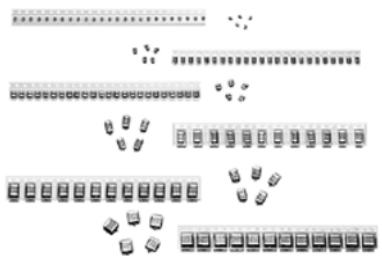
Solid Tantalum Chip Capacitors
TANTAMOUNT®, Conformal Coated



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 + 125 °C
(above 85 °C, voltage derating is required)

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

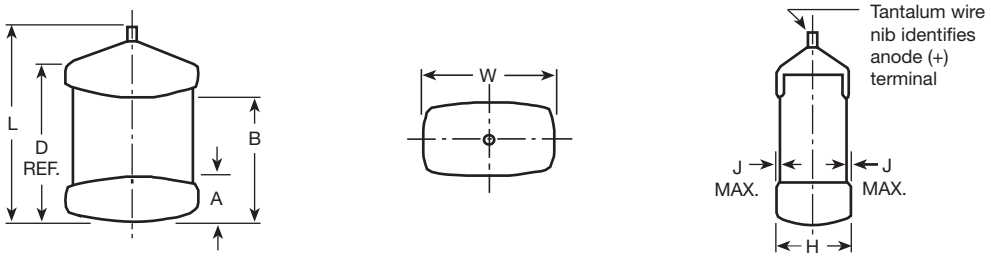
Note

- 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

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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

For technical questions, contact: tantalum@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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”

For technical questions, contact: tantalum@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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”

For technical questions, contact: tantalum@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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”

For technical questions, contact: tantalum@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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”

For technical questions, contact: tantalum@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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”

For technical questions, contact: tantalum@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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”

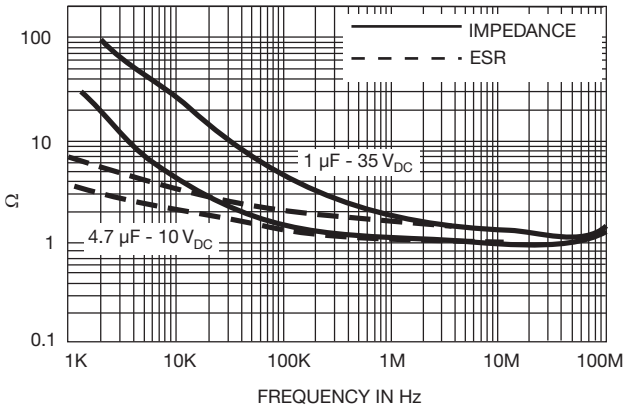
RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperature below + 85 °C)

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

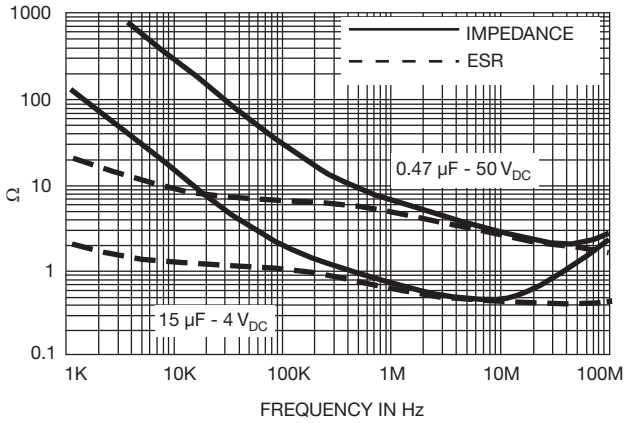
For technical questions, contact: tantalum@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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

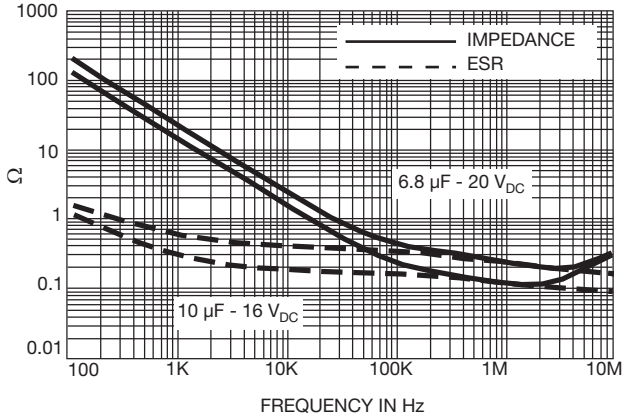
"S" Case



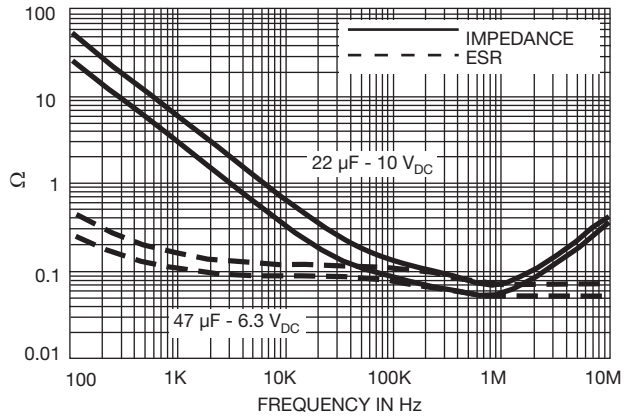
"V" Case



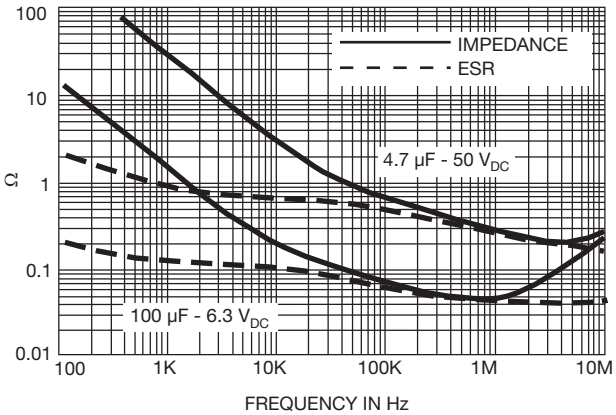
"X" Case



"Y" Case



"Z" Case



For technical questions, contact: tantalum@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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

For technical questions, contact: tantalum@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

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.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru