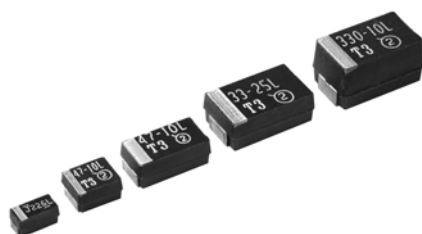


# Solid Tantalum Chip Capacitors

## TANTAMOUNT®, Commercial, Surface Mount



### FEATURES

- Terminations: 100 % Tin, standard  
SnPb available
- Compliant Terminations
- Molded case available in six case codes
- Compatible with "High Volume" automatic pick and place equipment
- Optical character recognition qualified
- Meets IEC Specification QC300801/US0001 and EIA 535BAAC



**RoHS\***  
COMPLIANT

### PERFORMANCE/ELECTRICAL CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 85 °C

(To + 125 °C with voltage derating)

**Note:** Refer to Doc. 40088

**Capacitance Range:** 0.10 µF to 680 µF

**Capacitance Tolerance:** ± 20 %, ± 10 % standard  
(20 % only for P case code)

**100 % Surge Current Tested (D & E Case Codes)**

**Voltage Rating:** 4 WVDC to 50 WVDC

### OTHER SPECIFICATIONS

#### CECC

30801-005

30801-009

30801-011

30801-801

#### IECQ

PQC32/GB003

300801/FR001

793DX

CTC3

CTC4

793DE

### ORDERING INFORMATION

293D TYPE	107 CAPACITANCE	X9 CAPACITANCE TOLERANCE	010 DC VOLTAGE RATING AT + 85 °C	D CASE CODE	2WE3 TERMINATION AND 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 volts).	See Ratings and Case Codes Table.	2TE3: 100 % tin terminations, 7" (178 mm) reel 2WE3: 100 % tin terminations, 13" (330 mm) reel 8T: 90/10 SnPb Solder Plate terminations, 7" (178 mm) reel 8W: 90/10 SnPb Solder Plate terminations, 13" (330 mm) reel 2T: Solderable coating, non-preferred 2W: Solderable coating, non-preferred

**Note:** We reserve the right to supply higher voltage ratings, tighter capacitance tolerance and higher grade capacitors in the same case size. Voltage substitutions will be marked with the higher voltage rating.

### DIMENSIONS in inches [millimeters]

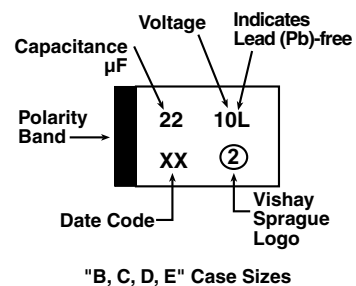
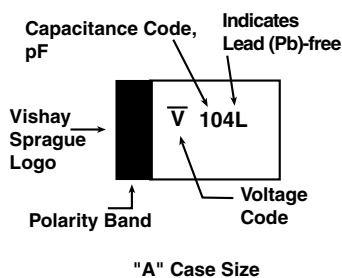
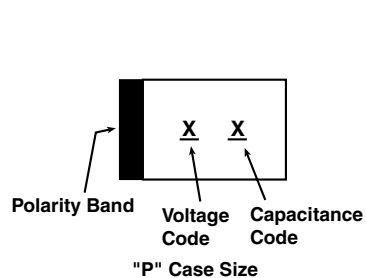
CASE CODE	EIA SIZE	L	W	H	P	TW	TH (MIN.)
A	3216-18	0.126 ± 0.008 [3.2 ± 0.20]	0.063 ± 0.008 [1.6 ± 0.20]	0.063 ± 0.008 [1.6 ± 0.20]	0.031 ± 0.012 [0.80 ± 0.30]	0.047 ± 0.004 [1.2 ± 0.10]	0.028 [0.70]
B	3528-21	0.138 ± 0.008 [3.5 ± 0.20]	0.110 ± 0.008 [2.8 ± 0.20]	0.075 ± 0.008 [1.9 ± 0.20]	0.031 ± 0.012 [0.80 ± 0.30]	0.087 ± 0.004 [2.2 ± 0.10]	0.028 [0.70]
C	6032-28	0.236 ± 0.012 [6.0 ± 0.30]	0.126 ± 0.012 [3.2 ± 0.30]	0.098 ± 0.012 [2.5 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.087 ± 0.004 [2.2 ± 0.10]	0.039 [1.0]
D	7343-31	0.287 ± 0.012 [7.3 ± 0.30]	0.170 ± 0.012 [4.3 ± 0.30]	0.110 ± 0.012 [2.8 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.095 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
E	7343-43	0.287 ± 0.012 [7.3 ± 0.30]	0.170 ± 0.012 [4.3 ± 0.30]	0.158 ± 0.012 [4.0 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.095 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
P	2012-12	0.079 ± 0.020 [2.0 ± 0.008]	0.049 ± 0.008 [1.25 ± 0.2]	0.047 Max. [1.2 Max.]	0.020 ± 0.008 [0.52 ± 0.20]	0.047 ± 0.004 [1.2 ± 0.10]	0.012 [0.3]

\* Pb containing terminations are not RoHS compliant, exemptions may apply

**RATINGS AND CASE CODES**

μF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.10							A	A
0.15							A	A/B
0.22							A	A/B
0.33							A	A/B
0.47						A	A/B	A/B/C
0.68					A	A	A/B	B/C
1.0		P	P	A	A	A/B	A/B	B/C
1.5		P	A	A	A	A/B	B/C	B/C
2.2	P	A/P	A/P	A/B	A/B	A/B	B/C	C/D
3.3	A/P	A/P	A/P	A/B	A/B	A*/B/C	B/C	C/D
4.7	A/P	A/B/P	A/B/P	A/B	A/B/C	A/B/C	C/D	D
6.8	A/P	A/B/P	A/B/P	A/B/C	A/B/C	B/C	C/D	D/E
10	A/B/P	A/B/C/P	A/B/C	A/B/C	B/C	B/C/D	C/D	D/E
15	A/B	A/B/C	A/B/C	B/C	B/C/D	C/D	D/E	
22	A/BC	A/B/C	A/B/C	B/C/D	B/C/D	D	D/E	
33	A/B/C	A/B/C	B/C/D	B/C/D	C/D	D/E		
47	A/B/C	B/C/D	B/C/D	C/D	D/E	E		
68	B/C/D	B/C/D	B*/C/D	D	D/E			
100	B/C/D	B/C/D	C/D	D/E	E			
150	B/C/D	C/D/E	D/E	D*/E				
220	B/C/D/E	C/D/E	D/E					
330	D/E	D/E	E					
470	D/E	E						
680	E							

\* Preliminary values, contact factory for availability.

**MARKING**

Solid Tantalum Chip Capacitors  
TANTAMOUNT®, Commercial, Surface Mount

Vishay Sprague

## STANDARD/EXTENDED RATINGS

CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz I <sub>rms</sub> (Amps)
4 WVDC AT + 85 °C, SURGE = 5.2 V . . . 2.7 WVDC AT + 125 °C, SURGE = 3.4 V						
2.2	P	293D225X_004P2T_E3	0.5	8	12	0.02
3.3	A	293D335X_004A2_E3	0.5	6	7.6	0.10
3.3	P	293D335X_004P2_E3	0.5	8	12	0.02
4.7	A	293D475X_004A2_E3	0.5	6	6.3	0.11
4.7	P	293D475X_004P2_E3	0.5	8	6.0	0.06
6.8	A	293D685X_004A2_E3	0.5	6	5.5	0.12
6.8	P	293D685X_004P2_E3	0.5	10	6.0	0.06
10	A	293D106X_004A2_E3	0.5	6	5.1	0.12
10	B	293D106X_004B2_E3	0.5	6	3.5	0.16
10	P	293D106X_004P2_E3	0.5	10	6.0	0.06
15	A	293D156X_004A2_E3	0.6	6	3.4	0.15
15	B	293D156X_004B2_E3	0.6	6	2.9	0.17
15	P	293D156X_004P2_E3	0.6	6	N/A	N/A
22	A	293D226X_004A2_E3	0.9	6	2.9	0.16
22	B	293D226X_004B2_E3	0.9	6	2.5	0.18
22	C	293D226X_004C2_E3	0.9	6	1.8	0.25
33	A	293D336X_004A2_E3	1.3	6	2.9	0.16
33	B	293D336X_004B2_E3	1.3	6	2.0	0.21
33	C	293D336X_004C2_E3	1.3	6	1.8	0.25
47	A	293D476X_004A2_E3	1.9	14	2.5	0.17
47	B	293D476X_004B2_E3	1.9	6	1.9	0.21
47	C	293D476X_004C2_E3	1.9	6	1.8	0.25
68	B	293D686X_004B2_E3	2.7	6	1.9	0.21
68	C	293D686X_004C2_E3	2.7	6	1.4	0.28
68	D	293D686X_004D2_E3	2.7	6	0.8	0.43
100	B	293D107X_004B2_E3	4.0	8	1.8	0.22
100	C	293D107X_004C2_E3	4.0	6	0.8	0.37
100	D	293D107X_004D2_E3	4.0	6	0.7	0.46
150	B	293D157X_004B2_E3	6.0	14	1.6	0.23
150	C	293D157X_004C2_E3	6.0	12	0.7	0.40
150	D	293D157X_004D2_E3	6.0	8	0.6	0.50
220	B	293D227X_004B2_E3	8.8	18	1.5	0.24
220	C	293D227X_004C2_E3	8.8	8	0.7	0.40
220	D	293D227X_004D2_E3	8.8	8	0.6	0.50
220	E	293D227X_004E2_E3	8.8	8	0.5	0.57
330	D	293D337X_004D2_E3	13.2	8	0.6	0.50
330	E	293D337X_004E2_E3	13.2	8	0.5	0.57
470	D	293D477X_004D2_E3	18.8	10	0.6	0.50
470	E	293D477X_004E2_E3	18.8	10	0.5	0.57
680	E	293D687X_004E2_E3	27.2	12	0.5	0.57
6.3 WVDC AT + 85 °C, SURGE = 8 V . . . 4 WVDC AT + 125 °C, SURGE = 5 V						
1.0	P	293D225X_6R3P2_E3	0.5	8	12	0.02
1.5	P	293D225X_6R3P2_E3	0.5	8	12	0.02
2.2	A	293D225X_6R3A2_E3	0.5	6	7.6	0.10
2.2	P	293D225X_6R3P2_E3	0.5	8	12	0.02
3.3	A	293D335X_6R3A2_E3	0.5	6	6.3	0.11
3.3	P	293D335X_6R3P2_E3	0.5	8	12	0.02
4.7	A	293D475X_6R3A2_E3	0.5	6	5.5	0.12
4.7	P	293D475X_6R3P2_E3	0.5	8	6.0	0.06
6.8	A	293D685X_6R3A2_E3	0.5	6	5.0	0.12
6.8	B	293D685X_6R3B2_E3	0.5	6	3.4	0.16
6.8	P	293D685X_6R3P2_E3	0.5	10	6.0	0.06
10	A	293D106X_6R3A2_E3	0.6	6	3.4	0.15
10	B	293D106X_6R3B2_E3	0.6	6	2.9	0.17
10	P	293D106X_6R3P2_E3	0.6	10	6.0	0.06
15	A	293D156X_6R3A2_E3	0.9	6	2.9	0.16
15	B	293D156X_6R3B2_E3	0.9	6	2.5	0.18
15	C	293D156X_6R3C2_E3	0.9	6	1.8	0.25
22	A	293D226X_6R3A2_E3	1.3	6	2.9	0.16
22	B	293D226X_6R3B2_E3	1.3	6	2.0	0.21
22	C	293D226X_6R3C2_E3	1.3	6	1.8	0.25
33	A	293D336X_6R3A2_E3	2.0	14	2.5	0.17
33	B	293D336X_6R3B2_E3	2.0	6	1.9	0.21
33	C	293D336X_6R3C2_E3	2.0	6	1.5	0.27
47	B	293D476X_6R3B2_E3	2.8	6	1.9	0.21
47	C	293D476X_6R3C2_E3	2.8	6	1.4	0.28

\* For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

**STANDARD/EXTENDED RATINGS**

CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
<b>6.3 WVDC AT + 85 °C, SURGE = 8 V ... 4 WVDC AT + 125 °C, SURGE = 5 V</b>						
47	D	293D476X_6R3D2_E3	2.8	6	0.8	0.43
68	B	293D686X_6R3B2_E3	4.1	6	1.8	0.22
68	C	293D686X_6R3C2_E3	4.1	6	0.8	0.37
68	D	293D686X_6R3D2_E3	4.1	6	0.7	0.46
100	B	293D107X_6R3B2_E3	6.0	15	1.7	0.22
100	C	293D107X_6R3C2_E3	6.0	6	0.8	0.37
100	D	293D107X_6R3D2_E3	6.0	6	0.7	0.46
150	C	293D157X_6R3C2_E3	9.0	8	0.7	0.40
150	D	293D157X_6R3D2_E3	9.0	8	0.6	0.50
150	E	293D157X_6R3E2_E3	9.0	8	0.5	0.57
220	C	293D227X_6R3C2_E3	13.9	14	0.7	0.39
220	D	293D227X_6R3D2_E3	13.2	8	0.6	0.50
220	E	293D227X_6R3E2_E3	13.2	8	0.5	0.57
330	D	293D337X_6R3D2_E3	19.8	8	0.6	0.50
330	E	293D337X_6R3E2_E3	19.8	8	0.5	0.57
470	E	293D477X_6R3E2_E3	28.2	10	0.5	0.57
<b>10 WVDC AT + 85 °C, SURGE = 13 V ... 7 WVDC AT + 125 °C, SURGE = 8 V</b>						
1.0	P	293D105X_010P2_E3	0.5	8	12	0.02
1.5	A	293D155X_010A2_E3	0.5	6	8.0	0.10
1.5	P	293D155X_010P2_E3	0.5	8	12	0.02
2.2	A	293D225X_010A2_E3	0.5	6	6.3	0.11
2.2	P	293D225X_010P2_E3	0.5	8	12	0.07
3.3	A	293D335X_010A2_E3	0.5	6	5.5	0.12
3.3	P	293D335X_010P2_E3	0.5	8	12	0.02
4.7	A	293D475X_010A2_E3	0.5	6	5.0	0.12
4.7	B	293D475X_010B2_E3	0.5	6	3.4	0.16
4.7	P	293D475X_010P2_E3	0.5	8	6.0	0.06
6.8	A	293D685X_010A2_E3	0.7	6	4.2	0.13
6.8	B	293D685X_010B2_E3	0.7	6	2.9	0.17
6.8	P	293D685X_010P2_E3	0.5	8	6.0	0.06
10	A	293D106X_010A2_E3	1.0	6	3.4	0.15
10	B	293D106X_010B2_E3	1.0	6	2.5	0.18
10	C	293D106X_010C2_E3	1.0	6	1.8	0.25
15	A	293D156X_010A2_E3	1.5	6	2.9	0.16
15	B	293D156X_010B2_E3	1.5	6	2.0	0.21
15	C	293D156X_010C2_E3	1.5	6	1.8	0.25
22	A	293D226X_010A2_E3	2.2	8	2.5	0.17
22	B	293D226X_010B2_E3	2.2	6	1.9	0.21
22	C	293D226X_010C2_E3	2.2	6	1.5	0.27
33	B	293D336X_010B2_E3	3.3	6	1.9	0.21
33	C	293D336X_010C2_E3	3.3	6	1.4	0.28
33	D	293D336X_010D2_E3	3.3	6	0.8	0.43
47	B	293D476X_010B2_E3	4.7	6	1.8	0.22
47	C	293D476X_010C2_E3	4.7	6	1.1	0.32
47	D	293D476X_010D2_E3	4.7	6	0.7	0.46
68	C	293D686X_010C2_E3	6.8	6	1.0	0.33
68	D	293D686X_010D2_E3	6.8	6	0.7	0.46
100	C	293D107X_010C2_E3	10	8	0.9	0.35
100	D	293D107X_010D2_E3	10	8	0.6	0.50
150	D	293D157X_010D2_E3	15	8	0.6	0.50
150	E	293D157X_010E2_E3	15	8	0.5	0.57
220	D	293D227X_010D2_E3	22	8	0.6	0.50
220	E	293D227X_010E2_E3	22	8	0.5	0.57
330	E	293D337X_010E2_E3	33	10	0.5	0.57
<b>16 WVDC AT + 85 °C, SURGE = 20 V ... 10 WVDC AT + 125 °C, SURGE = 12 V</b>						
1.0	A	293D105X_016A2_E3	0.5	4	9.3	0.09
1.5	A	293D155X_016A2_E3	0.5	6	6.7	0.11
2.2	A	293D225X_016A2_E3	0.5	6	5.9	0.11
2.2	B	293D225X_016B2_E3	0.5	6	4.6	0.14
3.3	A	293D335X_016A2_E3	0.5	6	5.0	0.12
3.3	B	293D335X_016B2_E3	0.5	6	3.5	0.16
4.7	A	293D475X_016A2_E3	0.8	6	5.0	0.12
4.7	B	293D475X_016B2_E3	0.8	6	2.9	0.17

\* For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

Solid Tantalum Chip Capacitors  
TANTAMOUNT®, Commercial, Surface Mount

Vishay Sprague

STANDARD/EXTENDED RATINGS						
CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
16 WVDC AT + 85 °C, SURGE = 20 V . . . 10 WVDC AT + 125 °C, SURGE = 12 V						
6.8	A	293D685X_016A2_E3	1.1	6	4.2	0.13
6.8	B	293D685X_016B2_E3	1.1	6	2.5	0.18
6.8	C	293D685X_016C2_E3	1.1	6	1.9	0.24
10	A	293D106X_016A2_E3	1.6	6	3.0	0.16
10	B	293D106X_016B2_E3	1.6	6	2.0	0.21
10	C	293D106X_016C2_E3	1.6	6	1.8	0.25
15	B	293D156X_016B2_E3	2.4	6	2.0	0.21
15	C	293D156X_016C2_E3	2.4	6	1.5	0.27
22	B	293D226X0016B2_E3	3.5	6	1.9	0.21
22	C	293D226X_016C2_E3	3.5	6	1.4	0.28
22	D	293D226X_016D2_E3	3.5	6	0.8	0.43
33	B	293D336X0016B2_E3	5.3	6	1.8	0.22
33	C	293D336X_016C2_E3	5.3	6	1.1	0.32
33	D	293D336X_016D2_E3	5.3	6	0.7	0.46
47	C	293D476X_016C2_E3	7.5	6	1.0	0.33
47	D	293D476X_016D2_E3	7.5	6	0.7	0.46
68	D	293D686X_016D2_E3	10.9	6	0.6	0.50
100	D	293D107X_016D2_E3	16	8	0.6	0.50
100	E	293D107X_016E2_E3	16	8	0.6	0.52
150	E	293D157X_016E2_E3	24	8	0.5	0.57
20 WVDC AT + 85 °C, SURGE = 26 V . . . 13 WVDC AT + 125 °C, SURGE = 16 V						
0.68	A	293D684X_020A2_E3	0.5	4	10	0.09
1.0	A	293D105X_020A2_E3	0.5	4	8.4	0.09
1.5	A	293D155X_020A2_E3	0.5	6	6.3	0.11
2.2	A	293D225X_020A2_E3	0.5	6	5.9	0.11
2.2	B	293D225X_020B2_E3	0.5	6	3.5	0.16
3.3	A	293D335X_020A2_E3	0.7	6	5.9	0.11
3.3	B	293D335X_020B2_E3	0.7	6	3.0	0.17
4.7	A	293D475X_020A2_E3	0.9	6	5.0	0.12
4.7	B	293D475X_020B2_E3	0.9	6	2.9	0.17
4.7	C	293D475X_020C2_E3	0.9	6	2.3	0.22
6.8	A	293D685X_020A2_E3	1.4	6	4.5	0.13
6.8	B	293D685X_020B2_E3	1.4	6	2.5	0.18
6.8	C	293D685X_020C2_E3	1.4	6	1.9	0.24
10	B	293D106X_020B2_E3	2.0	6	2.5	0.18
10	C	293D106X_020C2_E3	2.0	6	1.7	0.25
15	B	293D156X_020B2_E3	3.0	6	2.3	0.19
15	C	293D156X_020C2_E3	3.0	6	1.5	0.27
15	D	293D156X_020D2_E3	3.0	6	0.9	0.41
22	B	293D226X_020B2_E3	4.4	6	2.1	0.20
22	C	293D226X_020C2_E3	4.4	6	1.1	0.32
22	D	293D226X_020D2_E3	4.4	6	0.7	0.46
33	C	293D336X_020C2_E3	6.6	6	1.0	0.33
33	D	293D336X_020D2_E3	6.6	6	0.7	0.46
47	D	293D476X_020D2_E3	9.4	6	0.7	0.46
47	E	293D476X_020E2_E3	9.4	6	0.6	0.52
68	D	293D686X_020D2_E3	13.6	6	0.7	0.46
68	E	293D686X_020E2_E3	13.6	6	0.6	0.52
100	E	293D107X_020E2_E3	20.0	8	0.5	0.57
25 WVDC AT + 85 °C, SURGE = 32 V . . . 17 WVDC AT + 125 °C, SURGE = 20 V						
0.47	A	293D474X_025A2_E3	0.5	4	12	0.08
0.68	A	293D684X_025A2_E3	0.5	4	8.4	0.09
1.0	A	293D105X_025A2_E3	0.5	4	7.6	0.10
1.0	B	293D105X_025B2_E3	0.5	4	5.0	0.13
1.5	A	293D155X_025A2_E3	0.5	6	6.7	0.11
1.5	B	293D155X_025B2_E3	0.5	6	4.6	0.14
2.2	A	293D225X_025A2_E3	0.6	6	6.3	0.11
2.2	B	293D225X_025B2_E3	0.6	6	3.8	0.15
3.3	B	293D335X_025B2_E3	0.8	6	3.1	0.17
3.3	C	293D335X_025C2_E3	0.8	6	2.3	0.22
4.7	A	293D475X_025A2_E3	1.2	6	5.5	0.12
4.7	B	293D475X_025B2_E3	1.2	6	2.8	0.17
4.7	C	293D475X_025C2_E3	1.2	6	2.0	0.24

\* For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

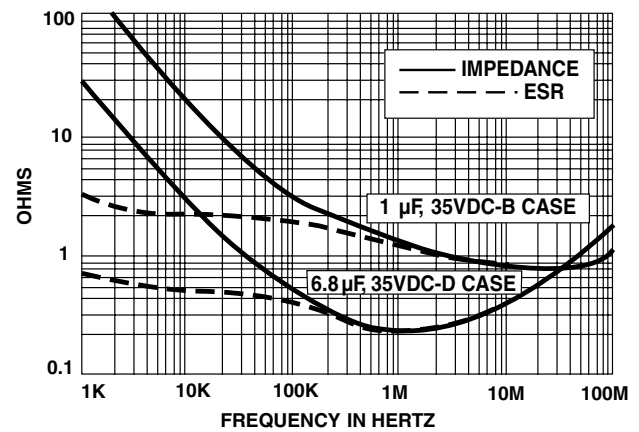
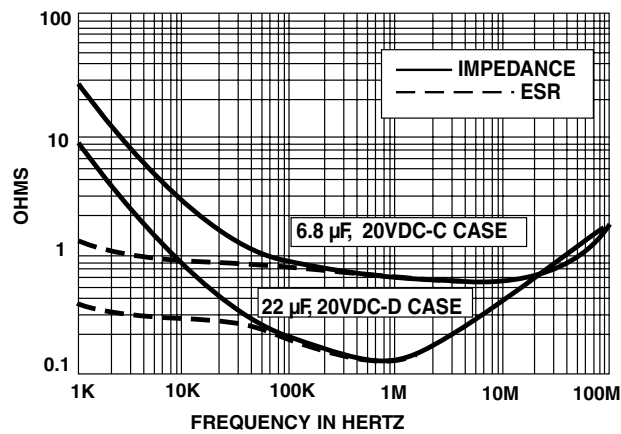
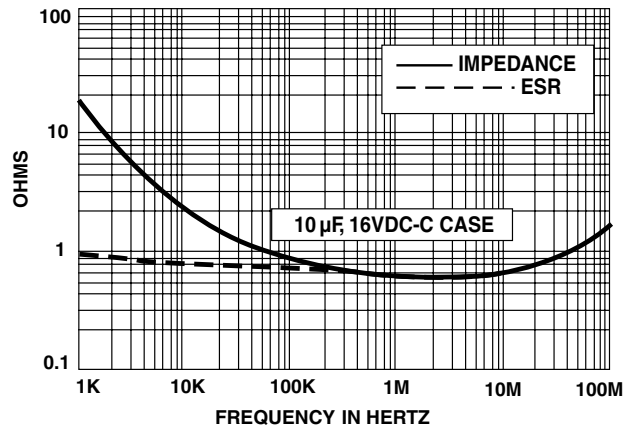
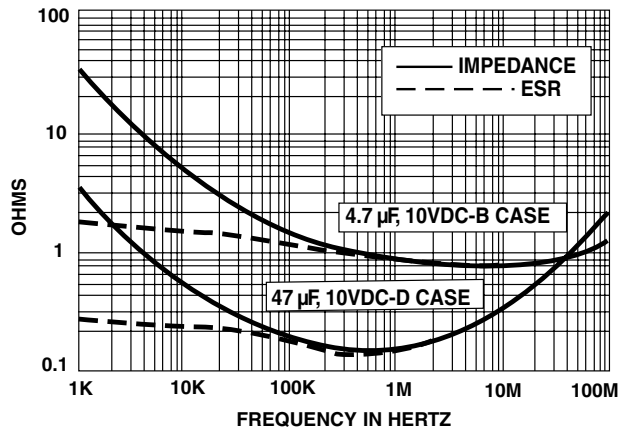
**STANDARD/EXTENDED RATINGS**

CAPACITANCE ( $\mu$ F)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C ( $\mu$ A)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz I <sub>rms</sub> (Amps)
<b>25 WVDC AT + 85 °C, SURGE = 32 V . . . 17 WVDC AT + 125 °C, SURGE = 20 V</b>						
6.8	B	293D685X_025B2_E3	1.7	6	2.4	0.19
6.8	C	293D685X_025C2_E3	1.7	6	1.7	0.25
10	B	293D106X_025B2_E3	2.5	6	2.3	0.19
10	C	293D106X_025C2_E3	2.5	6	1.5	0.27
10	D	293D106X_025D2_E3	2.5	6	1.0	0.39
15	C	293D156X_025C2_E3	3.8	6	1.2	0.30
15	D	293D156X_025D2_E3	3.8	6	0.8	0.43
22	D	293D226X_025D2_E3	5.5	6	0.7	0.46
33	D	293D336X_025D2_E3	8.3	6	0.7	0.46
33	E	293D336X_025E2_E3	8.3	6	0.6	0.52
47	E	293D476X_025E2_E3	11.8	6	0.6	0.52
<b>35 WVDC AT + 85 °C, SURGE = 46 V . . . 23 WVDC AT + 125 °C, SURGE = 28 V</b>						
0.10	A	293D104X_035A2_E3	0.5	4	20	0.06
0.15	A	293D154X_035A2_E3	0.5	4	18	0.07
0.22	A	293D224X_035A2_E3	0.5	4	15	0.07
0.33	A	293D334X_035A2_E3	0.5	4	13	0.08
0.47	A	293D474X_035A2_E3	0.5	4	10	0.09
0.47	B	293D474X_035B2_E3	0.5	4	8	0.10
0.68	A	293D684X_035A2_E3	0.5	4	7.6	0.10
0.68	B	293D684X_035B2_E3	0.5	4	6.5	0.11
1.0	A	293D105X_035A2_E3	0.5	4	7.5	0.10
1.0	B	293D105X_035B2_E3	0.5	4	5.0	0.13
1.5	B	293D155X_035B2_E3	0.5	6	4.2	0.14
1.5	C	293D155X_035C2_E3	0.5	6	3.8	0.17
2.2	B	293D225X_035B2_E3	0.8	6	3.8	0.15
2.2	C	293D225X_035C2_E3	0.8	6	2.9	0.20
3.3	B	293D335X_035B2_E3	1.2	6	3.5	0.16
3.3	C	293D335X_035C2_E3	1.2	6	2.1	0.23
4.7	C	293D475X_035C2_E3	1.6	6	1.9	0.24
4.7	D	293D475X_035D2_E3	1.6	6	1.3	0.34
6.8	C	293D685X_035C2_E3	2.4	6	1.8	0.25
6.8	D	293D685X_035D2_E3	2.4	6	1.1	0.37
10	C	293D106X_035C2_E3	3.5	6	1.6	0.26
10	D	293D106X_035D2_E3	3.5	6	0.8	0.43
15	D	293D156X_035D2_E3	5.3	6	0.7	0.46
15	E	293D156X_035E2_E3	5.3	6	0.7	0.49
22	D	293D226X_035D2_E3	7.7	6	0.6	0.52
22	E	293D226X_035E2_E3	7.7	6	0.6	0.52
<b>50 WVDC AT + 85 °C, SURGE = 65 V . . . 33 WVDC AT + 125 °C, SURGE = 40 V</b>						
0.10	A	293D104X_050A2_E3	0.5	4	19	0.06
0.15	A	293D154X_050A2_E3	0.5	4	17	0.07
0.15	B	293D154X_050B2_E3	0.5	4	14	0.08
0.22	A	293D224X_050A2_E3	0.5	4	15	0.07
0.22	B	293D224X_050B2_E3	0.5	4	12	0.08
0.33	A	293D334X_050A2_E3	0.5	4	14	0.07
0.33	B	293D334X_050B2_E3	0.5	4	10	0.09
0.47	A	293D474X_050A2_E3	0.5	4	12	0.08
0.47	B	293D474X_050B2_E3	0.5	4	8.4	0.10
0.47	C	293D474X_050C2_E3	0.5	4	6.7	0.13
0.68	B	293D684X_050B2_E3	0.5	4	7.6	0.11
0.68	C	293D684X_050C2_E3	0.5	4	5.9	0.14
1.0	B	293D105X_050B2_E3	0.5	4	6.7	0.11
1.0	C	293D105X_050C2_E3	0.5	4	4.6	0.16
1.5	B	293D155X_050B2_E3	0.8	6	6.0	0.12
1.5	C	293D155X_050C2_E3	0.8	6	3.4	0.18
2.2	C	293D225X_050C2_E3	1.1	6	2.9	0.20
2.2	D	293D225X_050D2_E3	1.1	6	2.1	0.27
3.3	C	293D335X_050C2_E3	1.7	6	2.5	0.21
3.3	D	293D335X_050D2_E3	1.7	6	1.7	0.30
4.7	D	293D475X_050D2_E3	2.4	6	1.2	0.37
6.8	D	293D685X_050D2_E3	3.4	6	0.9	0.41
6.8	E	293D685X_050E2_E3	3.4	6	0.9	0.43
10	D	293D106X_050D2_E3	5.0	6	0.8	0.43
10	E	293D106X_050E2_E3	5.0	6	0.8	0.45

\* For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".



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





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