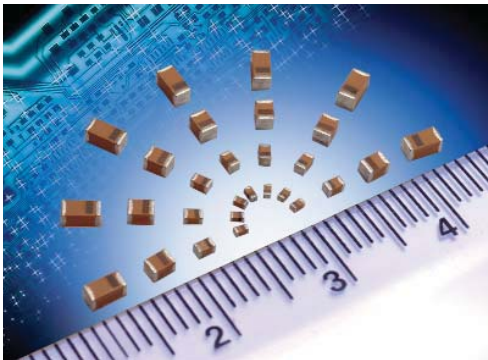


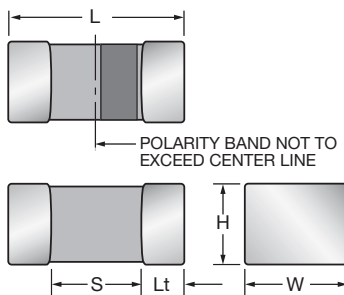
## Standard Microchip



- The world's smallest surface mount tantalum capacitor
- CV range: 0.47-150µF / 2-25V
- 5 case sizes available
- Low profile options available
- Industrial and hi-rel medical applications



### 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 (0.126±0.008)	1.60±0.20 (0.063±0.008)	1.60±0.20 (0.063±0.008)	1.80 min. (0.071 min.)	0.15 (0.006)	44.6mg
B	1210	3528-15	3.50 <sup>+0.20</sup> <sub>-0.20</sub> <sup>+0.008</sup> <sub>-0.008</sub> (0.138 <sup>+0.008</sup> <sub>-0.008</sub> )	2.80 <sup>+0.20</sup> <sub>-0.10</sub> <sup>+0.008</sup> <sub>-0.004</sub> (0.110 <sup>+0.008</sup> <sub>-0.004</sub> )	1.50 max.	2.00 min.	0.15 min.	90.0mg
K	0402	1005-07	1.00 <sup>+0.20</sup> <sub>-0.00</sub> <sup>+0.008</sup> <sub>-0.000</sub> (0.039 <sup>+0.008</sup> <sub>-0.000</sub> )	0.50 <sup>+0.20</sup> <sub>-0.00</sub> <sup>+0.008</sup> <sub>-0.000</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.50 <sup>+0.20</sup> <sub>-0.00</sub> <sup>+0.008</sup> <sub>-0.000</sub> (0.020 <sup>+0.008</sup> <sub>-0.000</sub> )	0.40 min. (0.016 min.)	0.10 (0.004)	2.8mg
L	0603	1608-10	1.60 <sup>+0.20</sup> <sub>-0.00</sub> <sup>+0.008</sup> <sub>-0.000</sub> (0.063 <sup>+0.008</sup> <sub>-0.000</sub> )	0.85 <sup>+0.15</sup> <sub>-0.00</sub> <sup>+0.006</sup> <sub>-0.000</sub> (0.033 <sup>+0.006</sup> <sub>-0.000</sub> )	0.85 <sup>+0.15</sup> <sub>-0.00</sub> <sup>+0.006</sup> <sub>-0.000</sub> (0.033 <sup>+0.006</sup> <sub>-0.000</sub> )	0.55 min. (0.022 min.)	0.15 (0.006)	8.6mg
R	0805	2012-15	2.00 <sup>+0.20</sup> <sub>-0.00</sub> <sup>+0.008</sup> <sub>-0.000</sub> (0.079 <sup>+0.008</sup> <sub>-0.000</sub> )	1.35 <sup>+0.15</sup> <sub>-0.00</sub> <sup>+0.006</sup> <sub>-0.000</sub> (0.053 <sup>+0.006</sup> <sub>-0.000</sub> )	1.35 <sup>+0.15</sup> <sub>-0.00</sub> <sup>+0.006</sup> <sub>-0.000</sub> (0.053 <sup>+0.006</sup> <sub>-0.000</sub> )	0.70 min. (0.027 min.)	0.15 (0.006)	29.9mg

### HOW TO ORDER

<b>TAC</b>	<b>L</b>	<b>226</b>	<b>M</b>	<b>004</b>	<b>R</b>	<b>TA</b>
<b>Type</b> TACmicrochip®	<b>Case Size</b> See table above	<b>Capacitance Code</b> pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	<b>Tolerance</b> K=±10% M=±20%	<b>Rated DC Voltage</b> 002=2Vdc 003=3Vdc 004=4Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 050=50Vdc	<b>Packaging</b> 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	<b>Alternative characters may be used for special requirements</b>

### TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C										
Capacitance Range:	0.10 µF to 150 µF										
Capacitance Tolerance:	±10%; ±20%										
Leakage Current DCL:	0.01CV or 0.5µA whichever is the greater										
Rated Voltage (V <sub>R</sub> )	≤ +85°C:	2	3	4	6.3	10	16	20	25	50	
Category Voltage (V <sub>C</sub> )	≤ +125°C:	1.3	2	2.7	4	7	10	13	17	33	
Surge Voltage (V <sub>S</sub> )	≤ +85°C:	2.7	3.9	5.2	8	13	20	26	32	65	
Surge Voltage (V <sub>S</sub> )	≤ +125°C:	1.7	2.6	3.2	5	8	12	16	20	40	
Temperature Range:	-55°C to +125°C										
Reliability:	1% per 1000 hours at 85°C, V <sub>R</sub> with 0.1Ω/V series impedance, 60% confidence level										
Termination Finish:	Nickel and Tin Plating (standard), Nickel and Gold Plating option available upon request										

## Standard Microchip

### STANDARD COMMERCIAL RANGE (EIA SIZES) (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V <sub>R</sub> ) at 85°C								
µF	Code	2.0V	3.0V	4.0V	6.3V	10V	16V	20V	25V	50V
0.10 0.15 0.22	104 154 224							K*		
0.33 0.47 0.68	334 474 684					K(15) <sup>(M)</sup> /K(25) <sup>(M)</sup> /L K <sup>(M)</sup> /L	L L			
1.0 1.5 2.2	105 155 225		K <sup>(M)</sup> /L	L L	K/L L K <sup>(M)</sup> /L	K/L L L	L L		R	A*
3.3 4.7 6.8	335 475 685	K <sup>(M)</sup> /L K <sup>(M)</sup> /L K <sup>(M)</sup> /L	K <sup>(M)</sup> /L K <sup>(M)</sup> /L L	L L L	L L L/R	L/R L/R L/R	R*	R <sup>(M)</sup> R <sup>(M)</sup>	A*	
10 15 22	106 156 226	K <sup>(M)</sup> /L R R	L R L <sup>(M)</sup> /R	L/R L <sup>(M)</sup> /R L <sup>(M)</sup> /R	L <sup>(M)</sup> /R L <sup>(M)</sup> /R R	L/R R R	R			
33 47 68	336 476 686	R R R <sup>(M)</sup>	R R R <sup>(M)</sup>	R R A <sup>(M)</sup>	R R A/R <sup>(M)</sup> A <sup>(M)*</sup>	A <sup>(M)</sup> /B <sup>(M)</sup> /R <sup>(M)</sup> B				
100 150 220	107 157 227	A <sup>(M)</sup>	A <sup>(M)</sup> /R <sup>(M)</sup>	A <sup>(M)</sup> /R <sup>(M)</sup>	A <sup>(M)</sup>					

ESR limits quoted in brackets (Ohms)

Released codes <sup>(M tolerance only)</sup>

\*Codes under development - subject to change.

Standard Height Profile: A, B, K, L, R Case

Low Profile: H, J, T, U, V Case

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

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	EIA Code	EIA Metric	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
<b>2 Volt @ 85°C (1.3 Volt @ 125°C)</b>									
TACK335M002#TA	0402	1005-07	K	3.3	2	0.5	8	15	1
TACL335*002#TA	0603	1608-10	L	3.3	2	0.5	6	7.5	1
TACK475M002#TA	0402	1005-07	K	4.7	2	0.5	12	15	1
TACL475*002#TA	0603	1608-10	L	4.7	2	0.5	6	7.5	1
TACK685M002#TA	0402	1005-07	K	6.8	2	0.5	20	15	1
TACL685*002#TA	0603	1608-10	L	6.8	2	0.5	6	7.5	1
TACK106M002#TA	0402	1005-07	K	10	2	0.5	15	15	1
TACL106*002#TA	0603	1608-10	L	10	2	0.5	10	7.5	1
TACR226*002#TA	0805	2012-15	R	22	2	0.5	8	5	1
TACR336*002#TA	0805	2012-15	R	33	2	0.7	10	5	1
TACR476*002#TA	0805	2012-15	R	47	2	0.9	10	5	1
TACR686M002#TA	0805	2012-15	R	68	2	1.4	14	5	1
TACA157M002#TA	1206	3216-18	A	150	2	3	20	1	1
<b>3 Volt @ 85°C (2 Volt @ 125°C)</b>									
TACK225M003#TA	0402	1005-07	K	2.2	3	0.5	6	15	1
TACL225*003#TA	0603	1608-10	L	2.2	3	0.5	6	7.5	1
TACK335M003#TA	0402	1005-07	K	3.3	3	0.5	8	15	1
TACL335*003#TA	0603	1608-10	L	3.3	3	0.5	6	7.5	1
TACK475M003#TA	0402	1005-07	K	4.7	3	0.5	12	15	1
TACL475*003#TA	0603	1608-10	L	4.7	3	0.5	6	7.5	1
TACL685*003#TA	0603	1608-10	L	6.8	3	0.5	6	7.5	1
TACL106*003#TA	0603	1608-10	L	10	3	0.5	10	7.5	1
TACR156*003#TA	0805	2012-15	R	15	3	0.5	8	5	1
TACL226M003#TA	0603	1608-10	L	22	3	0.7	20	7.5	1
TACR226*003#TA	0805	2012-15	R	22	3	0.7	8	5	1
TACR336*003#TA	0805	2012-15	R	33	3	1	10	5	1
TACR475*003#TA	0805	2012-15	R	47	3	1.5	10	5	1
TACR686M003#TA	0805	2012-15	R	68	3	2	14	5	1
TACA107M003#TA	1206	3216-18	A	100	3	3	15	1	1
TACR107M003#TA	0805	2012-15	R	100	3	3	30	5	1
<b>4 Volt @ 85°C (2.7 Volt @ 125°C)</b>									
TACL155*004#TA	0603	1608-10	L	1.5	4	0.5	6	7.5	1
TACL225*004#TA	0603	1608-10	L	2.2	4	0.5	6	7.5	1
TACL335*004#TA	0603	1608-10	L	3.3	4	0.5	6	7.5	1
TACL475*004#TA	0603	1608-10	L	4.7	4	0.5	6	7.5	1
TACL685*004#TA	0603	1608-10	L	6.8	4	0.5	8	7.5	1
TACL106*004#TA	0603	1608-10	L	10	4	0.5	10	7.5	1
TACR106*004#TA	0805	2012-15	R	10	4	0.5	8	5	1
TACL156M004#TA	0603	1608-10	L	15	4	0.6	20	7.5	1
TACR156*004#TA	0805	2012-15	R	15	4	0.6	8	5	1
TACL226M004#TA	0603	1608-10	L	22	4	0.9	20	7.5	1
TACR226*004#TA	0805	2012-15	R	22	4	0.9	8	5	1
TACR336*004#TA	0805	2012-15	R	33	4	1.3	10	5	1
TACR476*004#TA	0805	2012-15	R	47	4	1.9	14	5	1
TACA686M004#TA	1206	3216-18	A	68	4	2.7	15	1	1
TACA107M004#TA	1206	3216-18	A	100	4	4	20	1	1
TACR107M004#TA	0805	2012-15	R	100	4	4	30	5	1
<b>6.3 Volt @ 85°C (4 Volt @ 125°C)</b>									
TACK105*006#TA	0402	1005-07	K	1	6.3	0.5	6	15	1
TACL105*006#TA	0603	1608-10	L	1	6.3	0.5	6	7.5	1
TACL155*006#TA	0603	1608-10	L	1.5	6.3	0.5	6	7.5	1
TACK225M006#TA	0402	1005-07	K	2.2	6.3	0.5	8	15	1
TACL225*006#TA	0603	1608-10	L	2.2	6.3	0.5	6	7.5	1

AVX Part No.	EIA Code	EIA Metric	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
TACL335*006#TA	0603	1608-10	L	3.3	6.3	0.5	6	7.5	1
TACL475*006#TA	0603	1608-10	L	4.7	6.3	0.5	8	7.5	1
TACL685*006#TA	0603	1608-10	L	6.8	6.3	0.5	10	7.5	1
TACR685*006#TA	0805	2012-15	R	6.8	6.3	0.5	8	5	1
TACL106M006#TA	0603	1608-10	L	10	6.3	0.6	10	6	1
TACR106*006#TA	0805	2012-15	R	10	6.3	0.6	8	5	1
TACL156M006#TA	0603	1608-10	L	15	6.3	0.9	20	7.5	1
TACR156*006#TA	0805	2012-15	R	15	6.3	0.9	8	5	1
TACR226*006#TA	0805	2012-15	R	22	6.3	1.4	10	5	1
TACR336*006#TA	0805	2012-15	R	33	6.3	2.1	12	5	1
TACA476*006#TA	1206	3216-18	A	47	6.3	3	15	1	1
TACR476M006#TA	0805	2012-15	R	47	6.3	3	20	5	1
TACA686M006#TA	1206	3216-18	A	68	6.3	4.3	15	1	1
TACA107M006#TA	1206	3216-18	A	100	6.3	6.3	20	1	1
<b>10 Volt @ 85°C (7 Volt @ 125°C)</b>									
TACK474M010#TA	0402	1005-07	K	0.47	10	0.5	6	15	1
TACK474M010#FM	0402	1005-07	K	0.47	10	0.5	6	25	1
TACL474*010#TA	0603	1608-10	L	0.47	10	0.5	6	7.5	1
TACK684M010#TA	0402	1005-07	K	0.68	10	0.5	8	15	1
TACL684*010#TA	0603	1608-10	L	0.68	10	0.5	6	7.5	1
TACK105*010#TA	0402	1005-07	K	1	10	0.5	6	15	1
TACL105*010#TA	0603	1608-10	L	1	10	0.5	6	7.5	1
TACL155*010#TA	0603	1608-10	L	1.5	10	0.5	6	7.5	1
TACL225*010#TA	0603	1608-10	L	2.2	10	0.5	6	7.5	1
TACL335*010#TA	0603	1608-10	L	3.3	10	0.5	8	7.5	1
TACR335*010#TA	0805	2012-15	R	3.3	10	0.5	8	5	1
TACL475*010#TA	0603	1608-10	L	4.7	10	0.5	10	6	1
TACR475*010#TA	0805	2012-15	R	4.7	10	0.5	8	6	1
TACL685*010#TA	0603	1608-10	L	6.8	10	0.7	20	7.5	1
TACR685*010#TA	0805	2012-15	R	6.8	10	0.7	8	5	1
TACL106*010#TA	0603	1608-10	L	10	10	1	20	7.5	1
TACR106*010#TA	0805	2012-15	R	10	10	1	8	5	1
TACR156*010#TA	0805	2012-15	R	15	10	1.5	10	5	1
TACR226*010#TA	0805	2012-15	R	22	10	2.2	14	5	1
TACA336M010#TA	1206	3216-18	A	33	10	3.3	12	1	1
TACB336*010#TA	1210	3528-15	B	33	10	3.3	15	1	1
TACR336M010#TA	0805	2012-15	R	33	10	3.3	20	5	1
TACB476*010#TA	1210	3528-15	B	47	10	4.7	15	1	1
<b>16 Volt @ 85°C (10 Volt @ 125°C)</b>									
TACL474*016#TA	0603	1608-10	L	0.47	16	0.5	6	7.5	1
TACL684*016#TA	0603	1608-10	L	0.68	16	0.5	6	7.5	1
TACL105*016#TA	0603	1608-10	L	1	16	0.5	6	7.5	1
TACL225*016#TA	0603	1608-10	L	2.2	16	0.5	10	7.5	1
TACR335*016#TA	0805	2012-15	R	3.3	16	0.5	8	5	1
TACR106*016#TA	0805	2012-15	R	10	16	1.6	10	5	1
<b>20 Volt @ 85°C (13 Volt @ 125°C)</b>									
TACK104*020#TA	0402	1005-07	K	0.10	20	0.5	6	40	1
TACR335M020#TA	0805	2012-15	R	3.3	20	0.7	8	5	1
TACR475M020#TA	0805	2012-15	R	4.7	20	0.9	8	5	1
<b>25 Volt @ 85°C (17 Volt @ 125°C)</b>									
TACR105*025#TA	0805	2012-15	R	1	25	0.5	8	5	1
TACA475*025#TA	1206	3216-18	A	4.7	25	1.2	8	1	1
<b>50 Volt @ 85°C (33 Volt @ 125°C)</b>									
TACA105*050#TA	1206	3216-18	A	1.0	50	0.5	6	1	1

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

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts.

DCL is measured at rated voltage after 5 minutes.

For typical weight and composition see page 127.

**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.**