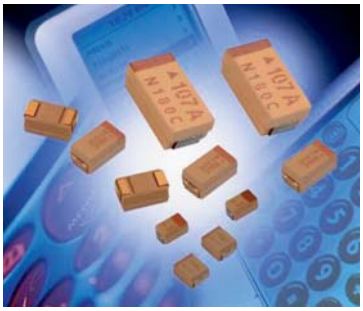
TLJ Series

Tantalum Solid Electrolytic Chip Capacitors
High CV Consumer Series



FEATURES

- High Volumetric Efficiency
- 3x reflow 260°C compatible
- 13 case sizes available including low profile codes
- Environmentally friendly
- Consumer applications (e.g. mobiles phones, PDA etc.)
- CV range: 10-1500µF / 2.5-20V

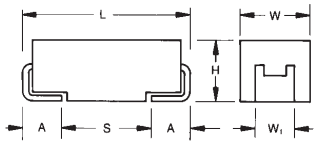
RoHS COMPLIANT

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

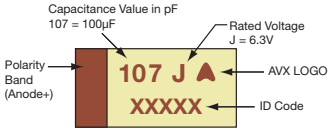
APPLICATIONS

- Mobile phones
- MP3/4 players

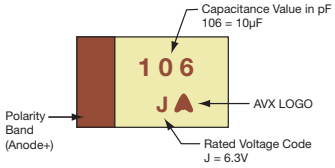


MARKING

A, B, F, G, H, K, S, T, V, W, Y CASE



N, P, R CASE



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W1±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	1206	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	1210	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)
F	2312	6032-20	6.00 (0.236)	3.20 (0.126)	2.00 (0.079) max.	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
G	1206	3216-15	3.20 (0.126)	1.60 (0.063)	1.50 (0.059) max	1.20 0.047)	0.80 (0.031)	1.10 (0.043)
H	1210	3528-15	3.50 (0.138)	2.80 (0.110)	1.50 (0.059) max	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
K	1206	3216-10	3.20 (0.126)	1.60 (0.063)	1.00 (0.039) max	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
N	0805	2012-10	2.05 (0.081)	1.30 (0.051)	1.00 (0.039) max	1.00 (0.039)	0.50 (0.020)	0.85 (0.033)
P	0805	2012-15	2.05 (0.081)	1.35 (0.053)	1.50 (0.059) max	1.00±0.10 (0.039±0.004)	0.50 (0.020)	0.85 (0.033)
R	0805	2012-12	2.05 (0.081)	1.30 (0.051)	1.20 (0.047) max	1.00±0.10 (0.039±0.004)	0.50 (0.020)	0.85 (0.033)
S	1206	3216-12	3.20 (0.126)	1.60 (0.063)	1.20 (0.047) max	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
T	1210	3528-12	3.50 (0.138)	2.80 (0.110)	1.20 (0.047) max	2.20 (0.087)	0.80 (0.031)	1.40 (0.033)
V	2924	7361-38	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.120)	1.30(0.051)	4.40 (0.173)
W	2312	6032-15	6.00 (0.236)	3.20 (0.126)	1.50 (0.059) max	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
Y	2917	7343-20	7.30 (0.287)	4.30 (0.169)	2.00 (0.079) max	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W1 dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

TLJ	W	157	M	010	R	0200
Type	**Case Size** See table above	**Capacitance Code** pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** M = ±20%	**Rated DC Voltage** 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc	**Packaging** R = Pure Tin 7" Reel S = Pure Tin 13" Reel	**ESR in mΩ**

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C						
Capacitance Range:	10 µF to 1500 µF						
Capacitance Tolerance:	±20%						
Rated Voltage (V_R)	-55°C ≤ +40°C:	2.5	4	6.3	10	16	20
Category Voltage (V_C)	at 85°C:	1.3	2	3.2	5	8	10
Category Voltage (V_C)	at 125°C:	0.5	0.8	1.3	2	3.2	4
Temperature Range:	-55°C to +125°C with category voltage						
Reliability:	0.2% per 1000 hours at 85°C, 0.5xV_R with 0.1Ω/V series impedance with 60% confidence level						

TLJ Series

Tantalum Solid Electrolytic Chip Capacitors
High CV Consumer Series

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

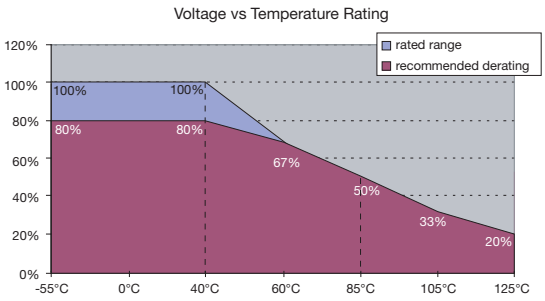
Capacitance		Rated Voltage DC to 40°C / 0.5DC to 85°C / 0.2DC to 125°C					
µF	Code	2.5V (e)	4V (G)	6.3V (J)	10V (A)	16V (C)	20V (D)
6.8	685						
10	106				N(2500) R(2000,3000)	S(2200)	T(1000)
15	156				R(2000)		
22	226			N(5400)/R(3500)	K(1800)/N(3800) R(3800)	T(1000)	
33	336		N(8000)/R(3000)	K(1700)/N(8000) P(3000)/R(3000)	K(1500)/N(9600) P(3500) R(3500)/S(1500)	T(1000)	
47	476		K(1500)/N(4000) P(3000)/R(3000)	K(1500)/N(8300) P(700,900,1800,2500) R(3200)/S(1500)	A(600)/G(1500) P(3200)/R(3200) S(1500)/T(600)		
68	686		K(1200)/N(8000) P(3000) R(2900)/S(1500)	A(500)/G(800) K(2000) S(1500)/T(600)	A(1500)		
100	107		A(500)/G(800) K(2000)/N(5200) P(2700)/S(1400)	A(500,800)/G(800) K(2000) P(5400)/T(800)	A(1400) H(900)/T(900)		
150	157		A(800)/T(800)	A(900)/G(2500)* H(900)/T(1200)	B(500) W(150,200)		
220	227	T(1100)	A(1100)/G(3000) H(900)/T(1100)	B(500)/T(2000) W(200)	F(300)		
330	337		T(2700)/W(200)	F(300)			
470	477						
680	687			Y(100,150)			
1000	108						
1500	158			V(100)			

Available Ratings, (ESR ratings in mOhms in brackets)

Engineering samples - please contact manufacturer

*Codes under development - subject to change

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



TLJ Series

Tantalum Solid Electrolytic Chip Capacitors
High CV Consumer Series

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	Maximum Surge Current (A)	DCL (µA) Max.	ESR Max. (mΩ) @ 100kHz	MSL	100kHz RMS Current (mA)			Product Category
											25°C	85°C	125°C	
2.5 Volt @ 40°C														
TLJT227M002#1200	T	220	2.5	40	0.5	125	0.8	5.5	1100	3	270	243	108	2
4 Volt @ 40°C														
TLJN336M004#8000	N	33	4	40	0.8	125	0.2	1.3	8000	3	79	71	32	1
TLJR336M004#3000	R	33	4	40	0.8	125	0.6	1.3	3000	3	135	122	54	2
TLJK476M004#1500	K	47	4	40	0.8	125	1.0	1.9	1500	3	208	187	83	2
TLJN476M004#4000	N	47	4	40	0.8	125	0.6	1.9	4000	3	112	101	45	1
TLJP476M004#3000	P	47	4	40	0.8	125	0.6	1.9	3000	3	141	127	57	2
TLJR476M004#3000	R	47	4	40	0.8	125	0.6	1.9	3000	3	135	122	54	2
TLJK686M004#1200	K	68	4	40	0.8	125	1.2	2.7	1200	3	233	209	93	2
TLJN686M004#8000	N	68	4	40	0.8	125	0.2	5.4	8000	3	79	71	32	1
TLJP686M004#3000	P	68	4	40	0.8	125	1.2	2.7	3000	3	141	127	57	2
TLJR686M004#2900	R	68	4	40	0.8	125	0.6	2.7	2900	3	138	124	55	2
TLJS686M004#1500	S	68	4	40	0.8	125	1.0	2.7	1500	3	208	187	83	2
TLJA107M004#0500	A	100	4	40	0.8	125	2.1	4.0	500	3	387	349	155	1
TLJG107M004#0800	G	100	4	40	0.8	125	1.6	4.0	800	3	296	266	118	2
TLJK107M004#2000	K	100	4	40	0.8	125	0.8	8.0	2000	3	180	162	72	2
TLJN107M004#5200	N	100	4	40	0.8	125	0.4	8.0	5200	3	98	88	39	1
TLJP107M004#2700	P	100	4	40	0.8	125	0.6	8.0	2700	3	149	134	60	2
TLJS107M004#1400	S	100	4	40	0.8	125	1.1	4.0	1400	3	215	194	86	2
TLJA157M004#0800	A	150	4	40	0.8	125	1.6	6.0	800	3	306	276	122	2
TLJT157M004#0800	T	150	4	40	0.8	125	1.6	6.0	800	3	316	285	126	2
TLJA227M004#1100	A	220	4	40	0.8	125	1.3	17.6	1100	3	261	235	104	2
TLJG227M004#3000	G	220	4	40	0.8	125	0.6	17.6	3000	3	153	137	61	2
TLJH227M004#0900	H	220	4	40	0.8	125	1.5	8.8	900	3	298	268	119	2
TLJT227M004#1100	T	220	4	40	0.8	125	1.3	17.6	1100	3	270	243	108	2
TLJT337M004#2700	T	330	4	40	0.8	125	0.6	26.4	2700	3	172	155	69	2
TLJW337M004#0200	W	330	4	40	0.8	125	3.1	13.2	200	3	671	604	268	1
6.3 Volt @ 40°C														
TLJN226M006#5400	N	22	6.3	40	1.3	125	0.5	1.3	5400	3	96	87	38	1
TLJR226M006#3500	R	22	6.3	40	1.3	125	0.8	1.3	3500	3	125	113	50	2
TLJK336M006#1700	K	33	6.3	40	1.3	125	1.5	2.0	1700	3	196	176	78	2
TLJN336M006#8000	N	33	6.3	40	1.3	125	0.4	2.0	8000	3	79	71	32	1
TLJP336M006#3000	P	33	6.3	40	1.3	125	0.9	2.0	3000	3	141	127	57	1
TLJR336M006#3000	R	33	6.3	40	1.3	125	0.9	2.0	3000	3	135	122	54	2
TLJK476M006#1500	K	47	6.3	40	1.3	125	1.6	2.8	1500	3	208	187	83	2
TLJN476M006#8300	N	47	6.3	40	1.3	125	0.4	5.6	8300	3	78	70	31	1
TLJP476M006#0700	P	47	6.3	40	1.3	125	2.7	2.8	700	3	293	263	117	2
TLJP476M006#0900	P	47	6.3	40	1.3	125	2.3	2.8	900	3	258	232	103	2
TLJP476M006#1800	P	47	6.3	40	1.3	125	1.4	2.8	1800	3	183	164	73	2
TLJP476M006#2500	P	47	6.3	40	1.3	125	1.1	2.8	2500	3	155	139	62	2
TLJR476M006#3200	R	47	6.3	40	1.3	125	0.9	2.8	3200	3	131	118	52	2
TLJS476M006#1500	S	47	6.3	40	1.3	125	1.6	2.8	1500	3	208	187	83	2
TLJA686M006#0500	A	68	6.3	40	1.3	125	3.3	4.1	500	3	387	349	155	1
TLJG686M006#0800	G	68	6.3	40	1.3	125	1.9	4.1	800	3	296	266	118	2
TLJK686M006#2000	K	68	6.3	40	1.3	125	1.3	8.16	2000	3	180	162	72	2
TLJS686M006#1500	S	68	6.3	40	1.3	125	1.6	4.1	1500	3	208	187	83	2
TLJT686M006#0600	T	68	6.3	40	1.3	125	3.0	4.1	600	3	365	329	146	1
TLJA107M006#0500	A	100	6.3	40	1.3	125	3.3	6.0	500	3	387	349	155	2
TLJA107M006#0800	A	100	6.3	40	1.3	125	2.5	6.0	800	3	306	276	122	2
TLJG107M006#0800	G	100	6.3	40	1.3	125	2.5	6.0	800	3	296	266	118	2
TLJK107M006#2000	K	100	6.3	40	1.3	125	1.3	12.0	2000	3	180	162	72	2
TLJP107M006#5400	P	100	6.3	40	1.3	125	0.5	12.0	5400	3	105	95	42	2
TLJT107M006#0800	T	100	6.3	40	1.3	125	2.5	6.0	800	3	316	285	126	2
TLJA157M006#0900	A	150	6.3	40	1.3	125	2.3	9.0	900	3	289	260	115	2
TLJG157M006#2500	G	150	6.3	40	1.3	125	1.1	18.0	2500	3	167	151	67	1
TLJH157M006#0900	H	150	6.3	40	1.3	125	2.3	9.0	900	3	298	268	119	2
TLJT157M006#1200	T	150	6.3	40	1.3	125	1.9	9.0	1200	3	258	232	103	2
TLJB227M006#0500	B	220	6.3	40	1.3	125	3.3	13.2	500	3	412	371	165	1
TLJT227M006#2000	T	220	6.3	40	1.3	125	1.3	26.4	2000	3	200	180	80	2
TLJW227M006#0200	W	220	6.3	40	1.3	125	4.8	13.2	200	3	671	604	268	1
TLJF337M006#0300	F	330	6.3	40	1.3	125	4.2	19.8	300	3	577	520	231	1
TLJY687M006#0100	Y	680	6.3	40	1.3	125	5.7	40.8	100	3	1118	1006	447	1
TLJY687M006#0150	Y	680	6.3	40	1.3	125	5.7	40.8	150	3	913	822	365	1
TLJV158M006#0100	V	1500	6.3	40	1.3	125	5.7	90	100	3	1581	1423	632	1

TLJ Series

Tantalum Solid Electrolytic Chip Capacitors
High CV Consumer Series

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	Maximum Surge Current (A)	DCL (µA) Max.	ESR Max. (mΩ) @ 100kHz	MSL	100kHz RMS Current (mA)			Product Category
											25°C	85°C	125°C	
10 Volt @ 40°C														
TLJN106M010#2500	N	10	10	40	2	125	1.7	1.0	2500	3	141	127	57	1
TLJR106M010#2000	R	10	10	40	2	125	2.0	1.0	2000	3	166	149	66	1
TLJR106M010#3000	R	10	10	40	2	125	1.4	1.0	3000	3	135	122	54	1
TLJR156M010#2000	R	15	10	40	2	125	2.0	1.5	2000	3	166	149	66	1
TLJK226M010#1800	K	22	10	40	2	125	2.2	2.2	1800	3	167	150	67	2
TLJN226M010#3800	N	22	10	40	2	125	1.2	2.2	3800	3	115	103	46	1
TLJR226M010#3800	R	22	10	40	2	125	1.2	2.2	3800	3	120	108	48	2
TLJK336M010#1500	K	33	10	40	2	125	2.6	3.3	1500	3	208	187	83	2
TLJN336M010#9600	N	33	10	40	2	125	0.5	6.6	9600	3	72	65	29	1
TLJP336M010#3500	P	33	10	40	2	125	1.3	3.3	3500	3	131	118	52	2
TLJR336M010#3500	R	33	10	40	2	125	1.3	3.3	3500	3	125	113	50	2
TLJS336M010#1500	S	33	10	40	2	125	2.6	3.3	1500	3	208	187	83	2
TLJA476M010#0600	A	47	10	40	2	125	4.8	4.7	600	3	354	318	141	1
TLJG476M010#1500	G	47	10	40	2	125	2.6	4.7	1500	3	216	194	86	2
TLJP476M010#3200	P	47	10	40	2	125	1.4	4.7	3200	3	137	123	55	2
TLJR476M010#3200	R	47	10	40	2	125	1.4	9.4	3200	3	131	118	52	2
TLJS476M010#1500	S	47	10	40	2	125	2.6	4.7	1500	3	208	187	83	2
TLJT476M010#0600	T	47	10	40	2	125	4.8	4.7	600	3	365	329	146	1
TLJA686M010#1500	A	68	10	40	2	125	2.6	6.8	1500	3	224	201	89	2
TLJA107M010#1400	A	100	10	40	2	125	2.7	10.0	1400	3	231	208	93	2
TLJH107M010#0900	H	100	10	40	2	125	3.7	10.0	900	3	298	268	119	2
TLJT107M010#0900	T	100	10	40	2	125	3.7	10.0	900	3	298	268	119	2
TLJB157M010#0500	B	150	10	40	2	125	5.3	15.0	500	3	412	371	165	1
TLJW157M010#0150	W	150	10	40	2	125	8.3	15.0	150	3	775	697	310	1
TLJW157M010#0200	W	150	10	40	2	125	7.7	15.0	200	3	671	604	268	1
TLJF227M010#0300	F	220	10	40	2	125	6.7	22.0	300	3	577	520	231	1
16 Volt @ 40°C														
TLJS106M016#2200	S	10	16	40	3.2	125	3.0	1.6	2200	3	172	155	69	1
TLJT226M016#1000	T	22	16	40	3.2	125	5.5	3.5	1000	3	283	255	113	1
TLJT336M016#1000	T	33	16	40	3.2	125	5.5	5.3	1000	3	283	255	113	1
20 Volt @ 40°C														
TLJT106M020#1000	T	10	20	40	4	125	6.9	2.0	1000	3	283	255	113	1

Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

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

ESR allowed to move up to 1.25 times catalogue limit post mounting

DCL allowed to move up to 2.00 times catalogue limit post mounting

For typical weight and composition see page 212.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TLJ Series

Tantalum Solid Electrolytic Chip Capacitors
High CV Consumer Series

QUALIFICATION TABLE – CATEGORY 1

TEST	TLJ series (Temperature range -55ºC to +125ºC)		
	Condition		Characteristics
Endurance	Determine after application of rated voltage for 2000 +48/-0 hours at 40±2ºC and then leaving 1-2 hours at room temperature. Also determine of 85ºC temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V.	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±10% of initial value
		ESR	1.25 x initial limit
Humidity	Determine after storage without applied voltage at 65±2ºC and 90-95% relative humidity for 500hrs and then recovery 1-2 hours at room temperature	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±10% of initial value
		ESR	1.25 x initial limit

Temperature Stability	Step	Temperature°C	Duration(min)
	1	+20±2	15
	2	-55+0/-3	15
	3	+20±2	15
	4	+85+3/-0	15
	5	+125+3/-0	15
	6	+20±2	15

	+20ºC	-55ºC	+20ºC	+85ºC	+125ºC	+20ºC
DCL	2 x IL*	n/a	2 x IL*	20 x IL*	25 x IL*	IL*
ΔC/C	n/a	+0/-20%	±5%	+20/-0%	+25/-0%	±5%
ESR	1.25 xIL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*

Surge Voltage			
	Test temperature: 40ºC+3/0ºC Test voltage: 1.3 x rated voltage Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±5% of initial value
		ESR	1.25 x initial limit

*Initial Limit

QUALIFICATION TABLE – CATEGORY 2

TEST	TLJ series (Temperature range -55ºC to +125ºC)		
	Condition		Characteristics
Endurance	Determine after application of rated voltage for 2000 +48/-0 hours at 40±2ºC and then leaving 1-2 hours at room temperature. Also determine of 85ºC temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V.	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within +5/-30% of initial value
		ESR	1.25 x initial limit
Humidity	Determine after storage without applied voltage at 65±2ºC and 90-95% relative humidity for 500hrs and then recovery 1-2 hours at room temperature	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±10% of initial value
		ESR	1.25 x initial limit

Temperature Stability	Step	Temperature°C	Duration(min)
	1	+20±2	15
	2	-55+0/-3	15
	3	+20±2	15
	4	+85+3/-0	15
	5	+125+3/-0	15
	6	+20±2	15

	+20ºC	-55ºC	+20ºC	+85ºC	+125ºC	+20ºC
DCL	2 x IL*	n/a	2 x IL*	20 x IL*	25 x IL*	2 x IL*
ΔC/C	n/a	+5/-20%	±10%	+20/-0%	+25/-0%	±10%
ESR	1.25 xIL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*

Surge Voltage			
	Test temperature: 40ºC+3/0ºC Test voltage: 1.3 x rated voltage Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge	Visual examination	no visible damage
		DCL	2 x initial limit
		ΔC/C	within ±5% of initial value
		ESR	1.25 x initial limit

*Initial Limit