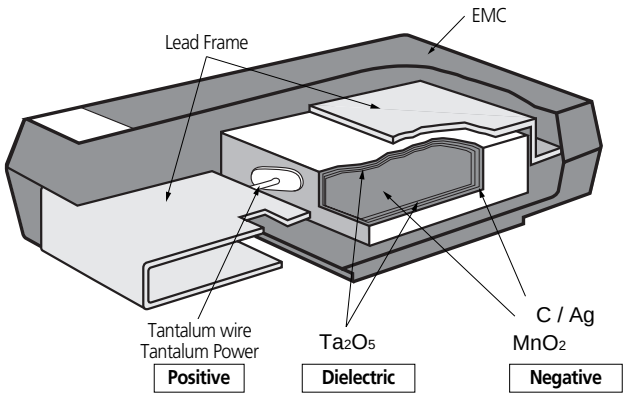
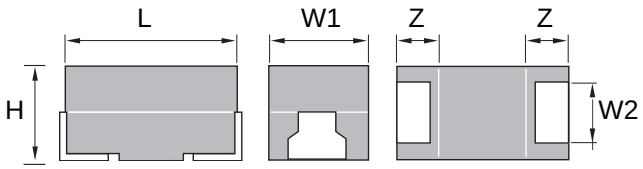
TC Series - Standard Tantalum Capacitors

Feature



Configuration and Dimension



Case Code	EIA Code	L	W1	W2	H	Z
P	2012	2.0 +/-0.2	1.25 +/-0.2	0.9 +/-0.1	1.1 +/-0.1	0.45 +/-0.1
A	3216	3.2 +/-0.2	1.60 +/-0.2	1.2 +/-0.1	1.6 +/-0.2	0.8 +/-0.3
B	3528	3.5 +/-0.2	2.80 +/-0.2	2.2 +/-0.1	1.9 +/-0.2	0.8 +/-0.3
C	6032	6.0 +/-0.3	3.20 +/-0.3	2.2 +/-0.1	2.5 +/-0.3	1.3 +/-0.3
D	7343	7.3 +/-0.3	4.30 +/-0.3	2.4 +/-0.1	2.8 +/-0.3	1.3 +/-0.3
E	7343	7.3 +/-0.3	4.30 +/-0.3	2.4 +/-0.1	4.0 +/-0.3	1.3 +/-0.3

Part Numbering Code

TC K IA 107 D T

- TC — Type of series
- K — Tolerance Code
- IA — Rated Voltage Code
- 107 — Capacitance Code
- D — Case Size Code
- T — Packing Code

Cal-Chip Electronics Inc.

RoHS

Feature

TC Series; The TC Series is designed for hybrid and low profile printed circuit boards where inductance is to be minimized, or where space is at a premium. These units have the further advantage of being compatible with automatic assembly equipment-minus the problems associated with flexible terminal lead wires. Our chip tantalums meet all EIA seizes and are environment friendly, Pb-free.

Specifications

Capacitance	Range	0.22μF to 470μF						
	Tolerance	±20%(M), ±10%(K)						
Dissipation Factor (Tan δ)		Refer to Specification						
Leakage Current		Refer to Specification						
Rated Voltage(VR)	T≤85℃	6.3	10.0	16.0	20.0	25.0	35.0	50.0
Category Voltage(V)	85℃＜T≤125℃	4.0	6.3	10.0	13.0	16.0	22.0	40.0
Surge Voltage(V)	T≤85℃	8.0	13.0	20.0	25.0	32.0	44.0	65.0
	85℃＜T≤125℃	5.0	8.0	13.0	16.0	20.0	28.0	33.0
Operating Temperature		-55℃ to 125℃						

Standard Value and Case Size

Cap. (uF) \ R.V.		4V (OG)	6.3V (OJ)	10V (IA)	16V (IC)	20V (ID)	25V (IE)	35V (IV)	50V (IX)
0.10	104							A	
0.15	154							A	
0.22	224							A	
0.33	334					A	A	A	
0.47	474					A	A	A	
0.68	684					A	A	A	
1	105				A	A	A	A, B	A, B, C
1.5	155				A	A	A	A, B	A, B, C
2.2	225			A	A, B	A, B	A, B	A, B, C	B, C, D
3.3	335		A	A, B	A, B	A, B	A, B, C	B, C, D	B, C, D
4.7	475	A	A	A	A, B, C	A, B, C	B, C	B, C, D	C, D
6.8	685	A	A	A, B	A, B	B, C	B, C	C, D	C, D, E
10	106	A	A, B	A, B, C	A, B. C, D	B, C, D	B, C, D	C, D	C, D, E
15	156	A, B	A, B	A, B	B, C	C, D	C, D	C, D, E	D, E
22	226	A, B	A, B	A, B. C, D	B, C, D	B, C, D	C, D	D, E	D, E
33	336	A, B	A, B, C	A, B, C	B, C, D	C, D	D, E	D, E	
47	476	A, B, C	A, B. C, D	A, B. C, D	C, D	D, E	D, E	D, E	
68	686	B, C	B, C, D	C, D	C, D	D, E	E		
100	107	A, B. C, D	B, C, D	B, C, D	D, E	D, E	E		
150	157	C, D	C, D	D, E	E				
220	227	B, C, D	C, D, E	D, E	E				
330	337	D, E	D, E	D, E					
470	477	D, E	D, E	E					
680	687	E	E						
1000	1000	E	E						

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Ratings & Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
4 Volt Rating@+85C(2.5 Volt Rating@+125C)					
TC*OG335AT	A	3.3	0.5	6	8
TC*OG475AT	A	4.7	0.5	6	8
TC*OG685AT	A	6.8	0.5	8	6
TC*OG106AT	A	10	0.5	8	6
TC*OG156AT	A	15	0.6	8	4
TC*OG156BT	B	15	0.6	8	3.5
TC*OG226AT	A	22	0.9	8	4
TC*OG226BT	B	22	0.9	8	3.5
TC*OG336AT	A	33	1.3	8	4
TC*OG336BT	B	33	1.3	8	3.5
TC*OG476AT	A	47	1.9	8	2
TC*OG476BT	B	47	1.9	8	3.5
TC*OG476CT	C	47	1.9	8	1.8
TC*OG686BT	B	68	2.7	8	1.8
TC*OG686CT	C	68	2.7	8	1.6
TC*OG107AT	A	100	4	30	2
TC*OG107BT	B	100	4	8	0.8
TC*OG107CT	C	100	4	8	1.6
TC*OG107DT	D	100	4	8	0.8
TC*OG157CT	C	150	6	8	1.2
TC*OG157DT	D	150	6	8	0.8
TC*OG227BT	B	220	8.8	18	0.5
TC*OG227CT	C	220	8.8	8	0.6
TC*OG227DT	D	220	8.8	8	0.9
TC*OG337DT	D	330	13.2	8	0.7
TC*OG337ET	E	330	13.2	8	0.8
TC*OG477DT	D	470	18.8	10	0.6
TC*OG477ET	E	470	18.8	8	0.5
TC*OG687ET	E	680	27.2	8	0.8
TC*OG108ET	E	1000	40	12	0.5

* Insert K for +/-10% tolerance and M for +/-20%.
Capacitance and DF are measured at 120Hz, 0.5V RMS with maximum DC bias of 2.0 volts.
DCL is measured at a rated voltage after 5 minutes.
Calchip reserves the right to substitute a higher voltage rated part
Additional values may be available, please contact your sales representative for more information.

Ratings & Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
6.3 Volt Rating@+85C(4 Volt Rating@+125C)					
TC*OJ335AT	A	3.3	0.5	6	8
TC*OJ475AT	A	4.7	0.5	6	8
TC*OJ685AT	A	6.8	0.5	8	6
TC*OJ106AT	A	10	0.5	8	6
TC*OJ106BT	B	10	0.6	8	4
TC*OJ156AT	A	15	0.6	8	3.5
TC*OJ156BT	B	15	0.9	8	4
TC*OJ226AT	A	22	0.9	8	3.5
TC*OJ226BT	B	22	1.3	8	4
TC*OJ336AT	A	33	1.3	8	3.5
TC*OJ336BT	B	33	1.9	8	2
TC*OJ336CT	C	33	1.9	8	3.5
TC*OJ476AT	A	47	1.9	8	1.8
TC*OJ476BT	B	47	2.7	8	1.8
TC*OJ476CT	C	47	2.7	8	1.6
TC*OJ476DT	D	47	3.0	6	0.8
TC*OJ686BT	B	68	4	30	2
TC*OJ686CT	C	68	4	8	0.8
TC*OJ686DT	D	68	4	8	1.6
TC*OJ107BT	B	100	6.3	10	1.7
TC*OJ107CT	C	100	6.3	6	0.9
TC*OJ107DT	D	100	6	8	0.8
TC*OJ157CT	C	150	8.8	18	0.5
TC*OJ157DT	D	150	8.8	8	0.6
TC*OJ227CT	C	220	8.8	8	0.9
TC*OJ227DT	D	220	13.2	8	0.7
TC*OJ227ET	E	220	13.9	8	0.7
TC*OJ337DT	D	330	13.2	8	0.8
TC*OJ337ET	E	330	20.8	8	0.4
TC*OJ477DT	D	470	29.6	12	0.4
TC*OJ477ET	E	470	29.6	8	0.4
TC*OJ687ET	E	680	42.8	15	0.6
TC*OJ108ET	E	1000	63	15	0.6

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Ratings & Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
10 Volt Rating@+85C(6.3 Volt Rating@+125C)					
TC*IA225AT	A	2.2	0.5	8	8
TC*IA335AT	A	3.3	0.5	8	6
TC*IA335BT	B	3.3	0.5	8	3.5
TC*IA475AT	A	4.7	0.5	8	6
TC*IA685AT	A	6.8	0.7	8	6
TC*IA685BT	B	6.8	0.7	8	3.5
TC*IA106AT	A	10	1	8	2
TC*IA106BT	B	10	1	8	3.5
TC*IA106CT	C	10	1	8	1.8
TC*IA156AT	A	15	1.5	8	4
TC*IA156BT	B	15	1.5	8	3.5
TC*IA226AT	A	22	2.2	8	2
TC*IA226BT	B	22	2.2	8	3
TC*IA226CT	C	22	2.2	8	1.8
TC*IA226DT	D	22	3.5	8	0.8
TC*IA336AT	A	33	3.3	12	2
TC*IA336BT	B	33	3.3	8	1.8
TC*IA336CT	C	33	3.3	8	1.6
TC*IA476AT	A	47	9.4	20	3
TC*IA476BT	B	47	4.7	8	1.0
TC*IA476CT	C	47	4.7	8	1.2
TC*IA476DT	D	47	4.7	8	0.8
TC*IA686CT	C	68	6.8	8	0.9
TC*IA686DT	D	68	6.8	8	0.8
TC*IA107BT	B	100	10	8	1.4
TC*IA107CT	C	100	10	8	1.2
TC*IA107DT	D	100	10	8	0.7
TC*IA157DT	D	150	15	8	0.8
TC*IA157ET	E	150	15	8	0.7
TC*IA227DT	D	220	22	8	0.4
TC*IA227ET	E	220	22	8	0.5
TC*IA337DT	D	330	33	8	0.9
TC*IA337ET	E	330	33	10	0.5
TC*IA477ET	E	470	47	10	0.2

* Insert K for +/-10% tolerance and M for +/-20%.
Capacitance and DF are measured at 120Hz, 0.5V RMS with maximum DC bias of 2.0 volts.
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Ratings & Part Number

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
16 Volt Rating@+85C(10 Volt Rating@+125C)					
TC*IC105AT	A	1	0.5	4	11
TC*IC155AT	A	1.5	0.5	6	8
TC*IC225AT	A	2.2	0.5	6	6.5
TC*IC225BT	B	2.2	0.5	6	2.3
TC*IC335AT	A	3.3	0.5	6	5
TC*IC335BT	B	3.3	0.5	6	4.5
TC*IC475AT	A	4.7	0.8	6	4
TC*IC475BT	B	4.7	0.8	6	3.5
TC*IC475CT	C	4.7	0.7	8	2.5
TC*IC685AT	A	6.8	1.1	6	3.5
TC*IC685BT	B	6.8	1.1	6	2.5
TC*IC106AT	A	10	1.6	6	3
TC*IC106BT	B	10	1.6	6	2.8
TC*IC106CT	C	10	1.6	6	2
TC*IC106DT	D	10	1.6	8	1
TC*IC156BT	B	15	2.4	6	2.5
TC*IC156CT	C	15	2.4	6	1.8
TC*IC226BT	B	22	3.5	6	2.3
TC*IC226CT	C	22	3.5	6	1
TC*IC226DT	D	22	3.5	6	1.1
TC*IC336BT	B	33	5.3	8	2.1
TC*IC336CT	C	33	5.3	6	1.5
TC*IC336DT	D	33	5.3	6	0.9
TC*IC476CT	C	47	7.5	6	0.5
TC*IC476DT	D	47	7.5	6	0.9
TC*IC686CT	C	68	10.9	6	1.3
TC*IC686DT	D	68	10.9	6	0.9
TC*IC107DT	D	100	16	6	0.6
TC*IC107ET	E	100	16	6	0.9
TC*IC157ET	E	150	24	8	0.3
TC*IC227ET	E	220	35.2	10	0.5

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Ratings & Part Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
20 Volt Rating@+85C(13 Volt Rating@+125C)					
TC*ID474AT	A	.47	0.5	4	14
TC*ID684AT	A	.68	0.5	4	12
TC*ID105AT	A	1	0.5	6	10
TC*ID155AT	A	1.5	0.5	8	8
TC*ID225AT	A	2.2	0.5	8	7
TC*ID225BT	B	2.2	0.5	8	4.5
TC*ID335AT	A	3.3	0.7	8	4
TC*ID335BT	B	3.3	0.7	8	3.5
TC*ID475AT	A	4.7	1	8	3.5
TC*ID475BT	B	4.7	1	8	3.5
TC*ID475CT	C	4.7	1	8	2.5
TC*ID685BT	B	6.8	1.4	8	3.5
TC*ID685CT	C	6.8	1.4	8	1.9
TC*ID106BT	B	10	2	8	3
TC*ID106CT	C	10	2	8	1.8
TC*ID106DT	D	10	2	8	1
TC*ID156CT	C	15	3	8	1.7
TC*ID156DT	D	15	3	8	0.8
TC*ID226BT	B	22	4.4	8	1.8
TC*ID226CT	C	22	4.4	8	1.6
TC*ID226DT	D	22	4.4	8	0.8
TC*ID336CT	C	33	6.6	8	1.2
TC*ID336DT	D	33	6.6	8	0.8
TC*ID476DT	D	47	9.4	8	0.7
TC*ID476ET	E	47	9.4	6	0.8
TC*ID686DT	D	68	13.6	8	0.7
TC*ID686ET	E	68	13.6	6	0.7
TC*ID107DT	D	100	20	8	0.9
TC*ID107ET	E	100	20	8	0.5

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Ratings & Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
25 Volt Rating@+85C(16 Volt Rating@+125C)					
TC*IE684AT	A	1	0.5	6	10
TC*IE105AT	A	1.5	0.5	8	8
TC*IE155AT	A	2.2	0.5	8	7
TC*IE225AT	A	2.2	0.5	8	4.5
TC*IE225BT	B	3.3	0.7	8	4
TC*IE335AT	A	3.3	0.7	8	3.5
TC*IE335BT	B	4.7	1	8	3.5
TC*IE335CT	C	4.7	1	8	3.5
TC*IE475BT	B	4.7	1	8	2.5
TC*IE475CT	C	6.8	1.4	8	3.5
TC*IE685BT	B	6.8	1.4	8	1.9
TC*IE685CT	C	10	2	8	3
TC*IE106BT	B	10	2	8	1.8
TC*IE106CT	C	10	2	8	1
TC*IE106DT	D	15	3	8	1.7
TC*IE156CT	C	15	3	8	0.8
TC*IE156DT	D	22	4.4	8	1.8
TC*IE226CT	C	22	4.4	8	1.6
TC*IE226DT	D	22	4.4	8	0.8
TC*IE336DT	D	33	6.6	8	1.2
TC*IE336ET	E	33	8.3	6	0.7
TC*IE476DT	D	33	6.6	8	0.8
TC*IE476ET	E	47	11.8	6	0.7
TC*IE686ET	E	68	17	6	0.7
TC*IE107ET	E	100	25	8	0.3

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Ratings Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
35 Volt Rating@+85C(22 Volt Rating@+125C)					
TC*IV104AT	A	0.10	0.5	4	20
TC*IV154AT	A	0.15	0.5	4	19
TC*IV224AT	A	0.22	0.5	6	15
TC*IV334AT	A	0.33	0.5	6	14
TC*IV474AT	A	0.47	0.5	6	12
TC*IV684AT	A	0.68	0.5	6	10
TC*IV105AT	A	1	0.5	6	7.5
TC*IV105BT	B	1	0.5	6	4.5
TC*IV155AT	A	1.5	0.5	8	7.5
TC*IV155BT	B	1.5	0.5	8	5
TC*IV225AT	A	2.2	0.8	6	4
TC*IV225BT	B	2.2	0.7	8	4.2
TC*IV225CT	C	2.2	0.73	8	2.5
TC*IV335BT	B	3.3	1.2	6	3.5
TC*IV335CT	C	3.3	1.2	8	2.2
TC*IV335DT	D	3.3	1.2	8	1
TC*IV475BT	B	4.7	1.6	8	2.5
TC*IV475CT	C	4.7	1.6	8	2.5
TC*IV475DT	D	4.7	1.6	8	1.5
TC*IV685CT	C	6.8	2.3	8	2
TC*IV685DT	D	6.8	2.3	8	1.2
TC*IV106CT	C	10	3.5	8	1.6
TC*IV106DT	D	10	3.5	8	1
TC*IV156CT	C	15	5.3	8	1.4
TC*IV156DT	D	15	5.2	8	0.8
TC*IV156ET	E	15	5.3	6	0.9
TC*IV226DT	D	22	7.7	8	0.9
TC*IV226ET	E	22	7.7	6	0.7
TC*IV336DT	D	33	11.5	8	0.9
TC*IV336ET	E	33	11.6	6	0.6
TC*IV476ET	E	47	16.5	6	0.6

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Ratings & Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25c 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
50 Volt Rating@+85C(35 Volt Rating@+125C)					
TC*IX105AT	A	1	0.5	4	7
TC*IX105BT	B	1	0.5	6	6
TC*IX105CT	C	1	0.5	4	4.8
TC*IX155AT	A	1.5	0.8	6	6
TC*IX155BT	B	1.5	0.8	6	4
TC*IX155CT	C	1.5	0.8	6	4
TC*IX225BT	B	2.2	1.1	6	4.5
TC*IX225CT	C	2.2	1.1	6	3
TC*IX225DT	D	2.2	1.1	6	2.5
TC*IX335BT	B	3.3	1.7	6	3
TC*IX335CT	C	3.3	1.7	6	2
TC*IX335DT	D	3.3	1.7	6	1.6
TC*IX475CT	C	4.7	2.4	4	1.4
TC*IX475DT	D	4.7	2.4	6	1.2
TC*IX685ET	E	6.8	3.4	6	0.8
TC*IX106CT	C	10	5	6	0.9
TC*IX106DT	D	10	5	6	0.8
TC*IX106ET	E	10	5	6	0.7
TC*IX156DT	D	15	7.5	8	0.8
TC*IX156ET	E	15	7.5	8	0.7
TC*IX226DT	D	22	11	10	0.7
TC*IX226ET	E	22	11	10	0.6

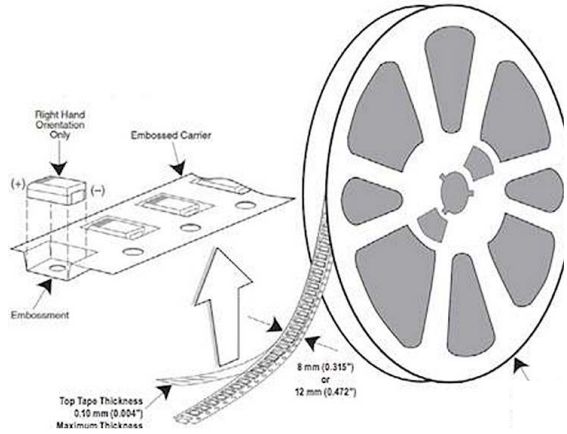
* Insert K for +/-10% tolerance and M for +/-20%.
Capacitance and DF are measured at 120Hz, 0.5V RMS with maximum DC bias of 2.0 volts.
DCL is measured at a rated voltage after 5 minutes.
Calchip reserves the right to substitute a higher voltage rated part
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Fax : (215) 942-6400

Tape and Reel Packaging Information

Cal-Chip's molded tantalum and aluminum chip capacitor families are packaged in 8 and 12 mm plastic tape on 7" reels in accordance with EIA Standard 481: Embossed Carrier Taping of Surface Mount Components for Automoatic Handling. This packaging system is compatible with all tape-fed automatic pick-and place systems.



Case Code		Tape Width (mm)	7" Reel
CCE	EIA		
P	2012-12	8	2,500
A	3216-18	8	2,000
B	3528-21	8	2,000
C	6032-28	12	500
D	7343-31	12	500
E	7343-43	12	400/500

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Feature

Reduced to about 1/3 the cubic volume.

- New low profile case size.
  (0805 size tantalum chip capacitors)
- Compatible with automatic pick and place equipment.
- Meets or exceeds EIA standard 535BAAC.

Specifications

Capacitance	Range	0.22㎌ to 22㎌						
	Tolerance	±20%(M), ±10%(K)						
Dissipation Factor (Tan δ)		Refer to Specification						
Leakage Current		between 0.01CV and 0.5㎂, whichever is larger						
Rated Voltage(VR)	T≤85℃	4.0	6.3	10.0	16.0	20.0	25.0	35.0
Category Voltage(V)	85℃＜T≤125℃	2.5	4.0	6.3	10.0	13.0	16.0	22.0
Surge Voltage(V)	T≤85℃	5.2	8.0	13.0	20.0	25.0	32.0	44.0
	85℃＜T≤125℃	3.2	5.0	8.0	13.0	16.0	20.0	28.0
Operating Temperature		-55℃ to 125℃						

Standard Value and Case Size

Cap.(㎌) \ R . V	4V(0G)	6.3V(0J)	10V(1A)	16V(1C)	20V(1D)
0.22	224	P	P	P	P	
0.33	334					
0.47	474	P	P	P	P	P
0.68	684	P	P	P	P	P
1.0	105	P	P	P	P	
1.5	155					
2.2	225	P	P	P	P	
3.3	335	P	P	P		
4.7	475	P	P	P		
6.8	685	P	P			
10	106	P	P	P		
15	156					
22	226	P	P			
33	336		P			
47	476					
100	107					

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Ratings & Part Number Reference

Part Number	Case Size	Capacitance (uF)	DC Leakage (uA)@+25C Max.	DF (%)@+25C 120Hz Max.	ESR (Ohm)@+25C 100KHz Max.
4 volt Rating@+85C(2.5 volt Rating@+125C)					
TC*OG224PT	P	0.22	0.5	0.5	25
TC*OG474PT	P	0.47	0.5	0.5	25
TC*OG684PT	P	0.68	0.5	0.5	20
TC*OG105PT	P	1	0.5	0.5	20
TC*OG225PT	P	2.2	0.5	0.5	15
TC*OG335PT	P	3.3	0.5	0.5	8
TC*OG475PT	P	4.7	0.5	0.5	9
TC*OG685PT	P	6.8	0.5	0.5	8
TC*OG106PT	P	10	0.5	0.5	6
TC*OG226PT	P	22	0.9	0.9	3
6.3 volt Rating@+85C(4 volt Rating@+125C)					
TC*OJ224PT	P	0.22	0.5	4	25
TC*OJ474PT	P	0.47	0.5	4	25
TC*OJ684PT	P	0.68	0.5	4	20
TC*OJ105PT	P	1	0.5	6	20
TC*OJ225PT	P	2.2	0.5	6	15
TC*OJ335PT	P	3.3	0.5	6	8
TC*OJ475PT	P	4.7	0.5	8	9
TC*OJ685PT	P	6.8	0.5	6	8
TC*OJ106PT	P	10	0.6	8	5
TC*OJ226PT	P	22	1.4	8	4
TC*OJ336PT	P	33	2.1	18	2
10 volt Rating@+85C(6.3 volt Rating@+125C)					
TC*IA224PT	P	0.22	0.5	4	25
TC*IA474PT	P	0.47	0.5	4	25
TC*IA684PT	P	0.68	0.5	4	20
TC*IA105PT	P	1	0.5	6	20
TC*IA225PT	P	2.2	0.5	6	15
TC*IA335PT	P	3.3	0.5	6	8
TC*IA475PT	P	4.7	0.5	8	4
TC*IA106PT	P	10	1	8	6
16 volt Rating@+85C(10 volt Rating@+125C)					
TC*IC224PT	P	0.22	0.5	6	25
TC*IC474PT	P	0.47	0.5	6	25
TC*IC684PT	P	0.68	0.5	6	20
TC*IC105PT	P	1	0.5	6	20
TC*IC225PT	P	2.2	0.5	6	6.5
20 volt Rating@+85C(13 volt Rating@+125C)					
TC*ID474PT	P	0.47	0.5	4	25
TC*ID684PT	P	0.68	0.5	4	20
TC*ID105PT	P	1	0.5	4	20

*** Insert K for +/-10% tolerance and M for +/-20%.**

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