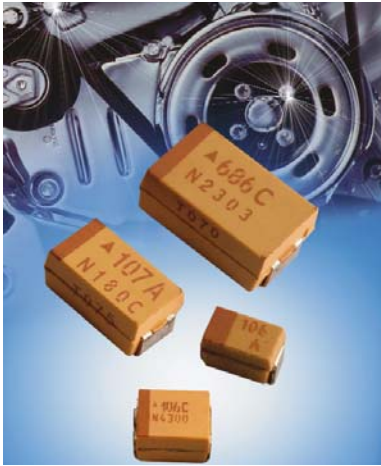


TAJ Series



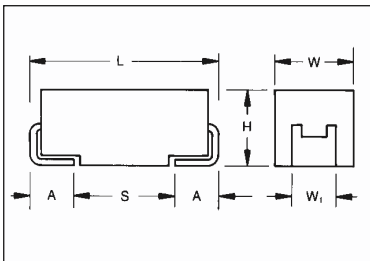
Standard Tantalum



The TAJ standard series encompasses the five key sizes recognized by major OEMs throughout the world. The V case size has been added to the TAJ range to allow high CVs to be offered. The

operational temperature is -55°C to +85°C rated voltage and up to +125°C with voltage derating in applications utilizing recommended series resistance.

CASE DIMENSIONS: millimeters (inches)



For part marking see page 157

Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.80 (0.071)
B	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)
C	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	7361-38	7.30 (0.287)	6.10 (0.240)	3.45±0.30 (0.136±0.012)	3.10 (0.120)	1.40 (0.055)	4.40 (0.173)

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

HOW TO ORDER

TAJ

Type

C

Case Size
See table above

106

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

M

Tolerance
K=±10%
M=±20%

035

Rated DC Voltage
002=2.5Vdc
004=4Vdc
006=6.3Vdc
010=10Vdc
016=16Vdc
020=20Vdc
025=25Vdc
035=35Vdc
050=50Vdc

R

Packaging
R = 7" T/R
(Lead Free since production date 1/1/04)
S = 13" T/R
(Lead Free since production date 1/1/04)
A = Gold Plating
7" Reel
B = Gold Plating
13" Reel

Additional characters may be added for special requirements

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C									
Capacitance Range:	0.1 µF to 2200 µF									
Capacitance Tolerance:	±10%; ±20%									
Rated Voltage (V _R)	≧ +85°C:	2.5	4	6.3	10	16	20	25	35	50
Category Voltage (V _C)	≧ +125°C:	1.7	2.7	4	7	10	13	17	23	33
Surge Voltage (V _S)	≧ +85°C:	3.3	5.2	8	13	20	26	32	46	65
Surge Voltage (V _S)	≧ +125°C:	2.2	3.4	5	8	13	16	20	28	40
Temperature Range:	-55°C to +125°C									
Reliability:	1% per 1000 hours at 85°C, V _R with 0.1Ω/V _R series impedance, 60% confidence level									
Qualification:	CECC 30801 - 005 issue 2 EIA 535BAAC									
	Meets requirements of AEC-Q200									



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

Capacitance		Rated voltage DC (V_R) to 85°C								
μF	Code	2.5V (e)	4V (G)	6.3V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.10	104								A	A
0.15	154								A	A/B
0.22	224								A	A/B
0.33	334								A	B
0.47	474							A	A/B	B/C
0.68	684						A	A	A/B	B/C
1.0	105					A	A	A	A/B	B/C
1.5	155				A	A	A	A/B	A/B/C	C/D
2.2	225			A	A	A/B	A/B	A/B	A/B/C	C/D
3.3	335			A	A	A/B	A/B	A/B/C	B/C	C/D
4.7	475		A	A	A/B	A/B	A/B/C	B/C	B/C/D	D
6.8	685		A	A/B	A/B	A/B/C	A/B/C	B/C	C/D	D
10	106		A	A/B	A/B/C	A/B/C	B/C	C/D	C/D/E	D/E
15	156		A/B	A/B	A/B/C	A ^(M) /B/C	B/C/D	C/D	C/D	E
22	226		A	A/B/C	A/B/C	B/C/D	B/C/D	C/D	D/E	V
33	336		A/B	A/B/C	A/B/C/D	B/C/D	C/D	D/E	D/E/V	
47	476	A	A/B	A/B/C/D	B/C/D	C/D	C/D/E	D/E	D/E	
68	686	A	B/C	B/C/D	B/C/D	C/D	D/E	E/V	E/V	V ^(M)
100	107	B	B/C	B/C/D	B ^(M) /C/D/E	D/E	D/E/V	V		
150	157	B	B/C	C/D	C/D/E	D/E/V	E/V			
220	227	B/D	B ^(M) /C/D	C/D/E	D/E	D/E/V	D/E/V			
330	337	D	C/D/E	C/D/E	D/E/V	E/V	E/V			
470	477	C/D	D/E	D/E/V	E/V	V				
680	687	D/E	D/E	E/V	V					
1000	108	D ^(M) /E	D/E/V	V ^(M)						
1500	158	D/E/V	E/V ^(M)							
2200	228	V								

Non preferred Ratings - not recommended for new designs, higher voltage or smaller case size substitution are offered.

Developmental Ratings - subject to change.

Released codes ^(M tolerance only)

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.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TAJA476*002#	A	47	2.5	0.9	6	3
TAJA686*002#	A	68	2.5	1.4	8	1.5
TAJB107*002#	B	100	2.5	2.5	8	1.4
TAJB157*002#	B	150	2.5	3	10	1.6
TAJB227*002#	B	220	2.5	4.4	16	1.6
TAJD227*002#	D	220	2.5	5.5	8	0.3
TAJD337*002#	D	330	2.5	8.2	8	0.3
TAJC477*002#	C	470	2.5	9.4	12	0.2
TAJD477*002#	D	470	2.5	11.6	8	0.2
TAJD687*002#	D	680	2.5	17	16	0.2
TAJE687*002#	E	680	2.5	17	10	0.2
TAJD108M002#	D	1000	2.5	25	20	0.2
TAJE108*002#	E	1000	2.5	20	14	0.4
TAJD158*002#	D	1500	2.5	37.5	60	0.2
TAJE158*002#	E	1500	2.5	37	20	0.2
TAJV158*002#	V	1500	2.5	30	20	0.2
TAJV228*002#	V	2200	2.5	55	50	0.2
TAJA336*004#	A	33	4	1.3	6	3
TAJA476*004#	A	47	4	1.9	8	2.6
TAJB686*004#	B	68	4	2.7	6	1.8
TAJB107*004#	B	100	4	4	8	0.9
TAJB157*004#	B	150	4	6	8	1.5
TAJC157*004#	C	150	4	6	6	0.3
TAJB227M004#	B	220	4	8.8	12	1.1
TAJC227*004#	C	220	4	8.8	8	1.2
TAJD227*004#	D	220	4	8.8	8	0.9
TAJC337*004#	C	330	4	13.2	8	0.9
TAJD337*004#	D	330	4	13.2	8	0.9
TAJD477*004#	D	470	4	18.8	12	0.9
TAJE477*004#	E	470	4	18.8	10	0.5
TAJD687*004#	D	680	4	27.2	14	0.5
TAJE687*004#	E	680	4	27.2	14	0.9
TAJD108*004#	D	1000	4	40	60	0.2
TAJE108*004#	E	1000	4	40	14	0.4
TAJV108*004#	V	1000	4	40	16	0.4
TAJE158*004#	E	1500	4	60	30	0.2
TAJV158M004#	V	1500	4	60	30	0.2
TAJA106*006#	A	10	6.3	0.6	6	4
TAJA156*006#	A	15	6.3	0.9	6	3.5
TAJA226*006#	A	22	6.3	1.4	6	3
TAJA336*006#	A	33	6.3	2.1	8	2.5
TAJA476*006#	A	47	6.3	2.8	10	1.6
TAJB476*006#	B	47	6.3	3	6	2
TAJC476*006#	C	47	6.3	3	6	1.6
TAJB686*006#	B	68	6.3	4	8	0.9
TAJC686*006#	C	68	6.3	4.3	6	1.5
TAJB107*006#	B	100	6.3	6.3	10	1.7
TAJC107*006#	C	100	6.3	6.3	6	0.9
TAJC157*006#	C	150	6.3	9.5	6	1.3
TAJD157*006#	D	150	6.3	9.5	6	0.9
TAJC227*006#	C	220	6.3	13.9	8	1.2
TAJD227*006#	D	220	6.3	13.9	8	0.9
TAJE227*006#	E	220	6.3	13.9	8	0.9
TAJD337*006#	D	330	6.3	20.8	8	0.4
TAJE337*006#	E	330	6.3	20.8	8	0.4
TAJD477*006#	D	470	6.3	28	12	0.4
TAJE477*006#	E	470	6.3	28	10	0.4

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TAJV477*006#	V	470	6.3	28	10	0.4
TAJE687*006#	E	680	6.3	42.8	10	0.5
TAJV687*006#	V	680	6.3	42.8	10	0.5
TAJV108M006#	V	1000	6.3	63	16	0.4
TAJA475*010#	A	4.7	10	0.5	6	5
TAJA685*010#	A	6.8	10	0.7	6	4
TAJA106*010#	A	10	10	1	6	3
TAJA156*010#	A	15	10	1.5	6	3.2
TAJB156*010#	B	15	10	1.5	6	2.8
TAJA226*010#	A	22	10	2.2	8	3
TAJB226*010#	B	22	10	2.2	6	2.4
TAJA336*010#	A	33	10	3.3	8	1.7
TAJB336*010#	B	33	10	3.3	6	1.8
TAJC336*010#	C	33	10	3.3	6	1.6
TAJB476*010#	B	47	10	4.7	8	1
TAJC476*010#	C	47	10	4.7	6	1.2
TAJB686*010#	B	68	10	6.8	6	1.4
TAJC686*010#	C	68	10	6.8	6	1.3
TAJB107M010#	B	100	10	10	8	1.4
TAJC107*010#	C	100	10	10	8	1.2
TAJD107*010#	D	100	10	10	6	0.9
TAJC157*010#	C	150	10	15	8	0.9
TAJD157*010#	D	150	10	15	6	0.9
TAJE157*010#	E	150	10	15	8	0.9
TAJD227*010#	D	220	10	22	8	0.5
TAJE227*010#	E	220	10	22	8	0.5
TAJD337*010#	D	330	10	33	8	0.9
TAJE337*010#	E	330	10	33	8	0.9
TAJV337*010#	V	330	10	33	10	0.9
TAJE477*010#	E	470	10	47	10	0.5
TAJV477*010#	V	470	10	47	10	0.5
TAJA225*016#	A	2.2	16	0.5	6	6.5
TAJA335*016#	A	3.3	16	0.5	6	5
TAJB335*016#	B	3.3	16	0.5	6	4.5
TAJA475*016#	A	4.7	16	0.8	6	4
TAJB475*016#	B	4.7	16	0.8	6	3.5
TAJA685*016#	A	6.8	16	1.1	6	3.5
TAJB685*016#	B	6.8	16	1.1	6	2.5
TAJA106*016#	A	10	16	1.6	8	3
TAJB106*016#	B	10	16	1.6	6	2.8
TAJC106*016#	C	10	16	1.6	6	2
TAJA156M016#	A	15	16	2.4	6	2
TAJB156*016#	B	15	16	2.4	6	2.5
TAJC156*016#	C	15	16	2.4	6	1.8
TAJB226*016#	B	22	16	3.5	6	2.3
TAJC226*016#	C	22	16	3.5	6	1.6
TAJD226*016#	D	22	16	3.5	6	1.1
TAJB336*016#	B	33	16	5.3	8	2.1
TAJC336*016#	C	33	16	5.3	6	1.5
TAJD336*016#	D	33	16	5.3	6	0.9
TAJC476*016#	C	47	16	7.5	6	1.4
TAJD476*016#	D	47	16	7.5	6	0.9
TAJC686*016#	C	68	16	10.9	6	1.3
TAJD686*016#	D	68	16	10.9	6	0.9
TAJD107*016#	D	100	16	16	6	0.9
TAJE107*016#	E	100	16	16	6	0.9
TAJD157*016#	D	150	16	24	6	0.9

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.

* Insert K for ±10% and M for ±20% Capacitance Tolerance
 # Standard Plating – Insert R for 7" reel and S for 13" reel
 # Gold Plating – Insert A for 7" reel and B for 13" reel

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.

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TAJE157*016#	E	150	16	24	8	0.3
TAJV157*016#	V	150	16	24	8	0.5
TAJE227*016#	E	220	16	35.2	10	0.5
TAJV227*016#	V	220	16	35.2	8	0.9
TAJA105*020#	A	1	20	0.5	4	9
TAJA155*020#	A	1.5	20	0.5	6	6.5
TAJA225*020#	A	2.2	20	0.5	6	5.3
TAJB225*020#	B	2.2	20	0.5	6	3.5
TAJA335*020#	A	3.3	20	0.7	6	4.5
TAJB335*020#	B	3.3	20	0.7	6	3
TAJA475*020#	A	4.7	20	0.9	6	4
TAJB475*020#	B	4.7	20	0.9	6	3
TAJA685*020#	A	6.8	20	1.4	6	2.5
TAJB685*020#	B	6.8	20	1.4	6	2.5
TAJC685*020#	C	6.8	20	1.4	6	2
TAJB106*020#	B	10	20	2	6	2.1
TAJC106*020#	C	10	20	2	6	1.9
TAJB156*020#	B	15	20	3	6	2
TAJC156*020#	C	15	20	3	6	1.7
TAJB226*020#	B	22	20	4.4	6	1.8
TAJC226*020#	C	22	20	4.4	6	1.6
TAJD226*020#	D	22	20	4.4	6	0.9
TAJC336*020#	C	33	20	6.6	6	1.5
TAJD336*020#	D	33	20	6.6	6	0.9
TAJC476*020#	C	47	20	9.4	6	0.9
TAJD476*020#	D	47	20	9.4	6	0.9
TAJE476*020#	E	47	20	9.4	6	0.9
TAJD686*020#	D	68	20	13.6	6	0.9
TAJE686*020#	E	68	20	13.6	6	0.9
TAJD107*020#	D	100	20	20	6	0.9
TAJE107*020#	E	100	20	20	6	0.9
TAJV107*020#	V	100	20	20	8	0.9
TAJE157*020#	E	150	20	30	8	0.3
TAJV157*020#	V	150	20	30	8	0.5
TAJA474*025#	A	0.47	25	0.5	4	14
TAJA684*025#	A	0.68	25	0.5	4	10
TAJA105*025#	A	1	25	0.5	4	8
TAJA155*025#	A	1.5	25	0.5	6	7.5
TAJB155*025#	B	1.5	25	0.5	6	5
TAJA225*025#	A	2.2	25	0.6	6	7
TAJB225*025#	B	2.2	25	0.6	6	4.5
TAJA335*025#	A	3.3	25	0.8	6	3.7
TAJB335*025#	B	3.3	25	0.8	6	3.5
TAJB475*025#	B	4.7	25	1.2	6	2.8
TAJB685*025#	B	6.8	25	1.7	6	2.8
TAJC685*025#	C	6.8	25	1.7	6	2
TAJC106*025#	C	10	25	2.5	6	1.8
TAJD106*025#	D	10	25	2.5	6	1.2
TAJC156*025#	C	15	25	3.8	6	1.6
TAJD156*025#	D	15	25	3.8	6	1
TAJC226*025#	C	22	25	5.5	6	1.4
TAJD226*025#	D	22	25	5.5	6	0.9
TAJD336*025#	D	33	25	8.3	6	0.9
TAJE336*025#	E	33	25	8.3	6	0.9
TAJD476*025#	D	47	25	11.8	6	0.9
TAJE476*025#	E	47	25	11.8	6	0.9
TAJE686*025#	E	68	25	17	6	0.9
TAJV686*025#	V	68	25	17	6	0.9
TAJV107*025#	V	100	25	25	8	0.4
TAJA104*035#	A	0.1	35	0.5	4	24

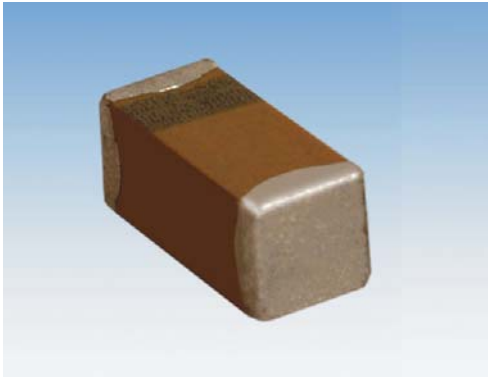
AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TAJA154*035#	A	0.15	35	0.5	4	21
TAJA224*035#	A	0.22	35	0.5	4	18
TAJA334*035#	A	0.33	35	0.5	4	15
TAJA474*035#	A	0.47	35	0.5	4	12
TAJB474*035#	B	0.47	35	0.5	4	10
TAJA684*035#	A	0.68	35	0.5	4	8
TAJB684*035#	B	0.68	35	0.5	4	8
TAJA105*035#	A	1	35	0.5	4	7.5
TAJB105*035#	B	1	35	0.5	4	6.5
TAJA155*035#	A	1.5	35	0.5	6	7.5
TAJB155*035#	B	1.5	35	0.5	6	5.2
TAJC155*035#	C	1.5	35	0.5	6	4.5
TAJA225*035#	A	2.2	35	0.8	6	4.5
TAJB225*035#	B	2.2	35	0.8	6	4.2
TAJC225*035#	C	2.2	35	0.8	6	3.5
TAJB335*035#	B	3.3	35	1.2	6	3.5
TAJC335*035#	C	3.3	35	1.2	6	2.5
TAJB475*035#	B	4.7	35	1.2	6	3.1
TAJC475*035#	C	4.7	35	1.6	6	2.2
TAJD475*035#	D	4.7	35	1.6	6	1.5
TAJC685*035#	C	6.8	35	2.4	6	1.8
TAJD685*035#	D	6.8	35	2.4	6	1.3
TAJC106*035#	C	10	35	3.5	6	1.6
TAJD106*035#	D	10	35	3.5	6	1
TAJE106*035#	E	10	35	3.5	6	0.9
TAJC156*035#	C	15	35	5.3	6	1.4
TAJD156*035#	D	15	35	5.3	6	0.9
TAJD226*035#	D	22	35	7.7	6	0.9
TAJE226*035#	E	22	35	7.7	6	0.9
TAJD336*035#	D	33	35	11.6	6	0.9
TAJE336*035#	E	33	35	11.6	6	0.9
TAJV336*035#	V	33	35	11.6	6	500
TAJE476*035#	E	47	35	16.5	6	0.9
TAJV476*035#	V	47	35	16.5	6	0.4
TAJV686M035#	V	68	35	23.8	6	0.5
TAJA104*050#	A	0.1	50	0.5	4	22
TAJA154*050#	A	0.15	50	0.5	4	15
TAJB154*050#	B	0.15	50	0.5	4	17
TAJA224*050#	A	0.22	50	0.5	4	18
TAJB224*050#	B	0.22	50	0.5	4	14
TAJB334*050#	B	0.33	50	0.5	4	12
TAJB474*050#	B	0.47	50	0.7	4	9.5
TAJC474*050#	C	0.47	50	0.5	4	8
TAJB684*050#	B	0.68	50	0.5	4	8
TAJC684*050#	C	0.68	50	0.5	4	7
TAJB105*050#	B	1	50	0.5	4	7
TAJC105*050#	C	1	50	0.5	4	5.5
TAJC155*050#	C	1.5	50	0.8	6	4.5
TAJD155*050#	D	1.5	50	0.8	6	4
TAJC225*050#	C	2.2	50	1.1	6	3
TAJD225*050#	D	2.2	50	1.1	6	2.5
TAJC335*050#	C	3.3	50	1.7	6	2.5
TAJD335*050#	D	3.3	50	1.7	6	2
TAJD475*050#	D	4.7	50	2.4	6	1.4
TAJD685*050#	D	6.8	50	3.4	6	1
TAJD106*050#	D	10	50	5	6	0.8
TAJE106*050#	E	10	50	5	6	1
TAJE156*050#	E	15	50	7.5	6	0.6
TAJV226*050#	V	22	50	11	8	0.6

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.

* Insert K for ±10% and M for ±20% Capacitance Tolerance # Standard Plating – Insert R for 7" reel and S for 13" reel # Gold Plating – Insert A for 7" reel and B for 13" reel

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.

Standard Microchip



The world's smallest surface mount Tantalum capacitor, small enough to create space providing room for ideas to grow.

TACmicrochip™ is a major breakthrough in miniaturization without reduction in performance.

It offers you the highest energy store in a small case size down to 0402; enhanced high frequency operation through unique ESR performance with temperature and voltage stability is also offered.

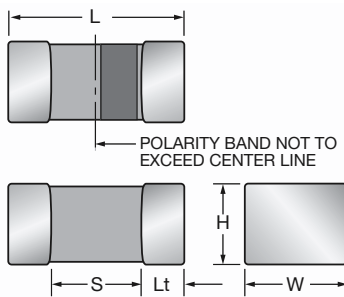


LEAD-FREE



HALOGEN-FREE COMPOUNDS

ENVIRONMENTAL FRIENDLY 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
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.	0.10 (0.004)	2.0mg
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.	0.15 (0.006)	8.6mg
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.	0.15 (0.006)	29.9mg
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.	0.15 (0.006)	44.6mg

HOW TO ORDER

TAC	L	226	M	004	R	TA
Type TACmicrochip™	Case Size 0402=K 0603=L 0805=R 1206=A	Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	Tolerance K=±10% M=±20%	Rated DC Voltage 002=2Vdc 003=3Vdc 004=4Vdc 005=5Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 035=35Vdc	Packaging (see table below)	Alternative characters may be used for special requirements

Packaging Suffix

Reel Size	Standard Tin Termination Plastic Tape	Standard Tin Termination Paper Tape	Gold Termination Plastic Tape
Case	A/R/L	K	A/R/L
7"	RTA	PTA	ATA
4 1/4"	XTA	QTA	FTA

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C											
Capacitance Range:	0.47 μF to 150 μF											
Capacitance Tolerance:	±10%; ±20%											
Leakage Current DCL:	0.01CV or 0.5μA whichever is the greater											
Rated Voltage (V _R)	≅ +85°C:	2	3	4	5	6.3	10	16	20	25	35	
Category Voltage (V _C)	≅ +125°C:	1.3	2	2.7	3.3	4	7	10	13	17	23	
Surge Voltage (V _S)	≅ +85°C:	2.7	3.9	5.2	6.5	8	13	20	26	32	46	
Surge Voltage (V _S)	≅ +125°C:	1.7	2.6	3.2	4	5	8	12	16	20	28	
Temperature Range:	-55°C to +125°C											
Reliability:	1% per 1000 hours at 85°C, V _R 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 COMMERCIAL RANGE (EIA Sizes) (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V _R) at 85°C									
µF	Code	2.0V	3.0V	4.0V	5.0V	6.3V	10V	16V	20V	25V	35V
0.33	334										
0.47	474						K/L	L			
0.68	684						K/L	L			
1.0	105					K/L	K/L	L		R	
1.5	155			L		L	L	L			
2.2	225		K/L	L		K/L	L	L			
3.3	335	K/L	K/L	L		L	L/R				
4.7	475	K/L	K/L	L		L	L/R		R		
6.8	685	L	L	L		L/R	R				
10	106	K/L	L	L/R		L/R	L/R	R			
15	156		R	L/R		L/R	R				
22	226	R	L/R	L/R	L	R	R				
33	336	R	R	R		R	A				
47	476	L/R	R	R		A					
68	686	R	R	A							
100	107		R/A	A		A					
150	157	A									
220	227	A									

Developmental Ratings - subject to change

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

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

Custom Low Profile: X Case

RATINGS & PART NUMBER REFERENCE

AVX Part No.	EIA	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TACK335M002#	0402	K	3.3	2	0.5	8	15
TACL335*002#	0603	L	3.3	2	0.5	6	7.5
TACK475M002#	0402	K	4.7	2	0.5	12	15
TACL475*002#	0603	L	4.7	2	0.5	6	7.5
TACL685*002#	0603	L	6.8	2	0.5	6	7.5
TACK106M002#	0402	K	10	2	0.5	15	15
TACL106*002#	0603	L	10	2	0.5	10	7.5
TACR226*002#	0805	R	22	2	0.5	8	5
TACR336*002#	0805	R	33	2	0.7	10	5
TACR476*002#	0805	R	47	2	0.9	10	5
TACR686M002#	0805	R	68	2	1.4	14	5
TACA157M002#	1206	A	150	2	3.0	20	1
TACK225M003#	0402	K	2.2	3	0.5	6	15
TACL225*003#	0603	L	2.2	3	0.5	6	7.5
TACK335M003#	0402	K	3.3	2	0.5	8	15
TACL335*003#	0603	L	3.3	3	0.5	6	7.5
TACK475M003#	0402	K	4.7	3	0.5	12	15
TACL475*003#	0603	L	4.7	3	0.5	6	7.5
TACL685*003#	0603	L	6.8	3	0.5	6	7.5
TACL106*003#	0603	L	10	3	0.5	10	7.5
TACR156*003#	0805	R	15	3	0.5	8	5
TACL226M003#	0603	L	22	3	0.7	20	7.5
TACR226*003#	0805	R	22	3	0.7	8	5
TACR336*003#	0805	R	33	3	1.0	10	5
TACR476*003#	0805	R	47	3	1.5	10	5
TACR686M003#	0805	R	68	3	2.0	14	5
TACA107M003#	1206	A	100	3	3.0	15	1
TACL155*004#	0603	L	1.5	4	0.5	6	7.5
TACL225*004#	0603	L	2.2	4	0.5	6	7.5
TACL335*004#	0603	L	3.3	4	0.5	6	7.5
TACL475*004#	0603	L	4.7	4	0.5	6	7.5
TACL685*004#	0603	L	6.8	4	0.5	8	7.5
TACL106M004#	0603	L	10	4	0.5	10	7.5
TACR106*004#	0805	R	10	4	0.5	8	5
TACL156M004#	0603	L	15	4	0.6	20	7.5
TACR156*004#	0805	R	15	4	0.6	8	5
TACL226M004#	0603	L	22	4	0.9	20	7.5
TACR226*004#	0805	R	22	4	0.9	8	5
TACR336*004#	0805	R	33	4	1.3	10	5
TACR476M004#	0805	R	47	4	1.9	14	5
TACA686M004#	1206	A	68	4	2.7	15	1
TACA107M004#	1206	A	100	4	4.0	20	1
TACL226M005#	0603	L	22	5	1.1	20	7.5

AVX Part No.	EIA	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz
TACK105M006#	0402	K	1.0	6.3	0.5	6	15
TACL105*006#	0603	L	1.0	6.3	0.5	6	7.5
TACL155*006#	0603	L	1.5	6.3	0.5	6	7.5
TACK225M006#	0402	K	2.2	6.3	0.5	8	15
TACL225*006#	0603	L	2.2	6.3	0.5	6	7.5
TACL335*006#	0603	L	3.3	6.3	0.5	6	7.5
TACL475*006#	0603	L	4.7	6.3	0.5	8	7.5
TACL685*006#	0603	L	6.8	6.3	0.5	10	7.5
TACR685*006#	0805	R	6.8	6.3	0.5	8	5
TACL106M006#	0603	L	10	6.3	0.6	10	6
TACR106*006#	0805	R	10	6.3	0.6	8	5
TACL156M006#	0603	L	15	6.0	0.9	20	7.5
TACR156*006#	0805	R	15	6.3	0.9	8	5
TACR226*006#	0805	R	22	6.3	1.4	10	5
TACR336*006#	0805	R	33	6.3	2.1	12	5
TACA476M006#	1206	A	47	6.3	3.0	15	1
TACA107M006#	1206	A	100	6.3	6.3	20	1
TACK474M010#	0402	K	0.47	10	0.5	6	15
TACL474*010#	0603	L	0.47	10	0.5	6	7.5
TACK684M010#	0402	K	0.68	10	0.5	8	15
TACL684*010#	0603	L	0.68	10	0.5	6	7.5
TACK105M010#	0402	K	1.0	10	0.5	6	15
TACL105*010#	0603	L	1.0	10	0.5	6	7.5
TACL155*010#	0603	L	1.5	10	0.5	6	7.5
TACL225*010#	0603	L	2.2	10	0.5	6	7.5
TACL335*010#	0603	L	3.3	10	0.5	8	7.5
TACR335*010#	0805	R	3.3	10	0.5	8	5
TACL475M010#	0603	L	4.7	10	0.5	10	6
TACR475*010#	0805	R	4.7	10	0.5	8	6
TACR685*010#	0805	R	6.8	10	0.7	8	5
TACL106M010#	0603	L	10	10	1.0	20	7.5
TACR106*010#	0805	R	10	10	1.0	8	5
TACR156*010#	0805	R	15	10	1.5	10	5
TACR226M010#	0805	R	22	10	2.2	14	5
TACA336M010#	1206	A	33	10	3.3	12	1
TACL474*016#	0603	L	0.47	16	0.5	6	7.5
TACL684*016#	0603	L	0.68	16	0.5	6	7.5
TACL105*016#	0603	L	1.0	16	0.5	6	7.5
TACL225M016#	0603	L	2.2	16	0.5	10	7.5
TACR106*016#	0805	R	10	16	1.6	10	5
TACR475M020#	0805	R	4.7	20	0.9	8	5
TACR105*025#	0805	R	1.0	25	0.5	8	5

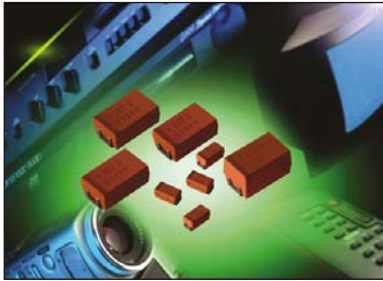
All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

* Insert K for ±10% and M for ±20% Capacitance Tolerance

Refer to packaging suffix for options

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.

Niobium Oxide Capacitor

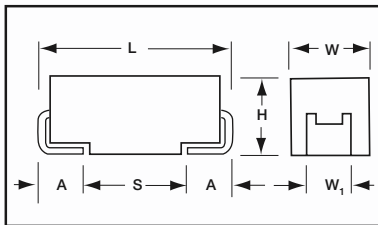


Cost versus Performance is a key requirement for consumer electronic products. A new solid electrolyte capacitor **OxiCap™** has been developed by AVX in standard EIA case sizes in order to meet this requirement as a higher performance alternative to aluminum and other SMT capacitor technologies currently on the market. The **OxiCap™ non-burn¹** technology is based on **NbO niobium oxide ceramic material** as the anodic material processed through the same manufacturing process as tantalum capacitors. Nb₂O₅ dielectric in

combination to self-healing MnO₂ cathode is a basis for a good reliability level **0.5%/1000 hrs.** within a temperature range up to **105°C** and rated voltage **<6V** (rail voltage <5V). Electrical parameters are similar to general tantalum specifications. NbO and MnO₂ are widely available materials. The laser coded **orange molded body** gives total traceability.

- Reduced Voltage Derating
- Failed OxiCap™ will not burn up to category voltage

CASE DIMENSIONS: millimeters (inches)



Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.80 (0.071)
B	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)
C	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	7361-38	7.30 (0.287)	6.10 (0.240)	3.45 ±0.30 (0.136±0.012)	3.10 (0.120)	1.40 (0.055)	1.80 (0.071)
Z*	7361-45	7.30 (0.287)	6.10 (0.240)	4.30 (0.169)	3.10 (0.120)	1.40 (0.055)	4.40 (0.173)

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

HOW TO ORDER

NOJ

Type

D

Case Size

107

Capacitance Code
1st two digits represent significant figures, 3rd digit represents multiplier in pF

M

Capacitance Tolerance
M = ±20%

006

Rated DC Voltage
001 = 1.8Vdc
002 = 2.5Vdc
004 = 4Vdc
006 = 6.3Vdc
010 = 10Vdc

RWJ

Packaging
R = Lead Free 7" Reel
S = Lead Free 13" Reel

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C is not stated						
Capacitance Range:	4.7 μF to 1500 μF						
Capacitance Tolerance:	±20%						
Leakage Current DCL:	0.02CV						
Rated Voltage DC (V _R)	≤+85°C:	1.8	2.5	4	6.3	10	
Category Voltage (V _C)	≤+105°C:	1.2	1.7	2.7	4	7	
Surge Voltage (V _S)	≤+85°C:	2.3	3.3	5.2	8	13	
	≤+105°C:	1.6	2.2	3.4	5	8	
Temperature Range:	-55°C to +105°C						
Reliability:	0.5% per 1000 hours at 85°C, V _R , 0.1Ω/V series impedance, 60% confidence level Meets requirements of AEC-Q200						

OxiCap™ NOJ Series



Niobium Oxide Capacitor

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R) to 85°C / 0.66 DC to 105°C				
μF	Code	1.8V (x)	2.5V (e)	4V (G)	6.3V (J)	10V (A)
4.7	475				A	A
6.8	685				A	A
10	106				A	A/B
15	156			A	B	B
22	226		A	A/B	B	B/C
33	336	A	A/B	B	B/C	C
47	476	A/B	B	B/C	C	C
68	686	B	B/C	B/C	C	D
100	107	B/C	B/C	C	C/D	D
150	157	B/C	C	C/D	C/D	E
220	227	C	C	C/D	D/E	V
330	337	C	C/D	D	E	
470	477	C/D	D/E	D/E	V	
680	687	D	E	V	Z	
1000	108	E	V	Z		
1500	158	V	Z			
2200	228	Z				

Developmental Ratings - subject to change

Z case = 4.5mm height V



LEAD-FREE

LEAD-FREE COMPATIBLE
COMPONENT



HALOGEN-FREE COMPOUNDS

ENVIRONMENTAL FRIENDLY
COMPONENT



NON-BURN
NON-SMOKE

Niobium Oxide Capacitor

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	100kHz Ripple Current (A)			100kHz Ripple Voltage (V)		
							25°C	85°C	105°C	25°C	85°C	105°C
1.8 Volt @ 85°C (1.2 Volt @ 105°C)												
NOJB476M001#	B	47	1.8	1.7	6	1.6	0.252	0.227	0.101	0.404	0.364	0.162
NOJB686M001#	B	68	1.8	2.5	6	1.5	0.261	0.235	0.104	0.391	0.352	0.156
NOJB107M001#	B	100	1.8	3.6	6	1.4	0.270	0.243	0.108	0.378	0.340	0.151
NOJC107M001#	C	100	1.8	3.6	6	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC157M001#	C	150	1.8	5.4	8	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC227M001#	C	220	1.8	8.0	8	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC337M001#	C	330	1.8	11.9	8	0.3	0.663	0.597	0.265	0.199	0.179	0.080
2.5 Volt @ 85°C (1.7 Volt @ 105°C)												
NOJA226M002#	A	22	2.5	1.1	6	1.9	0.218	0.196	0.087	0.414	0.372	0.165
NOJA336M002#	A	33	2.5	1.7	6	1.7	0.230	0.207	0.092	0.391	0.352	0.156
NOJB336M002#	B	33	2.5	1.7	6	1.7	0.245	0.220	0.098	0.416	0.375	0.167
NOJB476M002#	B	47	2.5	2.4	6	1.6	0.252	0.227	0.101	0.404	0.364	0.162
NOJB686M002#	B	68	2.5	3.4	6	1.5	0.261	0.235	0.104	0.391	0.352	0.156
NOJC686M002#	C	68	2.5	3.4	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJB107M002#	B	100	2.5	5.0	6	1.4	0.270	0.243	0.108	0.378	0.340	0.151
NOJC107M002#	C	100	2.5	5.0	6	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC157M002#	C	150	2.5	7.5	6	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC227M002#	C	220	2.5	11.0	8	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC337M002#	C	330	2.5	16.5	10	0.3	0.663	0.597	0.265	0.199	0.179	0.080
NOJD337M002#	D	330	2.5	16.5	10	0.3	0.775	0.697	0.310	0.232	0.209	0.093
NOJD477M002#	D	470	2.5	23.5	10	0.3	0.775	0.697	0.310	0.323	0.209	0.093
NOJE477M002#	E	470	2.5	23.5	10	0.3	0.812	0.731	0.325	0.244	0.219	0.097
NOJE687M002#	E	680	2.5	34.0	12	0.3	0.812	0.731	0.325	0.244	0.219	0.097
NOJV108M002#	V	1000	2.5	50.0	18	0.3	1.000	0.900	0.400	0.300	0.270	0.120
4 Volt @ 85°C (2.7 Volt @ 105°C)												
NOJA156M004#	A	15	4	1.2	6	2	0.212	0.191	0.085	0.424	0.382	0.170
NOJA226M004#	A	22	4	1.8	6	1.9	0.218	0.196	0.087	0.414	0.372	0.165
NOJB226M004#	B	22	4	1.8	6	1.9	0.232	0.209	0.093	0.440	0.396	0.176
NOJB336M004#	B	33	4	2.6	6	1.7	0.245	0.220	0.098	0.416	0.375	0.167
NOJB476M004#	B	47	4	3.8	6	1.6	0.252	0.227	0.101	0.404	0.364	0.162
NOJC476M004#	C	47	4	3.8	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJB686M004#	B	68	4	5.4	6	1.5	0.261	0.235	0.104	0.391	0.352	0.156
NOJC686M004#	C	68	4	5.4	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJC107M004#	C	100	4	8.0	6	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJC157M004#	C	150	4	12.0	6	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJD157M004#	D	150	4	12.0	6	0.3	0.775	0.697	0.310	0.232	0.209	0.093
NOJD227M004#	D	220	4	17.6	8	0.4	0.671	0.604	0.268	0.268	0.241	0.107
NOJD337M004#	D	330	4	26.4	8	0.3	0.775	0.697	0.310	0.232	0.209	0.093
NOJD477M004#	D	470	4	37.6	12	0.3	0.775	0.697	0.310	0.232	0.209	0.093
NOJE477M004#	E	470	4	37.6	12	0.3	0.812	0.731	0.325	0.244	0.219	0.097
NOJV687M004#	V	680	4	54.4	14	0.3	1.000	0.900	0.400	0.300	0.270	0.120
6.3 Volt @ 85°C (4 Volt @ 105°C)												
NOJA475M006#	A	4.7	6.3	1.1	6	3.1	0.170	0.153	0.068	0.528	0.475	0.211
NOJA685M006#	A	6.8	6.3	1.1	6	2.6	0.186	0.167	0.074	0.484	0.435	0.193
NOJA106M006#	A	10	6.3	1.2	6	2.2	0.202	0.182	0.081	0.445	0.400	0.178
NOJB156M006#	B	15	6.3	1.8	6	2	0.226	0.203	0.090	0.452	0.406	0.181
NOJB226M006#	B	22	6.3	2.6	6	1.9	0.232	0.209	0.093	0.440	0.396	0.176
NOJB336M006#	B	33	6.3	4.0	6	1.7	0.245	0.220	0.098	0.416	0.375	0.167
NOJC336M006#	C	33	6.3	4.0	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJC476M006#	C	47	6.3	5.7	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJC686M006#	C	68	6.3	8.2	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJC107M006#	C	100	6.3	12.0	8	0.4	0.574	0.517	0.230	0.230	0.207	0.092
NOJD107M006#	D	100	6.3	12.0	6	0.4	0.671	0.604	0.268	0.268	0.241	0.107
NOJD157M006#	D	150	6.3	18.0	6	0.4	0.671	0.604	0.268	0.268	0.241	0.107
NOJD227M006#	D	220	6.3	26.4	8	0.4	0.671	0.604	0.268	0.268	0.241	0.107
NOJE227M006#	E	220	6.3	26.4	12	0.4	0.704	0.633	0.281	0.281	0.253	0.113
NOJE337M006#	E	330	6.3	39.6	12	0.3	0.812	0.731	0.325	0.244	0.219	0.097
NOJV477M006#	V	470	6.3	56.4	12	0.3	1.000	0.900	0.400	0.300	0.270	0.120

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

NOTE: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

OxiCap™ NOJ Series



Niobium Oxide Capacitor

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL (μA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	100kHz Ripple Current (A)			100kHz Ripple Voltage (V)		
							25°C	85°C	105°C	25°C	85°C	105°C
10 Volt @ 85°C (7 Volt @ 105°C)												
NOJA475M010#	A	4.7	10	1.0	6	3.1	0.170	0.153	0.068	0.528	0.475	0.211
NOJA685M010#	A	6.8	10	1.4	6	2.6	0.186	0.167	0.074	0.484	0.435	0.193
NOJA106M010#	A	10	10	2.0	6	2.2	0.202	0.182	0.081	0.445	0.400	0.178
NOJB106M010#	B	10	10	2.0	6	2.2	0.215	0.194	0.086	0.474	0.426	0.189
NOJB156M010#	B	15	10	3.0	6	2	0.226	0.203	0.090	0.452	0.406	0.181
NOJB226M010#	B	22	10	4.4	6	1.8	0.238	0.214	0.095	0.428	0.386	0.171
NOJC226M010#	C	22	10	4.4	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJC336M010#	C	33	10	6.6	6	0.5	0.514	0.462	0.206	0.257	0.231	0.103
NOJC476M010#	C	47	10	9.4	6	0.4	0.574	0.517	0.230	0.230	0.207	0.092

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

NOTE: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.