



TANTALUM CHIP CAPACITORS

TH3 Series



High Temperature Molded Solid Tantalum Chip Capacitors

KEY BENEFITS

- Operating temperature up to 150 °C
- High reliability
- Compliant to RoHS directive 2002/95/EC
 - Terminations: matte tin or gold
- Automotive grade product
- 100 % surge current tested (B, C, D, E case sizes)

APPLICATIONS

- Automotive
- Industrial controls
- Oil exploration

Solid Tantalum Chip Capacitors TANTAMOUNT® High Temperature, Molded Case



FEATURES

- Operating temperature up to 150 °C with 50 % voltage derating
- High reliability
- RoHS compliant terminations available: Matte tin (all cases) or gold (D, E cases)
- Standard EIA 535BAAC case sizes (A through E)
- 100 % surge current tested (B, C, D, E case sizes)
- AEC-Q200 qualified
- Find out more about Vishay's Automotive Grade Product requirements at: www.vishay.com/applications

PERFORMANCE/ELECTRICAL CHARACTERISTICS

Operating Temperature: - 55 °C to + 150 °C
 Note: Refer to doc. 40088
 Capacitance Range: 0.33 µF to 220 µF

Capacitance Tolerance: ± 10 %, ± 20 %
 Voltage Rating: 6.3 VDC to 50 VDC

TH3 TYPE	D CASE CODE	106 CAPACITANCE	K CAPACITANCE TOLERANCE	Q35 DC VOLTAGE RATING AT + 85 °C	C TERMINATION AND PACKAGING	0700 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". (GR3 = 6.3 V)	A: Gold/7" (178 mm) reels (1) B: Gold/13" (330 mm) reels (1) 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 5000 = 500 mΩ 10R0 = 10.0 Ω

Notes

- (1) Contact factory for availability
- 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	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]	0.088 ± 0.012 [2.3 ± 0.30]	0.051 ± 0.012 [1.3 ± 0.30]	0.087 ± 0.004 [2.2 ± 0.10]	0.039 [1.0]
D	7949-31	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]	0.085 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]
E	7949-43	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]	0.085 ± 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	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V		
0.33									
0.47					A (6.5)	A (6.5)			
1			A (6.5)	A (5.9)		A (6.6)			
1.5						B (4.4)			C (3.3)
2.2		A (4.6)	A (4.3)	A (5.9)		B (4.2)			
3.3		A (3.4)	A (3.4)	B (3.0)		C (3.3)			
4.7	A (2.9)	A (2.9)	A (2.9)	A (5.0)		B (3.1)			
6.8	B (2.7)	B (2.7)	A (2.5, 2.0)	B (2.7)		C (1.3)			D (0.9)
10	A (3.4)	A (3.4)	B (1.8)	B (2.4)		D (0.9)			
15	B (1.8)	B (1.5, 1.8)	C (1.7, 1.8)	C (1.4)		C (1.1)			D (0.8)
22	B (1.5)	B (1.5)	B (2.0)	B (2.0)		D (0.7)			E (0.5)
33	B (1.7)	D (0.8)	C (0.9)	D (0.6)		D (0.6)			
47	B (1.8)	B (1.8)	C (0.8, 1.0)	D (0.7)		E (0.6)			
68	B (1.8)	D (1.0, 0.6, 0.4)	D (0.6)	E (0.6)					
100	D (0.6)	D (0.6)	D (0.6)	E (0.6)					
150	D (0.6)	E (0.5, 0.15)							
220	D (0.5)								

Note: ESR limits in Ω are shown in parenthesis

MARKING		"A" CASE VOLTAGE CODE	
Capacitance Code, pF	Indicates High Temperature	VOLTS	CODE
		4.0	G
		6.3	J
		10	A
		16	C
		20	D
		25	E
		35	V
		50	T

Indicates High Temperature	Indicates High Temperature Voltage
V 104H	22 XX
↑ Polarity Band (+)	↑ Polarity Band (+)
↑ Voltage Code	↑ Voltage
A Case	B, C, D, E Case

Marking includes an apostrophe (') 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 6 V.
 A manufacturing date code is marked on all capacitors.
 Call the factory for further explanation.

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Build Vishay into your Design

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