Solid Tantalum Chip Capacitors
TANTAMOUNT®, Molded Case, Built-In-Fuse Miniature

FEATURES

- Terminations: 100 % matte tin standard, tin/lead available
- Molded package available in three case codes
- Compatible with “High Volume” automatic pick and place
- Electrically activated internal fuse
- Meets EIA 535BAAC and IEC specification QC300801/US0001
- Fuse activation at 25 °C: 0.1 s max. with 5 A min. applied current
- 100 % surge current tested (D and E case codes)
- Compliant to RoHS Directive 2002/95/EC
- Moisture sensitivity level 1

Pb-free Available

RoHS* COMPLIANT

Note

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

PERFORMANCE CHARACTERISTICS

www.vishay.com/doc?40088

Operating Temperature: - 55 °C to + 125 °C
(Above 85 °C voltage derating is required)

Capacitance Range: 0.47 µF to 470 µF
Capacitance Tolerance: ± 10 %, ± 20 %
100 % Surge Current Tested (D and E case codes)
Voltage Rating: 4 V_{DC} to 50 V_{DC}

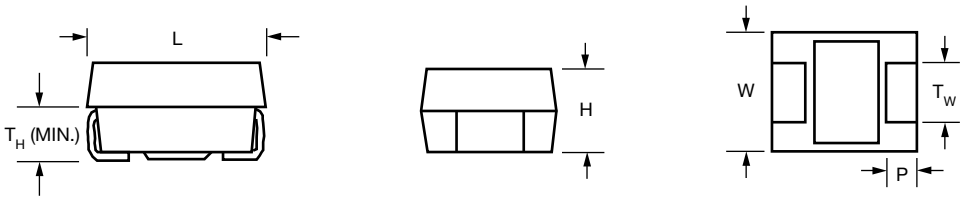
ORDERING INFORMATION

893D	106	X0	010	B	2WE3
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	CASE CODE	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	X9 = ± 10 % X0 = ± 20 %	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	2TE3: Matte tin, 7" (178 mm) reel 2WE3: Matte tin, 13" (330 mm) reel 8T: Tin/lead, 7" (178 mm) reel 8W: Tin/lead, 13" (330 mm) reel

Note

- 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.
  Effective July 15, 2008, part numbers with solderable termination codes “2T” and “2W” may have either matte tin or tin/lead terminations. Codes 2TE3 and 2WE3 specify only matte tin terminations. Codes 8T and 8W specify only tin/lead terminations.

DIMENSIONS in inches [millimeters]

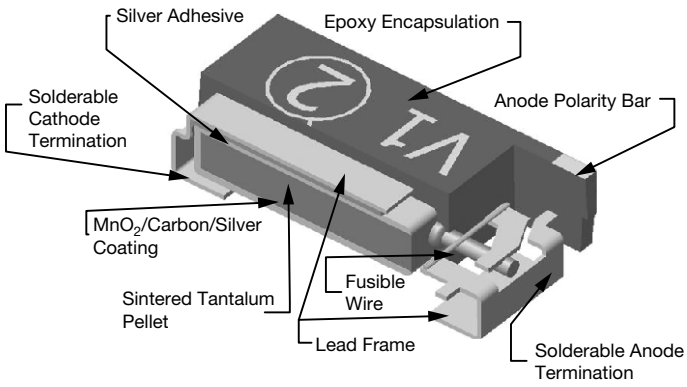


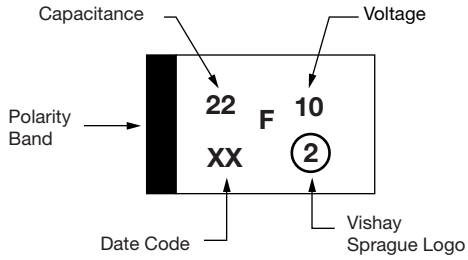
CASE CODE	EIA SIZE	L	W	H	P	T_W	T_H (MIN.)
C	6032-28	0.236 ± 0.012 [6.0 ± 0.30]	0.126 ± 0.012 [3.2 ± 0.30]	0.098 ± 0.012 [2.5 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.087 ± 0.004 [2.2 ± 0.10]	0.039 [1.0]
D	7343-31	0.287 ± 0.012 [7.3 ± 0.30]	0.169 ± 0.012 [4.3 ± 0.30]	0.110 ± 0.012 [2.8 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.094 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
E	7343-43	0.287 ± 0.012 [7.3 ± 0.30]	0.169 ± 0.012 [4.3 ± 0.30]	0.157 ± 0.012 [4.0 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.094 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]

RATINGS AND CASE CODES

µF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.47								C
0.68								C
1.0								C
1.5							C	C
2.2						C/D	C	C/D
3.3						C	C	C/D
4.7					C	C	C/D	D/E
6.8				C	C	C	D	D/E
10			C	C	C	C/D	D/E	
15		C	C	C	C/D	D	D/E	
22		C	C	C/D	D	D/E	E	
33		C	C/D	C/D	D/E	E		
47		C/D	C/D	D/E	E			
68	C	C/D	D/E	D	E			
100	C	D/E	D	E				
150	D	D	D/E	E				
220	D	D/E	E					
330	D/E	E						
470	E							

CONSTRUCTION AND MARKING

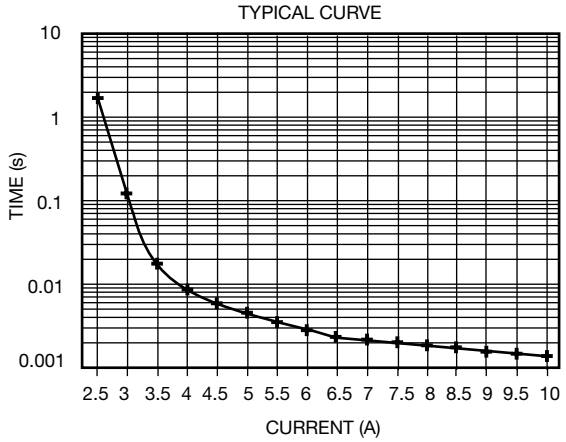




Marking:

Capacitors shall be marked with an anode polarity band, capacitance (in microfarads) and the rated DC working voltage 85 °C. The capacitance voltage will be separated by the letter "F" indicating a fused capacitor. Units rated at 6.3 V shall be marked as 6 V.

FUSE ACTIVATION



STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
4 V_{DC} AT + 85 °C; 2.7 V_{DC} AT + 125 °C						
68	C	893D686(1)004C(2)	2.7	6	1.4	0.28
100	C	893D107(1)004C(2)	4.0	8	0.8	0.37
150	D	893D157(1)004D(2)	6.0	8	0.6	0.50
220	D	893D227(1)004D(2)	8.8	8	0.6	0.50
330	D	893D337(1)004D(2)	13.2	15	0.6	0.50
330	E	893D337(1)004E(2)	13.2	8	0.5	0.57
470	E	893D477(1)004E(2)	18.8	16	0.5	0.57
6.3 V_{DC} AT + 85 °C; 4 V_{DC} AT + 125 °C						
15	C	893D156(1)6R3C(2)	0.9	6	1.8	0.25
22	C	893D226(1)6R3C(2)	1.1	6	1.8	0.25
33	C	893D336(1)6R3C(2)	1.6	6	1.4	0.28
47	C	893D476(1)6R3C(2)	2.3	6	1.3	0.29
47	D	893D476(1)6R3D(2)	2.3	6	0.9	0.41
68	C	893D686(1)6R3C(2)	3.3	6	0.8	0.37
68	D	893D686(1)6R3D(2)	3.3	6	0.7	0.46
100	D	893D107(1)6R3D(2)	6.0	8	0.7	0.46
100	E	893D107(1)6R3E(2)	6.0	8	0.7	0.49
150	D	893D157(1)6R3D(2)	9.0	8	0.6	0.50
220	D	893D227(1)6R3D(2)	13.2	8	0.6	0.50
220	E	893D227(1)6R3E(2)	13.2	8	0.5	0.57
330	E	893D337(1)6R3E(2)	19.8	8	0.5	0.57
10 V_{DC} AT + 85 °C; 7 V_{DC} AT + 125 °C						
10	C	893D106(1)010C(2)	1.0	6	1.8	0.25
15	C	893D156(1)010C(2)	1.5	6	1.8	0.25
22	C	893D226(1)010C(2)	2.2	6	1.4	0.28
33	C	893D336(1)010C(2)	3.3	6	1.3	0.29
33	D	893D336(1)010D(2)	3.3	6	0.9	0.41
47	C	893D476(1)010C(2)	4.7	6	1.0	0.33
47	D	893D476(1)010D(2)	4.7	6	0.7	0.46
68	D	893D686(1)010D(2)	6.8	6	0.7	0.46
68	E	893D686(1)010E(2)	6.8	6	0.7	0.49
100	D	893D107(1)010D(2)	10.0	8	0.6	0.50
150	D	893D157(1)010D(2)	15.0	8	0.6	0.50
150	E	893D157(1)010D(2)	15.0	8	0.5	0.57
220	E	893D227(1)010E(2)	22.0	8	0.5	0.57
16 V_{DC} AT + 85 °C; 10 V_{DC} AT + 125 °C						
6.8	C	893D685(1)016C(2)	1.1	6	2.0	0.23
10	C	893D106(1)016C(2)	1.6	6	1.8	0.25
15	C	893D156(1)016C(2)	2.4	6	1.4	0.28
22	C	893D226(1)016C(2)	3.5	6	1.3	0.29
22	D	893D226(1)016D(2)	3.5	6	0.9	0.41
33	C	893D336(1)016C(2)	5.3	6	1.0	0.33
33	D	893D336(1)016D(2)	5.3	6	0.7	0.46
47	D	893D476(1)016D(2)	7.5	6	0.7	0.46
47	E	893D476(1)016E(2)	7.5	6	0.7	0.49
68	D	893D686(1)016D(2)	10.9	6	0.6	0.50
100	E	893D107(1)016E(2)	16.0	8	0.6	0.52
150	E	893D157(1)016E(2)	24.0	10	0.4	0.64

Note

- Part number definitions:
  (1) Tolerance: X0, X9
  (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

STANDARD RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ω)	MAX. RIPPLE 100 kHz I_{RMS} (A)
20 V_{DC} AT + 85 °C; 13 V_{DC} AT + 125 °C						
4.7	C	893D475(1)020C(2)	0.9	6	2.0	0.22
6.8	C	893D685(1)020C(2)	1.4	6	1.9	0.24
10	C	893D106(1)020C(2)	2.0	6	1.6	0.26
15	C	893D156(1)020C(2)	3.0	6	1.4	0.28
15	D	893D156(1)020D(2)	3.0	6	0.9	0.41
22	D	893D226(1)020D(2)	4.4	6	0.7	0.46
33	D	893D336(1)020D(2)	6.6	6	0.7	0.46
33	E	893D336(1)020E(2)	6.6	6	0.7	0.49
47	E	893D476(1)020E(2)	9.4	6	0.6	0.52
68	E	893D686(1)020E(2)	13.6	6	0.6	0.52
25 V_{DC} AT + 85 °C; 17 V_{DC} AT + 125 °C						
2.2	C	893D225(1)025C(2)	0.6	6	2.8	0.21
2.2	D	893D225(1)025D(2)	0.6	6	2.0	0.21
3.3	C	893D335(1)025C(2)	0.8	6	2.3	0.22
4.7	C	893D475(1)025C(2)	1.2	6	1.9	0.24
6.8	C	893D685(1)025C(2)	1.7	6	1.6	0.26
10	C	893D106(1)025C(2)	2.5	6	1.4	0.28
10	D	893D106(1)025D(2)	2.5	6	1.0	0.39
15	D	893D156(1)025D(2)	3.8	6	0.8	0.43
22	D	893D226(1)025D(2)	5.5	6	0.7	0.46
22	E	893D226(1)025E(2)	5.5	6	0.7	0.49
33	E	893D336(1)025E(2)	8.3	6	0.6	0.52
35 V_{DC} AT + 85 °C; 23 V_{DC} AT + 125 °C						
1.5	C	893D155(1)035C(2)	0.5	6	3.8	0.17
2.2	C	893D225(1)035C(2)	0.8	6	2.9	0.20
3.3	C	893D335(1)035C(2)	1.2	6	2.0	0.23
4.7	C	893D475(1)035C(2)	1.6	6	1.8	0.25
4.7	D	893D475(1)035D(2)	1.6	6	1.2	0.35
6.8	D	893D685(1)035D(2)	2.4	6	1.0	0.39
10	D	893D106(1)035D(2)	3.5	6	0.8	0.43
10	E	893D106(1)035E(2)	3.5	6	0.8	0.43
15	D	893D156(1)035D(2)	5.3	6	0.7	0.46
15	E	893D156(1)035E(2)	5.3	6	0.7	0.49
22	E	893D226(1)035E(2)	7.7	6	0.6	0.52
50 V_{DC} AT + 85 °C; 33 V_{DC} AT + 125 °C						
0.47	C	893D474(1)050C(2)	0.5	4	6.7	0.13
0.68	C	893D684(1)050C(2)	0.5	4	5.9	0.14
1.0	C	893D105(1)050C(2)	0.5	4	4.4	0.16
1.5	C	893D155(1)050C(2)	0.8	6	3.2	0.19
2.2	C	893D225(1)050C(2)	1.1	6	2.8	0.20
2.2	D	893D225(1)050D(2)	1.1	6	2.1	0.27
3.3	C	893D335(1)050C(2)	1.7	6	2.4	0.21
3.3	D	893D335(1)050D(2)	1.7	6	1.6	0.31
4.7	D	893D475(1)050D(2)	2.4	6	1.1	0.37
4.7	E	893D475(1)050E(2)	2.4	6	1.4	0.34
6.8	D	893D685(1)050D(2)	3.4	6	0.9	0.41
6.8	E	893D685(1)050E(2)	3.4	6	0.9	0.43

Note

- Part number definitions:
  (1) Tolerance: X0, X9
  (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperatures 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
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

POWER DISSIPATION	
CASE CODE	**MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR**
C	0.110
D	0.150
E	0.165

STANDARD PACKAGING QUANTITY		
CASE CODE	**UNITS PER REEL**	
	7" REEL	**13" REEL**
C	500	3000
D	500	2500
E	400	1500

PRODUCT INFORMATION	
Molded Guide • Pad Dimensions • Package Dimensions	www.vishay.com/doc?40074
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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Material Category Policy

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