

## TP3 - Automotive Grade Molded Solid Tantalum Chip Capacitor



### KEY BENEFITS

- AEC-Q200 qualified
- Robust construction
- Low ESR
- 100% Surge current tested (B, C, D & E case sizes)
- Industry-standard case sizes A to E (EIA 535BAAC dimensions)

### APPLICATIONS

- Automotive
- Engine controls
- Safety systems
- High end automation
- High end industrial
- Robotics

### RESOURCES

- Datasheet: <http://www.vishay.com/doc?40116>
- Tantalum product portfolio: <http://www.vishay.com/capacitors/tantalum/>
- Reliability calculator: <http://www.vishay.com/capacitors/tantalum/capacitors/tantalum/tantalum-wet/tantalum-reliability-calculator-list/>
- Technical questions: [contact\\_tantalum@vishay.com](mailto:contact_tantalum@vishay.com)
- Sales contacts: <http://www.vishay.com/doc?99914>
- Material categorization: For definitions of compliance please see <http://www.vishay.com/doc?99912>



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COMPLIANT

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ORDERING INFORMATION							
TP3	D	226	K	035	C	0500	AS
TYPE	CASE CODE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	TERMINATION/PACKAGING	ESR	SPECIFICATION OPTION
	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 0500 = 500 mΩ 5000 = 5.0 Ω 10R0 = 10.0 Ω	AS = Standard

**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.

DIMENSIONS in inches [millimeters]							
CASE CODE	EIA SIZE	L	W	H	P	T <sub>w</sub>	T <sub>H</sub> (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]

 View complete datasheet: <http://www.vishay.com/doc?40116>



# CAPACITORS

## TP3 Tantalum



Capacitors - Automotive AEC-Q200 Qualified Tantalum

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 (20.00, 10.00)	A (19.00, 10.00)
0.15								
0.22							A (15.00, 6.00)	A (15.00) B (12.00, 8.50)
0.33							A (13.00, 6.00)	B (10.00, 4.50)
0.47							A (12.00, 9.00)	A (10.00, 4.00) B (8.00, 2.50)
0.68					A (10.00, 8.00)		A (8.40) B (7.00, 5.00)	A (7.60, 4.00) B (6.50, 2.50)
1.0				A (9.30, 6.00)	A (8.40, 5.50)		A (7.60, 4.00) B (5.00, 2.00)	B (6.70) C (4.60, 1.60)
1.5			A (8.00, 6.00)	A (6.70, 6.00)	A (6.30)		A (6.70, 4.00) B (4.60, 2.00)	B (4.20, 2.00) C (3.80)
2.2		A (7.60, 6.00)	A (6.30)	A (5.90, 4.00) B (4.60, 2.50)	A (5.90, 4.00) B (3.50, 1.50)		A (6.30, 4.00) B (4.00: 3.80, 1.50) C (2.20)	B (3.80, 2.00) C (2.90, 0.90) D (2.10, 0.80)
3.3		A (6.30, 5.00)	A (5.50)	A (5.00, 4.00, 3.50) B (3.5, 2.0)	A (5.90, 4.00) B (3.00, 1.30)		B (3.10, 1.50) C (2.30, 1.00)	B (3.50) C (2.10, 0.70) D (1.70, 0.80)
4.7	A (6.30)	A (5.50, 3.50)	A (5.00, 4.50, 3.00, 2.00) B (3.40, 1.50)	A (5.00, 2.50, 2.00) B (2.90, 1.50)	A (5.00, 3.50) B (2.90, 1.00) C (2.30, 0.60)		B (2.80, 1.50) C (2.00, 0.525) D (1.30, 0.45)	B (3.10, 1.50) C (1.90, 0.50) D (1.30, 0.45)
6.8		A (5.00) B (3.40)	A (4.20, 3.00) B (2.90, 1.20)	A (4.20, 3.80, 3.00) B (2.50) C (1.90, 0.60)	B (2.50, 1.00) C (1.90, 0.55)		C (1.70, 0.50)	C (1.80, 0.475) D (1.8, 1.10, 0.30)
10		A (3.40, 2.00, 1.50) B (2.90, 1.00)	A (3.40, 2.00) B (2.50, 0.60, 0.80) C (1.80, 0.55)	A (3.00, 1.70) B (2.00, 0.80) C (1.80, 0.45)	B (2.10, 2.5, 1.00) C (1.70, 0.50, 0.45)		C (1.50, 0.45) D (1.00, 0.30)	C (1.60, 0.45) D (0.80, 0.30, 0.135) E (0.80, 0.55, 0.30)
15		A (2.90, 2.00) B (2.50)	A (2.90, 2.00) B (2.00, 1.20, 0.70) C (1.80, 0.50)	B (2.00, 0.80) C (1.50, 0.40)	B (2.30, 1.00) C (1.50, 0.40) D (0.90, 0.30)		C (1.20, 0.425) D (0.80, 0.25)	D (0.70, 0.30, 0.26)
22		A (2.90, 2.00) B (2.00, 0.60) C (1.80, 0.50)	A (2.50, 1.50) B (1.90, 0.60, 0.70) C (1.50, 0.40, 0.345, 0.245)	B (1.90, 0.70, 0.60) C (1.40, 0.8, 0.375, 0.35) D (0.80, 0.25)	C (1.10, 0.375) D (0.70, 0.225)		C (1.20, 0.40) D (0.70, 0.20)	D (0.60, 0.30, 0.20) E (0.60, 0.275)
33	B (2.00) C (2.0, 1.80, 0.50)	A (2.50, 0.80) B (1.90, 0.60) C (1.50, 0.375)	B (1.90, 1.50, 0.60) C (1.40, 0.60, 0.30) D (0.80, 0.25)	C (1.10, 0.30) D (0.70, 0.225)	C (1.00, 0.35) D (0.70, 0.20)			
47		B (1.90, 0.60, 0.55, 0.50) C (1.40, 0.30, 0.25) D (0.80, 0.20)	B (1.80, 0.60) C (1.10, 0.30) D (0.70, 0.20)	C (1.00, 0.30) D (0.70, 0.20, 0.15, 0.12)	D (0.70, 0.25, 0.20, 0.15) E (0.60, 0.15)		E (0.60, 0.20)	
68	B (1.4) C (1.4)	B (1.80, 0.55) C (0.80, 0.275) D (0.70, 0.20)	C (1.00, 0.275) D (0.70, 0.15)	D (0.60, 0.15)				
100		B (0.9, 1.7) C (0.80, 0.25) D (0.70, 0.13, 0.15, 0.14)	C (0.90, 0.25, 0.20) D (0.60, 0.10, 0.15)	D (0.60, 0.15, 0.125) E (0.60, 0.10)	E (0.50, 0.15)			
150		D (0.60, 0.15)	D (0.60, 0.10) E (0.50, 0.10)	E (0.50, 0.10)				
220		D (0.60, 0.10) E (0.50, 0.10)	D (0.60, 0.125) E (0.50, 0.10)	E (0.50, 0.10)				
330		D (0.60, 0.125) E (0.50, 0.10)						
470		E (0.50, 0.10)						

**Note**

- ESR limits in Ω shown in parenthesis