

Tantalum Chip Capacitor

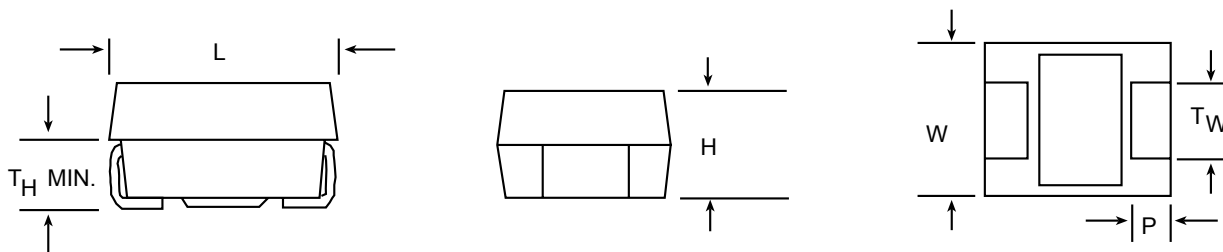
Features:

- Terminations: 100 % Tin, Standard. SnPb 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 535BAAE and IEC Specification QC300801/US0001

Performance/electrical Characteristics:

- Operating Temperature : - 55 °C to + 125 °C
- Note: Refer to Doc. 40088
- Capacitance Range: 0.47 µF to 680 µF
- Capacitance Tolerance: ± 20 %, ± 10 % standard
- Voltage Rating: 4 WVDC to 50 WVDC
- Compliant Terminations
- 100 % Surge Current Tested (B, C, D & E Case Sizes)

Case Dimensions:



Case Code	EIA Size	L	W	H	P	T _w	T _H (MIN.)
A	3216	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	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	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	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	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]	0.095 ± 0.004 [2.4 ± 0.10]	0.039 [1.0]

Technical Specifications:

Technical Data:	All technical data relate to an ambient temperature of +25°C									
Capacitance Range:	0.15 µF to 1500 µF									
Capacitance Tolerance:	± 10% ; ±20%									
Rated Voltage (V _R)	≤ +85°C	2.5	4	6.3	10	16	20	25	35	50
Category Voltage (V _C)	≤ +125°C	1.7	2.7	4	7	10	13	17	23	33
Surge Voltage (V _S)	≤ +85°C	.3	5.2	8	13	20	26	32	46	65
Surge Voltage (V _S)	≤ +125°C	2.2	3.4	5	8	13	18	20	20	40
Temperature Range:	-55° to +125°C									
Environmental Classification:	55/125/56 (IEC 68-2)									
Reliability:	1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level									
	Meets requirements of AEC-Q200									

HOW TO ORDER

TE K 1C 107 D T 150

PRO-CAP TYPE: _____

Capacitance Tolerance: _____

CODE	Tolerance
M	±20%
K	±10%

Rated Voltage: _____

Rated Voltage	2.5	4	6.3	10	16	20	25	35	50
Code	OE	OG	OJ	1A	1C	1D	1E	1V	1H

Capacitance: _____

First two digits represent significant figures.
 Third digit specifies number of zeros to follow.

Case Size: _____

Taping: _____

7" Reel - 500pcs.

Maximum ESR: _____

see note.

Tantalum Chip Capacitor Capacitance And Rated Voltage, Vr (Voltage Code) Range

Capacitance		Rated Voltage DC (VR) to 85°C								
µF	Code	2.5V (0E)	4V (0G)	6.3V (0J)	10V(1A)	16V(1C)	20V(1D)	25V(1E)	35V(1V)	50V(1H)
0.15	154									A(9000)
0.22	224								A(6000)	A(7000)
0.33	334								A(6000)	
0.47	474							A(7000)	A(6000) B(4000)	
0.68	684							A(6000)	A(6000)	
1	105						A(3000)		A(3000) B(2000)	C(2500)
1.5	155							A(3000) B(1800)	B(2500)	C(1500,200)
2.2	225				A(1800)	A(1800,3500)	A(3000)	B(900,1200, 2500)	A(1500), B(750, 1500,2000), C(1000)	D(1200)
3.3	335					A(3500)	A(2500) B(1300)	A(1000,1500) B(750,1500 2000)	B(1000), C(700)	D(800)
4.7	475				A(1400)	A(2000) B(800,1500)	A(1800) B(750,1000)	B(700,900, 1500)	B(700,1500) C(600)	D(300,500,700)
6.8	685			A(1800)	A(1800)	A(1500) B(600,1200)	A(1000) B(600,1000) C(700)	B(700) C(500,600, 700)	C(350), D(150,400,500)	D(200, 300 500,600)
10	106			A(1500)	A(900,1800)	B(500,800) C(500)	B(500,1000) C(500,700)	C(300,500)	C(300,500)	
15	156			A(700,1500)	A(1000) B(450,600)	B(500,800)	B(500) C(400,450)	C(220,300) D(100,300)	C(220,300) D(100,300)	
22	226			A(500,900) B(375,600)	A(900) B(400,500, 700) C(300)	B(400,600) C(150,250, 303,375)	B(400,600) C(100,150, 400) D(200,300)	C(275,400) D(100,200, 300)	C(275,400) D(100,200,300, 400)	
33	336			A(600) B(250,350, 450,600)	A(700) B(250,425,500, 650) C(150,375,500)	B(350,500) C(100,150, 225,300) D(200)	C(300) D(100,200)	D(100,200, 300)	D(100,200,300)	
47	476		A(500)	A(800) B(250,350, 500) C(300)	B(250,350,500, 650) C(200,350) D(100)	C(110,350) D(80,100, 150,200)	D(75,100, 200)	D(125,150, 250)		
68	686			B(250,350, 500) C(150,200)	B(600) C(80,100,200, 300) D(50,65,80,100, 125,150)	C(125,200) D(70,100,150)	D(70,150, 200,300)			
100	107	B(200)	B(200,250,350, 500)	B(250,400) C(75,150)	B(400) C(75,100,150, 200) D(50,65,80,100, 125,150)	D(60,100,125, 150)	D(85,100, 150) E(100,150, 200)			
150	157	(B150)	B(250) C(70,80)	C(50,90,150, 200,250) D(50,125)	D(50,85,100)	D(60,85,100, 125,150)				
220	227	B(150, 200,600) D(45)	D(40,50,100)	C(70,100,125, 250) D(50,100,125)	D(40,50,100,150)					
330	337		C(100) D(35,45,100)	D(45,50,70, 100)	D(45,60,100,200)					
470	477	D(35)	D(45,100)	D(45,60,100, 200)						
680	687	D(35,50)	D(45,60,100)							
1000	108									
1500	158	D(100)								

For C and D case ratings in TE S series, ESR ratings are printed on capacitor side in the following format:

T x x x -where x x x is ESR limit in milliohms i.e. T100 represents max. ESR of 100 milliohms.

NOTE: The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalog limit post mounting

ESR limits quoted in brackets (milliohms)

Tantalum Chip Capacitor

Ratings And Part Number Reference:

Capacitance (μF)	Case Code	Part Number	MAX. DC LEAKAGE AT + 25 °C (μA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
4 WVDC AT + 85 °C, SURGE = 5.2 V . . . 2.7 WVDC AT + 125 °C, SURGE = 3.4 V						
15	A	TE_OG156AT	0.6	6	1.500	0.22
22	A	TE_OG226AT	0.9	6	1.500	0.22
33	A	TE_OG336AT	1.3	6	1.500	0.22
33	B	TE_OG336BT	1.3	6	0.500	0.41
47	A	TE_OG476AT	1.9	14	0.500	0.31
47	B	TE_OG476BT	1.9	6	0.275	0.41
68	B	TE_OG686BT	2.7	6	0.450	0.41
68	C	TE_OG686CT	2.7	6	0.225	0.63
100	B	TE_OG107BT	4.0	6	0.500	0.43
100	C	TE_OG107CT	4.0	6	0.250	0.66
150	B	TE_OG157BT	6.0	14	0.150	0.41
150	C	TE_OG157CT	6.0	8	0.200	0.66
150	D	TE_OG157DT	6.0	8	0.150	1.00
220	C	TE_OG227CT	8.8	8	0.200	0.74
220	D	TE_OG227DT	8.8	8	0.150	1.00
330	D	TE_OG337DT	13.2	8	0.150	1.00
470	D	TE_OG477DT	18.8	10	0.125	1.10
470	E	TE_OG477ET	18.8	10	0.100	1.28
680	E	TE_OG687ET	27.2	12	0.100	1.28
6.3 WVDC AT + 85 °C, SURGE = 8 V . . . 4 WVDC AT 125 °C, SURGE = 5 V						
10	A	TE_OJ106AT	0.6	6	2.000	0.19
15	A	TE_OJ156AT	0.9	6	2.000	0.19
22	A	TE_OJ226AT	1.3	6	2.000	0.19
22	B	TE_OJ226BT	1.3	6	0.600	0.38
33	A	TE_OJ336AT	2.0	14	0.800	0.31
33	B	TE_OJ336BT	2.0	6	0.600	0.38
47	B	TE_OJ476BT	2.8	6	0.550	0.39
47	C	TE_OJ476CT	2.8	6	0.300	0.61
68	B	TE_OJ686BT	4.1	6	0.550	0.9
68	C	TE_OJ686CT	4.1	6	0.275	0.63
100	B	TE_OJ107BT	6.0	15	0.500	0.41
100	C	TE_OJ107CT	6.0	6	0.250	0.66
100	D	TE_OJ107DT	6.0	6	0.140	1.04
150	C	TE_OJ157CT	9.0	8	0.200	0.74
150	D	TE_OJ157DT	9.0	8	0.125	1.10
150	E	TE_OJ157ET	9.0	8	0.100	1.28
220	C	TE_OJ227DT	13.2	8	0.100	1.22
220	E	TE_OJ227ET	13.2	8	0.100	1.28
330	C	TE_OJ337DT	19.8	8	0.125	1.10
330	E	TE_OJ337ET	19.8	8	0.100	1.28
470	E	TE_OJ477ET	28.2	10	0.100	1.28



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Capacitance (μF)	Case Code	Part Number	MAX. DC LEAKAGE AT + 25 °C (μA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
10 WVDC AT + 85 °C, SURGE = 13 V . . . 7 WVDC AT 125 °C, SURGE = 8 V						
4.7	A	TE_1A475AT	0.5	6	3.000	0.16
6.8	A	TE_1A685AT	0.7	6	3.000	0.16
10	A	TE_1A106AT	1.0	6	2.000	0.19
15	A	TE_1A156AT	1.5	6	2.000	0.19
15	B	TE_1A156BT	1.5	6	0.700	0.35
22	A	TE_1A226AT	2.2	8	1.500	0.22
22	B	TE_1A226BT	2.2	6	0.700	0.35
22	C	TE_1A226CT	2.2	6	0.345	0.56
33	B	TE_1A336BT	3.3	6	0.600	0.38
33	C	TE_1A336CT	3.3	6	0.300	0.61
47	B	TE_1A476BT	4.7	6	0.600	0.38
47	C	TE_1A476CT	4.7	6	0.300	0.61
47	D	TE_1A476DT	4.7	6	0.200	0.87
68	C	TE_1A686CT	6.8	6	0.275	0.63
68	D	TE_1A686DT	6.8	6	0.150	1.00
100	C	TE_1A107CT	10.0	8	0.200	0.74
100	D	TE_1A107DT	10.0	6	0.100	1.22
150	D	TE_1A157DT	15.0	8	0.100	1.22
150	E	TE_1A157ET	15.0	8	0.100	1.28
220	D	TE_1A227DT	22.0	8	0.125	1.10
220	E	TE_1A227ET	22.0	8	0.100	1.28
330	E	TE_1A337ET	33.0	10	0.100	1.28
16 WVDC AT + 85 °C, SURGE = 20 V . . . 10 WVDC AT + 125 °C, SURGE = 12 V						
3.3	A	TE_1C335AT	0.5	6	3.500	0.15
4.7	A	TE_1C475AT	0.8	6	2.500	0.17
4.7	B	TE_1C475BT	0.8	6	1.500	0.24
6.8	A	TE_1C685AT	1.1	6	3.000	0.16
10	A	TE_1C106AT	1.6	6	1.700	0.21
10	B	TE_1C106BT	1.6	6	0.800	0.33
10	C	TE_1C106CT	1.6	6	0.450	0.49
15	B	TE_1C156BT	2.4	6	0.800	0.33
15	C	TE_1C156CT	2.4	6	0.400	0.49
22	B	TE_1C226BT	3.5	6	0.700	0.33
22	C	TE_1C226CT	3.5	6	0.300	0.52
33	B	TE_1C336BT	5.3	6	0.225	0.35
33	C	TE_1C336CT	5.3	6	0.300	0.61
33	D	TE_1C336DT	4.2	4	0.225	0.82
47	C	TE_1C476CT	7.5	6	0.300	0.61
47	D	TE_1C476DT	7.5	6	0.150	1.00
68	D	TE_1C686DT	10.9	6	0.150	1.00
100	D	TE_1C107DT	16.0	8	0.125	1.10
100	E	TE_1C107ET	16.0	8	0.100	1.28
150	E	TE_1C157ET	24.0	8	0.100	1.28

Tantalum Chip Capacitor

Ratings And Part Number Reference:

Capacitance (µF)	Case Code	Part Number	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
20 WVDC AT + 85 °C, SURGE = 26 V . . . 13 WVDC AT + 125 °C, SURGE = 16 V						
1.0	A	TE_1D105AT	0.5	4	5.500	0.12
2.2	A	TE_1D225AT	0.5	6	4.000	0.14
3.3	A	TE_1D335AT	0.7	6	4.000	0.14
4.7	A	TE_1D475AT	0.9	6	3.500	0.15
4.7	B	TE_1D475BT	0.9	6	1.000	0.29
6.8	B	TE_1D685BT	1.4	6	1.000	0.29
10	B	TE_1D106BT	2.0	6	1.000	0.29
10	C	TE_1D106CT	2.0	6	0.450	0.49
15	B	TE_1D156BT	3.0	6	1.000	0.29
15	C	TE_1D156CT	3.0	6	0.400	0.52
22	C	TE_1D226CT	4.4	6	0.375	0.54
22	D	TE_1D226DT	3.5	4	0.225	0.82
33	C	TE_1D336CT	6.6	6	0.350	0.56
33	D	TE_1D336DT	6.6	6	0.200	0.87
47	D	TE_1D476DT	9.4	6	0.200	0.87
47	E	TE_1D476ET	7.5	4	0.150	1.05
68	D	TE_1D686DT	13.6	6	0.175	0.93
68	E	TE_1D686ET	13.6	6	0.150	1.05
100	E	TE_1D107ET	20.0	8	0.150	1.05
25 WVDC AT + 85 °C, SURGE = 32 V . . . 17 WVDC AT + 125 °C, SURGE = 20 V						
1.0	A	TE_1E105AT	0.5	4	4.000	0.14
1.5	A	TE_1E155AT	0.5	6	4.000	0.14
2.2	A	TE_1E225AT	0.5	6	4.000	0.14
2.2	B	TE_1E225BT	0.5	6	1.500	0.24
3.3	B	TE_1E335BT	0.8	6	1.500	0.24
4.7	B	TE_1E475BT	1.2	6	1.500	0.24
4.7	C	TE_1E475CT	1.2	6	0.525	0.46
6.8	C	TE_1E685CT	1.7	6	0.500	0.47
10	C	TE_1E106CT	2.5	6	0.450	0.49
15	C	TE_1E156CT	3.8	6	0.425	0.51
15	D	TE_1E156DT	3.8	6	0.250	0.77
22	D	TE_1E226DT	5.5	6	0.200	0.87
33	D	TE_1E336DT	8.3	6	0.200	0.87
33	E	TE_1E336ET	8.3	6	0.200	0.91
47	E	TE_1E476ET	11.8	6	0.200	0.91
35 WVDC AT + 85 °C, SURGE = 46 V . . . 23 WVDC AT + 125 °C, SURGE = 28 V						
0.47	A	TE_1V474AT	0.5	4	4.000	0.14
0.68	A	TE_1V684AT	0.5	4	4.000	0.14
1.0	A	TE_1V105AT	0.5	4	4.000	0.14
1.0	B	TE_1V105BT	0.5	4	2.000	0.21
1.5	B	TE_1V155BT	0.5	6	2.000	0.21
1.5	C	TE_1V155CT	0.5	6	0.900	0.35
2.2	B	TE_1V225BT	0.8	6	2.000	0.21

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Ratings And Part Number Reference:

Capacitance (µF)	Case Code	Part Number	MAX. DC LEAKAGE AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
2.2	C	TE_1V225CT	0.8	6	0.900	0.40
3.3	C	TE_1V335CT	1.2	6	0.700	0.45
4.7	C	TE_1V475CT	1.6	6	0.500	0.47
6.8	C	TE_1V685CT	2.4	6	0.475	0.48
6.8	D	TE_1V685DT	2.4	6	0.300	0.71
10	C	TE_1V106CT	3.5	6	0.450	0.49
10	D	TE_1V106DT	3.5	6	0.300	0.71
15	D	TE_1V156DT	5.3	6	0.300	0.71
15	E	TE_1V156ET	5.3	6	0.300	0.74
22	D	TE_1V226DT	7.7	6	0.300	0.71
22	E	TE_1V226ET	7.7	6	0.275	0.77
50 WVDC AT + 85 °C, SURGE = 65 V . . . 33 WVDC AT + 125 °C, SURGE = 40 V						
1.0	B	TE_1H105BT	0.5	4	2.000	0.21
1.0	C	TE_1H105CT	0.5	4	1.600	0.26
1.5	B	TE_1H155BT	0.8	6	2.000	0.21
1.5	C	TE_1H155CT	0.8	6	1.500	0.27
2.2	C	TE_1H225CT	1.1	6	1.500	0.27
2.2	D	TE_1H225DT	1.1	6	0.800	0.43
3.3	C	TE_1H335CT	1.7	6	1.500	0.27
3.3	D	TE_1H335DT	1.7	6	0.800	0.43
4.7	D	TE_1H475DT	2.4	6	0.600	0.50
4.7	E	TE_1H475ET	1.9	6	0.600	0.50
6.8	D	TE_1H685DT	3.4	6	0.600	0.50
6.8	E	TE_1H685ET	3.4	6	0.550	0.55
10	E	TE_1H106ET	5.0	6	0.500	0.55