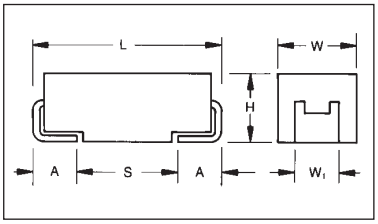
TRJ Series

Professional Tantalum Chip Capacitor

The TRJ surface mount series employs established Tantalum technology together with new process improvements and advanced manufacturing techniques. This robust series enables extension of the guaranteed 0.5% reliability level to 1000 hours at rated voltage, rated temperature and 0.1Ω/volt circuit impedance. The moisture penetration barrier, thicker external dielectric layer and modified manganising process make the capacitor more robust against higher thermo-mechanical stresses during assembly process ("lead-free" soldering) and also more robust against more severe working conditions in Automotive, Medical, Aerospace, Military and other applications. The temperature range is -55°C to 125°C and voltage range is 6.3V to 50V.

These components do not contain any lead either in the internal structure or in the termination plating. They are compatible with all SnPb and "lead-free" solders and are qualified for higher reflow temperature necessary for new lead-free assembly process.



For part marking see page 165

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W_1±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	3528-21	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W_1 dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

TRJ	B	105	*	035	R	RJ
Type	**Case Size** See table above	**Capacitor Code** pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** K=±10% M=±20%	**Rated DC Voltage** 006 = 6.3V 010 = 10V 016 = 16V 020 = 20V 025 = 25V 035 = 35V 050 = 50V	**Packaging/ Termination Plating** R = 7" T/R Lead Free S = 13" T/R Lead Free A = Gold Plating 7" Reel B = Gold Plating 13" Reel H = Tin Lead 7" Reel K = Tin Lead 13" Reel	**Additional characters may be added for special requirements**

TECHNICAL SPECIFICATIONS

Technical Data:		All technical data relate to an ambient temperature of +25°C						
Capacitance Range:		0.1 µF to 470 µF						
Capacitance Tolerance:		±10%; ±20%						
Leakage Current DCL:		0.0075CV						
Rated Voltage (V_R)	⩽ +85°C:	6.3	10	16	20	25	35	50
Category Voltage (V_C)	⩽ +125°C:	4	7	10	13	17	23	33
Surge Voltage (V_S)	⩽ +85°C:	8	13	20	26	32	46	65
Surge Voltage (V_S)	⩽ +125°C:	5	8	13	16	20	28	40
Temperature Range:		-55°C to +125°C						
Reliability:		0.5% per 1000 hours at 85°C, V_R with 0.1Ω/V series impedance, 60% confidence level						
Termination Plating:		Sn Plating (standard), Gold and SnPb Plating upon request						
		Meets requirements of AEC-Q200						

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CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE LETTER DENOTES CASE SIZE

Capacitance		Rated Voltage DC (V_R) to 85°C						
µF	Code	6.3V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.10	104						A	
0.15	154						A	
0.22	224						A	A
0.33	334						A	A
0.47	474					A	A	B
0.68	684					A	A	B
1.0	105				A	A	A/B	B
1.5	155				A	A	A/B	C
2.2	225			A	A	A/B	B	C
3.3	335			A	A/B	B	B/C	C/D
4.7	475		A	A/B	A/B	B	B/C	D
6.8	685		A	A/B	B	B/C	C	D
10	106	A	A/B	B	B/C	C	C/D	E
15	156	A/B	A/B	B	B/C	C/D	C/D	
22	226	A/B	B	B/C	C/D	C/D	D	
33	336	B	B/C	C	C/D	D	D/E	
47	476	B/C	C	C/D	D	D/E		
68	686	C	C	D	D/E			
100	107	C	C/D	D/E	D/E			
150	157	C/D	D/E	E				
220	227	D	D/E					
330	337	E	E					
470	477	E						

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same reliability standards.

Developmental Ratings - subject to change

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RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @ 100 kHz
Voltage Rating	6.3 v @ 85°C (4 v @ 125°C)				
TRJA106*006#	A	10	0.45	6	2.2
TRJA156*006#	A	15	0.68	6	2.0
TRJB156*006#	B	15	0.68	6	2.0
TRJA226*006#	A	22	0.99	6	1.7
TRJB226*006#	B	22	0.99	6	1.9
TRJB336*006#	B	33	1.5	6	1.7
TRJB476*006#	B	47	2.1	6	1.6
TRJC476*006#	C	47	2.1	6	0.5
TRJC686*006#	C	68	3.1	6	0.5
TRJC107*006#	C	100	4.5	6	0.4
TRJC157*006#	C	150	6.8	8	0.5
TRJD157*006#	D	150	6.8	6	0.4
TRJD227*006#	D	220	9.9	8	0.4
TRJE337*006#	E	330	14	8	0.3
TRJE477*006#	E	470	20.8	8	0.2
Voltage Rating	10 v @ 85°C (7 v @ 125°C)				
TRJA475*010#	A	4.7	0.35	6	3.2
TRJA685*010#	A	6.8	0.51	6	2.6
TRJA106*010#	A	10	0.75	6	2.2
TRJB106*010#	B	10	0.75	6	2.2
TRJA156*010#	A	15	1.1	6	1.8
TRJB156*010#	B	15	1.1	6	2.0
TRJB226*010#	B	22	1.7	6	1.9
TRJB336*010#	B	33	2.5	6	1.0
TRJC336*010#	C	33	2.5	6	0.6
TRJC476*010#	C	47	3.5	6	0.5
TRJC686*010#	C	68	5.1	6	0.5
TRJC107*010#	C	100	7.5	8	0.5
TRJD107*010#	D	100	7.5	6	0.4
TRJD157*010#	D	150	11	8	0.4
TRJE157*010#	E	150	11	8	0.4
TRJE227*010#	E	220	17	8	0.4
TRJE337*010#	E	330	24.8	8	0.3
Voltage Rating	16 v @ 85°C (10 v @ 125°C)				
TRJA225*016#	A	2.2	0.30	6	4.5
TRJA335*016#	A	3.3	0.40	6	3.7
TRJA475*016#	A	4.7	0.56	6	3.2
TRJB475*016#	B	4.7	0.56	6	3.2
TRJA685*016#	A	6.8	0.82	4	2.0
TRJB685*016#	B	6.8	0.82	6	2.6
TRJB106*016#	B	10	1.2	6	2.2
TRJB156*016#	B	15	1.8	6	2.0
TRJB226*016#	B	22	2.6	6	1.1
TRJC226*016#	C	22	2.6	6	0.7
TRJC336*016#	C	33	4.0	6	0.6
TRJC476*016#	C	47	5.6	6	0.5
TRJD476*016#	D	47	5.6	6	0.5
TRJD686*016#	D	68	8.2	6	0.5
TRJD107*016#	D	100	12	6	0.4
TRJE107*016#	E	100	12	6	0.4
TRJE157*016#	E	150	16	6	0.3

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

* Insert K for ±10% and M for ±20%
# Termination finished and packaging reel size

NOTE: AVX reserves the right to supply higher specification parts in the same case size, to the same reliability standards.

AVX Part No.	Case Size	Capacitance (µF)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @ 100 kHz
Voltage Rating	20 v @ 85°C (13 v @ 125°C)				
TRJA105*020#	A	1	0.30	4	6.6
TRJA155*020#	A	1.5	0.30	6	5.5
TRJA225*020#	A	2.2	0.33	6	4.5
TRJA335*020#	A	3.3	0.50	6	3.7
TRJB335*020#	B	3.3	0.50	6	3.7
TRJA475*020#	A	4.7	0.71	5	2.5
TRJB475*020#	B	4.7	0.71	6	3.2
TRJB685*020#	B	6.8	1.0	6	2.6
TRJB106*020#	B	10	1.5	6	2.2
TRJC106*020#	C	10	1.5	6	0.8
TRJB156*020#	B	15	2.3	6	1.4
TRJC156*020#	C	15	2.3	6	0.7
TRJC226*020#	C	22	3.3	6	0.7
TRJD226*020#	D	22	3.3	6	0.7
TRJC336*020#	C	33	5.0	6	0.6
TRJD336*020#	D	33	5.0	6	0.6
TRJD476*020#	D	47	7.1	6	0.5
TRJD686*020#	D	68	10	6	0.5
TRJE686*020#	E	68	10	6	0.5
TRJE107*020#	E	100	15	6	0.3
Voltage Rating	25 v @ 85°C (17 v @ 125°C)				
TRJA474*025#	A	0.47	0.30	4	9.5
TRJA684*025#	A	0.68	0.30	4	8.0
TRJA105*025#	A	1	0.30	4	6.6
TRJA155*025#	A	1.5	0.30	6	5.5
TRJA225*025#	A	2.2	0.41	6	2.9
TRJB225*025#	B	2.2	0.41	6	4.5
TRJB335*025#	B	3.3	0.62	6	3.7
TRJB475*025#	B	4.7	0.88	6	3.2
TRJB685*025#	B	6.8	1.3	6	1.5
TRJC685*025#	C	6.8	1.3	6	1.1
TRJC106*025#	C	10	1.9	6	0.8
TRJC156*025#	C	15	2.8	6	0.7
TRJD156*025#	D	15	2.8	6	0.7
TRJD226*025#	D	22	4.1	6	0.7
TRJD336*025#	D	33	6.2	6	0.6
TRJE476*025#	E	47	8.8	6	0.5
Voltage Rating	35 v @ 85°C (23 v @ 125°C)				
TRJA104*035#	A	0.1	0.30	4	20
TRJA154*035#	A	0.15	0.30	4	16
TRJA224*035#	A	0.22	0.30	4	14
TRJA334*035#	A	0.33	0.30	4	11
TRJA474*035#	A	0.47	0.30	4	9.5
TRJA684*035#	A	0.68	0.30	4	8.0
TRJA105*035#	A	1	0.30	4	6.6
TRJB105*035#	B	1	0.30	4	3.4
TRJA155*035#	A	1.5	0.39	6	3.1
TRJB155*035#	B	1.5	0.39	6	5.5
TRJB225*035#	B	2.2	0.58	6	4.5
TRJB335*035#	B	3.3	0.87	6	3.7
TRJC335*035#	C	3.3	0.87	6	1.8
TRJB475*035#	B	4.7	1.2	6	2.2
TRJC475*035#	C	4.7	1.2	6	1.4
TRJC685*035#	C	6.8	1.8	6	1.1
TRJC106*035#	C	10	2.6	6	0.8
TRJD106*035#	D	10	2.6	6	0.8
TRJD156*035#	D	15	3.9	6	0.7
TRJD226*035#	D	22	5.8	6	0.7
TRJE336*035#	E	33	8.7	6	0.6
Voltage Rating	50 v @ 85°C (33 v @ 125°C)				
TRJA224*050#	A	0.22	0.30	4	7.5
TRJA334*050#	A	0.33	0.30	4	7.0
TRJB474*050#	B	0.47	0.30	4	5.0
TRJB684*050#	B	0.68	0.30	4	4.0
TRJB105*050#	B	1.0	0.40	4	3.4
TRJC155*050#	C	1.5	0.60	6	2.5
TRJC225*050#	C	2.2	0.80	6	1.7
TRJC335*050#	C	3.3	1.20	6	1.4
TRJD335*050#	D	3.3	1.20	4.5	1.1
TRJD475*050#	D	4.7	1.80	4.5	0.9
TRJD685*050#	D	6.8	2.60	4.5	0.7
TRJE106*050#	E	10	3.80	4.5	0.7