

TLJ Series



Tantalum Solid Electrolytic Chip Capacitors High CV Consumer Series



FEATURES

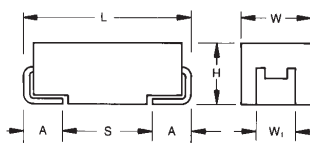
- High Volumetric Efficiency
- 3x reflow 260°C compatible
- 14 case sizes available including low profile codes
- Environmentally friendly
- Consumer applications (e.g. mobiles phones, PDA etc.)
- CV range: 10-1500µF / 2.5-20V

APPLICATIONS

- Mobile phones
- MP3/4 players

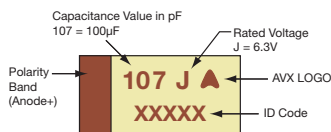


LEAD-FREE
COMPATIBLE
COMPONENT

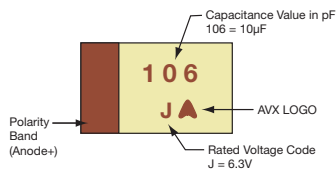


MARKING

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

Type

W

Case Size
See table above

157

Capacitance Code
pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M

Tolerance
M = ±20%

010

Rated DC Voltage
002 = 2.5Vdc
004 = 4Vdc
006 = 6.3Vdc
010 = 10Vdc
016 = 16Vdc
020 = 20Vdc

R

Packaging
R = Pure Tin 7" Reel
S = Pure Tin 13" Reel

0200

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



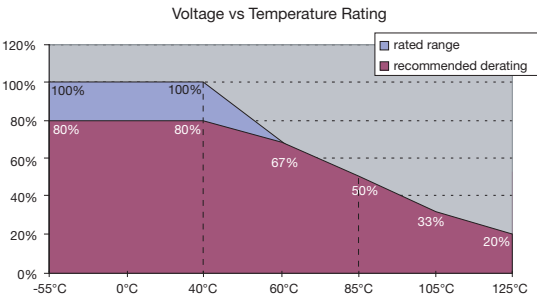
Tantalum Solid Electrolytic Chip Capacitors High CV Consumer Series

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)/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) 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)			

Released ratings, (ESR ratings in mOhms in parentheses)

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage 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 Max. (µA)	ESR Max. @ 100kHz (mΩ)	100kHz RMS Current (mA)			Product Category	MSL
										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	270	243	108	2	3
4 Volt @ 40°C														
TLJN336M004#8000	N	33	4	40	0.8	125	0.2	1.3	8000	79	71	32	1	3
TLJR336M004#3000	R	33	4	40	0.8	125	0.6	1.3	3000	135	122	54	2	3
TLJK476M004#1500	K	47	4	40	0.8	125	1.0	1.9	1500	208	187	83	2	3
TLJN476M004#4000	N	47	4	40	0.8	125	0.6	1.9	4000	112	101	45	1	3
TLJP476M004#3000	P	47	4	40	0.8	125	0.6	1.9	3000	141	127	57	2	3
TLJR476M004#3000	R	47	4	40	0.8	125	0.6	1.9	3000	135	122	54	2	3
TLJK686M004#1200	K	68	4	40	0.8	125	1.2	2.7	1200	233	209	93	2	3
TLJN686M004#8000	N	68	4	40	0.8	125	0.2	5.4	8000	79	71	32	1	3
TLJP686M004#3000	P	68	4	40	0.8	125	1.2	2.7	3000	141	127	57	2	3
TLJR686M004#2900	R	68	4	40	0.8	125	0.6	2.7	2900	138	124	55	2	3
TLJS686M004#1500	S	68	4	40	0.8	125	1.0	2.7	1500	208	187	83	2	3
TLJA107M004#0500	A	100	4	40	0.8	125	2.1	4.0	500	387	349	155	1	3
TLJG107M004#0800	G	100	4	40	0.8	125	1.6	4.0	800	296	266	118	2	3
TLJK107M004#2000	K	100	4	40	0.8	125	0.8	8.0	2000	180	162	72	2	3
TLJP107M004#2700	P	100	4	40	0.8	125	0.6	8.0	2700	149	134	60	2	3
TLJS107M004#1400	S	100	4	40	0.8	125	1.1	4.0	1400	215	194	86	2	3
TLJA157M004#0800	A	150	4	40	0.8	125	1.6	6.0	800	306	276	122	2	3
TLJT157M004#0800	T	150	4	40	0.8	125	1.6	6.0	800	316	285	126	2	3
TLJA227M004#1100	A	220	4	40	0.8	125	1.3	17.6	1100	261	235	104	2	3
TLJG227M004#3000	G	220	4	40	0.8	125	0.6	17.6	3000	153	137	61	2	3
TLJH227M004#0900	H	220	4	40	0.8	125	1.5	8.8	900	298	268	119	2	3
TLJT227M004#1100	T	220	4	40	0.8	125	1.3	17.6	1100	270	243	108	2	3
TLJT337M004#2700	T	330	4	40	0.8	125	0.6	26.4	2700	172	155	69	2	3
TLJW337M004#0200	W	330	4	40	0.8	125	3.1	13.2	200	671	604	268	1	3
6.3 Volt @ 40°C														
TLJN226M006#5400	N	22	6.3	40	1.3	125	0.5	1.3	5400	96	87	38	1	3
TLJR226M006#3500	R	22	6.3	40	1.3	125	0.8	1.3	3500	125	113	50	2	3
TLJK336M006#1700	K	33	6.3	40	1.3	125	1.5	2.0	1700	196	176	78	2	3
TLJN336M006#8000	N	33	6.3	40	1.3	125	0.4	2.0	8000	79	71	32	1	3
TLJP336M006#3000	P	33	6.3	40	1.3	125	0.9	2.0	3000	141	127	57	1	3
TLJR336M006#3000	R	33	6.3	40	1.3	125	0.9	2.0	3000	135	122	54	2	3
TLJK476M006#1500	K	47	6.3	40	1.3	125	1.6	2.8	1500	208	187	83	2	3
TLJN476M006#8300	N	47	6.3	40	1.3	125	0.4	5.6	8300	78	70	31	1	3
TLJP476M006#0700	P	47	6.3	40	1.3	125	2.7	2.8	700	293	263	117	2	3
TLJP476M006#0900	P	47	6.3	40	1.3	125	2.3	2.8	900	258	232	103	2	3
TLJP476M006#1800	P	47	6.3	40	1.3	125	1.4	2.8	1800	183	164	73	2	3
TLJP476M006#2500	P	47	6.3	40	1.3	125	1.1	2.8	2500	155	139	62	2	3
TLJR476M006#3200	R	47	6.3	40	1.3	125	0.9	2.8	3200	131	118	52	2	3
TLJS476M006#1500	S	47	6.3	40	1.3	125	1.6	2.8	1500	208	187	83	2	3
TLJA686M006#0500	A	68	6.3	40	1.3	125	3.3	4.1	500	387	349	155	1	3
TLJG686M006#0800	G	68	6.3	40	1.3	125	1.9	4.1	800	296	266	118	2	3
TLJK686M006#2000	K	68	6.3	40	1.3	125	1.3	8.16	2000	180	162	72	2	3
TLJS686M006#1500	S	68	6.3	40	1.3	125	1.6	4.1	1500	208	187	83	2	3
TLJT686M006#0600	T	68	6.3	40	1.3	125	3.0	4.1	600	365	329	146	1	3
TLJA107M006#0500	A	100	6.3	40	1.3	125	3.3	6.0	500	387	349	155	2	3
TLJA107M006#0800	A	100	6.3	40	1.3	125	2.5	6.0	800	306	276	122	2	3
TLJG107M006#0800	G	100	6.3	40	1.3	125	2.5	6.0	800	296	266	118	2	3
TLJK107M006#2000	K	100	6.3	40	1.3	125	1.3	12.0	2000	180	162	72	2	3
TLJP107M006#5400	P	100	6.3	40	1.3	125	0.5	12.0	5400	105	95	42	2	3
TLJT107M006#0800	T	100	6.3	40	1.3	125	2.5	6.0	800	316	285	126	2	3
TLJA157M006#0900	A	150	6.3	40	1.3	125	2.3	9.0	900	289	260	115	2	3
TLJH157M006#0900	H	150	6.3	40	1.3	125	2.3	9.0	900	298	268	119	2	3
TLJT157M006#1200	T	150	6.3	40	1.3	125	1.9	9.0	1200	258	232	103	2	3
TLJB227M006#0500	B	220	6.3	40	1.3	125	3.3	13.2	500	412	371	165	1	3
TLJT227M006#2000	T	220	6.3	40	1.3	125	1.3	26.4	2000	200	180	80	2	3
TLJW227M006#0200	W	220	6.3	40	1.3	125	4.8	13.2	200	671	604	268	1	3
TLJF337M006#0300	F	330	6.3	40	1.3	125	4.2	19.8	300	577	520	231	1	3
TLJY687M006#0100	Y	680	6.3	40	1.3	125	5.7	40.8	100	1118	1006	447	1	3
TLJY687M006#0150	Y	680	6.3	40	1.3	125	5.7	40.8	150	913	822	365	1	3
TLJV158M006#0100	V	1500	6.3	40	1.3	125	5.7	90	100	1581	1423	632	1	3

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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 Max. (μA)	ESR Max. @ 100kHz (mΩ)	100kHz RMS Current (mA)			Product Category	MSL
										25°C	85°C	125°C		
10 Volt @ 40°C														
TLJN106M010#2500	N	10	10	40	2	125	1.7	1.0	2500	141	127	57	1	3
TLJR106M010#2000	R	10	10	40	2	125	2.0	1.0	2000	166	149	66	1	3
TLJR106M010#3000	R	10	10	40	2	125	1.4	1.0	3000	135	122	54	1	3
TLJR156M010#2000	R	15	10	40	2	125	2.0	1.5	2000	166	149	66	1	3
TLJK226M010#1800	K	22	10	40	2	125	2.2	2.2	1800	167	150	67	2	3
TLJN226M010#3800	N	22	10	40	2	125	1.2	2.2	3800	115	103	46	1	3
TLJR226M010#3800	R	22	10	40	2	125	1.2	2.2	3800	120	108	48	2	3
TLJK336M010#1500	K	33	10	40	2	125	2.6	3.3	1500	208	187	83	2	3
TLJN336M010#9600	N	33	10	40	2	125	0.5	6.6	9600	72	65	29	1	3
TLJP336M010#3500	P	33	10	40	2	125	1.3	3.3	3500	131	118	52	2	3
TLJR336M010#3500	R	33	10	40	2	125	1.3	3.3	3500	125	113	50	2	3
TLJS336M010#1500	S	33	10	40	2	125	2.6	3.3	1500	208	187	83	2	3
TLJA476M010#0600	A	47	10	40	2	125	4.8	4.7	600	354	318	141	1	3
TLJG476M010#1500	G	47	10	40	2	125	2.6	4.7	1500	216	194	86	2	3
TLJP476M010#3200	P	47	10	40	2	125	1.4	4.7	3200	137	123	55	2	3
TLJR476M010#3200	R	47	10	40	2	125	1.4	9.4	3200	131	118	52	2	3
TLJS476M010#1500	S	47	10	40	2	125	2.6	4.7	1500	208	187	83	2	3
TLJT476M010#0600	T	47	10	40	2	125	4.8	4.7	600	365	329	146	1	3
TLJA686M010#1500	A	68	10	40	2	125	2.6	6.8	1500	224	201	89	2	3
TLJA107M010#1400	A	100	10	40	2	125	2.7	10.0	1400	231	208	93	2	3
TLJH107M010#0900	H	100	10	40	2	125	3.7	10.0	900	298	268	119	2	3
TLJT107M010#0900	T	100	10	40	2	125	3.7	10.0	900	298	268	119	2	3
TLJB157M010#0500	B	150	10	40	2	125	5.3	15.0	500	412	371	165	1	3
TLJW157M010#0150	W	150	10	40	2	125	8.3	15.0	150	775	697	310	1	3
TLJW157M010#0200	W	150	10	40	2	125	7.7	15.0	200	671	604	268	1	3
TLJF227M010#0300	F	220	10	40	2	125	6.7	22.0	300	577	520	231	1	3
16 Volt @ 40°C														
TLJS106M016#2200	S	10	16	40	3.2	125	3.0	1.6	2200	172	155	69	1	3
TLJT226M016#1000	T	22	16	40	3.2	125	5.5	3.5	1000	283	255	113	1	3
TLJT336M016#1000	T	33	16	40	3.2	125	5.5	5.3	1000	283	255	113	1	3
20 Volt @ 40°C														
TLJT106M020#1000	T	10	20	40	4	125	6.9	2.0	1000	283	255	113	1	3

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 273.

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

Tantalum Solid Electrolytic Chip Capacitors High CV Consumer Series

QUALIFICATION TABLE – CATEGORY 1

TEST	TLJ series (Temperature range -55°C to +125°C)										
	Condition				Characteristics						
Endurance	Apply rated voltage (Ur) at 40°C and / or category voltage (Uc) at 85°C for 2000 hours through a circuit impedance of ≤0.1Ω/V. Stabilize at room temperature for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	2 x initial limit						
				ΔC/C	within ±10% of initial value						
				ESR	1.25 x initial limit						
Humidity	Store at 65°C and 90-95% relative humidity for 500 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.			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)		+20°C	-55°C	+20°C	+85°C	+125°C	+20°C	
	1	+20	15	DCL	2 x IL*	n/a	2 x IL*	20 x IL*	25 x IL*	IL*	
	2	-55	15		ΔC/C	n/a	+0/-20%	±5%	+20/-0%	+25/-0%	±5%
	3	+20	15			ESR	1.25 xIL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*
	4	+85	15								
	5	+125	15								
	6	+20	15								
Surge Voltage	Apply 1.3x rated voltage (Ur) at 40°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000Ω			Visual examination	no visible damage						
				DCL	2 x initial limit						
				ΔC/C	within ±5% of initial value						
				ESR	1.25 x initial limit						
Mechanical Shock	MIL-STD-202, Method 213, Condition C			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	initial limit						
Vibration	MIL-STD-202, Method 204, Condition D			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	initial limit						

*Initial Limit

QUALIFICATION TABLE – CATEGORY 2

TEST	TLJ series (Temperature range -55°C to +125°C)									
	Condition			Characteristics						
Endurance	Apply rated voltage (Ur) at 40°C and / or category voltage (Uc) at 85°C for 2000 hours through a circuit impedance of ≤0.1Ω/V. Stabilize at room temperature for 1-2 hours before measuring.			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	Store at 65°C and 90-95% relative humidity for 500 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.			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)		+20°C	-55°C	+20°C	+85°C	+125°C	+20°C
	1	+20	15							
	2	-55	15	DCL	2 x IL*	n/a	2 x IL*	20 x IL*	25 x IL*	2 x IL*
	3	+20	15	ΔC/C	n/a	+5/-20%	±10%	+20/-0%	+25/-0%	±10%
	4	+85	15							
	5	+125	15							
	6	+20	15	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	Apply 1.3x rated voltage (Ur) at 40°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000Ω			Visual examination	no visible damage					
				DCL	2 x initial limit					
				ΔC/C	within ±5% of initial value					
				ESR	1.25 x initial limit					
Mechanical Shock	MIL-STD-202, Method 213, Condition C			Visual examination	no visible damage					
				DCL	initial limit					
				ΔC/C	within ±5% of initial value					
				DF	initial limit					
				ESR	initial limit					
Vibration	MIL-STD-202, Method 204, Condition D			Visual examination	no visible damage					
				DCL	initial limit					
				ΔC/C	within ±5% of initial value					
				DF	initial limit					
				ESR	initial limit					

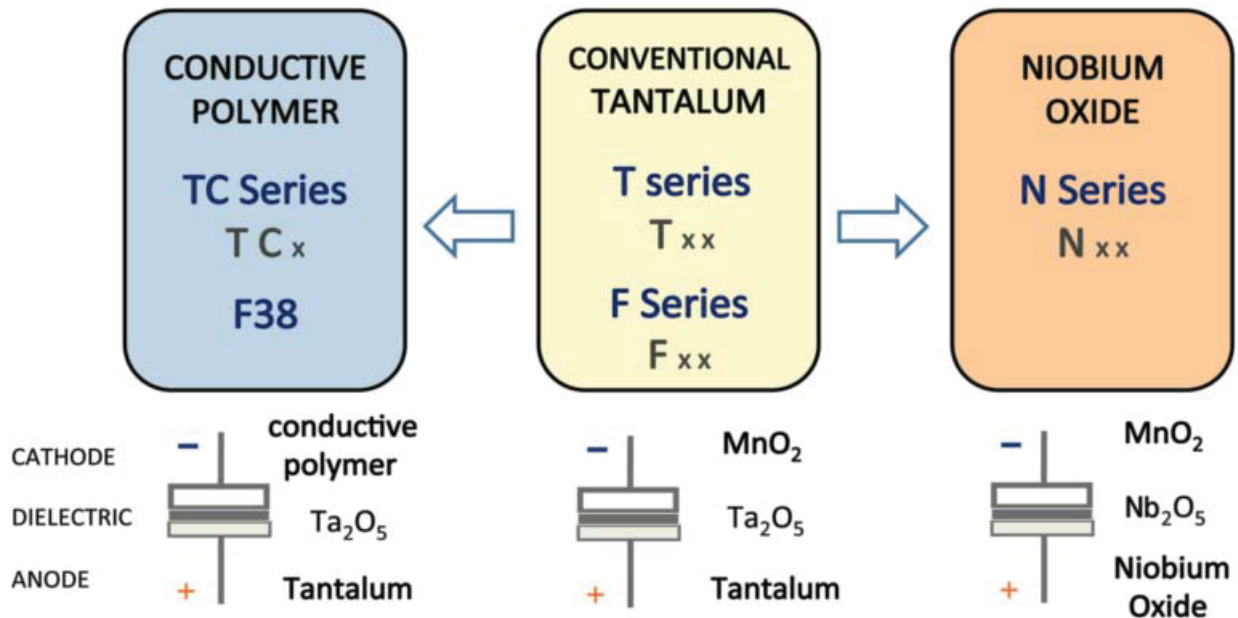
*Initial Limit

TLJ Series

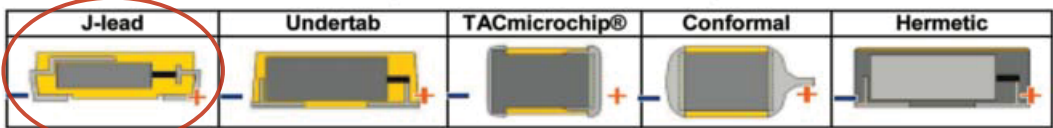
Tantalum Solid Electrolytic Chip Capacitors High CV Consumer Series



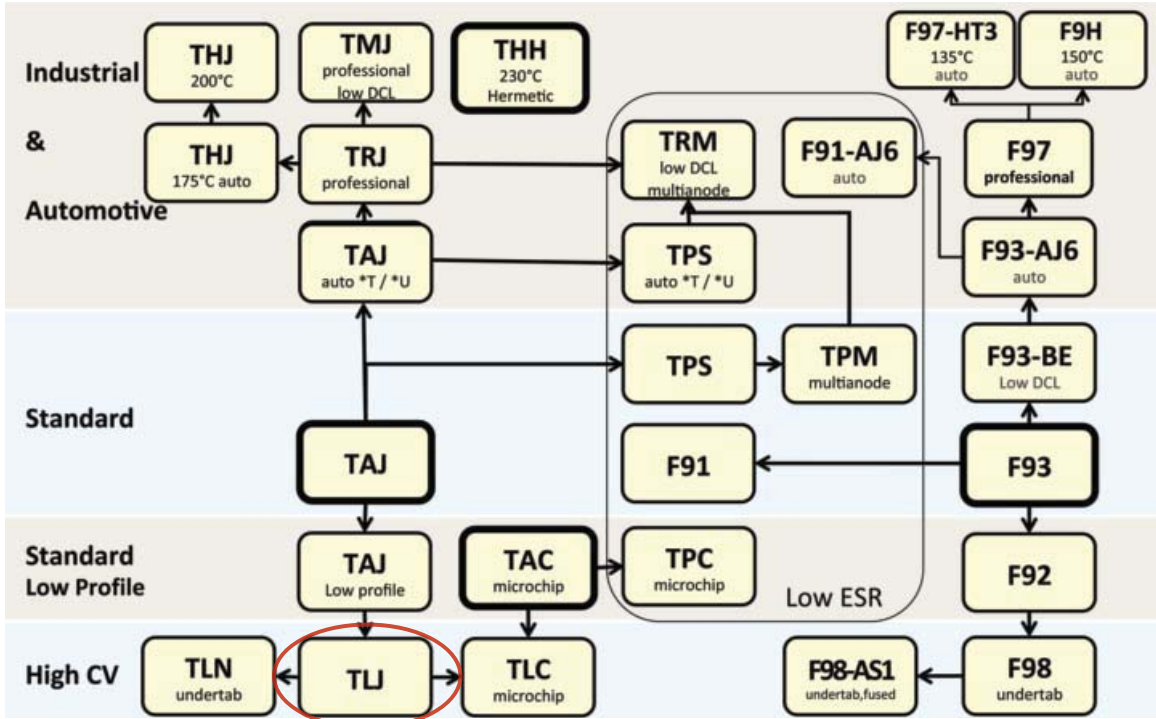
AVX SOLID ELECTROLYTE CAPACITOR ROADMAP



Five Capacitor Construction Styles



SERIES LINE UP: CONVENTIONAL SMD MnO₂



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AVX:

TLJT226M016R1000	TLJT227M004R1100	TLJA107M004R0500	TLJA107M006R0800	TLJA157M004R0800
TLJA476M010R0600	TLJA686M006R0500	TLJB227M006R0500	TLJG107M004R0800	TLJG476M010R1500
TLJG686M006R0800	TLJH107M010R0900	TLJH157M006R0900	TLJH227M004R0900	TLJK336M006R1700
TLJK476M006R1500	TLJP336M006R3000	TLJP476M006R2500	TLJR106M010R3000	TLJR156M010R2000
TLJR226M006R3500	TLJR336M004R3000	TLJR336M006R3000	TLJR476M004R3000	TLJS107M004R1400
TLJS336M010R1500	TLJS476M006R1500	TLJS476M010R1500	TLJS686M004R1500	TLJT107M006R0800
TLJT157M004R0800	TLJT157M006R1200	TLJT227M002R1100	TLJT476M010R0600	TLJT686M006R0600
TLJW157M010R0200	TLJW157M010S0200	TLJW227M006R0200	TLJW337M004R0200	TLJB157M010R0500
TLJT107M010R0900	TLJR336M010R3500	TLJJ475M010RKJ	TLJA157M006R0900	TLJK476M004R1500
TLJS686M006R1500	TLJJ106M006RKJ	TLJK686M004R1200	TLJP476M004R3000	TLJJ685M006RKJ
TLJJ685M004RKJ	TLJK226M010R1800	TLJP686M004R3000	TLJP476M010R3200	TLJJ106M004RKJ
TLJJ475M006RKJ	TLJF337M006R0300	TLJG107M004S0800	TLJP476M006R0700	TLJA227M004R1100
TLJG107M006R0800	TLJP107M004R2700	TLJP107M006R5400	TLJP476M006R0900	TLJR686M004R2900
TLJT336M016R1000	TLJY687M006R0150	TLJA107M010R1400	TLJN336M010R9600	TLJN476M004R4000
TLJN107M004R5200	TLJN686M004R8000	TLJN476M006R8300	TLJN106M010R2500	TLJY687M006R0100
TLJA107M006R0500	TLJN226M010R3800	TLJR476M006R3200	TLJS106M016R2200	TLJN336M006R8000
TLJR226M010R3800	TLJP336M010R3500	TLJN226M006R5400	TLJW157M010R0150	TLJK336M010R1500
TLJN336M004R8000	TLJT106M020R1000	TLJB227M006S0500	TLJA686M010R1500	TLJG227M004R3000
TLJG227M004S3000	TLJR476M010R3200	TLJR476M010S3200	TLJT227M006R2000	TLJT227M006S2000
TLJT337M004R2700	TLJT337M004S2700	TLJF227M010R0300	TLJR106M010R2000	TLJR106M010S2000