



# TANTALUM CHIP CAPACITOR

TP3



## Automotive Grade Molded Solid Tantalum Chip Capacitor

### KEY BENEFITS

- AEC-Q200 qualified
- Robust construction
- High reliability
- Compliant to RoHS directive 2002/95/EC
- Industry-standard case sizes A to E (EIA 535BAAC dimensions)
- Low ESR

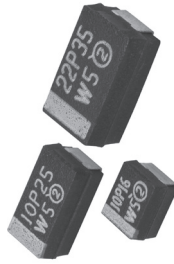
### APPLICATIONS

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

# Automotive Grade Molded Solid Tantalum Chip Capacitor

## FEATURES

- Terminations: 100 % matte tin, standard, in/lead available
- Molded case available in five case codes
- Compatible with "High Volume" automatic pick and place equipment
- High ripple current carrying capability
- Low ESR
- Meets EIA 535BAAC
- Compliant terminations
- 100 % surge current tested (B, C, D and E case sizes)
- AEC-Q200 qualified
- Compliant to RoHS directive 2002/95/EC
- Find out more about Vishay's Automotive Grade Product requirements at: [www.vishay.com/applications](http://www.vishay.com/applications)



## PERFORMANCE/ELECTRICAL CHARACTERISTICS

Operating Temperature: - 55 °C to + 125 °C  
 Capacitance Tolerance: ± 10 %, ± 20 %  
 Voltage Rating: 4 V<sub>DC</sub> to 50 V<sub>DC</sub>

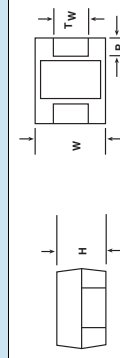
TP3 TYPE	D CASE CODE	226 CAPACITANCE TOLERANCE	K CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	C TERMINATION/ PACKAGING	0500		AS SPECIFICATION OPTION
						ESR	ESR	
		This is expressed in picofarads. The first two figures are the significant figures. The third is zeros to follow.		This is expressed in V. To complete the termination codes precede the voltage rating. A decimal point is indicated by an "R" (GR3 = 6.3 V)		C = Matte tin/77 (180 mm) reels D = Matte tin/33 (330 mm) reels E = Tin/Lead/77 (178 mm) reels F = Tin/Lead/13" (330 mm) reels		AS = Standard
		K = ± 10 % M = ± 20 %		This is expressed in V. To complete the termination codes precede the voltage rating. A decimal point is indicated by an "R" (GR3 = 6.3 V)		Maximum ESR 5000 = 5.0 Ω 10R0 = 10.0 Ω		

**Note**  
 • We reserve the right to supply higher voltage ratings and lighter 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]	0.170 ± 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]	0.138 ± 0.012 [3.5 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.095 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]

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



RATINGS AND CASE CODES									
µF	4V	6.3V	10V	16V	20V	25V	35V	50V	
0.1							A (20.00, 10.00)	A (19.00, 10.00)	
0.22							A (15.00, 6.00)	A (15.00, 6.50)	
0.33							A (13.00, 6.00)	B (10.00, 4.50)	
0.47							A (12.00, 9.00)	A (10.00, 4.00)	
0.68							A (8.40, 4.00)	B (6.00, 2.50)	
1							A (8.40, 4.00)	A (7.60, 5.00)	
1.5							A (8.40, 5.50)	A (7.50, 6.00, 4.00)	
2.2							A (6.30, 1.50)	A (6.30, 2.00)	
3.3							A (6.30, 1.50)	A (6.30, 2.00)	
4.7							A (5.00, 4.00, 3.50)	A (5.00, 4.00, 3.50)	
6.8							A (4.20, 3.00)	A (4.20, 3.00)	
10							A (3.40, 2.00)	A (3.40, 2.00)	
15							A (2.90, 2.00)	A (2.90, 2.00)	
22							A (2.50, 1.50)	A (2.50, 1.50)	
33							A (2.50, 1.50)	A (2.50, 1.50)	
47							A (2.50, 1.50)	A (2.50, 1.50)	
68							A (2.50, 1.50)	A (2.50, 1.50)	
100							A (2.50, 1.50)	A (2.50, 1.50)	
150							A (2.50, 1.50)	A (2.50, 1.50)	
220							A (2.50, 1.50)	A (2.50, 1.50)	
330							A (2.50, 1.50)	A (2.50, 1.50)	
470							A (2.50, 1.50)	A (2.50, 1.50)	
Notes	• ESR limits in Ω shown in parenthesis								

MARKING	
Capacitance Code, µF	Indicates High Performance
Volt	Indicates High Performance Voltage
Polarity Band (+)	Indicates High Performance Voltage
Case Code	Indicates High Performance Voltage
ESR	Indicates High Performance Voltage

**Marking:**  
 Capacitor marking includes an anode (+) polarity band, capacitance in microfarads and the voltage rating. "A" Case capacitors use a letter code for the voltage and EIA capacitance code. The Vishay Sprague trademark is included, if space permits. Capacitors rated at 6.3 V are marked D. V: A manufacturing date code is marked on all capacitors. Call the factory for further explanation.

## Build Vishay into your Design

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