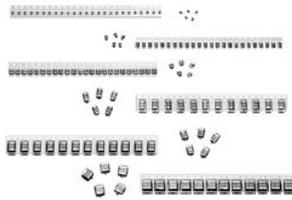


Solid Tantalum Chip Capacitors, TANTAMOUNT[®], High-Rel COTS, Conformal Coated Case



FEATURES

- High reliability; Weibull grading available
- Surge current testing per MIL-PRF-55365 options available
- Standard and low ESR options
- Terminations: SnPb, standard. 100 % tin available
- Compliant to RoHS directive 2002/95/EC



PERFORMANCE/ELECTRICAL CHARACTERISTICS

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

Capacitance Range: 0.15 µF to 680 µF

Capacitance Tolerance: ± 20 %, ± 10 % standard

Voltage Rating: 4 WV_{DC} to 50 WV_{DC}

ORDERING INFORMATION								
T95	D	107	K	010	E	A	S	
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	TERMINATION AND PACKAGING	RELIABILITY LEVEL	SURGE CURRENT	ESR
	See Ratings and Case Codes table.	This is expressed in picofarads. 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 volts. 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) reels L: Sn/Pb solder/7" (178 mm) ½ reel C: 100 % tin/7" (178 mm) reels H: 100 % tin/7" (178 mm) ½ reel Y = R-case only; Sn/Pb solder, side mounted, 7" reels	A = 1.0 % Weibull B = 0.1 % Weibull ⁽¹⁾ S = Hi-rel standard 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	S = Std L = Low

Note

⁽¹⁾ Weibull 0.1 % may not be available on all ratings. See detailed notes in ratings table or contact marketing for availability

DIMENSIONS in inches [millimeters]							
CASE CODE	L (MAX.)	W	H	A	B	D (REF.)	J (MAX.)
A	0.146 [3.7]	0.072 ± 0.012 [1.8 ± 0.3]	0.056 ± 0.012 [1.4 ± 0.3]	0.031 ± 0.012 [0.80 ± 0.30]	0.085 ± 0.016 [2.2 ± 0.4]	0.115 [2.9]	0.004 [0.1]
B	0.158 [4.0]	0.110 + 0.012 - 0.016 [2.8 + 0.3 - 0.4]	0.075 + 0.012 - 0.024 [1.9 + 0.3 - 0.6]	0.031 ± 0.012 [0.80 ± 0.30]	0.097 ± 0.016 [2.5 ± 0.4]	0.138 [3.5]	0.004 [0.1]
C	0.281 [7.1]	0.126 ± 0.012 [3.2 ± 0.3]	0.098 ± 0.012 [2.5 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.30]	0.180 ± 0.024 [4.6 ± 0.6]	0.236 [6.0]	0.004 [0.1]
D	0.293 [7.5]	0.170 ± 0.012 [4.3 ± 0.3]	0.110 ± 0.012 [2.8 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.30]	0.180 ± 0.024 [4.6 ± 0.6]	0.253 [6.4]	0.004 [0.1]
R	0.283 [7.2]	0.235 + 0.012/- 0.024 [6.0 + 0.3/- 0.6]	0.136 ± 0.012 [3.5 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.30]	0.180 ± 0.024 [4.6 ± 0.6]	0.243 [6.2]	0.004 [0.1]
S	0.143 [3.63]	0.072 ± 0.008 [1.83 ± 0.2]	0.048 ± 0.008 [1.22 ± 0.2]	0.023 ± 0.010 [0.58 ± 0.25]	0.085 ± 0.015 [2.16 ± 0.37]	0.115 [2.9]	0.004 [0.1]

* Pb containing terminations are not RoHS compliant, exemptions may apply



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Vishay Sprague

DIMENSIONS in inches [millimeters]							
CASE CODE	L (MAX.)	W	H	A	B	D (REF.)	J (MAX.)
V	0.143 [3.63]	0.104 ± 0.010 [2.65 ± 0.25]	0.051 ± 0.010 [1.3 ± 0.25]	0.023 ± 0.010 [0.58 ± 0.25]	0.085 ± 0.015 [2.16 ± 0.37]	0.115 [2.9]	0.004 [0.1]
X	0.285 [7.24]	0.104 ± 0.010 [2.65 ± 0.25]	0.051 ± 0.010 [1.3 ± 0.25]	0.040 ± 0.020 [1.0 ± 0.5]	0.200 ± 0.027 [5.08 ± 0.69]	0.243 [6.2]	0.004 [0.1]
Y	0.285 [7.24]	0.104 ± 0.010 [2.65 ± 0.25]	0.069 ± 0.010 [1.75 ± 0.25]	0.040 ± 0.020 [1.0 ± 0.5]	0.200 ± 0.027 [5.08 ± 0.69]	0.243 [6.2]	0.004 [0.1]
Z	0.285 [7.24]	0.104 ± 0.010 [2.65 ± 0.25]	0.104 ± 0.010 [2.65 ± 0.25]	0.040 ± 0.020 [1.0 ± 0.5]	0.200 ± 0.027 [5.08 ± 0.69]	0.243 [6.2]	0.004 [0.1]

Note

- The anode termination (D less B) will be a minimum of 0.010" (0.25 mm)

RATINGS AND CASE CODES								
µF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.15							S	
0.22							S	
0.33							S	
0.47							S	
0.68						S	S	
1.0						S	S	
1.5					S	S	V	
2.2				S	S	V	X	
3.3			S	S	V			
4.7		S	S	V	X	X	Y	C
6.8	S	S	V	A/X	X	Y	Z	C/D
10	S	V	X	X	Y	C/Y	Z	R
15	V	X	B/X	B/Y	Z	Z	D/R	R
22	X	X	Y	B/Z	Z		R	R
33	X		Z	Z		D/R	R	
47	Y	Y	Z		R	D/R	R	
68	Y			R		D/R		
100	Z	Z	R	C/D	R	R		
120			D/R		R			
150			D/R	D	R			
180		R		R				
220		D/R	D/R	R				
270	D							
330	R	C	D/R	R				
390		R						
470		D	R					
680		R	R					



STANDARD RATINGS						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μ A)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
4 WV_{DC} AT + 85 °C, 2.7 WV_{DC} AT + 125 °C						
6.8	S	T95S685(1)004(2)(3)(4)L	0.5	6	N/A	2.000
10	S	T95S106(1)004(2)(3)(4)L	0.5	6	N/A	2.000
15	V	T95V156(1)004(2)(3)(4)L	0.6	6	N/A	1.500
22	X	T95X226(1)004(2)(3)(4)L	0.9	6	N/A	1.000
33	X	T95X336(1)004(2)(3)(4)L	1.3	6	N/A	1.000
47	Y	T95Y476(1)004(2)(3)(4)L	1.9	6	N/A	0.600
68	Y	T95Y686(1)004(2)(3)(4)L	2.7	6	N/A	0.600
100	Z	T95Z107(1)004(2)(3)(4)L	4.0	6	N/A	0.400
270	D	T95D277(1)004(2)(3)(4)(5)	10.8	8	0.13	0.060
330	R	T95R337(1)004(2)(3)(4)(5)	13.2	8	0.13	0.080
6.3 WV_{DC} AT + 85 °C, 4 WV_{DC} AT 125 °C						
4.7	S	T95S475(1)6R3(2)(3)(4)L	0.5	6	N/A	2.000
6.8	S	T95S685(1)6R3(2)(3)(4)L	0.5	6	N/A	2.000
10	V	T95V106(1)6R3(2)(3)(4)L	0.6	6	N/A	1.500
15	X	T95X156(1)6R3(2)(3)(4)L	0.9	6	N/A	1.000
22	X	T95X226(1)6R3(2)(3)(4)L	1.4	6	N/A	1.000
47	Y	T95Y476(1)6R3(2)(3)(4)L	2.8	6	N/A	0.600
100	Z	T95Z107(1)6R3(2)(3)(4)L	6.0	6	N/A	0.400
180	R	T95R187(1)6R3(2)(3)(4)(5)	10.8	8	0.13	0.080
220	D	T95R227(1)6R3(2)(6)(4)(5)	22.0	8	0.14	0.065
220	R	T95R227(1)6R3(2)(3)(4)(5)	13.2	8	0.13	0.080
330	C	T95C337(1)6R3(2)(6)(4)(5)	20.8	8	0.08	0.170
390	R	T95R397(1)6R3(2)(3)(4)(5)	23.4	8	0.13	0.045
470	D	T95D477(1)6R3(2)(3)(4)(5)	28.2	10	0.13	0.060
680	R	T95R687(1)6R3(2)(3)(4)(5)	40.8	12	0.09	0.045
10 WV_{DC} AT + 85 °C, 7 WV_{DC} AT 125 °C						
3.3	S	T95S335(1)010(2)(3)(4)L	0.5	6	N/A	2.500
4.7	S	T95S475(1)010(2)(3)(4)L	0.5	6	N/A	2.000
6.8	V	T95V685(1)010(2)(3)(4)L	0.7	6	N/A	2.000
10	X	T95X106(1)010(2)(3)(4)L	1.0	6	N/A	1.500
15	B	T95B156(1)010(2)(6)(4)(5)	2.4	6	0.75	0.550
15	X	T95X156(1)010(2)(3)(4)L	1.5	6	N/A	1.000
22	Y	T95Y226(1)010(2)(6)(4)L	2.2	6	N/A	0.600
33	Z	T95Z336(1)010(2)(3)(4)L	3.3	6	N/A	0.400
47	Z	T95Z476(1)010(2)(3)(4)L	4.7	6	N/A	0.400
100	R	T95R107(1)010(2)(3)(4)(5)	10.0	8	0.14	0.075
120	D	T95D127(1)010(2)(6)(4)(5)	12.0	8	0.14	0.085
120	R	T95R127(1)010(2)(6)(4)(5)	12.0	8	0.14	0.070
150	D	T95D157(1)010(2)(3)(4)(5)	15.0	8	0.14	0.075
150	R	T95R157(1)010(2)(3)(4)(5)	15.0	8	0.13	0.065
220	D	T95D227(1)010(2)(6)(4)(5)	22.0	8	0.14	0.065
220	R	T95R227(1)010(2)(3)(4)(5)	22.0	8	0.13	0.055
330	D	T95D337(1)010(2)(6)(4)(5)	33.0	8	0.14	0.065
330	R	T95R337(1)010(2)(3)(4)(5)	33.0	8	0.13	0.045
470	R	T95R477(1)010(2)(6)(4)(5)	47.0	8	0.13	0.045
680	R	T95R687(1)010(2)(6)(4)(5)	68.0	14	0.09	N/A



Solid Tantalum Chip Capacitors,
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STANDARD RATINGS						
CAPACITANCE (μF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μA)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
16 WV_{DC} AT + 85 °C, 10 WV_{DC} AT + 125 °C						
2.2	S	T95S225(1)016(2)(3)(4)L	0.5	6	N/A	3.500
3.3	S	T95S335(1)016(2)(3)(4)L	0.5	6	N/A	2.500
4.7	V	T95V475(1)016(2)(3)(4)L	0.8	6	N/A	2.000
6.8	X	T95X685(1)016(2)(3)(4)L	1.1	6	N/A	1.500
6.8	A	T95A685(1)016(2)(3)(4)(5)	1.1	6	2.8	0.800
10	X	T95X106(1)016(2)(3)(4)L	1.6	6	N/A	1.500
15	B	T95B156(1)016(2)(3)(4)(5)	2.4	6	0.75	0.550
15	Y	T95Y156(1)016(2)(3)(4)L	2.4	6	N/A	0.600
22	B	T95B226(1)016(2)(6)(4)(5)	3.5	6	0.75	0.500
22	Z	T95Z226(1)016(2)(3)(4)L	3.5	6	N/A	0.400
33	Z	T95Z336(1)016(2)(3)(4)L	5.3	6	N/A	0.400
68	R	T95R686(1)016(2)(3)(4)(5)	10.9	6	0.6	0.095
100	C	T95C107(1)016(2)(6)(4)(5)	16.0	8	0.6	0.090
100	D	T95D107(1)016(2)(6)(4)(5)	16.0	8	0.14	0.080
150	D	T95D157(1)016(2)(3)(4)(5)	24.0	8	0.14	0.085
180	R	T95R187(1)016(2)(6)(4)(5)	28.8	8	0.13	0.055
220	R	T95R227(1)016(2)(6)(4)(5)	35.2	8	0.12	0.055
330	R	T95R337(1)016(2)(6)(4)(5)	52.8	14	0.11	0.055
20 WV_{DC} AT + 85 °C, 13 WV_{DC} AT + 125 °C						
1.5	S	T95S155(1)020(2)(3)(4)L	0.5	6	N/A	3.500
2.2	S	T95S225(1)020(2)(3)(4)L	0.5	6	N/A	3.500
3.3	V	T95V335(1)020(2)(3)(4)L	0.7	6	N/A	3.000
4.7	X	T95X475(1)020(2)(3)(4)L	0.9	6	N/A	1.500
6.8	X	T95X685(1)020(2)(3)(4)L	1.4	6	N/A	1.500
10	Y	T95Y106(1)020(2)(3)(4)L	2.0	6	N/A	1.000
15	Z	T95Z156(1)020(2)(3)(4)L	3.0	6	N/A	0.600
22	Z	T95Z226(1)020(2)(3)(4)L	4.4	6	N/A	0.400
47	R	T95R476(1)020(2)(3)(4)L	9.4	6	0.20	0.110
100	R	T95R107(1)020(2)(6)(4)S	20.0	8	0.14	N/A
120	R	T95R127(1)020(2)(6)(4)(5)	24.0	8	0.14	0.080
150	R	T95R157(1)020(2)(3)(4)(5)	30.0	8	0.14	0.075
25 WV_{DC} AT + 85 °C, 17 WV_{DC} AT + 125 °C						
0.68	S	T95S684(1)025(2)(3)(4)L	0.5	4	N/A	5.000
1	S	T95S105(1)025(2)(3)(4)L	0.5	4	N/A	3.500
1.5	S	T95S155(1)025(2)(3)(4)L	0.5	6	N/A	3.500
2.2	V	T95V225(1)025(2)(3)(4)L	0.6	6	N/A	2.000
4.7	X	T95X475(1)025(2)(3)(4)L	1.2	6	N/A	1.500
6.8	Y	T95Y685(1)025(2)(3)(4)L	1.7	6	N/A	1.000
10	C	T95C106(1)025(2)(3)(4)(5)	2.5	6	0.57	0.280
10	Y	T95Y106(1)025(2)(3)(4)L	2.5	6	N/A	1.000
15	Z	T95Z156(1)025(2)(3)(4)L	3.8	6	N/A	0.600
33	D	T95D336(1)025(2)(3)(4)(5)	8.3	6	0.26	0.130
33	R	T95R336(1)025(2)(3)(4)(5)	8.3	6	0.25	0.130
47	D	T95D476(1)025(2)(6)(4)(5)	11.8	6	0.26	0.130
47	R	T95R476(1)025(2)(3)(4)(5)	11.8	6	0.20	0.108
68	D	T95D686(1)025(2)(6)(4)(5)	17.0	8	0.26	0.200
68	R	T95R686(1)025(2)(6)(4)(5)	17.0	6	0.20	0.095
100	R	T95R107(1)025(2)(6)(4)(5)	25.0	8	0.20	0.090



STANDARD RATINGS						
CAPACITANCE (μ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (μ A)	MAX. DF AT + 25 °C 120 Hz (%)	STD. (S) MAX. ESR AT + 25 °C 100 kHz (Ω)	LOW (L) MAX. ESR AT + 25 °C 100 kHz (Ω)
35 WV_{DC} AT + 85 °C, 23 WV_{DC} AT + 125 °C						
0.15	S	T95S154(1)035(2)(3)(4)L	0.5	4	N/A	18.000
0.22	S	T95S224(1)035(2)(3)(4)L	0.5	4	N/A	15.000
0.33	S	T95S334(1)035(2)(3)(4)L	0.5	4	N/A	12.000
0.47	S	T95S474(1)035(2)(3)(4)L	0.5	4	N/A	9.000
0.68	S	T95S684(1)035(2)(3)(4)L	0.5	4	N/A	5.000
1	S	T95S105(1)035(2)(3)(4)L	0.5	4	N/A	3.500
1.5	V	T95V155(1)035(2)(3)(4)L	0.5	6	N/A	3.000
2.2	X	T95X225(1)035(2)(3)(4)L	0.8	6	N/A	2.000
4.7	Y	T95Y475(1)035(2)(3)(4)L	1.6	6	NA	0.800
6.8	Z	T95Z685(1)035(2)(6)(4)L	2.4	6	N/A	0.800
10	Z	T95Z106(1)035(2)(3)(4)L	3.5	6	N/A	0.600
15	D	T95D156(1)035(2)(3)(4)(5)	5.3	6	0.41	0.270
15	R	T95R156(1)035(2)(3)(4)(5)	5.3	6	0.38	0.190
22	R	T95R226(1)035(2)(3)(4)(5)	7.7	6	0.28	0.240
33	R	T95R336(1)035(2)(3)(4)(5)	11.6	6	0.28	0.200
47	R	T95R476(1)035(2)(3)(4)(5)	16.5	6	0.28	0.320
50 WV_{DC} AT + 85 °C, 33 WV_{DC} AT + 125 °C						
4.7	C	T95C475(1)050(2)(3)(4)(5)	2.4	6	1.4	0.800
6.8	C	T95C685(1)050(2)(3)(4)(5)	3.4	6	0.7	1.300
6.8	D	T95D685(1)050(2)(3)(4)(5)	3.4	6	0.82	0.450
10	R	T95R106(1)050(2)(6)(4)(5)	5.0	6	0.65	0.500
15	R	T95R156(1)050(2)(3)(4)(5)	7.5	6	0.40	0.350
22	R	T95R226(1)050(2)(3)(4)(5)	11.0	6	0.39	0.300

Notes

- (1) Capacitance tolerance: K, M
- (2) Termination and packaging: C, E, H, L
- (3) Reliability level: A, S, Z
- (4) Surge current: A, B, S
- (5) ESR: L, S
- (6) Reliability level: A, B, S, Z



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