

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



## FEATURES

- New case size offerings
- Low profile case: V case (2 mm)
- Terminations: 100 % tin (2) standard; tin/lead available
- Extremely low ESR
- Mounting: Surface mount
- Ripple current up to 4.1 A
- Compliant to RoHS Directive 2002/95/EC



**RoHS\***  
COMPLIANT

## Note

\* 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:** 10 µF to 1500 µF

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

**Voltage Rating:** 4 V<sub>DC</sub> to 75 V<sub>DC</sub>

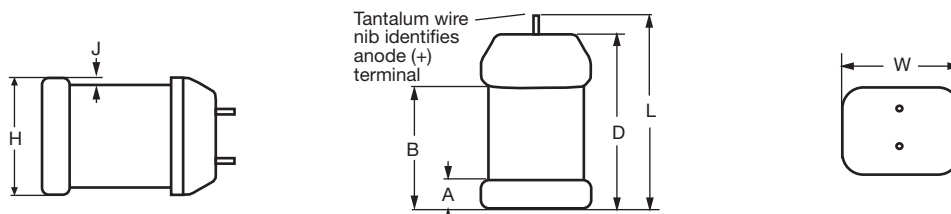
## ORDERING INFORMATION

597D	687	X0	6R3	E	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> <b>X9 = ± 10 %</b>	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 Codes table	<b>2 = 100 % tin</b> 8 = Solder plated (60/40) special order	<b>T = Tape and reel</b> <b>7" [178 mm] reel</b>

## 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. Voltage substitutions will be marked with the higher voltage rating.

## DIMENSIONS in inches [millimeters]



CASE CODE	L (MAX.)	W	H	A	B	D (REF.)	J (MAX.)
V	0.299 [7.6]	0.173 ± 0.016 [4.4 ± 0.4]	0.079 [2.0 max.]	0.051 ± 0.012 [1.3 ± 0.3]	0.181 ± 0.024 [4.6 ± 0.6]	0.252 [6.4]	0.004 [0.1]
D	0.299 [7.6]	0.173 ± 0.016 [4.4 ± 0.4]	0.138 [3.5 max.]	0.051 ± 0.012 [1.3 ± 0.3]	0.181 ± 0.024 [4.6 ± 0.6]	0.252 [6.4]	0.004 [0.1]
E	0.299 [7.6]	0.173 ± 0.016 [4.4 ± 0.4]	0.157 ± 0.016 [4.0 ± 0.4]	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	0.299 [7.6]	0.238 ± 0.016 [6.0 ± 0.4]	0.142 ± 0.016 [3.6 ± 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]
F	0.299 [7.6]	0.238 ± 0.016 [6.0 ± 0.4]	0.185 ± 0.016 [4.7 ± 0.4]	0.055 ± 0.016 [1.4 ± 0.4]	0.181 ± 0.024 [4.6 ± 0.6]	0.244 [6.2]	0.004 [0.1]
Z	0.299 [7.6]	0.238 ± 0.016 [6.0 ± 0.4]	0.236 ± 0.016 [6.0 ± 0.4]	0.055 ± 0.016 [1.4 ± 0.4]	0.181 ± 0.024 [4.6 ± 0.6]	0.244 [6.2]	0.004 [0.1]
M	0.315 [8]	0.260 ± 0.016/- 0.024 [6.6 ± 0.4/- 0.6]	0.142 ± 0.016 [3.6 ± 0.4]	0.051 ± 0.012 [1.3 ± 0.3]	0.197 ± 0.024 [5.0 ± 0.6]	0.260 [6.6]	0.004 [0.1]
H	0.315 [8]	0.260 ± 0.016/- 0.024 [6.6 ± 0.4/- 0.6]	0.205 ± 0.016 [5.2 ± 0.4]	0.055 ± 0.016 [1.4 ± 0.4]	0.197 ± 0.024 [5.0 ± 0.6]	0.260 [6.6]	0.004 [0.1]

## Note

- The anode termination (D less B) will be a minimum of 0.012" [0.3 mm]



RATINGS AND CASE CODES										
μF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V	63 V	75 V
10									D	R <sup>(1)</sup>
15								E/R	R	
22								R	F	
33								F		
47							R	Z		
68						R	F			
100						F	F			
150						F				
220				E	R	M				
330		V	E	F	H					
470	V	E	E	H						
680	E	E	R							
1000	E/R	R	F							
1500	R									
2200										

**Note**

(1) Preliminary values, contact factory for availability

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 (mΩ)	MAX. RIPPLE 100 kHz I <sub>RMS</sub> (A)
<b>4 V<sub>DC</sub> AT + 85 °C; 2.7 V<sub>DC</sub> AT + 125 °C</b>						
470	V	597D477(1)004V(2)(3)	19	8	60	2.2
680	E	597D687(1)004E(2)(3)	27	6	25	2.9
1000	E	597D108(1)004E(2)(3)	40	8	20	3.3
1000	R	597D108(1)004R(2)(3)	40	8	18	3.7
1500	R	597D158(1)004R(2)(3)	60	8	24	2.9
<b>6.3 V<sub>DC</sub> AT + 85 °C; 4 V<sub>DC</sub> AT + 125 °C</b>						
330	V	597D337(1)6R3V(2)(3)	21	8	56	2.0
470	E	597D477(1)6R3E(2)(3)	30	6	30	2.7
680	E	597D687(1)6R3E(2)(3)	43	6	25	2.9
1000	R	597D108(1)6R3R(2)(3)	63	8	31	2.8
<b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b>						
330	E	597D337(1)010E(2)(3)	33	6	35	2.5
470	E	597D477(1)010E(2)(3)	47	6	28	2.8
680	R	597D687(1)010R(2)(3)	68	6	28	3.0
1000	F	597D108(1)010F(2)(3)	100	20	120	1.4
<b>16 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C</b>						
220	E	597D227(1)016E(2)(3)	35	8	60	2.3
330	F	597D337(1)016F(2)(3)	53	10	100	1.6
470	H	597D477(1)016H(2)(3)	75	14	100	1.4
<b>20 V<sub>DC</sub> AT + 85 °C; 13 V<sub>DC</sub> AT + 125 °C</b>						
220	R	597D227(1)020R(2)(3)	44	8	80	1.8
330	H	597D337(1)020H(2)(3)	66	10	100	1.6
<b>25 V<sub>DC</sub> AT + 85 °C; 17 V<sub>DC</sub> AT + 125 °C</b>						
68	R	597D686(1)025R(2)(3)	17	6	100	1.6
100	F	597D107(1)025F(2)(3)	25	8	100	1.6

**Notes**

- Part number definitions:
  - Tolerance: For 10 % tolerance, specify "X9", for 20 % tolerance, change to "X0"
  - Termination: For 100 % tin specify "2", for solder plated 60/40 specify "8"
  - Packaging code: For 7" reels specify "T"
- Preliminary values, contact factory for availability



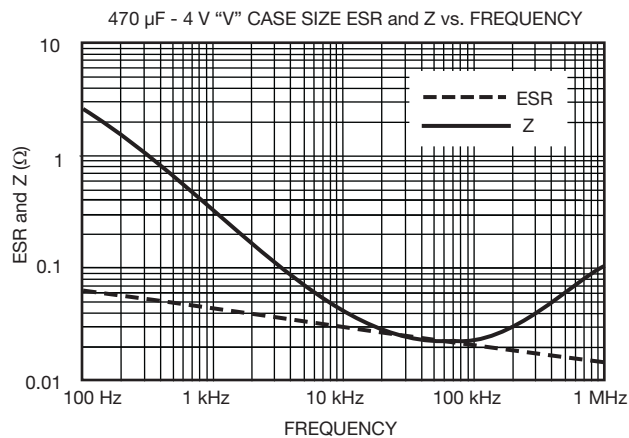
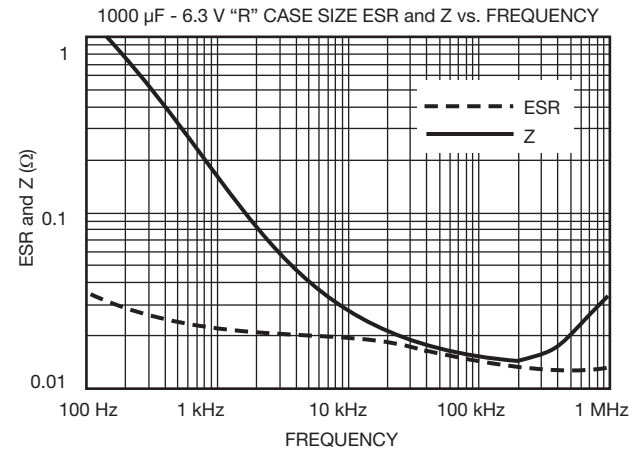
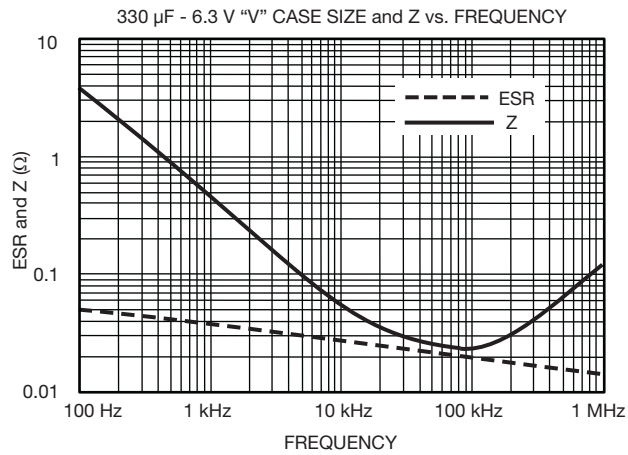
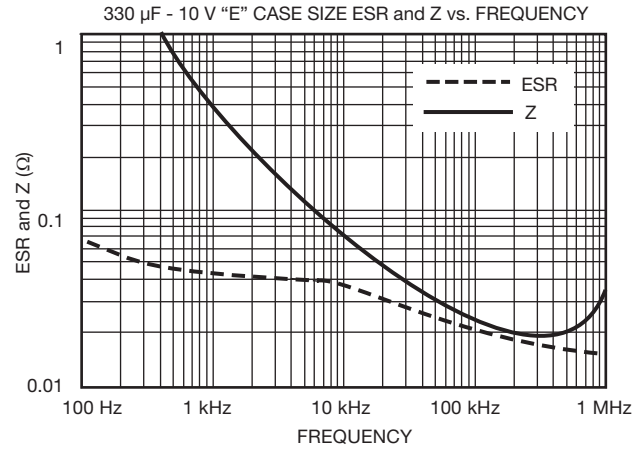
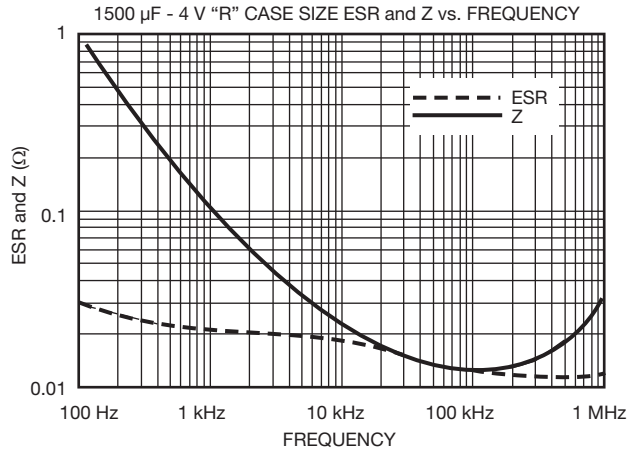
STANDARD RATINGS						
CAPACITANCE (μF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (μA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (mΩ)	MAX. RIPPLE 100 kHz I <sub>RMS</sub> (A)
<b>25 V<sub>DC</sub> AT + 85 °C; 17 V<sub>DC</sub> AT + 125 °C</b>						
150	F	597D157(1)025F(2)(3)	38	8	80	1.8
220	M	597D227(1)025M(2)(3)	55	8	100	1.6
<b>35 V<sub>DC</sub> AT + 85 °C; 23 V<sub>DC</sub> AT + 125 °C</b>						
47	R	597D476(1)035R(2)(3)	17	6	100	1.6
68	F	597D686(1)035F(2)(3)	24	6	100	1.6
100	F	597D107X0035F(2)(3)	35	8	100	1.6
<b>50 V<sub>DC</sub> AT + 85 °C; 33 V<sub>DC</sub> AT + 125 °C</b>						
15	E	597D156(1)050E(2)(3)	8	6	300	0.9
15	R	597D156(1)050R(2)(3)	8	6	250	1.0
22	R	597D226(1)050R(2)(3)	11	6	220	1.1
33	F	597D336(1)050F(2)(3)	17	6	150	1.3
47	Z	597D476(1)050Z(2)(3)	24	6	240	1.1
<b>63 V<sub>DC</sub> AT + 85 °C; 42 V<sub>DC</sub> AT + 125 °C</b>						
10	D	597D106(1)063D(2)(3)	10	6	400	0.6
15	R	597D156(1)063R(2)(3)	10	6	400	0.8
22	F	597D226(1)063F(2)(3)	14	6	250	1.0
<b>75 V<sub>DC</sub> AT + 85 °C; 50 V<sub>DC</sub> AT + 125 °C</b>						
10	R <sup>(1)</sup>	597D106(1)075R(2)(3)	8	6	500	0.7

**Notes**

- Part number definitions:
  - (1) Tolerance: For 10 % tolerance, specify "X9", for 20 % tolerance, change to "X0"
  - (2) Termination: For 100 % tin specify "2", for solder plated 60/40 specify "8"
  - (3) Packaging code: For 7" reels specify "T"
- (1) Preliminary values, contact factory for availability

RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperature below + 85 °C)	
STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS	
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
63	37.8
75	45
SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS	
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
63	32
75	37

**TYPICAL CURVES**





POWER DISSIPATION	
CASE CODE	MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR
V	0.141
D	0.215
E	0.240
R, F, M	0.250
Z	0.265
H	0.265

STANDARD PACKAGING QUANTITY	
CASE CODE	UNITS PER 7" REEL
V	1000
D	400
E	500
R	300
F	250
Z	250
M	200
H	200

PRODUCT INFORMATION	
Conformal Coated Guide	<a href="http://www.vishay.com/doc?40150">www.vishay.com/doc?40150</a>
Pad Dimensions	
Packaging Dimensions	
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>
FAQ	
Frequently Asked Questions	<a href="http://www.vishay.com/doc?40110">www.vishay.com/doc?40110</a>



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