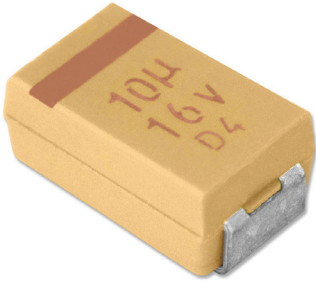


Low ESR Tantalum Capacitors (TCR Series)



Features:

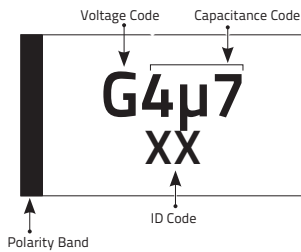
- RoHS Compliant and Halogen Free
- Lower ESR than standard Tantalum
- Excellent frequency characteristics and impedance
- Laser marking for easy identification
- Voltage range: 4V to 50V
- Operating temperature: -55°C to + 125°C
- Capacitance range: 0.47µF to 680µF

Part Number Structure

TA	035	TCR	105	K	C	R	□	
Tantalum Capacitor	Rated Voltage	Series	Capacitance (pico - Farads)	Tolerance	Case Code	Packaging	Optional Reel Identifier	
	4R0 = 4.0V 6R3 = 6.3V 010 = 10V 016 = 16V 020 = 20V 025 = 25V 035 = 35V 050 = 50V	TCR	1st two figures are significant. Third is the number of zeros to follow. 105 = 1.0µF 226 = 22µF 107 = 100µF	K = ±10% M = ±20%	A B C D E	R = Tape and Reel	Leave blank for standard 7 inch reels. For 13 inch reels add "-13".	
Example P/N: TA035TCR105KCR							Standard termination finish is 100% matte Tin (Sn) over Nickel.	

Marking Code

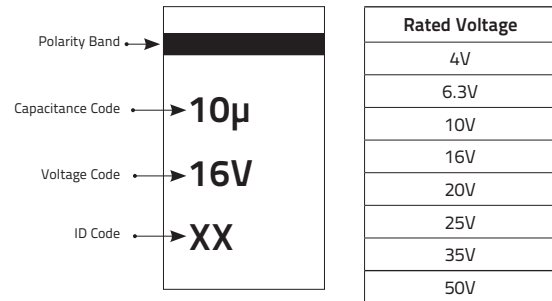
Voltage Code (A & B Case)



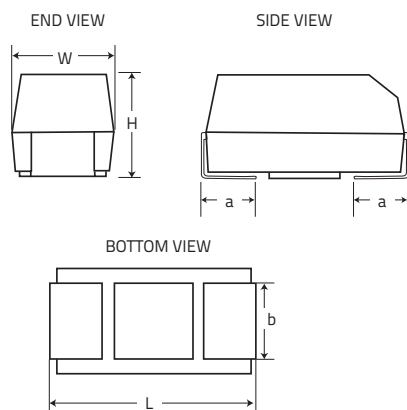
Note: For values less than 10µF, marking codes will contain the µ symbol to indicate a decimal. (Example: 4µ7 = 4.7µF)
For values 10µF and greater, marking codes will be marked with the standard EIA code.

Voltage Code	Rated Voltage
e	2.5V
G	4V
J	6.3V
A	10V
C	16V
D	20V
E	25V
V	35V

Voltage Code (C, D, E Case)



Dimensions



Case Code	L	W	H	a	b
A	3.2 ± 0.2 (0.126 ± 0.008)	1.6 ± 0.2 (0.063 ± 0.008)	1.6 ± 0.2 (0.063 ± 0.008)	0.8 ± 0.3 (0.031 ± 0.012)	1.2 ± 0.2 (0.047 ± 0.008)
B	3.5 ± 0.2 (0.138 ± 0.008)	2.8 ± 0.2 (0.110 ± 0.008)	1.9 ± 0.2 (0.075 ± 0.008)	0.8 ± 0.3 (0.031 ± 0.012)	2.2 ± 0.2 (0.087 ± 0.008)
C	6.0 ± 0.3 (0.236 ± 0.012)	3.2 ± 0.3 (0.126 ± 0.012)	2.5 ± 0.3 (0.098 ± 0.012)	1.3 ± 0.3 (0.051 ± 0.012)	2.2 ± 0.2 (0.087 ± 0.008)
D	7.3 ± 0.3 (0.287 ± 0.012)	4.3 ± 0.3 (0.169 ± 0.012)	2.8 ± 0.3 (0.110 ± 0.012)	1.3 ± 0.3 (0.051 ± 0.012)	2.4 ± 0.2 (0.094 ± 0.008)
E	7.3 ± 0.3 (0.287 ± 0.012)	4.3 ± 0.3 (0.169 ± 0.012)	4.0 ± 0.3 (0.157 ± 0.012)	1.3 ± 0.3 (0.051 ± 0.012)	2.4 ± 0.2 (0.094 ± 0.008)

Unit: mm (inch)

Low ESR Tantalum Capacitors (TCR Series)

Standard Ratings and Case Codes

Rated Voltage. ► Capacitance (uF) ▼	4V	6.3V	10V	16V	20V	25V	35V	50V
0.47						A	B	
0.68								
1.0					A		A,B	C
1.5								
2.2				A			B,C	D
3.3				A			B,C	D
4.7			A,B	A,B		C	B,C	D
6.8			A,B			B	D	D
10			B		B,C	C	D,E	E
15			B,C	B	C	D	D	E
22			C	C	D	C,D	D,E	
33			B	C,D	D	D,E	E	
47		B,C	B,D	C,D	D,E	D,E	E	
68			B,C,D	D	D,E	E		
100	B	B,C	D,E	D,E	E			
150	B,C	C,D	D,E	D,E				
220	D	C,D,E	D,E	E				
330	C,D	D,E	D,E					
470	D,E	D,E	E					
680	E							

Electrical Specifications and Part Numbers

Rated Voltage	Capacitance (uF)	Case Code	Max. DCL @ +25°C (uA)	Max. DF @ +25°C 120 Hz (%)	Max. ESR 100 kHz (Ω)	Max. Ripple Current (mA@25°C)	Venkel Part Number
4.0V	100	B	4	8	0.5	412	TA4R0TCR107 K or M BR
4.0V	150	B	6	10	0.25	583	TA4R0TCR157 K or M BR
4.0V	150	C	6	6	0.08	1173	TA4R0TCR157 K or M CR
4.0V	220	D	8.8	8	0.1	1225	TA4R0TCR227 K or M DR
4.0V	330	C	13.2	8	0.1	1049	TA4R0TCR337 K or M CR
4.0V	330	D	13.2	8	0.045	1826	TA4R0TCR337 K or M DR
4.0V	470	D	18.8	12	0.1	1225	TA4R0TCR477 K or M DR
4.0V	470	E	18.8	10	0.1	1285	TA4R0TCR477 K or M ER
4.0V	1000	E	40	14	0.06	1658	TA4R0TCR108 K or M ER
6.3V	33	B	2.1	6	0.35	493	TA6R3TCR336 K or M BR
6.3V	47	B	3	6	0.35	493	TA6R3TCR476 K or M BR
6.3V	47	C	3	6	0.3	606	TA6R3TCR476 K or M CR
6.3V	100	B	6.3	10	0.4	461	TA6R3TCR107 K or M BR
6.3V	100	C	6.3	6	0.15	856	TA6R3TCR107 K or M CR
6.3V	150	C	9.5	6	0.2	742	TA6R3TCR157 K or M CR
6.3V	150	D	9.5	6	0.125	1095	TA6R3TCR157 K or M DR
6.3V	220	C	13.9	8	0.25	663	TA6R3TCR227 K or M CR
6.3V	220	D	13.9	8	0.1	1225	TA6R3TCR227 K or M DR
6.3V	220	E	13.9	8	0.1	1285	TA6R3TCR227 K or M ER
6.3V	330	D	20.8	8	0.1	1225	TA6R3TCR337 K or M DR
6.3V	330	E	20.8	8	0.1	1285	TA6R3TCR337 K or M ER
6.3V	470	D	29.6	12	0.1	1225	TA6R3TCR477 K or M DR
6.3V	470	E	29.6	10	0.06	1658	TA6R3TCR477 K or M ER

Low ESR Tantalum Capacitors (TCR Series)

Electrical Specifications and Part Numbers

Rated Voltage	Capacitance (µF)	Case Code	Max. DCL @ +25°C (µA)	Max. DF @ +25°C 120 Hz (%)	Max. ESR 100 kHz (Ω)	Max. Ripple Current (mA@25°C)	Venkel Part Number
10V	4.7	A	0.5	6	1.4	231	TA010TCR475 K or M AR
10V	6.8	A	0.7	6	1.8	204	TA010TCR685 K or M AR
10V	15	B	1.5	6	0.45	435	TA010TCR107 K or M BR
10V	22	C	2.2	6	0.3	606	TA010TCR226 K or M CR
10V	33	B	3.3	6	0.425	447	TA010TCR336 K or M BR
10V	47	B	4.7	8	0.5	412	TA010TCR476 K or M BR
10V	47	C	4.7	6	0.35	561	TA010TCR476 K or M CR
10V	47	D	4.7	6	0.1	1225	TA010TCR476 K or M DR
10V	68	B	6.8	8	0.6	376	TA010TCR686 K or M BR
10V	68	C	6.8	6	0.2	742	TA010TCR686 K or M CR
10V	68	D	6.8	6	0.15	1000	TA010TCR686 K or M DR
10V	100	D	10	6	0.1	1225	TA010TCR107 K or M DR
10V	100	E	10	6	0.1	1149	TA010TCR107 K or M ER
10V	150	D	15	8	0.1	1225	TA010TCR157 K or M DR
10V	150	E	15	8	0.1	1285	TA010TCR157 K or M ER
10V	220	D	22	8	0.1	1225	TA010TCR227 K or M DR
10V	220	E	22	8	0.1	1285	TA010TCR227 K or M ER
10V	330	D	33	8	0.15	1000	TA010TCR337 K or M DR
10V	330	E	33	8	0.1	1285	TA010TCR337 K or M ER
10V	470	E	47	10	0.2	908	TA010TCR477 K or M ER
16V	2.2	A	0.5	6	1.8	204	TA016TCR225 K or M AR
16V	3.3	A	0.5	6	3.5	146	TA016TCR335 K or M AR
16V	4.7	A	0.8	6	2	194	TA016TCR475 K or M AR
16V	4.7	B	0.8	6	0.8	326	TA016TCR475 K or M BR
16V	10	B	1.6	6	0.8	326	TA016TCR106 K or M BR
16V	15	B	2.4	6	0.5	412	TA016TCR156 K or M BR
16V	22	C	3.5	6	0.3	606	TA016TCR226 K or M CR
16V	33	C	5.3	6	0.3	606	TA016TCR336 K or M CR
16V	33	D	5.3	6	0.2	866	TA016TCR336 K or M DR
16V	47	C	7.5	6	0.35	561	TA016TCR476 K or M CR
16V	47	D	7.5	6	0.15	1000	TA016TCR476 K or M DR
16V	68	D	10.9	6	0.15	1000	TA016TCR686 K or M DR
16V	100	D	16	6	0.125	1095	TA016TCR107 K or M DR
16V	100	E	16	6	0.1	1285	TA016TCR107 K or M ER
16V	150	D	24	6	0.15	1000	TA016TCR157 K or M DR
16V	150	E	24	6	0.1	1285	TA016TCR157 K or M ER
16V	220	E	35.2	10	0.1	1285	TA016TCR227 K or M ER
20V	1	A	0.5	4	3	158	TA020TCR105 K or M AR
20V	10	B	2	6	1	292	TA020TCR106 K or M BR
20V	10	C	2	6	0.5	469	TA020TCR106 K or M CR
20V	15	C	3	6	0.4	524	TA020TCR156 K or M CR
20V	22	D	4.4	6	0.2	866	TA020TCR226 K or M DR
20V	33	D	6.6	6	0.2	866	TA020TCR336 K or M DR
20V	47	D	9.4	6	0.2	866	TA020TCR476 K or M DR
20V	47	E	9.4	6	0.15	1049	TA020TCR476 K or M ER
20V	68	D	13.6	6	0.15	1000	TA020TCR686 K or M DR
20V	68	E	13.6	6	0.15	1049	TA020TCR686 K or M ER
20V	100	E	20	6	0.15	1049	TA020TCR107 K or M ER

Low ESR Tantalum Capacitors (TCR Series)

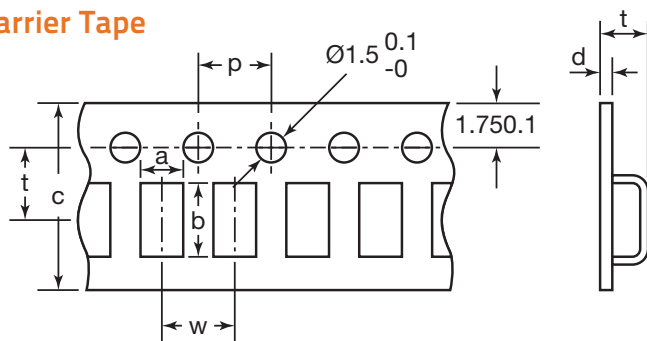
Electrical Specifications and Part Numbers

Rated Voltage	Capacitance (uF)	Case Code	Max. DCL @ +25°C (uA)	Max. DF @ +25°C 120 Hz (%)	Max. ESR 100 kHz (Ω)	Max. Ripple Current (mA@25°C)	Venkel Part Number
25V	0.47	A	0.5	4	7	104	TA025TCR474 K or M AR
25V	4.7	C	1.2	6	0.7	396	TA025TCR475 K or M CR
25V	6.8	B	1.7	6	0.7	348	TA025TCR685 K or M BR
25V	10	C	2.5	6	0.5	469	TA025TCR106 K or M CR
25V	15	D	3.8	6	0.3	707	TA025TCR156 K or M DR
25V	22	C	5.5	6	0.4	524	TA025TCR226 K or M CR
25V	22	D	5.5	6	0.3	707	TA025TCR226 K or M DR
25V	33	D	8.3	6	0.3	707	TA025TCR336 K or M DR
25V	33	E	8.3	6	0.3	742	TA025TCR336 K or M ER
25V	47	D	11.8	6	0.25	775	TA025TCR476 K or M DR
25V	47	E	11.8	6	0.125	1149	TA025TCR476 K or M ER
25V	68	E	17	6	0.2	908	TA025TCR686 K or M ER
35V	0.47	B	0.5	4	4	146	TA035TCR474 K or M BR
35V	1	A	0.5	4	3	158	TA035TCR105 K or M AR
35V	1	B	0.5	4	2	206	TA035TCR105 K or M BR
35V	2.2	B	0.8	6	2	206	TA035TCR225 K or M BR
35V	2.2	C	0.8	6	1	332	TA035TCR225 K or M CR
35V	3.3	B	1.2	6	1	292	TA035TCR335 K or M BR
35V	3.3	C	1.2	6	0.7	396	TA035TCR335 K or M CR
35V	4.7	B	1.6	6	1.5	238	TA035TCR475 K or M BR
35V	4.7	C	1.6	6	0.6	428	TA035TCR475 K or M CR
35V	6.8	D	2.4	6	0.5	548	TA035TCR685 K or M DR
35V	10	D	3.5	6	0.3	707	TA035TCR106 K or M DR
35V	10	E	3.5	6	0.2	908	TA035TCR106 K or M ER
35V	15	D	5.3	6	0.3	707	TA035TCR156 K or M DR
35V	22	D	7.7	6	0.4	612	TA035TCR226 K or M DR
35V	22	E	7.7	6	0.3	742	TA035TCR226 K or M ER
35V	33	E	11.6	6	0.3	742	TA035TCR336 K or M ER
35V	47	E	16.5	6	0.25	812	TA035TCR476 K or M ER
50V	1	C	0.5	4	2.5	210	TA050TCR105 K or M CR
50V	2.2	D	1.1	6	1.2	354	TA050TCR225 K or M DR
50V	3.3	D	1.7	6	0.8	433	TA050TCR335 K or M DR
50V	4.7	D	2.4	6	0.3	636	TA050TCR475 K or M DR
50V	6.8	D	3.4	6	0.3	707	TA050TCR685 K or M DR
50V	10	E	5	6	0.3	742	TA050TCR106 K or M ER
50V	15	E	7.5	6	0.25	812	TA050TCR156 K or M ER

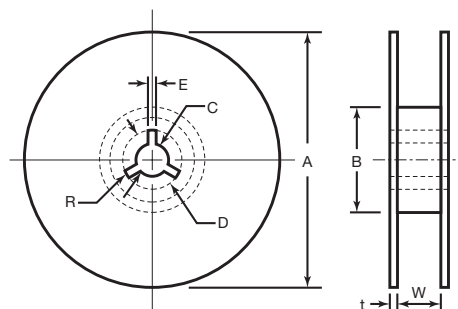
Low ESR Tantalum Capacitors (TCR Series)

Tape and Reel Specifications

Carrier Tape



Reel



Carrier Tape Dimensions

Unit: mm

Case Size	a ± 0.1	b ± 0.1	c ± 0.1	t ± 0.1	p ± 0.1	w ± 0.1	d ± 0.1
A	1.9	3.9	8.0	2.0	4.0	4.0	0.2
B	3.1	3.9	8.0	2.3	4.0	4.0	0.2
C	3.9	6.3	12.0	2.7	4.0	8.0	0.3
D	4.6	7.7	12.0	3.3	4.0	8.0	0.3
E	4.6	7.7	12.0	4.2	4.0	8.0	0.3

Reel Dimensions

Case Size	A +0 -3.0	B -0	C ± 0.2	D ± 0.8	E ± 0.5	W ± 0.3	t ± 0.5	R
A, B	180	60	13.0	21.0	2.0	9.0	2.0	1.0
C, D, E	330	60	13.0	21.0	2.0	13.0	2.0	1.0

Quantity per reel

Case Size	Reel Size	
	7"	13"
A	2,000 pcs	9,000 pcs
B	2,000 pcs	8,000 pcs
C	500 pcs	3,000 pcs
D	500 pcs	2,500 pcs
E	400 pcs	2,000 pcs