

# TLC Series



## Tantalum Solid Electrolytic Chip Capacitors Consumer Series

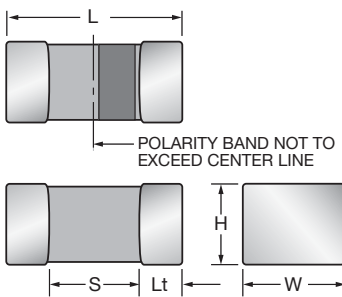


- High capacitance vs. voltage ratio
- Super high volumetric efficiency
- CV range: 0.47-220µF / 2-35V
- 10 case sizes available
- Consumer applications (portable hand-held electronics, cellular phones, digital equipments etc.)



### CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L+0.20 (0.008) -0.00 (0.000)	W+0.15 (0.006) -0.00 (0.000)	H+0.15 (0.006) -0.00 (0.000)	Termination Spacing(S)	Minimum Termination Length (Lt)
A	1206	3216-18	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.80 (0.071) min	0.15 (0.006)
C	1206	3216-10	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.00 (0.039) max	1.80 (0.071) min	0.15 (0.006)
H	0805	2012-10	2.00 (0.079)	1.35 (0.053)	1.00 (0.039) max	0.70 (0.028) min	0.15 (0.006)
J	0603	1608-08	1.60 (0.063)	0.85 (0.033)	0.75 (0.030) max	0.55 (0.022) min	0.15 (0.006)
K	0402	1005-07	1.00 (0.039)	0.50 <sup>+0.20</sup> <sub>-0.00</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.50 <sup>+0.20</sup> <sub>-0.00</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.40 (0.016) min	0.10 (0.004)
L	0603	1608-10	1.60 (0.063)	0.85 (0.033)	0.85 (0.033)	0.55 (0.022) min	0.15 (0.006)
M	0803	2008-10	2.00 (0.079)	0.85 (0.033)	0.85 (0.033)	0.70 (0.028) min	0.15 (0.006)
N	0402	1005-05	1.00 ± 0.05 (0.039 ± 0.002)	0.50 <sup>+0.00</sup> <sub>-0.10</sub> (0.020 <sup>+0.000</sup> <sub>-0.004</sub> )	0.50 <sup>+0.00</sup> <sub>-0.10</sub> (0.020 <sup>+0.000</sup> <sub>-0.004</sub> )	0.40 (0.016) min	0.10 (0.004)
Q	0805	2012-12	2.00 (0.079)	1.35 (0.053)	1.20 (0.047) max	0.70 (0.028) min	0.15 (0.006)
R	0805	2012-15	2.00 (0.079)	1.35 (0.053)	1.35 (0.053)	0.70 (0.028) min	0.15 (0.006)
S	1206	3216-12	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.20 (0.047) max	1.80 (0.071) min	0.15 (0.006)
T	1210	3528-12	3.50 ± 0.20 (0.138 ± 0.008)	2.80 <sup>+0.20</sup> <sub>-0.10</sub> (0.110 <sup>+0.008</sup> <sub>-0.004</sub> )	1.20 (0.047) max	2.00 (0.079) min	0.15 (0.006)
U	0805	2012-06	2.00 (0.079)	1.35 (0.053)	0.60 (0.024) max	0.70 (0.028) min	0.15 (0.006)
V	1206	3216-08	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	0.75 (0.030) max	1.80 (0.071) min	0.15 (0.006)
Z	0602	1605-07	1.60 (0.063)	0.50 <sup>+0.20</sup> <sub>-0.00</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.50 <sup>+0.20</sup> <sub>-0.00</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.55 (0.022) min	0.15 (0.006)



Under development



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### HOW TO ORDER

<b>TLC</b>	<b>L</b>	<b>226</b>	<b>M</b>	<b>006</b>	<b>R</b>	<b>TA</b>
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 008=8Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 035=35Vdc 050=50Vdc	Packaging R, P = 7" Standard Tin Termination Plastic Tape X, Q = 4 1/4" Standard Tin Termination Plastic Tape A = 7" Gold Termination Plastic Tape F = 4 1/4" Gold Termination Plastic Tape	Standard Suffix OR <b>4000</b> 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 <sub>R</sub> )	-55°C ≤ +40°C:	2	3	4	6.3	8	10	16	20	25	35	50
Category Voltage (V <sub>C</sub> )	at 85°C:	1	1.5	2	3.2	4	5	8	10	12.5	17.5	25
Category Voltage (V <sub>C</sub> )	at 125°C:	0.4	0.6	0.8	1.3	1.6	2	3.2	4	5	7	10
Temperature Range:	-55°C to +125°C with category voltage											
Reliability:	0.2% per 1000 hours at 85°C, 0.5xV <sub>R</sub> with 0.1Ω/V series impedance with 60% confidence level											

### CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V <sub>R</sub> ) to 40°C										
μF	Code	2.0V	3.0V	4.0V	6.3V	8V	10V	16V	20V	25V	35V	50V
0.33	334						N*	J*		L*		
0.47	474							K				
0.68	684											
1.0	105							J*/K	J*	L	L*/R	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*/K*/U/Z*	V	R		A*	
15	156	K	K*	K/Z*			H/L					
22	226	J	J	J*/U	L/U		L/M			T*		
33	336			L/U	H/L/L(4000)/U/V	L	H/M*					
47	476	L	L	H/L	H/L*/V		C*/H/L*/Q*/R/V*					
68	686			R	R		A*/R*					
100	107		H*	C*/H*/Q*/R	H*/R/V*		R*/T					
150	157			R*	R*		A*					
220	227	R*	S*	A*/R*/T	A*		T*					
330	337			A*	T*							
470	477	A*		A*/T*								
680	687											

Released Codes

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.



