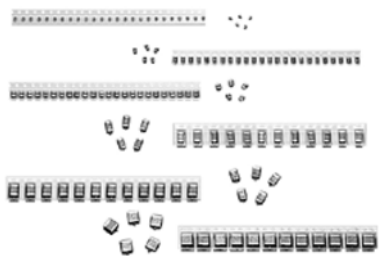
Solid Tantalum Chip Capacitors
TANTAMOUNT®, Conformal Coated



FEATURES

- 8 mm, 12 mm tape packaging to EIA-481 reeling per IEC 60286-3.
  7" (178 mm) standard 13" (330 mm) available
- US and European case sizes available
- Mounting: Surface mount
- Terminations: 100 % tin (2) standard, tin/lead available
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

RoHS* COMPLIANT

Note

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

PERFORMANCE/ELECTRICAL CHARACTERISTICS

www.vishay.com/doc?40088

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

Capacitance Range: 0.1 µF to 330 µF

Capacitance Tolerance: ± 10 %, ± 20 % standard

Voltage Rating: 2 V_{DC} to 50 V_{DC}

ORDERING INFORMATION

195D	106	X0	004	S	2	T
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	CASE CODE	TERMINATION	PACKAGING
	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	**X0 = ± 20 %** X9 = ± 10 % X5 = ± 5 % (Special order)	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).	See Ratings and Case Codes table	Style 2 is standard **2 = 100 % tin** 4 = Gold plated 8 = Solder plated (60/40) Special order	**T = Tape and reel 7" [178 mm] reel standard. For H case size lengthwise** **W = Tape and reel 13" [330 mm] reel available** See Standard Packaging Quantity table

Note

- Preferred tolerance and reel sizes are in bold.
  We reserve the right to supply higher voltage ratings and tighter capacitance tolerance capacitors in the same case size.

For technical questions, contact: tantalum@vishay.com

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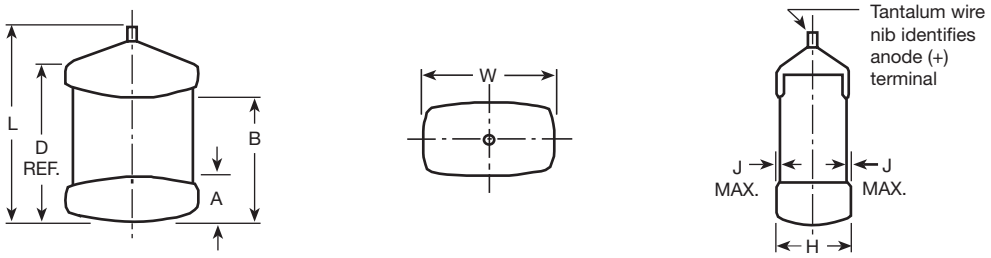
DIMENSIONS in inches [millimeters]



CASE CODE	L	W	H	A	B	C (MIN.)	D (REF.)	J (MAX.)
STANDARD CASE CODES								
C	0.087 max. [2.21 max.]	0.045 ± 0.010 [1.14 ± 0.25]	0.045 ± 0.010 [1.14 ± 0.25]	0.016 ± 0.008 [0.40 ± 0.20]	0.042 ± 0.010 [1.07 ± 0.25]	-	0.063 [1.60]	0.004 [0.10]
S	0.143 max. [3.63 max.]	0.072 ± 0.008 [1.83 ± 0.20]	0.048 ± 0.008 [1.22 ± 0.20]	0.023 ± 0.010 [0.58 ± 0.25]	0.085 ± 0.015 [2.16 ± 0.37]	-	0.114 [2.90]	0.004 [0.10]
V	0.143 max. [3.63 max.]	0.104 ± 0.010 [2.65 ± 0.25]	0.051 ± 0.010 [1.30 ± 0.25]	0.023 ± 0.010 [0.58 ± 0.25]	0.085 ± 0.015 [2.16 ± 0.37]	-	0.114 [2.90]	0.004 [0.10]
X	0.285 max. [7.24 max.]	0.104 ± 0.010 [2.65 ± 0.25]	0.051 ± 0.010 [1.30 ± 0.25]	0.039 ± 0.020 [1.00 ± 0.50]	0.200 ± 0.027 [5.08 ± 0.69]	-	0.244 [6.20]	0.004 [0.10]
Y	0.285 max. [7.24 max.]	0.104 ± 0.010 [2.65 ± 0.25]	0.069 ± 0.010 [1.75 ± 0.25]	0.039 ± 0.020 [1.00 ± 0.50]	0.200 ± 0.027 [5.08 ± 0.69]	-	0.244 [6.20]	0.004 [0.10]
Z	0.285 max. [7.24 max.]	0.104 ± 0.010 [2.65 ± 0.25]	0.104 ± 0.010 [2.65 ± 0.25]	0.039 ± 0.020 [1.00 ± 0.50]	0.200 ± 0.027 [5.08 ± 0.69]	-	0.244 [6.20]	0.004 [0.10]
R	0.283 max. [7.20 max.]	0.236 + 0.012/- 0.024 [6.0 + 0.30/- 0.60]	0.138 ± 0.012 [3.50 ± 0.30]	0.051 ± 0.012 [1.30 ± 0.30]	0.181 ± 0.025 [4.60 ± 0.60]	-	0.244 [6.20]	0.004 [0.10]
EUROPEAN CASE CODES								
A	0.110 ± 0.008 [2.80 ± 0.20]	0.0591 ± 0.012 [1.5 ± 0.30]	0.055 max. [1.40 max.]	0.028 ± 0.012 [0.70 ± 0.30]	0.063 ± 0.012 [1.60 ± 0.30]	0.012 [0.3]	-	-
B	0.165 ± 0.008 [4.20 ± 0.20]	0.055 ± 0.012 [1.4 ± 0.30]	0.063 max. [1.6 max.]	0.031 ± 0.012 [0.80 ± 0.30]	0.098 ± 0.012 [2.50 ± 0.30]	0.012 [0.3]	-	-
D	0.165 ± 0.008 [4.20 ± 0.20]	0.083 ± 0.012 [2.1 ± 0.30]	0.063 max. [1.6 max.]	0.031 ± 0.012 [0.80 ± 0.30]	0.098 ± 0.012 [2.50 ± 0.30]	0.02 [0.5]	-	-
E	0.217 ± 0.012 [5.50 ± 0.30]	0.083 ± 0.012 [2.1 ± 0.30]	0.067 max. [1.70 max.]	0.039 ± 0.012 [1.00 ± 0.30]	0.126 ± 0.012 [3.20 ± 0.30]	0.031 [0.8]	-	-
F	0.197 ± 0.012 [5.0 ± 0.30]	0.130 ± 0.012 [3.3 ± 0.30]	0.079 max. [2.00 max.]	0.039 ± 0.012 [1.00 ± 0.30]	0.142 ± 0.012 [3.60 ± 0.30]	0.031 [0.8]	-	-
G	0.276 ± 0.012 [7.00 ± 0.30]	0.102 ± 0.012 [2.6 ± 0.30]	0.110 max. [2.80 max.]	0.039 ± 0.012 [1.00 ± 0.30]	0.177 ± 0.012 [4.5 ± 0.30]	0.031 [0.8]	-	-
H	0.307 ± 0.012 [7.80 ± 0.30]	0.146 ± 0.012 [3.7 ± 0.30]	0.118 max. [3.0 max.]	0.039 ± 0.012 [1.00 ± 0.30]	0.197 ± 0.012 [5.00 ± 0.30]	0.031 [0.8]	-	-

Note

- The anode termination (D less B) will be a minimum of 0.010" (0.25 mm), C case = 0.005" (0.131 mm) minimum

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RATINGS AND CASE CODES

µF	2 V	4 V	6.3 V	10 V	15 V	16 V	20 V	25 V	35 V	40 V	50 V
0.10									A	A	A/C
0.15									A	A	A/C
0.22				S					A	A	B/C/S
0.33								A	B/C	B	B/S
0.47					A	A	A	C	B/S	B	D/V
0.68					A	A	C	B/S	D/S	D	D/V
1.0				A/S	B	B/C	B/S	S	D/S	D	E/X
1.5			A	C	B	B/S	S	D/S	E/V	E	F/X
2.2		A	C	B/S		S	D/S	E/V	F/X	F	F/Y
3.3	A	C	B/S	S	D	D/S	E/V	X	F/Y	F	G/Z
4.7	A	B/S	S	D/S	E	E/V	X	F/X	G/Z	G	H/Z
6.8	A	S	D/S	E/V		X	F/X	G/Y	H/Z	H	R
10	A	D/S	E/V	X	F	F/X	Y	G/Y	Z		R
15		E/V	X	F/X		Y	G/Z	H/Z	R		
22		X	F/X	Y	G	G/Y/Z	H/Z	R	R		
33		F/X	Y	G/Z	H	H/Z	R	R			
47		Y	G/Y	H/Z		R	R				
68		G/Y	H/Z	R		R					
100		H/Z	Z	H/R							
120		R	R	R							
150		R	R	R							
180		R	R								
220		R	R								
330		R									

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)
2 V_{DC} AT + 85 °C, 1.2 V_{DC} AT + 125 °C				
3.3	A	195D335(1)002A(2)(3)	0.5	8
4.7	A	195D475(1)002A(2)(3)	0.5	8
6.8	A	195D685(1)002A(2)(3)	0.5	8
10	A	195D106(1)002A(2)(3)	0.6	8
4 V_{DC} AT + 85 °C, 2.7 V_{DC} AT + 125 °C				
2.2	A	195D225(1)004A(2)(3)	0.5	8
3.3	C	195D335(1)004C(2)(3)	0.5	6
4.7	B	195D475(1)004B(2)(3)	0.5	8
4.7	S	195D475(1)004S(2)(3)	0.5	6
6.8	S	195D685(1)004S(2)(3)	0.5	6
10	D	195D106(1)004D(2)(3)	0.5	8
10	S	195D106(1)004S(2)(3)	0.5	6
15	E	195D156(1)004E(2)(3)	0.6	8
15	V	195D156(1)004V(2)(3)	0.6	6
22	X	195D226(1)004X(2)(3)	0.9	6

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”

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STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)
4 V_{DC} AT + 85 °C, 2.7 V_{DC} AT + 125 °C				
33	F	195D336(1)004F(2)(3)	1.3	8
33	X	195D336(1)004X(2)(3)	1.3	6
47	Y	195D476(1)004Y(2)(3)	1.9	6
68	G	195D686(1)004G(2)(3)	2.7	8
68	Y	195D686(1)004Y(2)(3)	2.7	6
100	H	195D107(1)004H(2)(3)	4.0	8
100	Z	195D107(1)004Z(2)(3)	4.0	8
120	R	195D127(1)004R(2)(3)	4.8	8
150	R	195D157(1)004R(2)(3)	6.0	8
180	R	195D187(1)004R(2)(3)	7.2	8
220	R	195D227(1)004R(2)(3)	8.8	8
330	R	195D337(1)004R(2)(3)	13.2	8
6.3 V_{DC} AT + 85 °C, 4 V_{DC} AT + 125 °C				
1.5	A	195D155(1)6R3A(2)(3)	0.5	8
2.2	C	195D225(1)6R3C(2)(3)	0.5	6
3.3	B	195D335(1)6R3B(2)(3)	0.5	8
3.3	S	195D335(1)6R3S(2)(3)	0.5	6
4.7	S	195D475(1)6R3S(2)(3)	0.5	6
6.8	D	195D685(1)6R3D(2)(3)	0.5	8
6.8	S	195D685(1)6R3S(2)(3)	0.5	6
10	E	195D106(1)6R3E(2)(3)	0.6	8
10	V	195D106(1)6R3V(2)(3)	0.6	6
15	X	195D156(1)6R3X(2)(3)	0.9	6
22	F	195D226(1)6R3F(2)(3)	1.3	8
22	X	195D226(1)6R3X(2)(3)	1.3	6
33	Y	195D336(1)6R3Y(2)(3)	2.0	6
47	G	195D476(1)6R3G(2)(3)	2.8	8
47	Y	195D476(1)6R3Y(2)(3)	2.8	6
68	H	195D686(1)6R3H(2)(3)	4.1	8
68	Z	195D686(1)6R3Z(2)(3)	4.1	6
100	Z	195D107(1)6R3Z(2)(3)	6.0	8
120	R	195D127(1)6R3R(2)(3)	7.2	8
150	R	195D157(1)6R3R(2)(3)	9.0	8
180	R	195D187(1)6R3R(2)(3)	10.8	8
220	R	195D227(1)6R3R(2)(3)	13.2	8
10 V_{DC} AT + 85 °C, 7 V_{DC} AT + 125 °C				
0.22	S	195D224(1)010S(2)(3)	0.5	4
1.0	A	195D105(1)010A(2)(3)	0.5	6
1.0	S	195D105(1)010S(2)(3)	0.5	6
1.5	C	195D155(1)010C(2)(3)	0.5	6
2.2	B	195D225(1)010B(2)(3)	0.5	6
2.2	S	195D225(1)010S(2)(3)	0.5	6
3.3	S	195D335(1)010S(2)(3)	0.5	6
4.7	D	195D475(1)010D(2)(3)	0.5	6
4.7	S	195D475(1)010S(2)(3)	0.5	6
6.8	E	195D685(1)010E(2)(3)	0.7	6
6.8	V	195D685(1)010V(2)(3)	0.7	6

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”

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STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)
10 V_{DC} AT + 85 °C, 7 V_{DC} AT + 125 °C				
10	X	195D106(1)010X(2)(3)	1.0	6
15	F	195D156(1)010F(2)(3)	1.5	6
15	X	195D156(1)010X(2)(3)	1.5	6
22	Y	195D226(1)010Y(2)(3)	2.2	6
33	G	195D336(1)010G(2)(3)	3.3	6
33	Z	195D336(1)010Z(2)(3)	3.0	6
47	H	195D476(1)010H(2)(3)	4.7	6
47	Z	195D476(1)010Z(2)(3)	4.7	6
68	R	195D686(1)010R(2)(3)	6.8	6
100	H	195D107(1)010H(2)(3)	8.0	7
100	R	195D107(1)010R(2)(3)	10.0	8
120	R	195D127(1)010R(2)(3)	12.0	8
150	R	195D157(1)010R(2)(3)	15.0	8
15 V_{DC} AT + 85 °C, 10 V_{DC} AT + 125 °C				
0.47	A	195D474(1)015A(2)(3)	0.5	6
0.68	A	195D684(1)015A(2)(3)	0.5	6
1.0	B	195D105(1)015B(2)(3)	0.5	6
1.5	B	195D155(1)015B(2)(3)	0.5	6
3.3	D	195D335(1)015D(2)(3)	0.5	6
4.7	E	195D475(1)015E(2)(3)	0.7	6
10	F	195D106(1)015F(2)(3)	1.5	6
22	G	195D226(1)015G(2)(3)	3.3	6
33	H	195D336(1)015H(2)(3)	5.0	6
16 V_{DC} AT + 85 °C, 10 V_{DC} AT + 125 °C				
0.47	A	195D474(1)016A(2)(3)	0.5	6
0.68	A	195D684(1)016A(2)(3)	0.5	6
1.0	B	195D105(1)016B(2)(3)	0.5	6
1.0	C	195D105(1)016C(2)(3)	0.5	4
1.5	B	195D155(1)016B(2)(3)	0.5	6
1.5	S	195D155(1)016S(2)(3)	0.5	6
2.2	S	195D225(1)016S(2)(3)	0.5	6
3.3	D	195D335(1)016D(2)(3)	0.5	6
3.3	S	195D335(1)016S(2)(3)	0.5	6
4.7	E	195D475(1)016E(2)(3)	0.7	6
4.7	V	195D475(1)016V(2)(3)	0.7	6
6.8	X	195D685(1)016X(2)(3)	1.0	6
10	F	195D106(1)016F(2)(3)	1.5	6
10	X	195D106(1)016X(2)(3)	1.5	6
15	Y	195D156(1)016Y(2)(3)	2.3	6
22	G	195D226(1)016G(2)(3)	3.3	6
22	Y	195D226(1)016Y(2)(3)	3.2	6
22	Z	195D226(1)016Z(2)(3)	3.3	6
33	H	195D336(1)016H(2)(3)	5.0	6
33	Z	195D336(1)016Z(2)(3)	5.0	6
47	R	195D476(1)016R(2)(3)	7.1	6
68	R	195D686(1)016R(2)(3)	10.2	6

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”

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STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)
20 V_{DC} AT + 85 °C, 13 V_{DC} AT + 125 °C				
0.47	A	195D474(1)020A(2)(3)	0.5	6
0.68	C	195D684(1)020C(2)(3)	0.5	4
1.0	B	195D105(1)020B(2)(3)	0.5	6
1.0	S	195D105(1)020S(2)(3)	0.5	4
1.5	S	195D155(1)020S(2)(3)	0.5	6
2.2	D	195D225(1)020D(2)(3)	0.5	6
2.2	S	195D225(1)020S(2)(3)	0.5	6
3.3	E	195D335(1)020E(2)(3)	0.7	6
3.3	V	195D335(1)020V(2)(3)	0.7	6
4.7	X	195D475(1)020X(2)(3)	0.9	6
6.8	F	195D685(1)020F(2)(3)	1.4	6
6.8	X	195D685(1)020X(2)(3)	1.4	6
10	Y	195D106(1)020Y(2)(3)	2.0	6
15	G	195D156(1)020G(2)(3)	3.0	6
15	Z	195D156(1)020Z(2)(3)	3.0	6
22	H	195D226(1)020H(2)(3)	4.4	6
22	Z	195D226(1)020Z(2)(3)	4.4	6
33	R	195D336(1)020R(2)(3)	6.6	6
47	R	195D476(1)020R(2)(3)	9.4	6
25 V_{DC} AT + 85 °C, 17 V_{DC} AT + 125 °C				
0.33	A	195D334(1)025A(2)(3)	0.5	6
0.47	C	195D474(1)025C(2)(3)	0.5	4
0.68	B	195D684(1)025B(2)(3)	0.5	6
0.68	S	195D684(1)025S(2)(3)	0.5	4
1.0	S	195D105(1)025S(2)(3)	0.5	4
1.5	D	195D155(1)025D(2)(3)	0.5	6
1.5	S	195D155(1)025S(2)(3)	0.5	6
2.2	E	195D225(1)025E(2)(3)	0.6	6
2.2	V	195D225(1)025V(2)(3)	0.6	6
3.3	X	195D335(1)025X(2)(3)	0.8	6
4.7	F	195D475(1)025F(2)(3)	1.2	6
4.7	X	195D475(1)025X(2)(3)	1.2	6
6.8	G	195D685(1)025G(2)(3)	1.7	6
6.8	Y	195D685(1)025Y(2)(3)	1.7	6
10	G	195D106(1)025G(2)(3)	2.5	6
10	Y	195D106(1)025Y(2)(3)	2.5	6
15	H	195D156(1)025H(2)(3)	3.8	6
15	Z	195D156(1)025Z(2)(3)	3.8	6
22	R	195D226(1)025R(2)(3)	5.5	6
33	R	195D336(1)025R(2)(3)	8.3	6

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”

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STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)
35 V_{DC} AT + 85 °C, 23 V_{DC} AT + 125 °C				
0.10	A	195D104(1)035A(2)(3)	0.5	6
0.15	A	195D154(1)035A(2)(3)	0.5	6
0.22	A	195D224(1)035A(2)(3)	0.5	6
0.33	B	195D334(1)035B(2)(3)	0.5	6
0.33	C	195D334(1)035C(2)(3)	0.5	4
0.47	B	195D474(1)035B(2)(3)	0.5	6
0.47	S	195D474(1)035S(2)(3)	0.5	4
0.68	D	195D684(1)035D(2)(3)	0.5	6
0.68	S	195D684(1)035S(2)(3)	0.5	4
1.0	D	195D105(1)035D(2)(3)	0.5	6
1.0	S	195D105(1)035S(2)(3)	0.5	4
1.5	E	195D155(1)035E(2)(3)	0.5	6
1.5	V	195D155(1)035V(2)(3)	0.5	6
2.2	F	195D225(1)035F(2)(3)	0.8	6
2.2	X	195D225(1)035X(2)(3)	0.8	6
3.3	F	195D335(1)035F(2)(3)	1.2	6
3.3	Y	195D335(1)035Y(2)(3)	1.2	6
4.7	G	195D475(1)035G(2)(3)	1.6	6
4.7	Z	195D475(1)035Z(2)(3)	1.6	6
6.8	H	195D685(1)035H(2)(3)	2.4	6
6.8	Z	195D685(1)035Z(2)(3)	2.4	6
10	Z	195D106(1)035Z(2)(3)	3.5	6
15	R	195D156(1)035R(2)(3)	5.3	6
22	R	195D226(1)035R(2)(3)	7.7	6
40 V_{DC} AT + 85 °C, 23 V_{DC} TO 25 V_{DC} AT + 125 °C				
0.10	A	195D104(1)040A(2)(3)	0.5	6
0.15	A	195D154(1)040A(2)(3)	0.5	6
0.22	A	195D224(1)040A(2)(3)	0.5	6
0.33	B	195D334(1)040B(2)(3)	0.5	6
0.47	B	195D474(1)040B(2)(3)	0.5	6
0.68	D	195D684(1)040D(2)(3)	0.5	6
1.0	D	195D105(1)040D(2)(3)	0.5	6
1.5	E	195D155(1)040E(2)(3)	0.5	6
2.2	F	195D225(1)040F(2)(3)	0.8	6
3.3	F	195D335(1)040F(2)(3)	1.2	6
4.7	G	195D475(1)040G(2)(3)	1.6	6
6.8	H	195D685(1)040H(2)(3)	2.4	6
50 V_{DC} AT + 85 °C, 33 V_{DC} AT + 125 °C				
0.10	A	195D104(1)050A(2)(3)	0.5	6
0.10	C	195D104(1)050C(2)(3)	0.5	4
0.15	A	195D154(1)050A(2)(3)	0.5	6
0.15	C	195D154(1)050C(2)(3)	0.5	4
0.22	B	195D224(1)050B(2)(3)	0.5	6
0.22	C	195D224(1)050C(2)(3)	0.5	4
0.22	S	195D224(1)050S(2)(3)	0.5	4
0.33	B	195D334(1)050B(2)(3)	0.5	6
0.33	S	195D334(1)050S(2)(3)	0.5	4

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”

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STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)
		50 V_{DC} AT + 85 °C, 33 V_{DC} AT + 125 °C		
0.47	D	195D474(1)050D(2)(3)	0.5	6
0.47	V	195D474(1)050V(2)(3)	0.5	4
0.68	D	195D684(1)050D(2)(3)	0.5	6
0.68	V	195D684(1)050V(2)(3)	0.5	4
1.0	E	195D105(1)050E(2)(3)	0.5	6
1.0	X	195D105(1)050X(2)(3)	0.5	4
1.5	F	195D155(1)050F(2)(3)	0.8	6
1.5	X	195D155(1)050X(2)(3)	0.8	6
2.2	F	195D225(1)050F(2)(3)	1.1	6
2.2	Y	195D225(1)050Y(2)(3)	1.1	6
3.3	G	195D335(1)050G(2)(3)	1.7	6
3.3	Z	195D335(1)050Z(2)(3)	1.7	6
4.7	H	195D475(1)050H(2)(3)	2.4	6
4.7	Z	195D475(1)050Z(2)(3)	2.4	6
6.8	R	195D685(1)050R(2)(3)	3.4	6
10	R	195D106(1)050R(2)(3)	5.0	6

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”

RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperature below + 85 °C)

STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS	
Capacitor Voltage Rating	**Operating Voltage**
2.0	1.2
4.0	2.5
6.3	3.6
10	6
15/16	9
20	12
25	15
35	24
40	26
50	28
SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS	
Capacitor Voltage Rating	**Operating Voltage**
2.0	1.0
4.0	2.5
6.3	3.3
10	5.0
15/16	7.5
20	10
25	12
35	15
40	20
50	24

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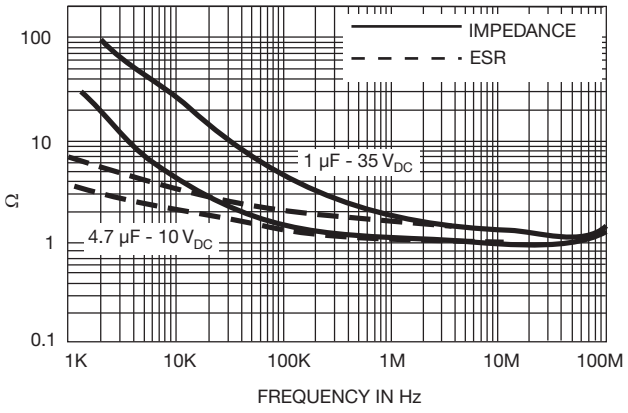
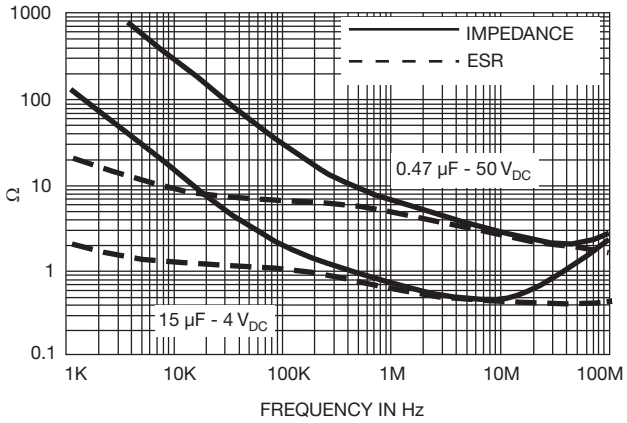
TYPICAL CURVES AT + 25 °C, IMPEDANCE AND ESR VS. FREQUENCY

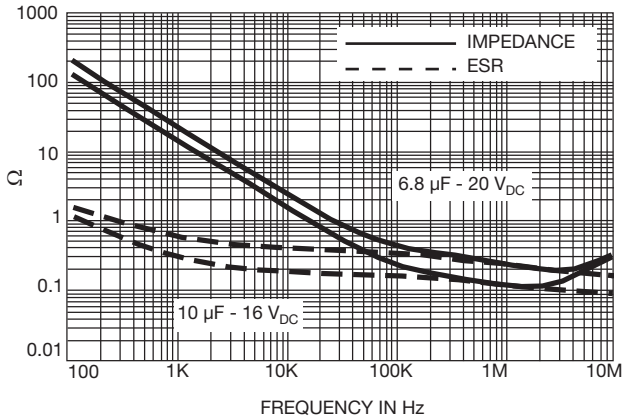
"S" Case



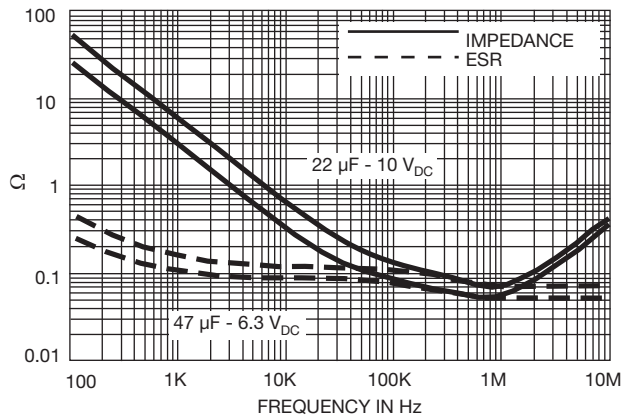
"V" Case



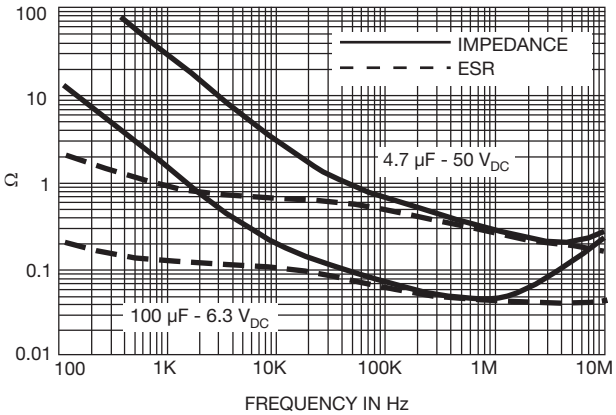
"X" Case



"Y" Case



"Z" Case



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POWER DISSIPATION	
CASE CODE	MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR
A	0.040
B	0.050
C	0.030
D	0.080
E	0.090
F	0.110
G	0.120
H	0.140
R	0.250
S	0.080
V	0.095
X	0.110
Y	0.120
Z	0.135

STANDARD PACKAGING QUANTITY		
CASE CODE	UNITS PER REEL	
	7" REEL	13" REEL
A	2500	n/a
B	2000	n/a
C	2500	10 000
D	2000	n/a
E	2000	n/a
F	700	n/a
G	1400	n/a
H	400	n/a
R	600	n/a
S	2500	10 000
V	2500	10 000
X	200	10 000
Y	1500	7500
Z	1500	5000

PRODUCT INFORMATION	
Conformal Coated Guide	www.vishay.com/doc?40150
Moisture Sensitivity	www.vishay.com/doc?40135
SELECTOR GUIDES	
Solid Tantalum Selector Guide	www.vishay.com/doc?49053
Solid Tantalum Chip Capacitors	www.vishay.com/doc?40091
FAQ	
Frequently Asked Questions	www.vishay.com/doc?40110

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