 0.4]	0.157 ± 0.016 [4.0 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.180 ± 0.025 [4.6 ± 0.6]	0.253 [6.4]	0.004 [0.1]
F	0.287 ± 0.012 [7.3 ± 0.3]	0.238 ± 0.016 [6.0 ± 0.4]	0.187 ± 0.016 [4.7 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.180 ± 0.025 [4.6 ± 0.6]	0.243 [6.2]	0.004 [0.1]
R	0.287 ± 0.012 [7.3 ± 0.3]	0.238 + 0.016/- 0.024 [6.0 + 0.4/- 0.6]	0.142 ± 0.016 [3.6 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.180 ± 0.025 [4.6 ± 0.6]	0.243 [6.2]	0.004 [0.1]
V	0.287 ± 0.012 [7.3 ± 0.3]	0.173 ± 0.016 [4.4 ± 0.4]	0.079 [2.0] Max.	0.051 ± 0.012 [1.3 ± 0.3]	0.180 ± 0.025 [4.6 ± 0.6]	0.253 [6.4]	0.004 [0.1]
Z	0.287 ± 0.012 [7.3 ± 0.3]	0.238 ± 0.016 [6.0 ± 0.4]	0.238 ± 0.016 [6.0 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.180 ± 0.025 [4.6 ± 0.6]	0.243 [6.2]	0.004 [0.1]
D	0.287 ± 0.012 [7.3 ± 0.3]	0.173 ± 0.016 [4.4 ± 0.4]	0.137 [3.5] Max.	0.051 ± 0.012 [1.3 ± 0.3]	0.180 ± 0.025 [4.6 ± 0.6]	0.253 [6.4]	0.004 [0.1]
M	0.303 ± 0.012 [7.7 ± 0.3]	0.259 ± 0.016 [6.6 ± 0.4]	0.141 ± 0.016 [3.6 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.196 ± 0.025 [5.0 ± 0.6]	0.259 [6.6]	0.004 [0.1]
H	0.303 ± 0.012 [7.7 ± 0.3]	0.259 ± 0.016 [6.6 ± 0.4]	0.204 ± 0.016 [5.2 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.196 ± 0.025 [5.0 ± 0.6]	0.259 [6.6]	0.004 [0.1]
N	0.303 ± 0.012 [7.7 ± 0.3]	0.259 ± 0.016 [6.6 ± 0.4]	0.259 ± 0.016 [6.6 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.196 ± 0.025 [5.0 ± 0.6]	0.259 [6.6]	0.004 [0.1]

Note

- The anode termination (D less B) will be a minimum of 0.012" [0.3 mm]
- * Pb containing terminations are not RoHS compliant, exemptions may apply



RATINGS AND CASE CODE										
µF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V	63 V	75 V
10									D*	
15								E/R		
22								R	F	
33								F		
47							R	Z/N*		
68						R				
100										
150						F				
220				E	R	M				
330		V	E		H					
470	V	E	E	H*						
680	E	E	R							
1000	E/R	R	F							
1500	R									
2200										

STANDARD RATINGS						
CAPACITANCE (µF)	CASE CODE	PART NUMBER*	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (mΩ)	MAX. RIPPLE 100 kHz IRMS (A)
4 WVDC at + 85 °C, 2.7 WVDC at + 125 °C						
470	V	T97V477(1)004(2)(3)(5)	19	8	30	2.2
680	E	T97E687(1)004(2)(3)(5)	27	6	25	2.9
1000	E	T97E108(1)004(2)(4)(5)	40	8	20	3.3
1000	R	T97R108(1)004(2)(3)(5)	40	8	18	3.7
1500	R	T97R158(1)004(2)(3)(5)	60	8	15	4.1
6.3 WVDC at + 85 °C, 4 WVDC at + 125 °C						
330	V	T97V337(1)6R3(2)(6)(5)	21	8	35	2.0
470	E	T97E477(1)6R3(2)(3)(5)	30	6	30	2.7
680	E	T97E687(1)6R3(2)(3)(5)	43	6	25	2.9
1000	R	T97R108(1)6R3(2)(3)(5)	63	8	20	3.5
10 WVDC at + 85 °C, 7 WVDC at + 125 °C						
330	E	T97E337(1)010(2)(4)(5)	33	6	35	2.5
470	E	T97E477(1)010(2)(3)(5)	47	6	28	2.8
680	R	T97R687(1)010(2)(3)(5)	68	6	28	3.0
1000	F	T97F108(1)010(2)(3)(5)	100	20	120	1.4
16 WVDC at + 85 °C, 10 WVDC at + 125 °C						
220	E	T97E227(1)016(2)(4)(5)	35	8	60	2.3
470	H	T97H477(1)016(2)(3)(5)*	75	14	100	1.4
20 WVDC at + 85 °C, 13 WVDC at + 125 °C						
220	R	T97R227(1)020(2)(3)(5)	44	8	80	1.8
330	F	T97F337(1)020ESA	66	10	100	1.6
330	H	T97H337(1)020(2)(4)(5)	66	10	100	1.6
25 WVDC at + 85 °C, 17 WVDC at + 125 °C						
68	R	T97R686(1)025(2)(4)(5)	17	6	100	1.6
150	F	T97F157(1)025(2)(4)(5)	38	8	80	1.8
220	M	T97M227(1)025(2)(3)(5)	55	8	100	1.6
35 WVDC at + 85 °C, 23 WVDC at + 125 °C						
47	R	T97R476(1)035(2)(3)(5)	17	6	80	1.8
50 WVDC at + 85 °C, 33 WVDC at + 125 °C						
15	E	T97E156(1)050(2)(4)(5)	8	6	300	0.85
15	R	T97R156(1)050(2)(4)(5)	8	6	250	1.0
22	R	T97R226(1)050(2)(3)(5)	11	6	170	1.2
33	F	T97F336(1)050(2)(3)(5)	17	6	150	1.3
47	Z	T97Z476(1)050(2)(3)(5)	24	6	145	1.35
47	N	T97N476(1)050(2)(4)(5)*	24	6	150	1.35
63 WVDC at + 85 °C, 42 WVDC at + 125 °C						
10	D	T97D106(1)063(2)(4)(5)*	10	6	350	1.0
22	F	T97F226(1)063(2)(3)(5)	14	6	200	1.1

Notes

* Contact factory for availability

(1) Capacitance tolerance: K, M

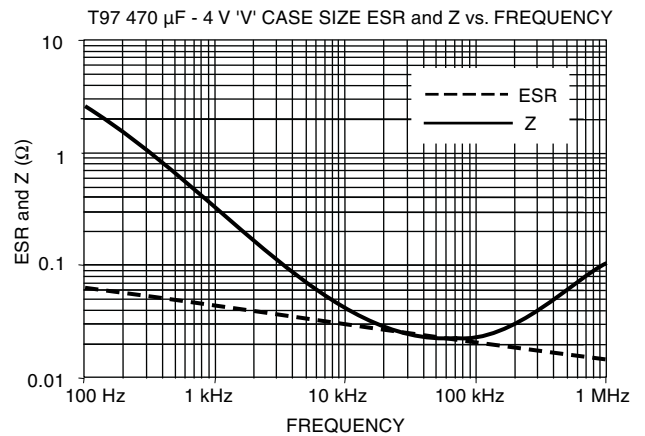
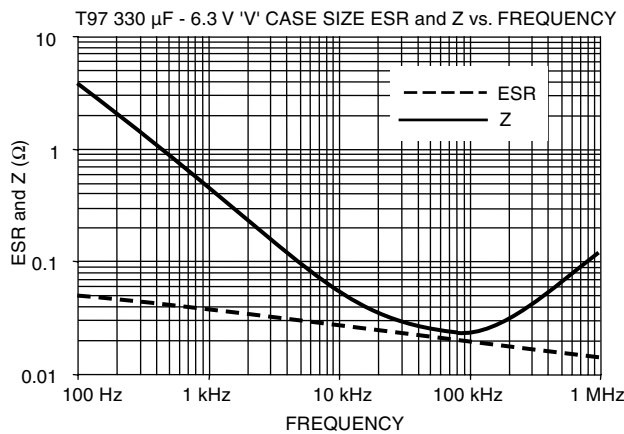
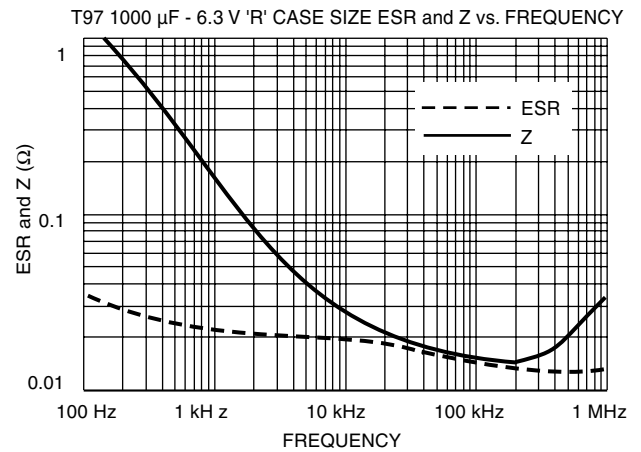
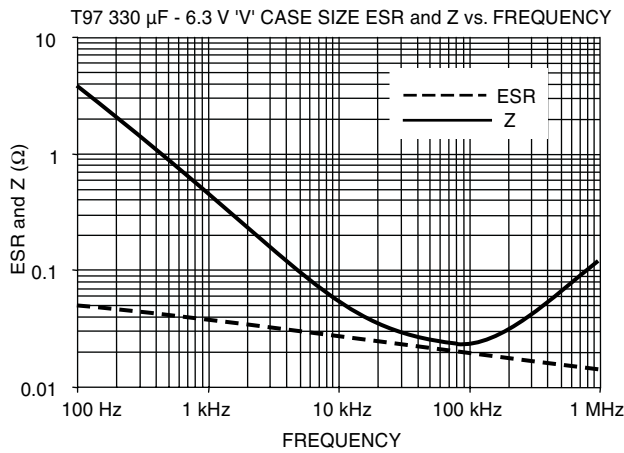
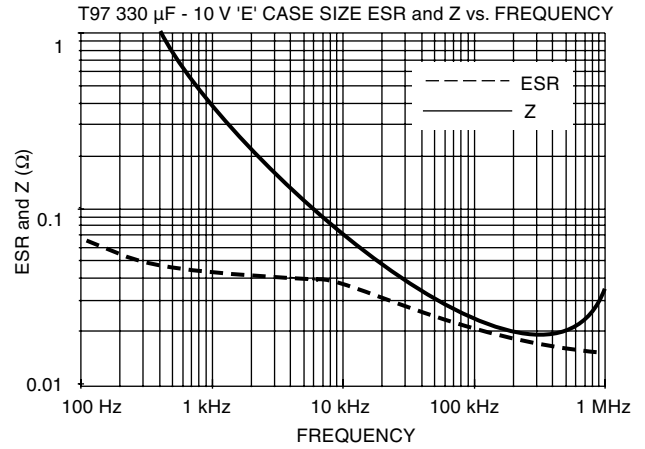
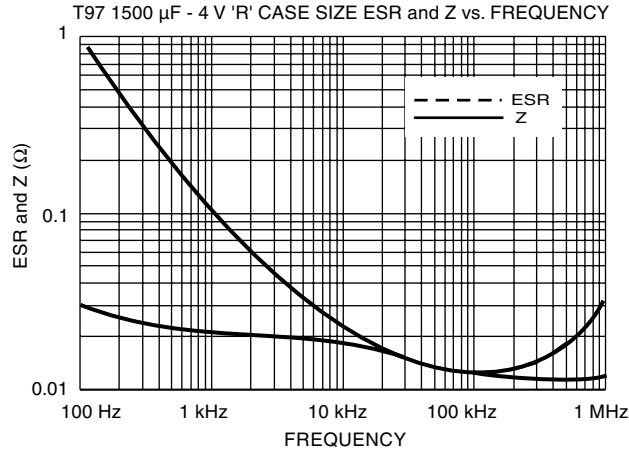
(2) Termination and packaging: C, E, H, L

(3) Reliability level: A, S, Z

(4) Reliability level: A, B, S, Z

(5) Surge current: A, B, S

(6) Reliability level: S, Z

TYPICAL CURVES




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