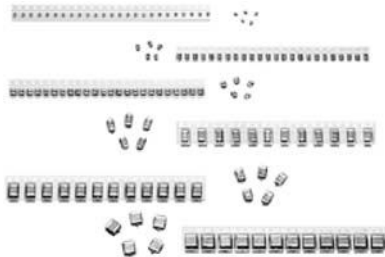


## Solid Tantalum Chip Capacitors TANTAMOUNT<sup>®</sup>, Conformal Coated, Maximum CV



### FEATURES

- Large capacitance rating range
- Terminations: 100 % tin (2) standard tin/lead available
- Mounting: Surface mount
- 8 mm, 12 mm tape and reel packaging available per EIA 481 and reeling per IEC 60286-3. 7" [178 mm] standard. 13" [330 mm] available.
- Case code compatibility with EIA 535BAAC and CECC 30801
- Compliant to RoHS Directive 2002/95/EC


**RoHS\***  
COMPLIANT

### Note

\* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

### PERFORMANCE CHARACTERISTICS

[www.vishay.com/doc?40088](http://www.vishay.com/doc?40088)

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

**Capacitance Range:** 0.1 µF to 1500 µF

**Capacitance Tolerance:** ± 10 %, ± 20 % standard

**Voltage Rating:** 4 V<sub>DC</sub> to 50 V<sub>DC</sub>

ORDERING INFORMATION						
595D	106	X0	010	A	2	T
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	CASE CODE	TERMINATION	REEL SIZE AND PACKAGING
	This is expressed in pF. The first two digits are the significant figures. The third is the number of zeros to follow.	<b>X0 = ± 20 %</b> X9 = ± 10 %	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).	See Ratings and Case Codestable	<b>2 = 100 % tin</b> 4 = Gold plated 8 = Solder plated (60/40) Special order	<b>Tape and reel</b> <b>T = 7" [178 mm]</b> reel W = 13" [330 mm] reel

### Note

- Preferred tolerances and reel sizes are in bold. We reserve the right to substitute form-fit-function replacement products with higher voltage rating, tighter capacitance tolerance, lower ESR (e.g., 594D series), or increased reliability screening (T95 series).

DIMENSIONS in inches [millimeters]							
					Tantalum wire nib identifies anode (+) terminal		
CASE CODE	L MAX.	W	H	A	B	D REF.	J MAX.
T	0.087 [2.2]	0.043 ± 0.012 [1.1 ± 0.3]	0.043 ± 0.012 [1.1 ± 0.3]	0.016 ± 0.008 [0.4 ± 0.2]	0.042 ± 0.001 [1.07 ± 0.25]	0.063 [1.6]	0.004 [0.1]
S	0.134 [3.4]	0.067 ± 0.008 [1.7 ± 0.2]	0.051 ± 0.008 [1.3 ± 0.3]	0.031 ± 0.012 [0.8 ± 0.3]	0.079 ± 0.012 [2.0 ± 0.3]	0.087 [2.2]	0.004 [0.1]
A	0.146 [3.7]	0.071 ± 0.012 [1.8 ± 0.3]	0.055 ± 0.012 [1.4 ± 0.3]	0.031 ± 0.012 [0.8 ± 0.3]	0.087 ± 0.016 [2.2 ± 0.4]	0.115 [2.9]	0.004 [0.1]
M	0.142 [3.6]	0.106 ± 0.012 [2.7 ± 0.3]	0.067 ± 0.012 [1.7 ± 0.3]	0.031 ± 0.012 [0.8 ± 0.3]	0.079 ± 0.012 [2.0 ± 0.3]	0.253 [6.4]	0.004 [0.1]
B	0.157 [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 [0.8 ± 0.3]	0.098 ± 0.016 [2.5 ± 0.4]	0.138 [3.5]	0.004 [0.1]
C	0.280 [7.1]	0.126 ± 0.012 [3.2 ± 0.3]	0.098 ± 0.012 [2.5 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.3]	0.181 ± 0.024 [4.6 ± 0.6]	0.236 [6.0]	0.004 [0.1]
G	0.220 [5.6]	0.144 ± 0.016 [3.65 ± 0.4]	0.087 [2.2 max.]	0.051 ± 0.012 [1.3 ± 0.3]	0.134 ± 0.016 [3.4 ± 0.4]	0.236 [6.0]	0.004 [0.1]
D	0.295 [7.5]	0.169 ± 0.012/- 0.024 [4.3 + 0.3/- 0.6]	0.110 ± 0.012 [2.8 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.3]	0.181 ± 0.024 [4.6 ± 0.6]	0.252 [6.4]	0.004 [0.1]
R	0.283 [7.2]	0.236 ± 0.012/- 0.024 [6.0 + 0.3/- 0.6]	0.138 ± 0.012/- 0.016 [3.5 + 0.3/- 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.181 ± 0.024 [4.6 ± 0.6]	0.244 [6.2]	0.004 [0.1]

### Note

- The anode termination (D less B) will be a minimum of 0.012" [0.3 mm]. T case = 0.005" [0.13 mm] minimum.



RATINGS AND CASE CODES								
μF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.10								T
0.15								T
0.22								T/A
0.33							T	A
0.47						T	A	A
0.68					T	A	A	A/B
1.0					T	A	A	A/B
1.5				T		A	A/B	B/C
2.2			T	T/A	A	A/B	B	B/C
3.3		T/A	A	T	A	B	B/C	C
4.7	T	A	T/A	A	A/B	B/C	B/C	C
6.8	T	T	A	A	A/B	B	C	C/D
10	T		A	A/B	B	B/C	D	D/R
15	A	A	A/B	A/B	B	C	C/D	R
22		A/B	A/B	M/B	B/C	C/D	D/R	R
33	A/B	S/A/B	A/B	B/C		C/D	R	
47	A	A/B	B /C	B/C	C/D	D/R	R	
68	A	A/B	B/C	C/D	C/D	D/R		
100	A/B	M/B/C	B/C/D	C/D	D/R	R		
120	C	C	C/D	R	R			
150	B/C	D	C/D	D/R	R			
180	D	D	D/R	R	R			
220	C/D	C/G/D	C/D/R	R				
270	C/D		R					
330	C	C/D/R	D/R	R				
390	D	R	R					
470	C/R	D/R	R					
560		R						
680	D	R	R					
1000	R	R						
1500	R							

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 (Ω)	MAX. RIPPLE 100 kHz I <sub>RMS</sub> (A)
4 V <sub>DC</sub> AT + 85 °C, 2.7 V <sub>DC</sub> AT + 125 °C						
4.7	T	595D475(1)004T(2)(3)	0.5	6	7.80	0.06
6.8	T	595D685(1)004T(2)(3)	0.5	6	7.80	0.06
10	T	595D106(1)004T(2)(3)	0.5	6	7.80	0.06
15	A	595D156(1)004A(2)(3)	0.6	6	1.40	0.23
33	A	595D336(1)004A(2)(3)	1.3	6	1.40	0.23
33	B	595D336(1)004B(2)(3)	1.3	6	0.47	0.43
47	A	595D476(1)004A(2)(3)	1.9	6	1.40	0.23
68	A	595D686(1)004A(2)(3)	2.7	6	1.30	0.24
100	A	595D107(1)004A(2)(3)	4.0	12	0.60	0.35
100	B	595D107(1)004B(2)(3)	4.0	8	0.45	0.43
120	C	595D127(1)004C(2)(3)	4.8	8	0.19	0.76
150	B	595D157(1)004B(2)(3)	6.0	8	0.45	0.43
150	C	595D157(1)004C(2)(3)	6.0	8	0.18	0.78
180	D	595D187(1)004D(2)(3)	7.2	8	0.14	1.04
220	C	595D227(1)004C(2)(3)	8.8	8	0.18	0.78
220	D	595D227(1)004D(2)(3)	8.8	8	0.14	1.04
270	C	595D277(1)004C(2)(3)	10.8	8	0.17	0.80

**Note**

- Part number definitions:
  - Tolerance: For 10 % tolerance, specify "X9"; for 20 % tolerance, change to "X0"
  - Termination: For 100 % tin specify "2"; for gold plated specify "4", for solder plated 60/40 specify "8"
  - Packaging code: For 7" reels specify "T", for 13" reels specify "W"



STANDARD RATINGS						
CAPACITANCE ( $\mu\text{F}$ )	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu\text{A}$ )	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{\text{RMS}}$ (A)
<b>4 V<sub>DC</sub> AT + 85 °C, 2.7 V<sub>DC</sub> AT + 125 °C</b>						
270	D	595D277(1)004D(2)(3)	10.8	8	0.13	1.07
330	C	595D337(1)004C(2)(3)	13.2	8	0.17	0.80
390	D	595D397(1)004D(2)(3)	15.6	8	0.13	1.07
470	C	595D477(1)004C(2)(3)	18.8	10	0.16	0.83
470	R	595D477(1)004R(2)(3)	18.8	10	0.13	1.39
680	D	595D687(1)004D(2)(3)	27.2	12	0.13	1.07
1000	R	595D108(1)004R(2)(3)	40.0	16	0.07	1.89
1500	R	595D158(1)004R(2)(3)	60.0	20	0.07	1.89
<b>6.3 V<sub>DC</sub> AT + 85 °C, 4 V<sub>DC</sub> AT + 125 °C</b>						
3.3	A	595D335(1)6R3A(2)(3)	0.2	6	3.80	0.14
3.3	T	595D335(1)6R3T(2)(3)	0.5	6	8.50	0.06
4.7	A	595D475(1)6R3A(2)(3)	0.3	6	3.80	0.14
6.8	T	595D685(1)6R3T(2)(3)	0.5	6	8.50	0.06
15	A	595D156(1)6R3A(2)(3)	0.9	6	1.70	0.21
22	A	595D226(1)6R3A(2)(3)	1.4	6	1.70	0.21
22	B	595D226(1)6R3B(2)(3)	1.4	6	0.57	0.39
33	S	595D336(1)6R3S(2)(3)	2.1	8	1.30	0.21
33	A	595D336(1)6R3A(2)(3)	2.1	6	1.70	0.21
33	B	595D336(1)6R3B(2)(3)	2.1	5	0.57	0.39
47	A	595D476(1)6R3A(2)(3)	2.8	6	1.50	0.22
47	B	595D476(1)6R3B(2)(3)	2.8	5	0.57	0.39
68	A	595D686(1)6R3A(2)(3)	4.3	12	0.50	0.39
68	B	595D686(1)6R3B(2)(3)	4.3	6	0.55	0.39
100	M	595D107(1)6R3M(2)(3)	6.3	14	0.40	0.49
100	B	595D107(1)6R3B(2)(3)	6.3	8	0.55	0.39
100	C	595D107(1)6R3C(2)(3)	6.3	8	0.20	0.74
120	C	595D127(1)6R3C(2)(3)	7.6	8	0.19	0.76
150	D	595D157(1)6R3D(2)(3)	9.5	8	0.50	0.55
180	D	595D187(1)6R3D(2)(3)	11.3	8	0.14	1.04
220	C	595D227(1)6R3C(2)(3)	13.9	8	0.18	0.78
220	G	595D227(1)6R3G(2)(3)	13.9	8	0.18	0.80
220	D	595D227(1)6R3D(2)(3)	13.9	8	0.14	1.04
330	C	595D337(1)6R3C(2)(3)	20.8	8	0.17	0.80
330	D	595D337(1)6R3D(2)(3)	20.8	8	0.14	1.04
330	R	595D337(1)6R3R(2)(3)	20.8	8	0.13	1.39
390	R	595D397(1)6R3R(2)(3)	24.6	8	0.13	1.39
470	D	595D477(1)6R3D(2)(3)	29.6	8	0.13	1.07
470	R	595D477(1)6R3R(2)(3)	29.6	10	0.12	1.44
560	R	595D567(1)6R3R(2)(3)	35.3	10	0.11	1.51
680	R	595D687(1)6R3R(2)(3)	42.8	10	0.09	1.67
1000	R	595D108(1)6R3R(2)(3)	63.0	16	0.07	1.89

**Note**

- Part number definitions:

(1) Tolerance: For 10 % tolerance, specify "X9"; for 20 % tolerance, change to "X0"

(2) Termination: For 100 % tin specify "2"; for gold plated specify "4", for solder plated 60/40 specify "8"

(3) Packaging code: For 7" reels specify "T", for 13" reels specify "W"



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
<b>10 V<sub>DC</sub> AT + 85 °C, 7 V<sub>DC</sub> AT + 125 °C</b>						
2.2	T	595D225(1)010T(2)(3)	0.5	6	8.60	0.06
3.3	A	595D335(1)010A(2)(3)	0.5	6	3.80	0.14
4.7	T	595D475(1)010T(2)(3)	0.5	6	8.60	0.06
4.7	A	595D475(1)010A(2)(3)	0.5	6	3.60	0.14
6.8	A	595D685(1)010A(2)(3)	0.7	6	3.60	0.14
10	A	595D106(1)010A(2)(3)	1.0	6	1.90	0.20
15	A	595D156(1)010A(2)(3)	1.5	6	1.80	0.20
15	B	595D156(1)010B(2)(3)	1.5	6	0.67	0.36
22	A	595D226(1)010A(2)(3)	2.2	6	1.80	0.20
22	B	595D226(1)010B(2)(3)	2.2	6	1.90	0.21
33	A	595D336(1)010A(2)(3)	3.3	8	3.00	0.16
33	B	595D336(1)010B(2)(3)	3.3	6	1.90	0.21
47	B	595D476(1)010B(2)(3)	4.7	6	0.65	0.36
47	C	595D476(1)010C(2)(3)	4.7	6	0.30	0.61
68	B	595D686(1)010B(2)(3)	6.8	6	0.65	0.36
68	C	595D686(1)010C(2)(3)	6.8	6	0.24	0.68
100	B	595D107(1)010B(2)(3)	10.0	12	0.40	0.46
100	C	595D107(1)010C(2)(3)	10.0	8	0.20	0.74
100	D	595D107(1)010D(2)(3)	8.0	7	0.15	1.00
120	C	595D127(1)010C(2)(3)	12.0	7	0.22	0.71
120	D	595D127(1)010D(2)(3)	12.0	8	0.14	1.04
150	C	595D157(1)010C(2)(3)	15.0	8	0.22	0.71
150	D	595D157(1)010D(2)(3)	15.0	8	0.14	1.04
180	D	595D187(1)010D(2)(3)	18.0	7	0.38	0.63
180	R	595D187(1)010R(2)(3)	18.0	8	0.13	1.39
220	C	595D227(1)010C(2)(3)	22.0	8	0.20	0.74
220	D	595D227(1)010D(2)(3)	22.0	8	0.14	1.04
220	R	595D227(1)010R(2)(3)	22.0	8	0.13	1.39
270	R	595D277(1)010R(2)(3)	27.0	8	0.13	1.39
330	D	595D337(1)010D(2)(3)	33.0	8	0.14	1.04
330	R	595D337(1)010R(2)(3)	33.0	8	0.13	1.39
390	R	595D397(1)010R(2)(3)	39.0	8	0.12	1.44
470	R	595D477(1)010R(2)(3)	47.0	8	0.12	1.44
680	R	595D687(1)010R(2)(3)	68.0	14	0.09	1.67
<b>16 V<sub>DC</sub> AT + 85 °C, 10 V<sub>DC</sub> AT + 125 °C</b>						
1.5	T	595D155(1)016T(2)(3)	0.5	6	8.70	0.06
2.2	T	595D225(1)016T(2)(3)	0.5	6	8.70	0.06
2.2	A	595D225(1)016A(2)(3)	0.4	5	3.90	0.14
3.3	T	595D335(1)016T(2)(3)	0.5	6	8.60	0.06
4.7	A	595D475(1)016A(2)(3)	0.8	6	2.90	0.16
6.8	A	595D685(1)016A(2)(3)	1.1	6	2.80	0.16
10	A	595D106(1)016A(2)(3)	1.6	6	2.50	0.17
10	B	595D106(1)016B(2)(3)	1.6	6	0.76	0.33
15	A	595D156(1)016A(2)(3)	2.4	6	2.40	0.18
15	B	595D156(1)016B(2)(3)	2.4	6	0.75	0.34

**Note**

- Part number definitions:
  - (1) Tolerance: For 10 % tolerance, specify "X9"; for 20 % tolerance, change to "X0"
  - (2) Termination: For 100 % tin specify "2"; for gold plated specify "4", for solder plated 60/40 specify "8"
  - (3) Packaging code: For 7" reels specify "T", for 13" reels specify "W"



STANDARD RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{RMS}$ (A)
<b>16 V<sub>DC</sub> AT + 85 °C, 10 V<sub>DC</sub> AT + 125 °C</b>						
22	M	595D226(1)016M(2)(3)	3.5	6	0.50	0.44
22	B	595D226(1)016B(2)(3)	3.5	6	0.75	0.34
33	B	595D336(1)016B(2)(3)	5.3	6	0.72	0.34
33	C	595D336(1)016C(2)(3)	5.3	6	0.29	0.62
47	B	595D476(1)016B(2)(3)	7.5	6	0.72	0.34
47	C	595D476(1)016C(2)(3)	7.5	6	0.28	0.63
68	C	595D686(1)016C(2)(3)	10.9	6	0.26	0.65
68	D	595D686(1)016D(2)(3)	10.9	6	0.14	1.04
100	C	595D107(1)016C(2)(3)	16.0	8	0.27	0.64
100	D	595D107(1)016D(2)(3)	16.0	8	0.14	1.04
120	R	595D127(1)016R(2)(3)	19.2	8	0.14	1.34
150	D	595D157(1)016D(2)(3)	24.0	8	0.14	1.04
150	R	595D157(1)016R(2)(3)	24.0	8	0.13	1.39
180	R	595D187(1)016R(2)(3)	28.8	8	0.13	1.39
220	R	595D227(1)016R(2)(3)	35.2	8	0.12	1.44
330	R	595D337(1)016R(2)(3)	52.8	14	0.11	1.51
<b>20 V<sub>DC</sub> AT + 85 °C, 13 V<sub>DC</sub> AT + 125 °C</b>						
0.68	T	595D684(1)020T(2)(3)	0.5	4	10.80	0.05
1.0	T	595D105(1)020T(2)(3)	0.5	4	9.00	0.06
2.2	A	595D225(1)020A(2)(3)	0.5	6	3.80	0.14
3.3	A	595D335(1)020A(2)(3)	0.7	6	3.80	0.14
4.7	A	595D475(1)020A(2)(3)	0.9	6	3.10	0.16
4.7	B	595D475(1)020B(2)(3)	0.9	6	0.95	0.30
6.8	A	595D685(1)020A(2)(3)	1.4	6	3.00	0.16
6.8	B	595D685(1)020B(2)(3)	1.4	6	0.95	0.30
10	B	595D106(1)020B(2)(3)	2.0	6	1.00	0.29
15	B	595D156(1)020B(2)(3)	3.0	6	1.00	0.29
22	B	595D226(1)020B(2)(3)	4.4	6	0.90	0.31
22	C	595D226(1)020C(2)(3)	4.4	6	0.38	0.54
47	C	595D476(1)020C(2)(3)	9.4	6	0.35	0.56
47	D	595D476(1)020D(2)(3)	9.4	6	0.19	0.89
68	C	595D686(1)020C(2)(3)	13.6	6	0.19	0.76
68	D	595D686(1)020D(2)(3)	13.6	6	0.19	0.89
100	D	595D107(1)020D(2)(3)	20.0	8	0.18	0.91
100	R	595D107(1)020R(2)(3)	20.0	8	0.14	1.34
120	R	595D127(1)020R(2)(3)	24.0	8	0.14	1.34
150	R	595D157(1)020R(2)(3)	30.0	8	0.14	1.34
180	R	595D187(1)020R(2)(3)	36.0	8	0.14	1.34
<b>25 V<sub>DC</sub> AT + 85 °C, 17 V<sub>DC</sub> AT + 125 °C</b>						
0.47	T	595D474(1)025T(2)(3)	0.5	4	13.50	0.05
1.0	A	595D105(1)025A(2)(3)	0.4	4	4.20	0.13
1.5	A	595D155(1)025A(2)(3)	0.5	6	3.80	0.14
2.2	A	595D225(1)025A(2)(3)	0.6	6	3.80	0.14
2.2	B	595D225(1)025B(2)(3)	0.6	6	2.30	0.19
3.3	B	595D335(1)025B(2)(3)	0.8	6	1.90	0.21

**Note**

- Part number definitions:
  - Tolerance: For 10 % tolerance, specify "X9"; for 20 % tolerance, change to "X0"
  - Termination: For 100 % tin specify "2"; for gold plated specify "4", for solder plated 60/40 specify "8"
  - Packaging code: For 7" reels specify "T", for 13" reels specify "W"



STANDARD RATINGS						
CAPACITANCE ( $\mu\text{F}$ )	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu\text{A}$ )	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz ( $\Omega$ )	MAX. RIPPLE 100 kHz $I_{\text{RMS}}$ (A)
<b>25 V<sub>DC</sub> AT + 85 °C, 17 V<sub>DC</sub> AT + 125 °C</b>						
4.7	B	595D475(1)025B(2)(3)	1.2	6	1.80	0.22
4.7	C	595D475(1)025C(2)(3)	1.3	5	0.68	0.40
6.8	B	595D685(1)025B(2)(3)	1.7	6	1.50	0.24
10	B	595D106(1)025B(2)(3)	2.5	6	1.50	0.24
10	C	595D106(1)025C(2)(3)	2.5	6	0.57	0.44
15	C	595D156(1)025C(2)(3)	3.8	6	0.56	0.44
22	C	595D226(1)025C(2)(3)	5.5	6	0.50	0.47
22	D	595D226(1)025D(2)(3)	5.5	6	0.28	0.73
33	C	595D336(1)025C(2)(3)	8.3	6	0.45	0.49
33	D	595D336(1)025D(2)(3)	8.3	6	0.27	0.75
47	D	595D476(1)025D(2)(3)	11.8	6	0.26	0.76
47	R	595D476(1)025R(2)(3)	11.8	6	0.20	1.12
68	D	595D686(1)025D(2)(3)	17.0	8	0.26	0.76
68	R	595D686(1)025R(2)(3)	17.0	6	0.20	1.12
100	R	595D107(1)025R(2)(3)	25.0	8	0.20	1.12
<b>35 V<sub>DC</sub> AT + 85 °C, 23 V<sub>DC</sub> AT + 125 °C</b>						
0.33	T	595D334(1)035T(2)(3)	0.5	4	14.40	0.05
0.47	A	595D474(1)035A(2)(3)	0.5	4	4.30	0.13
0.68	A	595D684(1)035A(2)(3)	0.5	4	4.20	0.13
1.0	A	595D105(1)035A(2)(3)	0.5	4	4.10	0.14
1.5	A	595D155(1)035A(2)(3)	0.5	6	3.80	0.14
1.5	B	595D155(1)035B(2)(3)	0.5	6	2.80	0.17
2.2	B	595D225(1)035B(2)(3)	0.8	6	2.30	0.19
3.3	B	595D335(1)035B(2)(3)	1.2	6	2.40	0.19
3.3	C	595D335(1)035C(2)(3)	1.2	6	0.75	0.38
4.7	B	595D475(1)035B(2)(3)	1.6	6	2.20	0.20
4.7	C	595D475(1)035C(2)(3)	1.6	6	0.66	0.41
6.8	C	595D685(1)035C(2)(3)	2.4	6	0.63	0.42
10	D	595D106(1)035D(2)(3)	3.5	6	0.43	0.59
15	C	595D156(1)035C(2)(3)	5.3	6	0.60	0.43
15	D	595D156(1)035D(2)(3)	5.3	6	0.41	0.60
22	D	595D226(1)035D(2)(3)	7.7	6	0.32	0.68
22	R	595D226(1)035R(2)(3)	7.7	6	0.28	0.94
33	R	595D336(1)035R(2)(3)	11.6	6	0.28	0.94
47	R	595D476(1)035R(2)(3)	16.5	6	0.28	0.94
<b>50 V<sub>DC</sub> AT + 85 °C, 33 V<sub>DC</sub> AT + 125 °C</b>						
0.10	T	595D104(1)050T(2)(3)	0.5	4	22.50	0.04
0.15	T	595D154(1)050T(2)(3)	0.5	4	18.00	0.04
0.22	T	595D224(1)050T(2)(3)	0.5	4	15.30	0.04
0.22	A	595D224(1)050A(2)(3)	0.5	4	9.00	0.09
0.33	A	595D334(1)050A(2)(3)	0.5	4	8.10	0.10

**Note**

- Part number definitions:
  - Tolerance: For 10 % tolerance, specify "X9"; for 20 % tolerance, change to "X0"
  - Termination: For 100 % tin specify "2"; for gold plated specify "4", for solder plated 60/40 specify "8"
  - Packaging code: For 7" reels specify "T", for 13" reels specify "W"



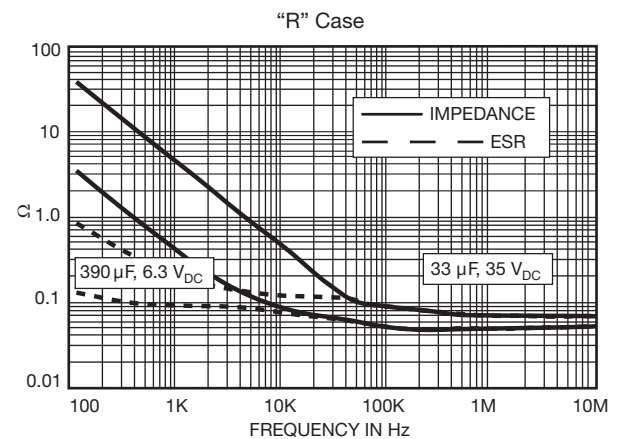
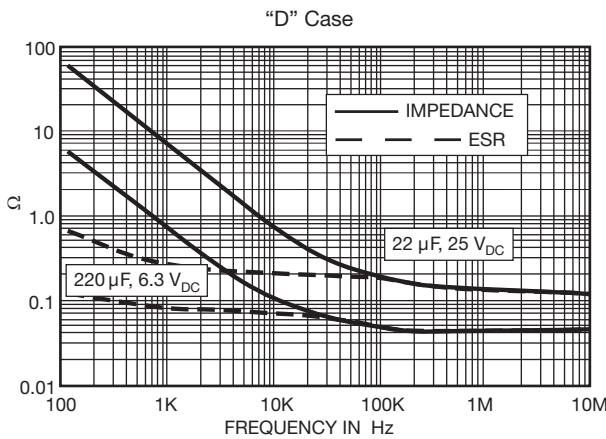
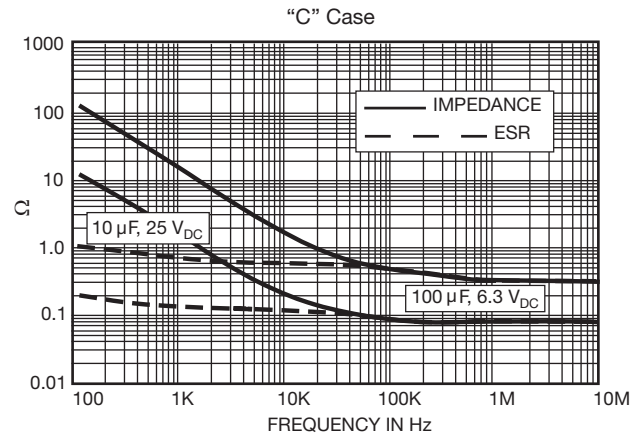
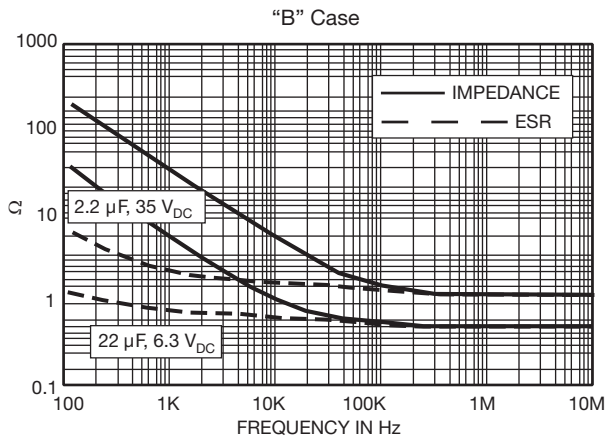
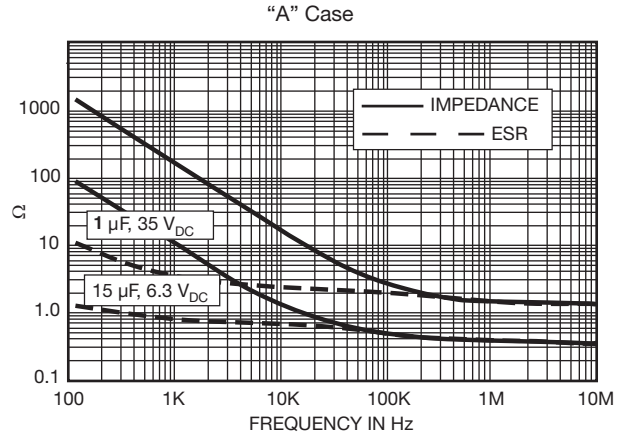
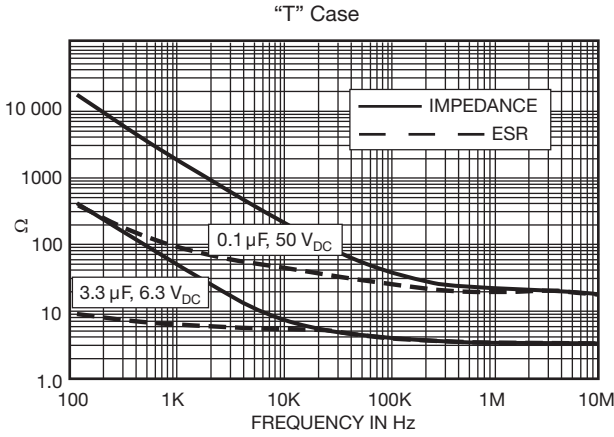
<b>STANDARD RATINGS</b>						
CAPACITANCE (μF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (μA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I <sub>RMS</sub> (A)
<b>50 V<sub>DC</sub> AT + 85 °C, 33 V<sub>DC</sub> AT + 125 °C</b>						
0.47	A	595D474(1)050A(2)(3)	0.5	4	7.20	0.10
0.68	A	595D684(1)050A(2)(3)	0.5	4	6.10	0.11
0.68	B	595D684(1)050B(2)(3)	0.5	4	5.40	0.13
1.0	A	595D105(1)050A(2)(3)	0.5	4	6.00	0.11
1.0	B	595D105(1)050B(2)(3)	0.5	4	5.00	0.13
1.5	B	595D155(1)050B(2)(3)	0.8	6	4.10	0.14
1.5	C	595D155(1)050C(2)(3)	0.8	6	1.80	0.25
2.2	B	595D225(1)050B(2)(3)	1.1	6	3.20	0.16
2.2	C	595D225(1)050C(2)(3)	1.1	6	1.70	0.25
3.3	C	595D335(1)050C(2)(3)	1.7	6	1.60	0.26
4.7	C	595D475(1)050C(2)(3)	2.4	6	1.40	0.28
6.8	C	595D685(1)050C(2)(3)	3.4	6	1.30	0.29
6.8	D	595D685(1)050D(2)(3)	3.4	6	0.82	0.43
10	D	595D106(1)050D(2)(3)	5.0	6	0.80	0.43
10	R	595D106(1)050R(2)(3)	5.0	6	0.65	0.62
15	R	595D156(1)050R(2)(3)	7.5	6	0.40	0.79
22	R	595D226(1)050R(2)(3)	11.0	6	0.39	0.80

**Note**

- Part number definitions:
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  - Termination: For 100 % tin specify "2"; for gold plated specify "4", for solder plated 60/40 specify "8"
  - Packaging code: For 7" reels specify "T", for 13" reels specify "W"

<b>RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperature below + 85 °C)</b>	
<b>STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS</b>	
Capacitor Voltage Rating	Operating Voltage
4.0	2.5
6.3	3.6
10	6.0
16	10
20	12
25	15
35	24
50	28
<b>SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS</b>	
Capacitor Voltage Rating	Operating Voltage
4.0	2.5
6.3	3.3
10	5.0
16	8.0
20	10
25	12
35	15
50	24

**TYPICAL CURVES AT + 25 °C, IMPEDANCE AND ESR VS. FREQUENCY**







POWER DISSIPATION	
CASE CODE	MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR
A	0.075
B	0.085
C	0.110
D	0.150
G	0.115
M	0.095
R	0.250
S	0.060
T	0.030

STANDARD PACKAGING QUANTITY		
CASE CODE	UNITS PER REEL	
	7" REEL	13" REEL
A	2000	9000
B	2000	8000
C	500	3000
D	500	2500
G	500	2500
M	2000	8000
R	600	n/a
S	2500	10 000
T	2500	10 000

PRODUCT INFORMATION	
Conformal Coated Guide	<a href="http://www.vishay.com/doc?40150">www.vishay.com/doc?40150</a>
Moisture Sensitivity	<a href="http://www.vishay.com/doc?40135">www.vishay.com/doc?40135</a>
SELECTOR GUIDES	
Solid Tantalum Selector Guide	<a href="http://www.vishay.com/doc?49053">www.vishay.com/doc?49053</a>
Solid Tantalum Chip Capacitors	<a href="http://www.vishay.com/doc?40091">www.vishay.com/doc?40091</a>
FAQ	
Frequently Asked Questions	<a href="http://www.vishay.com/doc?40110">www.vishay.com/doc?40110</a>



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## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**