

TLC Series



Tantalum Solid Electrolytic Chip Capacitors Consumer Series



- High capacitance vs. voltage ratio
- Super high volumetric efficiency
- CV range: 0.47-220µF / 2-35V
- 10 case sizes available
- Consumer applications (portable hand-held electronics, cellular phones, digital equipments etc.)



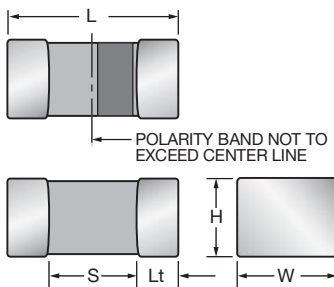
LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	Length (L)	Width (W)	Height (H)	Termination Spacing(S)	Minimum Termination Length (Lt)	Average Mass
A	1206	3216-18	3.20 ^{+0.20} _{-0.20} (0.126 ^{+0.008} _{-0.008})	1.60 ^{+0.20} _{-0.20} (0.063 ^{+0.008} _{-0.008})	1.60 ^{+0.20} _{-0.20} (0.063 ^{+0.008} _{-0.008})	1.80 min (0.071 min)	0.15 (0.006)	44.6mg
C	1206	3216-10	3.20 ^{+0.20} _{-0.20} (0.126 ^{+0.008} _{-0.008})	1.60 ^{+0.20} _{-0.20} (0.063 ^{+0.008} _{-0.008})	1.00 max (0.039 max)	1.80 min (0.071 min)	0.15 (0.006)	20.0mg
H	0805	2012-10	2.00 ^{+0.20} _{-0.00} (0.079 ^{+0.008} _{-0.000})	1.35 ^{+0.15} _{-0.00} (0.053 ^{+0.006} _{-0.000})	1.00 max (0.039 max)	0.70 min (0.028 min)	0.15 (0.006)	17.1mg
J	0603	1608-08	1.60 ^{+0.20} _{-0.00} (0.063 ^{+0.008} _{-0.000})	0.85 ^{+0.15} _{-0.00} (0.033 ^{+0.006} _{-0.000})	0.75 max (0.030 max)	0.55 min (0.022 min)	0.15 (0.006)	5.8mg
K	0402	1005-07	1.00 ^{+0.20} _{-0.00} (0.039 ^{+0.008} _{-0.000})	0.50 ^{+0.20} _{-0.00} (0.020 ^{+0.008} _{-0.000})	0.50 ^{+0.20} _{-0.00} (0.020 ^{+0.008} _{-0.000})	0.40 min (0.016 min)	0.10 (0.004)	2.8mg
L	0603	1608-10	1.60 ^{+0.20} _{-0.00} (0.063 ^{+0.008} _{-0.000})	0.85 ^{+0.15} _{-0.00} (0.033 ^{+0.006} _{-0.000})	0.85 ^{+0.15} _{-0.00} (0.033 ^{+0.006} _{-0.000})	0.55 min (0.022 min)	0.15 (0.006)	8.6mg
M	0803	2008-10	2.00 ^{+0.20} _{-0.00} (0.079 ^{+0.008} _{-0.000})	0.85 ^{+0.15} _{-0.00} (0.033 ^{+0.006} _{-0.000})	0.85 ^{+0.15} _{-0.00} (0.033 ^{+0.006} _{-0.000})	0.70 min (0.028 min)	0.15 (0.006)	9.9mg
N	0402	1005-05	1.00 ^{+0.05} _{-0.05} (0.039 ^{+0.002} _{-0.002})	0.50 ^{+0.00} _{-0.10} (0.020 ^{+0.000} _{-0.004})	0.50 ^{+0.00} _{-0.10} (0.020 ^{+0.000} _{-0.004})	0.40 min (0.016 min)	0.15 (0.006)	1.5mg
Q	0805	2012-12	2.00 ^{+0.20} _{-0.00} (0.079 ^{+0.008} _{-0.000})	1.35 ^{+0.15} _{-0.00} (0.053 ^{+0.006} _{-0.000})	1.20 max (0.047 max)	0.70 min (0.028 min)	0.10 (0.004)	19.2mg
R	0805	2012-15	2.00 ^{+0.20} _{-0.00} (0.079 ^{+0.008} _{-0.000})	1.35 ^{+0.15} _{-0.00} (0.053 ^{+0.006} _{-0.000})	1.35 ^{+0.15} _{-0.00} (0.053 ^{+0.006} _{-0.000})	0.70 min (0.028 min)	0.15 (0.006)	29.9mg
S	1206	3216-12	3.20 ^{+0.20} _{-0.20} (0.126 ^{+0.008} _{-0.008})	1.60 ^{+0.20} _{-0.20} (0.063 ^{+0.008} _{-0.008})	1.20 max (0.047 max)	1.80 min (0.071 min)	0.15 (0.006)	33.0mg
T	1210	3528-12	3.50 ^{+0.20} _{-0.20} (0.138 ^{+0.008} _{-0.008})	2.80 ^{+0.20} _{-0.10} (0.110 ^{+0.008} _{-0.004})	1.20 max (0.047 max)	2.00 min (0.079 min)	0.15 (0.006)	65.0mg
U	0805	2012-06	2.00 ^{+0.20} _{-0.00} (0.079 ^{+0.008} _{-0.000})	1.35 ^{+0.15} _{-0.00} (0.053 ^{+0.006} _{-0.000})	0.60 max (0.039 max)	0.70 min (0.028 min)	0.15 (0.006)	8.9mg
V	1206	3216-08	3.20 ^{+0.20} _{-0.20} (0.126 ^{+0.008} _{-0.008})	1.60 ^{+0.20} _{-0.20} (0.063 ^{+0.008} _{-0.008})	0.75 max (0.030 max)	1.80 min (0.071 min)	0.15 (0.006)	19.1mg
Z	0602	1605-07	1.60 ^{+0.20} _{-0.00} (0.063 ^{+0.008} _{-0.000})	0.50 ^{+0.20} _{-0.00} (0.020 ^{+0.008} _{-0.000})	0.50 ^{+0.20} _{-0.00} (0.020 ^{+0.008} _{-0.000})	0.55 min (0.022 min)	0.15 (0.006)	4.5mg

Under development



TLC Series



Tantalum Solid Electrolytic Chip Capacitors Consumer Series

HOW TO ORDER

TLC	L	226	M	006	R	TA
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=2Vdc 003=3Vdc 004=4Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 035=35Vdc	Packaging R, P = 7" Standard Tin Termination Plastic Tape X, Q = 4 1/2" Standard Tin Termination Plastic Tape A = 7" Gold Termination Plastic Tape F = 4 1/2" Gold Termination Plastic Tape	Standard Suffix OR 4000 ESR in mΩ

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C									
Capacitance Range:	0.33 μF to 470 μF									
Capacitance Tolerance:	±20%									
Rated Voltage (V _R)	-55°C ≤ +40°C:	2	3	4	6.3	10	16	20	25	35
Category Voltage (V _C)	at 85°C:	1	1.5	2	3.2	5	8	10	12.5	17.5
Category Voltage (V _C)	at 125°C:	0.4	0.6	0.8	1.3	2	3.2	4	5	7
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									

CAPACITANCE AND RATED VOLTAGE, VR (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V _R) to 40°C								
μF	Code	2.0V	3.0V	4.0V	6.3V	10V	16V	20V	25V	35V
0.33	334						J*		L	
0.47	474					N*	K			
0.68	684									
1.0	105						J*	J*	L	L*/R
1.5	155									
2.2	225					J*/K	J*	H/L*	H/R	
3.3	335						L			
4.7	475			K/N*	K/U	J/K*				R*
6.8	685		K	K		U				
10	106		K	J/K/Z	J/K/Z	J*/U/Z*	V	R		A*
15	156	K	K*	K*/Z*		H/L				
22	226	J	J	J*	L/U*	L*/M		T*		
33	336			L	H/L(4000)	H				
47	476	L	L	H/L	H	C*/Q*/R				
68	686			R	R	A*/R*				
100	107		H*	C*/H*/Q*/R	R	R*/T				
150	157			R*	R*					
220	227	R*	S*	A*/R*/T						
330	337									
470	477	A*		A*						
680	687									

Released Codes

*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.

Not RoHS Compliant



LEAD-FREE
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COMPONENT



RoHS
COMPLIANT

For RoHS compliant products,
please select correct termination style.



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Tantalum Solid Electrolytic Chip Capacitors Consumer Series

RATINGS & PART NUMBER REFERENCE

AVX Part No.	EIA Code	EIA Metric	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	ESR Max. (Ω) @100kHz	MSL
2 Volt @ 40°C (1 Volt @ 85°C, 0.4 Volt @ 125°C)								
TLCK156M002#TA	0402	1005-07	K	15	2	0.5	15	3
TLCJ226M002#TA	0603	1608-08	J	22	2	0.5	7.5	3
TLCL476M002#TA	0603	1608-10	L	47	2	0.9	7.5	3
TLCR227M002#TA	0805	2012-15	R	220	2	4.4	5	3
TLCA477M002#TA	1206	3216-18	A	470	2	9.4	1	3
3 Volt @ 40°C (1.5 Volt @ 85°C, 0.6 Volt @ 125°C)								
TLCK685M003#TA	0402	1005-07	K	6.8	3	0.5	15	3
TLCK106M003#TA	0402	1005-07	K	10	3	0.5	15	3
TLCK156M003#TA	0402	1005-07	K	15	3	0.5	15	3
TLCJ226M003#TA	0603	1608-08	J	22	3	0.7	7.5	3
TLCL476M003#TA	0603	1608-10	L	47	3	1.4	7.5	3
TLCH107M003#TA	0805	2012-10	H	100	3	3.0	5	3
TLCG227M003#TA	1206	3216-12	S	220	3	6.6	2	3
4 Volt @ 40°C (2 Volt @ 85°C, 0.8 Volt @ 125°C)								
TLCK475M004#TA	0402	1005-07	K	4.7	4	0.5	15	3
TLCN475M004#TA	0402	1005-05	N	4.7	4	0.5	20	3
TLCK685M004#TA	0402	1005-07	K	6.8	4	0.5	15	3
TLCJ106M004#TA	0603	1608-08	J	10	4	0.5	7.5	3
TLCK106M004#TA	0402	1005-07	K	10	4	0.5	15	3
TLCL106M004#TA	0602	1605-07	Z	10	4	0.5	15	3
TLCK156M004#TA	0402	1005-07	K	15	4	0.6	15	3
TLCZ156M004#TA	0602	1605-07	Z	15	4	0.6	15	3
TLCK226M004#TA	0603	1608-08	J	22	4	0.9	7.5	3
TLCL336M004#TA	0603	1608-10	L	33	4	1.3	7.5	3
TLCH476M004#TA	0805	2012-10	H	47	4	1.9	5	3
TLCL476M004#TA	0603	1608-10	L	47	4	1.9	7.5	3
TLCR686M004#TA	0805	2012-15	R	68	4	2.7	5	3
TLCQ107M004#TA	1205	3216-10	C	100	4	4.0	2	3
TLCH107M004#TA	0805	2012-10	H	100	4	4.0	5	3
TLCQ107M004#TA	0805	2012-12	Q	100	4	4.0	5	3
TLCR107M004#TA	0805	2012-15	R	100	4	4.0	5	3
TLCR157M004#TA	0805	2012-15	R	150	4	6.0	5	3
TLCA227M004#TA	1206	3216-18	A	220	4	8.8	1	3
TLCR227M004#TA	0805	2012-15	R	220	4	8.8	5	3
TLCT227M004#TA	1210	3528-12	T	220	4	8.8	1	3
TLCA477M004#TA	1206	3216-18	A	470	4	18.8	1	3
6.3 Volt @ 40°C (3.2 Volt @ 85°C, 1.3 Volt @ 125°C)								
TLCK475M006#TA	0402	1005-07	K	4.7	6.3	0.5	15	3
TLCU475M006#TA	0805	2012-06	U	4.7	6.3	0.5	5	3
TLCJ106M006#TA	0603	1608-08	J	10	6.3	0.6	7.5	3
TLCK106M006#TA	0402	1005-07	K	10	6.3	0.6	15	3
TLCZ106M006#TA	0602	1605-07	Z	10	6.3	0.6	15	3
TLCL226M006#TA	0603	1608-10	L	22	6.3	1.4	7.5	3
TLCJ226M006#TA	0805	2012-06	J	22	6.3	1.4	5	3
TLCH336M006#TA	0805	2012-10	H	33	6.3	2.0	5	3
TLCL336M006#TA	0603	1608-10	L	33	6.3	2.1	7.5	3
TLCL336M006#4000	0603	1608-10	L	33	6.3	2.1	4	3
TLCH476M006#TA	0805	2012-10	H	47	6.3	3.0	5	3

AVX Part No.	EIA Code	EIA Metric	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	ESR Max. (Ω) @100kHz	MSL
TLCK686M006#TA	0805	2012-15	R	68	6.3	4.3	5	3
TLCR107M006#TA	0805	2012-15	R	100	6.3	6.0	5	3
TLCK157M006#TA	0805	2012-15	R	150	6.3	9.5	5	3
10 Volt @ 40°C (5 Volt @ 85°C, 2 Volt @ 125°C)								
TLCN474M010#TA	0402	1005-05	N	0.47	10	0.5	20	3
TLCJ225M010#TA	0603	1608-08	J	2.2	10	0.5	7.5	3
TLCK225M010#TA	0402	1005-07	K	2.2	10	0.5	15	3
TLCU685M010#TA	0805	2012-06	U	6.8	10	0.7	5	3
TLCJ106M010#TA	0603	1608-08	J	10	10	1.0	7.5	3
TLCH106M010#TA	0805	2012-06	U	10	10	1.0	5	3
TLCZ106M010#TA	0602	1605-07	Z	10	10	1.0	15	3
TLCH156M010#TA	0805	2012-10	H	15	10	1.5	5	3
TLCL156M010#TA	0603	1608-08	L	15	10	1.5	7.5	3
TLCL226M010#TA	0603	1608-10	L	22	10	2.2	7.5	3
TLCM226M010#TA	0803	2008-10	M	22	10	2.2	7.5	3
TLCH336M010#TA	0805	2012-10	H	33	10	3.3	5	3
TLCQ476M010#TA	1205	3216-10	C	47	10	4.7	2	3
TLCQ476M010#TA	0805	2012-12	Q	47	10	4.7	5	3
TLCK476M010#TA	0805	2012-15	R	47	10	4.7	5	3
TLCA686M010#TA	1206	3216-18	A	68	10	6.8	1	3
TLCR686M010#TA	0805	2012-15	R	68	10	6.8	5	3
TLCR107M010#TA	0805	2012-15	R	100	10	10	5	3
TLCT107M010#TA	1210	3528-12	T	100	10	10	1	3
16 Volt @ 40°C (8 Volt @ 85°C, 3.2 Volt @ 125°C)								
TLCJ334M016#TA	0603	1608-08	J	0.33	16	0.5	7.5	3
TLCK474M016#TA	0402	1005-07	K	0.47	16	0.5	15	3
TLCJ105M016#TA	0603	1608-08	J	1.0	16	0.5	7.5	3
TLCJ225M016#TA	0603	1608-08	J	2.2	16	0.5	7.5	3
TLCL335M016#TA	0603	1608-10	L	3.3	16	0.5	7.5	3
TLCV106M016#TA	1206	1206-08	V	10	16	1.6	2	3
20 Volt @ 40°C (10 Volt @ 85°C, 4 Volt @ 125°C)								
TLCJ105M020#TA	0603	1608-08	J	1.0	20	0.5	7.5	3
TLCJ225M020#TA	0805	2012-10	H	2.2	20	0.5	5	3
TLCL225M020#TA	0603	1608-10	L	2.2	20	0.5	7.5	3
TLCR106M020#TA	0805	2012-15	R	10	20	2.0	5	3
25 Volt @ 40°C (12.5 Volt @ 85°C, 5 Volt @ 125°C)								
TLCL334M025#TA	0603	1608-10	L	0.33	25	0.5	7.5	3
TLCL105M025#TA	0603	1608-10	L	1.0	25	0.5	7.5	3
TLCJ225M025#TA	0805	2012-10	H	2.2	25	0.6	5	3
TLCR225M025#TA	0805	2012-15	R	2.2	25	0.6	5	3
TLCT226M025#TA	1210	3528-12	T	22	25	5.5	1	3
35 Volt @ 40°C (17.5 Volt @ 85°C, 7 Volt @ 125°C)								
TLCL105M035#TA	0603	1608-10	L	1.0	35	0.5	7.5	3
TLCR105M035#TA	0805	2012-15	R	1.0	35	0.5	5	3
TLCK475M035#TA	0805	2012-15	R	4.7	35	1.6	5	3
TLCA106M035#TA	1206	3216-18	A	10	35	3.5	1	3

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

DCL allowed to move up to 2.00 times the limit post mounting.

ESR allowed to move up to 1.25 times the limit post mounting.

For typical weight and composition see page 125.

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.

Voltage vs Temperature Rating

