



INFORMATION NOTIFICATION

Tantalum Capacitor Division. December 23, 2014

Adding of Halogen Free Identification

DESCRIPTION OF CHANGE:

Data sheet is updated to include symbols of halogen free and green for correct identification of the product compliance.

CLASSIFICATION OF CHANGE: Data sheet correction

REASON FOR CHANGE:

Accordingly to PCN TC-006-2010, Vishay applies halogen free mold compound to meet environmental regulations. During the transition period, the shipped products were manufactured with either halogen free or non-halogen free mold compounds. Now that transition period has ended, the respective data sheets were updated to show that parts meet the definition of halogen free and "Green".

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: N/A

PRODUCT CATEGORY: Tantalum Capacitors

PART NUMBERS/SERIES/FAMILIES AFFECTED: 293D,593D, 793D, CTC3, CTC4 (CECC), TR3,TL3, TM3

VISHAY BRAND(s): Vishay Sprague

TIME SCHEDULE:

As of 1 January 2015.

PRODUCT IDENTIFICATION:

Reel labels will contain "H/F" symbol

ISSUED BY: Sahar Eitan, Director Process engineering, Tantalum Capacitors (Eitan.Sahar@vishay.com)

For further information, please contact your regional Vishay office.

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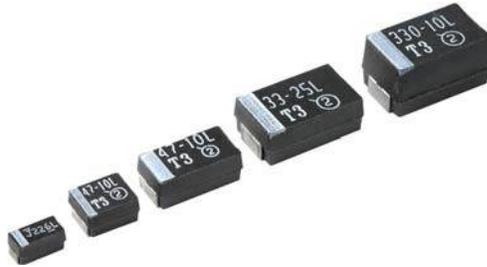
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ONE OF THE WORLD'S LARGEST MANUFACTURERS OF DISCRETE SEMICONDUCTORS AND PASSIVE COMPONENT

Solid Tantalum Surface Mount Chip Capacitors

TANTAMOUNT[®], Molded Case, Low ESR



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 1000 μF

Capacitance Tolerance: ± 10 %, ± 20 %

Voltage Rating: 4 V_{DC} to 75 V_{DC}

FEATURES

- Low ESR
- 100 % surge current tested (C, D, and E case sizes)
- Qualified to EIA-717
- Molded case available in seven case codes
- High ripple current carrying capability
- Terminations: 100 % matte tin, standard tin / lead available
- Compatible with “high volume” automatic pick and place equipment
- Compliant terminations
- Meets EIA-535-BAAC mechanical and performance requirements
- Moisture sensitivity level 1
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.



RoHS*
Available

HALOGEN

FREE

GREEN

(5-2008)

Available

APPLICATIONS

- Industrial
- Telecom infrastructure
- Consumer
- Computer
- General purpose

ORDERING INFORMATION						
TR3	D	107	K	010	C	0100
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT +85 °C	TERMINATION AND PACKAGING	ESR
	See Ratings and Case Codes table	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	K = ± 10 % M = ± 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).	C = matte tin / 7" (178 mm) reels D = matte tin / 13" (330 mm) reels E = tin / lead / 7" (178 mm) reels F = tin / lead / 13" (330 mm) reels	Maximum 100 kHz ESR in mΩ. See note below.

Notes

- 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. Low ESR solid tantalum chip capacitors allow delta ESR of 1.25 times the datasheet limit after mounting.
- Dry pack is available per request, contact regional marketing.

Solid Tantalum Surface Mount Chip Capacitors TANTAMOUNT[®], Molded Case, for Medical Instruments



FEATURES

- **For non-life support medical applications**
- High reliability
- Weibull grading options
- DC leakage at 0.005 CV
- 100 % surge current tested (B, C, D, E cases)
- Terminations: 100 % matte tin and tin / lead
- Standard EIA 535BAAC case sizes (A through E)
- Manufacturing location is certified to medical standard ISO 13485
- Compliant terminations
- Mounting: surface mount
- Dry pack as per IPC / JEDEC[®] J-STD-033 standard
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS*
Available

HALOGEN
FREE

GREEN
(5-2008)
Available

PERFORMANCE / ELECTRICAL CHARACTERISTICS

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

Capacitance Range: 1 μF to 220 μF

Capacitance Tolerance: ± 10 %, ± 20 % standard

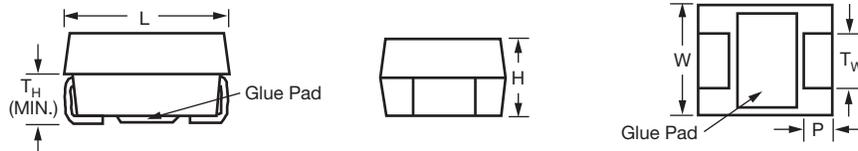
Voltage Rating: 4 V_{DC} to 20 V_{DC}

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

ORDERING INFORMATION							
TM3	C	226	K	6R3	C	B	A
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT +85 °C	TERMINATION AND PACKAGING	RELIABILITY LEVEL	SURGE CURRENT
	See Ratings and Case Codes table.	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	K = ± 10 % M = ± 20 %	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).	C: matte tin / 7" (178 mm) reel H: matte tin / 7" (178 mm) ½ reel E: tin / lead / 7" (178 mm) reel L: tin / lead / 7" (178 mm) ½ reel	B = 0.1 % Weibull FRL S = hi-rel std. (40 h burn-in) Z = non-established reliability	A = 10 cycles at +25 °C, 1.1 RV Z = no surge (for A case only)

DIMENSIONS in inches (millimeters)

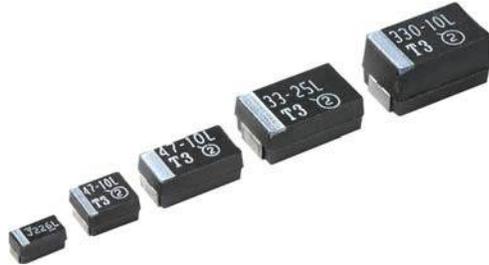


CASE CODE	EIA SIZE	L	W	H	P	Tw	Th (MIN.)
A	3216-18	0.126 ± 0.008 [3.2 ± 0.20]	0.063 ± 0.008 [1.6 ± 0.20]	0.063 ± 0.008 [1.6 ± 0.20]	0.031 ± 0.012 [0.80 ± 0.30]	0.047 ± 0.004 [1.2 ± 0.10]	0.028 [0.70]
B	3528-21	0.138 ± 0.008 [3.5 ± 0.20]	0.110 ± 0.008 [2.8 ± 0.20]	0.075 ± 0.008 [1.9 ± 0.20]	0.031 ± 0.012 [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]	0.169 ± 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]

Note

- Glue pad (non-conductive, part of molded case) is dedicated for glue attachment (as user option).

Solid Tantalum Surface Mount Chip Capacitors, TANTAMOUNT[®], Molded Case, Very Low DCL



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 470 µF

Capacitance Tolerance: ± 10 %, ± 20 %

Voltage Rating: 4 V to 50 V

FEATURES

- DC leakage at 0.005 CV
- Low ESR options
- Qualified to EIA-717
- 100 % surge current tested (B, C, D, and E case sizes)
- Improved reliability: 0.50 % / 1000 h, 85 °C, rated voltage
- Molded case available in five case codes
- Terminations: 100 % matte tin, standard tin / lead available
- Compliant terminations
- Compatible with “high volume” automatic pick and place equipment
- Moisture sensitivity level 1
- Standard EIA-535-BAAC case size (A through E)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

APPLICATIONS

- Industrial
- Telecom infrastructure
- Consumer
- Medical
- General purpose



RoHS*
Available

HALOGEN

FREE

GREEN

(5-2008)

Available

ORDERING INFORMATION

TL3	D	107	K	010	C	0100
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT +85 °C	TERMINATION AND PACKAGING	ESR
	See Ratings and Case Codes table.	This is expressed in picofarads. The first two digits are significant figures. The third is the number of zeros to follow.	K = ± 10 % M = ± 20 %	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).	C = matte tin / 7" (178 mm) reels D = matte tin / 13" (330 mm) reels E = tin / lead / 7" (178 mm) reels F = tin / lead / 13" (330 mm) reels	Maximum 100 kHz ESR in mΩ. See note below.

Notes

- 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.
- The EIA and CECC standards for low ESR solid tantalum chip capacitors, allow delta ESR of 1.25 times the datasheet limit after mounting.
- Dry pack is available per request, contact regional marketing.

Solid Tantalum Surface Mount Chip Capacitors TANTAMOUNT[®], Molded Case, CECC Approved



FEATURES

- CECC
30801/005 - 793DX
30801/009 - CTC3
30801/011 - CTC4
- Terminations: 100 % matte tin, standard, tin / lead available
- Molded case available in four case codes
- Compatible with "high volume" automatic pick and place equipment
- Optical character recognition qualified
- Compliant terminations
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS*
Available

HALOGEN

FREE

GREEN

(5-2008)

Available

PERFORMANCE / ELECTRICAL CHARACTERISTICS

- **Operating Temperature:** -55 °C to +125 °C (above 85 °C, voltage derating is required)
- **Capacitance Range:** 0.10 µF to 100 µF
- **Capacitance Tolerance:** ± 10 %, ± 20 %
- **Voltage Rating:** 4 V_{DC} to 50 V_{DC}

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

APPLICATIONS

- Military / aerospace
- General purpose

ORDERING INFORMATION					
793DX	106	X0	010	B	2WE3
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT +85 °C	CASE CODE	TERMINATION AND PACKAGING
CTC3 CTC4	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	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]

Note

- Glue pad (non-conductive, part of molded case) is dedicated for glue attachment (as user option).

Solid Tantalum Surface Mount Chip Capacitors TANTAMOUNT[®], Molded Case, Low ESR



Effective September 2005, new capacitor ratings will not be added to the 593D series. All new ratings are available in the TR3 series. The TR3 series offers state-of-the-art low ESR for switch mode power supplies and DC/DC converters.

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 680 μF

Capacitance Tolerance: ± 5 %, ± 10 %, ± 20 %

100 % Surge Current Tested (C, D and E Case Sizes)

Voltage Rating: 4 V_{DC} to 50 V_{DC}

FEATURES

- Low ESR
- Molded case available in five case codes
- Terminations: 100 % matte tin, standard, tin / lead available
- High ripple current carrying capability
- Compatible with “high volume” automatic pick and place equipment
- Qualified to EIA-717
- Moisture sensitivity level 1
- Compliant terminations
- Meets EIA-535-BAAC mechanical and performance requirements
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

APPLICATIONS

- Industrial
- Telecom infrastructure
- General purpose



RoHS*
Available

HALOGEN

FREE

GREEN

(5-2008)

Available

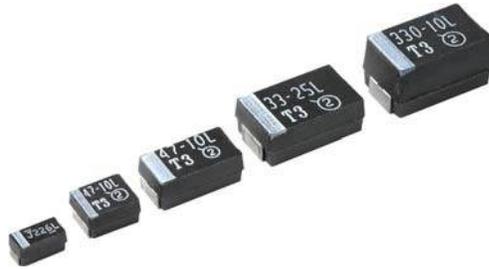
ORDERING INFORMATION					
593D	107	X9	010	D	2WE3
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT +85 °C	CASE CODE	TERMINATION AND PACKAGING
	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow	X0 = ± 20 % X9 = ± 10 % 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	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

Notes

- 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 or tin / lead terminations. Codes 2TE3 and 2WE3 specify only matte tin terminations. Codes 8T and 8W specify only tin / lead terminations. Low ESR solid tantalum chip capacitors allow delta ESR of 1.25 times the datasheet limits after mounting.
- Dry pack is available per request, contact regional marketing.

Solid Tantalum Surface Mount Chip Capacitors

TANTAMOUNT[®], Molded Case, Standard Industrial Grade



PERFORMANCE / ELECTRICAL CHARACTERISTICS

www.vishay.com/doc?40088

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

Capacitance Range: 0.10 µF to 1000 µF

Capacitance Tolerance: ± 5 %, ± 10 %, ± 20 %

100 % Surge Current Tested (D and E Case Codes)

Voltage Rating: 4 V_{DC} to 75 V_{DC}

FEATURES

- Molded case available in six case codes
- Terminations: 100 % matte tin, standard, tin / lead available
- Compatible with “high volume” automatic pick and place equipment
- Meets EIA-535-BAAC mechanical and performance requirements
- Qualified to EIA-717
- Moisture sensitivity level 1
- Optical character recognition qualified
- Compliant terminations
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS*
Available

HALOGEN

FREE

GREEN

(5-2008)

Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

APPLICATIONS

- Industrial
- Telecom infrastructure
- General purpose

ORDERING INFORMATION					
293D	107	X9	010	D	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.	X0 = ± 20 % X9 = ± 10 % X5 = ± 5 % (special order)	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

Notes

- 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.
- We reserve the right to supply better series with more extensive screening.
- Dry pack is available per request, contact regional marketing.

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]	0.169 ± 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]
V	7343-20	0.287 ± 0.012 [7.3 ± 0.30]	0.169 ± 0.012 [4.3 ± 0.30]	0.079 max [2.0 max]	0.051 ± 0.012 [1.3 ± 0.30]	0.094 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]

Note

- Glue pad (non-conductive, part of molded case) is dedicated for glue attachment (as user option).