

## Solid Tantalum Chip Capacitors TANTAMOUNT<sup>®</sup>, 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](http://www.vishay.com/doc?99912)



### Note

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

### PERFORMANCE/ELECTRICAL CHARACTERISTICS

[www.vishay.com/doc?40088](http://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<sub>DC</sub> to 50 V<sub>DC</sub>

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

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



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 (%)	
<b>2 V<sub>DC</sub> AT + 85 °C, 1.2 V<sub>DC</sub> AT + 125 °C</b>					
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	
<b>4 V<sub>DC</sub> AT + 85 °C, 2.7 V<sub>DC</sub> AT + 125 °C</b>					
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"



STANDARD RATINGS				
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)
<b>4 V<sub>DC</sub> AT + 85 °C, 2.7 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>6.3 V<sub>DC</sub> AT + 85 °C, 4 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>10 V<sub>DC</sub> AT + 85 °C, 7 V<sub>DC</sub> AT + 125 °C</b>				
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:
  - 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>				
<b>CAPACITANCE (<math>\mu</math>F)</b>	<b>CASE CODE</b>	<b>PART NUMBER</b>	<b>MAX. DCL AT + 25 °C (<math>\mu</math>A)</b>	<b>MAX. DF AT + 25 °C 120 Hz (%)</b>
<b>10 V<sub>DC</sub> AT + 85 °C, 7 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>15 V<sub>DC</sub> AT + 85 °C, 10 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>16 V<sub>DC</sub> AT + 85 °C, 10 V<sub>DC</sub> AT + 125 °C</b>				
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:
  - 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 ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)
<b>20 V<sub>DC</sub> AT + 85 °C, 13 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>25 V<sub>DC</sub> AT + 85 °C, 17 V<sub>DC</sub> AT + 125 °C</b>				
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:
  - 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 ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)
<b>35 V<sub>DC</sub> AT + 85 °C, 23 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>40 V<sub>DC</sub> AT + 85 °C, 23 V<sub>DC</sub> TO 25 V<sub>DC</sub> AT + 125 °C</b>				
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
<b>50 V<sub>DC</sub> AT + 85 °C, 33 V<sub>DC</sub> AT + 125 °C</b>				
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:
  - 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 ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)
<b>50 V<sub>DC</sub> AT + 85 °C, 33 V<sub>DC</sub> AT + 125 °C</b>				
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

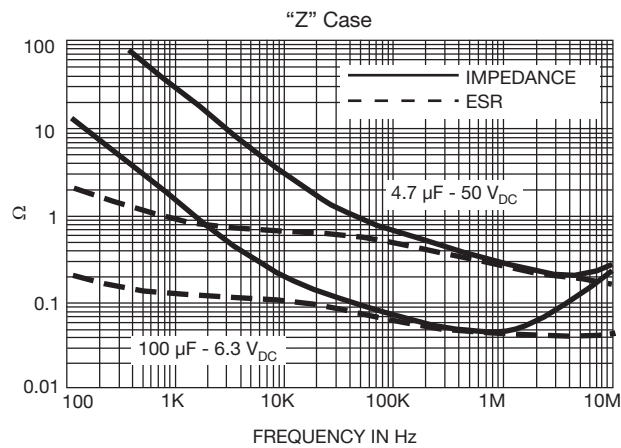
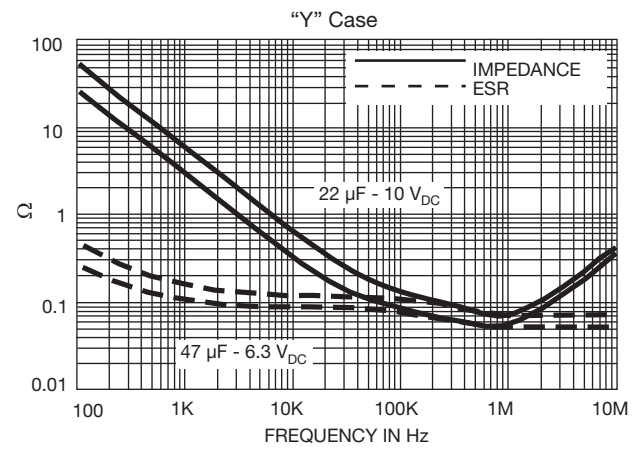
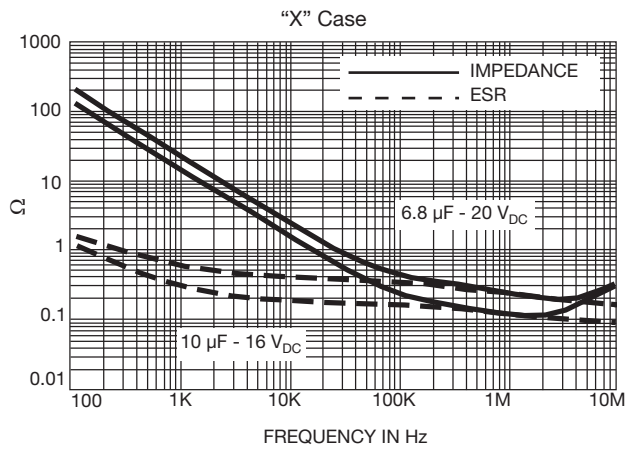
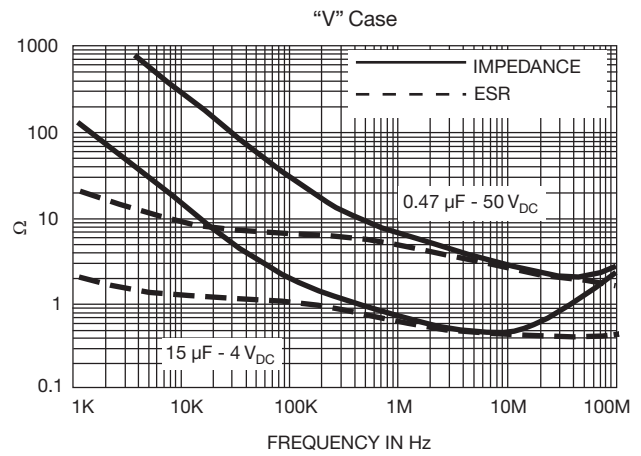
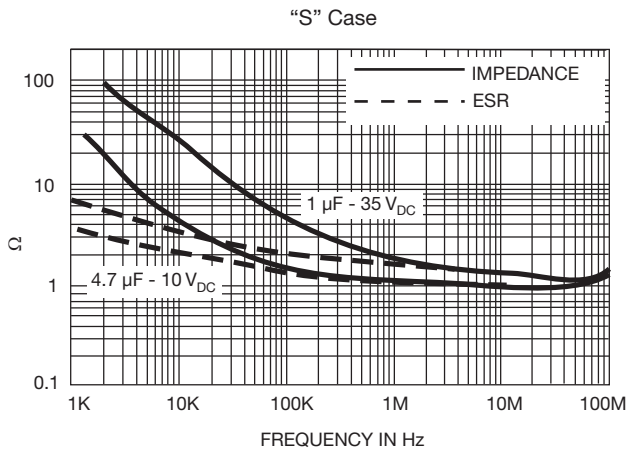
**Note**

- Part number definitions:
  - 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>RECOMMENDED VOLTAGE DERATING GUIDELINES</b> (for temperature below + 85 °C)	
<b>STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS</b>	
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
<b>SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS</b>	
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



**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	0.040
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	<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.**

**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.**

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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