

TAJ Series

Standard Tantalum

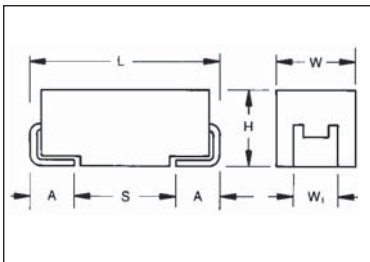


- General purpose SMT chip tantalum series
- 7 case sizes available
- Low profile options available
- CV range: 0.10-2200 μ F / 2.5-50V



SnPb termination option is not RoHS compliant.

CASE DIMENSIONS: millimeters (inches)



For part marking see page 151

Code	EIA Code	EIA Metric	L \pm 0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W _t \pm 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)
C	2312	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	2917	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	2917	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)
U	2924	7361-43	7.30 (0.287)	6.10 (0.240)	4.10 (0.162)	3.10 (0.120)	1.30 (0.051)	4.40 (0.173)
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_t: dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

TAJ	C	106	M	035	R	NJ	-
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 K=±10% M=±20%	Rated DC Voltage 002=2.5Vdc 004=4Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 035=35Vdc 050=50Vdc	Packaging R = Pure Tin 7" Reel S = Pure Tin 13" Reel A = Gold Plating 7" Reel B = Gold Plating 13" Reel H = Tin Lead 7" Reel (Contact Manufacturer) K = Tin Lead 13" Reel (Contact Manufacturer) H, K = Non RoHS	Specification Suffix NJ = Standard Suffix	Additional characters may be added for special requirements V = Dry pack Option (selected codes only)

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C										
Capacitance Range:	0.10 μ F to 2200 μ F										
Capacitance Tolerance:	\pm 10%; \pm 20%										
Rated Voltage (V _R)	\leq +85°C:	2.5	4	6.3	10	16	20	25	35	50	
Category Voltage (V _C)	\leq +125°C:	1.7	2.7	4	7	10	13	17	23	33	
Surge Voltage (V _S)	\leq +85°C:	3.3	5.2	8	13	20	26	32	46	65	
Surge Voltage (V _S)	\leq +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 0.1 Ω /V series impedance, 60% confidence level										
Qualification:	CECC 30801 - 005 issue 2 EIA 535BAAC										
Termination Finished:	Sn Plating (standard), Gold and SnPb Plating upon request For AEC-Q200 availability, please contact AVX										



Standard Tantalum

CAPACITANCE AND RATED VOLTAGE, VR (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	A	A/B
0.47	474						A	A	A/B	A/B/C
0.68	684						A	A	A/B	A/B/C
1.0	105					A	A	A	A/B	A ^(M) /B/C
1.5	155				A	A	A	A/B	A/B/C	B/C/D
2.2	225			A	A	A/B	A/B	A/B	A/B/C	B/C/D
3.3	335		A	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	A/B/C	B/C/D	C/D
6.8	685		A	A/B	A/B	A/B/C	A/B/C	B/C	C/D	C/D
10	106		A	A/B	A/B/C	A/B/C	A ^(M) *B/C	B/C/D	C/D/E	D/E/V
15	156		A/B	A/B	A/B/C	A ^(M) /B/C	B/C/D	C/D	C/D	D/E/V
22	226		A	A/B/C	A/B/C	B/C/D	B/C/D	C/D	D/E	V
33	336	A	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	E/V	
68	686	A	A/B/C	B/C/D	B/C/D	C/D	C ^(M) /D/E	E/V	V	
100	107	A/B	A/B/C	B/C/D	B ^(M) /C/D/E	C/D/E	D/E/V	E ^(M) /V		
150	157	B	B/C	B ^(M) /C/D	C/D/E	D/E/V	E/V	V ^(M)		
220	227	B/D	B ^(M) /C/D	C/D/E	C/D/E	E/V				
330	337	D	C/D/E	C/D/E	D/E/V	E ^(M)				
470	477	C/D	C/D/E	D/E/V	E/U/V					
680	687	C/D/E	D/E	E/V						
1000	108	D ^(M) /E	D/E/V	E ^(M) /V ^(M)						
1500	158	D/E/V ^(M)	E/V ^(M)							
2200	228	V ^(M)								

Not recommended for new designs, higher voltage or smaller case size substitution are offered.

Released codes ^(M tolerance only)

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.

TAJ Series

Standard Tantalum



RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
2.5 Volt @ 85°C (1.7 Volt @ 125°C)							
TAJA336*002#NJ	A	33	2.5	0.8	8	1.7	1
TAJA476*002#NJ	A	47	2.5	0.9	6	3	1
TAJA686*002#NJ	A	68	2.5	1.4	8	1.5	1
TAJA107*002#NJ	A	100	2.5	2.5	30	1.4	1
TAJB107*002#NJ	B	100	2.5	2.5	8	1.4	1
TAJB157*002#NJ	B	150	2.5	3	10	1.6	1
TAJB227*002#NJ	B	220	2.5	4.4	16	1.6	1
TAJD227*002#NJ	D	220	2.5	5.5	8	0.3	1
TAJD337*002#NJ	D	330	2.5	8.2	8	0.3	1
TAJC477*002#NJ	C	470	2.5	9.4	12	0.2	1
TAJD477*002#NJ	D	470	2.5	11.6	8	0.2	1
TAJC687*002#NJ	C	680	2.5	17.0	18	0.2	1
TAJD687*002#NJ	D	680	2.5	17	16	0.2	1
TAJE687*002#NJ	E	680	2.5	17	10	0.2	1 ¹⁾
TAJD108M002#NJ	D	1000	2.5	25	20	0.2	1
TAJE108*002#NJ	E	1000	2.5	20	14	0.4	1 ¹⁾
TAJD158*002#NJ	D	1500	2.5	37.5	60	0.2	1
TAJE158*002#NJ	E	1500	2.5	37	20	0.2	1 ¹⁾
TAJV158M002#NJ	V	1500	2.5	30	20	0.2	1 ¹⁾
TAJV228M002#NJ	V	2200	2.5	55	50	0.2	1 ¹⁾
4 Volt @ 85°C (2.7 Volt @ 125°C)							
TAJA336*004#NJ	A	33	4	1.3	6	3	1
TAJA476*004#NJ	A	47	4	1.9	8	2.6	1
TAJA686*004#NJ	A	68	4	2.7	10	1.5	1
TAJB686*004#NJ	B	68	4	2.7	6	1.8	1
TAJA107*004#NJ	A	100	4	4	30	1.4	1
TAJB107*004#NJ	B	100	4	4	8	0.9	1
TAJB157*004#NJ	B	150	4	6	10	1.5	1
TAJC157*004#NJ	C	150	4	6	6	0.3	1
TAJB227M004#NJ	B	220	4	8.8	12	1.1	1
TAJC227*004#NJ	C	220	4	8.8	8	1.2	1
TAJD227*004#NJ	D	220	4	8.8	8	0.9	1
TAJC337*004#NJ	C	330	4	13.2	8	0.3	1
TAJD337*004#NJ	D	330	4	13.2	8	0.9	1
TAJC477*004#NJ	C	470	4	18.8	14	0.3	1
TAJD477*004#NJ	D	470	4	18.8	12	0.9	1
TAJE477*004#NJ	E	470	4	18.8	10	0.5	1 ¹⁾
TAJD687*004#NJ	D	680	4	27.2	14	0.5	1
TAJE687*004#NJ	E	680	4	27.2	14	0.9	1 ¹⁾
TAJD108*004#NJ	D	1000	4	40	60	0.2	1
TAJE108*004#NJ	E	1000	4	40	14	0.4	1 ¹⁾
TAJV108*004#NJ	V	1000	4	40	16	0.2	1 ¹⁾
TAJE158*004#NJ	E	1500	4	60	30	0.2	1 ¹⁾
TAJV158M004#NJ	V	1500	4	60	30	0.2	1 ¹⁾
6.3 Volt @ 85°C (4 Volt @ 125°C)							
TAJA106*006#NJ	A	10	6.3	0.6	6	4	1
TAJA156*006#NJ	A	15	6.3	0.9	6	3.5	1
TAJA226*006#NJ	A	22	6.3	1.4	6	3	1
TAJA336*006#NJ	A	33	6.3	2.1	8	2.2	1
TAJA476*006#NJ	A	47	6.3	2.8	10	1.6	1
TAJB476*006#NJ	B	47	6.3	3	6	2	1
TAJC476*006#NJ	C	47	6.3	3	6	1.6	1
TAJB686*006#NJ	B	68	6.3	4	8	0.9	1
TAJC686*006#NJ	C	68	6.3	4.3	6	1.5	1
TAJB107*006#NJ	B	100	6.3	6.3	10	1.7	1
TAJC107*006#NJ	C	100	6.3	6.3	6	0.9	1
TAJB157M006#NJ	B	150	6.3	9.5	10	1.2	1
TAJC157*006#NJ	C	150	6.3	9.5	6	1.3	1

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
TAJD157*006#NJ	D	150	6.3	9.5	6	0.9	1
TAJC227*006#NJ	C	220	6.3	13.9	8	1.2	1
TAJD227*006#NJ	D	220	6.3	13.9	8	0.4	1
TAJE227*006#NJ	E	220	6.3	13.9	8	0.4	1 ¹⁾
TAJC337*006#NJ	C	330	6.3	19.8	12	0.5	1
TAJD337*006#NJ	D	330	6.3	20.8	8	0.4	1
TAJE337*006#NJ	E	330	6.3	20.8	8	0.4	1 ¹⁾
TAJD477*006#NJ	D	470	6.3	28	12	0.4	1
TAJE477*006#NJ	E	470	6.3	28	10	0.4	1 ¹⁾
TAJV477*006#NJ	V	470	6.3	28	10	0.4	1 ¹⁾
TAJE687*006#NJ	E	680	6.3	42.8	10	0.5	1 ¹⁾
TAJV687*006#NJ	V	680	6.3	42.8	10	0.5	1 ¹⁾
TAJE108M006#NJ	E	1000	6.3	60	20	0.2	1 ¹⁾
TAJV108M006#NJ	V	1000	6.3	60	16	0.2	1 ¹⁾
10 Volt @ 85°C (7 Volt @ 125°C)							
TAJA475*010#NJ	A	4.7	10	0.5	6	5	1
TAJA685*010#NJ	A	6.8	10	0.7	6	4	1
TAJA106*010#NJ	A	10	10	1	6	3	1
TAJA156*010#NJ	A	15	10	1.5	6	3.2	1
TAJB156*010#NJ	B	15	10	1.5	6	2.8	1
TAJA226*010#NJ	A	22	10	2.2	8	3	1
TAJB226*010#NJ	B	22	10	2.2	6	2.4	1
TAJA336*010#NJ	A	33	10	3.3	8	1.7	1
TAJB336*010#NJ	B	33	10	3.3	6	1.8	1
TAJC336*010#NJ	C	33	10	3.3	6	1.6	1
TAJB476*010#NJ	B	47	10	4.7	8	1	1
TAJC476*010#NJ	C	47	10	4.7	6	1.2	1
TAJB686*010#NJ	B	68	10	6.8	6	1.4	1
TAJC686*010#NJ	C	68	10	6.8	6	1.3	1
TAJB107M010#NJ	B	100	10	10	8	1.4	1
TAJC107*010#NJ	C	100	10	10	8	1.2	1
TAJD107*010#NJ	D	100	10	10	6	0.9	1
TAJC157*010#NJ	C	150	10	15	8	0.9	1
TAJD157*010#NJ	D	150	10	15	8	0.9	1
TAJE157*010#NJ	E	150	10	15	8	0.9	1 ¹⁾
TAJC227*010#NJ	C	220	10	22	16	0.5	1
TAJD227*010#NJ	D	220	10	22	8	0.5	1
TAJE227*010#NJ	E	220	10	22	8	0.5	1 ¹⁾
TAJD337*010#NJ	D	330	10	33	8	0.9	1
TAJE337*010#NJ	E	330	10	33	8	0.9	1 ¹⁾
TAJV337*010#NJ	V	330	10	33	10	0.9	1 ¹⁾
TAJE477*010#NJ	E	470	10	47	10	0.5	1 ¹⁾
TAJU477*010RNJ	U	470	10	47	12	0.5	1 ¹⁾
TAJV477*010#NJ	V	470	10	47	10	0.5	1 ¹⁾
16 Volt @ 85°C (10 Volt @ 125°C)							
TAJA225*016#NJ	A	2.2	16	0.5	6	6.5	1
TAJA335*016#NJ	A	3.3	16	0.5	6	5	1
TAJB335*016#NJ	B	3.3	16	0.5	6	4.5	1
TAJA475*016#NJ	A	4.7	16	0.8	6	4	1
TAJB475*016#NJ	B	4.7	16	0.8	6	3.5	1
TAJA685*016#NJ	A	6.8	16	1.1	6	3.5	1
TAJB685*016#NJ	B	6.8	16	1.1	6	2.5	1
TAJA106*016#NJ	A	10	16	1.6	6	3	1
TAJB106*016#NJ	B	10	16	1.6	6	2.8	1
TAJC106*016#NJ	C	10	16	1.6	6	2	1
TAJA156M016#NJ	A	15	16	2.4	6	2	1
TAJB156*016#NJ	B	15	16	2.4	6	2.5	1
TAJC156*016#NJ	C	15	16	2.4	6	1.8	1
TAJB226*016#NJ	B	22	16	3.5	6	2.3	1
TAJC226*016#NJ	C	22	16	3.5	6	1	1

¹⁾ Dry pack option (see How to order) recommended for reduction of stress during soldering. Dry pack parts should be treated as MSL 3.

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

For AEC-Q200 availability, please contact AVX.

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 144.

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.



TAJ Series



Standard Tantalum

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
TAJD226*016#NJ	D	22	16	3.5	6	1.1	1
TAJB336*016#NJ	B	33	16	5.3	8	2.1	1
TAJC336*016#NJ	C	33	16	5.3	6	1.5	1
TAJD336*016#NJ	D	33	16	5.3	6	0.9	1
TAJC476*016#NJ	C	47	16	7.5	6	0.5	1
TAJD476*016#NJ	D	47	16	7.5	6	0.9	1
TAJC686*016#NJ	C	68	16	10.9	6	1.3	1
TAJD686*016#NJ	D	68	16	10.9	6	0.9	1
TAJC107*016#NJ	C	100	16	16	8	1	1
TAJD107*016#NJ	D	100	16	16	6	0.6	1
TAJE107*016#NJ	E	100	16	16	6	0.9	1 ¹⁾
TAJD157*016#NJ	D	150	16	24	6	0.9	1
TAJE157*016#NJ	E	150	16	23	8	0.3	1 ¹⁾
TAJV157*016#NJ	V	150	16	24	8	0.5	1 ¹⁾
TAJE227*016#NJ	E	220	16	35.2	10	0.5	1 ¹⁾
TAJV227*016#NJ	V	220	16	35.2	8	0.9	1 ¹⁾
TAJE337M016#NJ	E	330	16	52.8	30	0.4	1 ¹⁾
20 Volt @ 85°C (13 Volt @ 125°C)							
TAJA105*020#NJ	A	1	20	0.5	4	9	1
TAJA155*020#NJ	A	1.5	20	0.5	6	6.5	1
TAJA225*020#NJ	A	2.2	20	0.5	6	5.3	1
TAJB225*020#NJ	B	2.2	20	0.5	6	3.5	1
TAJA335*020#NJ	A	3.3	20	0.7	6	4.5	1
TAJB335*020#NJ	B	3.3	20	0.7	6	3	1
TAJA475*020#NJ	A	4.7	20	0.9	6	4	1
TAJB475*020#NJ	B	4.7	20	0.9	6	3	1
TAJA685*020#NJ	A	6.8	20	1.4	6	2.4	1
TAJB685*020#NJ	B	6.8	20	1.4	6	2.5	1
TAJC685*020#NJ	C	6.8	20	1.4	6	2	1
TAJB106*020#NJ	B	10	20	2	6	2.1	1
TAJC106*020#NJ	C	10	20	2	6	1.2	1
TAJB156*020#NJ	B	15	20	3	6	2	1
TAJC156*020#NJ	C	15	20	3	6	1.7	1
TAJB226*020#NJ	B	22	20	4.4	6	1.8	1
TAJC226*020#NJ	C	22	20	4.4	6	1.6	1
TAJD226*020#NJ	D	22	20	4.4	6	0.9	1
TAJC336*020#NJ	C	33	20	6.6	6	1.5	1
TAJD336*020#NJ	D	33	20	6.6	6	0.9	1
TAJC476*020#NJ	C	47	20	9.4	6	0.5	1
TAJD476*020#NJ	D	47	20	9.4	6	0.9	1
TAJE476*020#NJ	E	47	20	9.4	6	0.9	1 ¹⁾
TAJC686M020#NJ	C	68	20	13.6	8	0.5	1
TAJD686*020#NJ	D	68	20	13.6	6	0.4	1
TAJE686*020#NJ	E	68	20	13.6	6	0.9	1 ¹⁾
TAJD107*020#NJ	D	100	20	20	6	0.5	1
TAJE107*020#NJ	E	100	20	20	6	0.4	1 ¹⁾
TAJV107*020#NJ	V	100	20	20	8	0.9	1 ¹⁾
TAJE157*020#NJ	E	150	20	30	8	0.3	1 ¹⁾
TAJV157*020#NJ	V	150	20	30	8	0.3	1 ¹⁾
25 Volt @ 85°C (17 Volt @ 125°C)							
TAJA474*025#NJ	A	0.47	25	0.5	4	14	1
TAJA684*025#NJ	A	0.68	25	0.5	4	10	1
TAJA105*025#NJ	A	1	25	0.5	4	8	1
TAJA155*025#NJ	A	1.5	25	0.5	6	7.5	1
TAJB155*025#NJ	B	1.5	25	0.5	6	5	1
TAJA225*025#NJ	A	2.2	25	0.6	6	7	1
TAJB225*025#NJ	B	2.2	25	0.6	6	4.5	1
TAJA335*025#NJ	A	3.3	25	0.8	6	3.7	1

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
TAJB335*025#NJ	B	3.3	25	0.8	6	3.5	1
TAJA475*025#NJ	A	4.7	25	1.2	6	3.1	1
TAJB475*025#NJ	B	4.7	25	1.2	6	1.5	1
TAJB685*025#NJ	B	6.8	25	1.7	6	2.8	1
TAJC685*025#NJ	C	6.8	25	1.7	6	2	1
TAJB106*025#NJ	B	10	25	2.5	6	2.5	1
TAJC106*025#NJ	C	10	25	2.5	6	1.8	1
TAJD106*025#NJ	D	10	25	2.5	6	1.2	1
TAJC156*025#NJ	C	15	25	3.8	6	1.6	1
TAJD156*025#NJ	D	15	25	3.8	6	1	1
TAJC226*025#NJ	C	22	25	5.5	6	1.4	1
TAJD226*025#NJ	D	22	25	5.5	6	0.9	1
TAJD336*025#NJ	D	33	25	8.3	6	0.9	1
TAJE336*025#NJ	E	33	25	8.3	6	0.9	1 ¹⁾
TAJD476*025#NJ	D	47	25	11.8	6	0.9	1
TAJE476*025#NJ	E	47	25	11.8	6	0.9	1 ¹⁾
TAJE686*025#NJ	E	68	25	17	6	0.9	1 ¹⁾
TAJV686*025#NJ	V	68	25	17	6	0.9	1 ¹⁾
TAJE107M025#NJ	E	100	25	25	10	0.3	1 ¹⁾
TAJV107*025#NJ	V	100	25	25	8	0.4	1 ¹⁾
TAJV157M025#NJ	V	150	25	37.5	10	0.4	1 ¹⁾
35 Volt @ 85°C (23 Volt @ 125°C)							
TAJA104*035#NJ	A	0.1	35	0.5	4	24	1
TAJA154*035#NJ	A	0.15	35	0.5	4	21	1
TAJA224*035#NJ	A	0.22	35	0.5	4	18	1
TAJA334*035#NJ	A	0.33	35	0.5	4	15	1
TAJA474*035#NJ	A	0.47	35	0.5	4	12	1
TAJB474*035#NJ	B	0.47	35	0.5	4	10	1
TAJA684*035#NJ	A	0.68	35	0.5	4	8	1
TAJB684*035#NJ	B	0.68	35	0.5	4	8	1
TAJA105*035#NJ	A	1	35	0.5	4	7.5	1
TAJB105*035#NJ	B	1	35	0.5	4	6.5	1
TAJA155*035#NJ	A	1.5	35	0.5	6	7.5	1
TAJB155*035#NJ	B	1.5	35	0.5	6	5.2	1
TAJC155*035#NJ	C	1.5	35	0.5	6	4.5	1
TAJA225*035#NJ	A	2.2	35	0.8	6	4.5	1
TAJB225*035#NJ	B	2.2	35	0.8	6	4.2	1
TAJC225*035#NJ	C	2.2	35	0.8	6	3.5	1
TAJB335*035#NJ	B	3.3	35	1.2	6	3.5	1
TAJC335*035#NJ	C	3.3	35	1.2	6	2.5	1
TAJB475*035#NJ	B	4.7	35	1.6	6	3.1	1
TAJC475*035#NJ	C	4.7	35	1.6	6	2.2	1
TAJD475*035#NJ	D	4.7	35	1.6	6	1.5	1
TAJC685*035#NJ	C	6.8	35	2.4	6	1.8	1
TAJD685*035#NJ	D	6.8	35	2.4	6	1.3	1
TAJC106*035#NJ	C	10	35	3.5	6	1.6	1
TAJD106*035#NJ	D	10	35	3.5	6	1	1
TAJE106*035#NJ	E	10	35	3.5	6	0.9	1 ¹⁾
TAJC156*035#NJ	C	15	35	5.3	6	1.4	1
TAJD156*035#NJ	D	15	35	5.3	6	0.9	1
TAJD226*035#NJ	D	22	35	7.7	6	0.9	1
TAJE226*035#NJ	E	22	35	7.7	6	0.5	1 ¹⁾
TAJD336*035#NJ	D	33	35	11.6	6	0.9	1
TAJE336*035#NJ	E	33	35	11.6	6	0.9	1 ¹⁾
TAJV336*035#NJ	V	33	35	11.6	6	0.5	1 ¹⁾
TAJE476*035#NJ	E	47	35	16.5	6	0.9	1 ¹⁾
TAJV476*035#NJ	V	47	35	16.5	6	0.4	1 ¹⁾
TAJV686*035#NJ	V	68	35	23.8	6	0.5	1 ¹⁾

¹⁾ Dry pack option (see How to order) recommended for reduction of stress during soldering. Dry pack parts should be treated as MSL 3.

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

For AEC-Q200 availability, please contact AVX.

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 144.

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.



TAJ Series



Standard Tantalum

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
50 Volt @ 85°C (33 Volt @ 125°C)							
TAJA104*050#NJ	A	0.1	50	0.5	4	22	1
TAJA154*050#NJ	A	0.15	50	0.5	4	15	1
TAJB154*050#NJ	B	0.15	50	0.5	4	17	1
TAJA224*050#NJ	A	0.22	50	0.5	4	18	1
TAJB224*050#NJ	B	0.22	50	0.5	4	14	1
TAJA334*050#NJ	A	0.33	50	0.5	4	17	1
TAJB334*050#NJ	B	0.33	50	0.5	4	12	1
TAJA474*050#NJ	A	0.47	50	0.5	4	9.5	1
TAJB474*050#NJ	B	0.47	50	0.7	4	9.5	1
TAJC474*050#NJ	C	0.47	50	0.5	4	8	1
TAJA684*050#NJ	A	0.68	50	0.5	4	7.9	1
TAJB684*050#NJ	B	0.68	50	0.5	4	8	1
TAJC684*050#NJ	C	0.68	50	0.5	4	7	1
TAJA105M050#NJ	A	1	50	0.5	4	6.6	1
TAJB105*050#NJ	B	1	50	0.5	6	7	1
TAJC105*050#NJ	C	1	50	0.5	4	5.5	1
TAJB155*050#NJ	B	1.5	50	0.8	8	5.4	1
TAJC155*050#NJ	C	1.5	50	0.8	6	4.5	1
TAJD155*050#NJ	D	1.5	50	0.8	6	4	1
TAJB225*050#NJ	B	2.2	50	1.1	8	4.5	1
TAJC225*050#NJ	C	2.2	50	1.1	8	2.5	1
TAJD225*050#NJ	D	2.2	50	1.1	6	2.5	1
TAJC335*050#NJ	C	3.3	50	1.6	6	2.5	1
TAJD335*050#NJ	D	3.3	50	1.7	6	2	1
TAJC475*050#NJ	C	4.7	50	0.5	4	1.4	1
TAJD475*050#NJ	D	4.7	50	2.4	6	1.4	1
TAJC685*050#NJ	C	6.8	50	3.4	6	1	1
TAJD685*050#NJ	D	6.8	50	3.4	6	1	1
TAJD106*050#NJ	D	10	50	5	6	0.8	1
TAJE106*050#NJ	E	10	50	5	6	1	1 ¹⁾
TAJV106*050#NJ	V	10	50	5	6	0.65	1 ¹⁾
TAJD156*050#NJ	D	15	50	7.5	6	0.6	1
TAJE156*050#NJ	E	15	50	7.5	6	0.6	1 ¹⁾
TAJV156*050#NJ	V	15	50	7.5	6	0.6	1 ¹⁾
TAJV226*050#NJ	V	22	50	11	8	0.6	1 ¹⁾

¹⁾ Dry pack option (see How to order) recommended for reduction of stress during soldering. Dry pack parts should be treated as MSL 3.

For AEC-Q200 availability, please contact AVX.

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 144.

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.

TAJ Automotive Range



Standard Tantalum - Automotive Product Range

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

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

Not recommended for new designs, higher voltage or smaller case size substitution are offered.

Released codes

Engineering samples - please contact manufacturer

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

HOW TO ORDER

TAJ	C	106	M	035	T	NJ	V
Type	Case Size	Capacitance Code	Tolerance	Rated DC Voltage	Packaging	Specification Suffix	Dry Pack Option
	See table above	pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	K = $\pm 10\%$ M = $\pm 20\%$	006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc	025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	T = Automotive Lead Free 7" Reel U = Automotive Lead Free 13" Reel	(D,E case sizes mandatory)

TECHNICAL SPECIFICATIONS

Technical Data:

All technical data relate to an ambient temperature of +25°C

Capacitance Range:	0.22 μF to 680 μF								
Capacitance Tolerance:	$\pm 10\%$; $\pm 20\%$								
Rated Voltage (V_R)	$\leq +85^\circ\text{C}$:	6.3	10	16	20	25	35	50	
Category Voltage (V_C)	$\leq +125^\circ\text{C}$:	4	7	10	13	17	23	33	
Surge Voltage (V_S)	$\leq +85^\circ\text{C}$:	8	13	20	26	32	46	65	
Surge Voltage (V_S)	$\leq +125^\circ\text{C}$:	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C								
Environmental Classification:	55/125/56 (IEC 68-2)								
Reliability:	1% per 1000 hours at 85°C, V_R with 0.1 Ω /V series impedance, 60% confidence level								
Termination Finished:	Sn Plating (standard), Gold and SnPb Plating upon request								
	Meets requirements of AEC-Q200								



TAJ Automotive Range



Standard Tantalum - Automotive Product Range

RATINGS & PART NUMBER REFERENCE

AVX Part No.*	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
6.3 Volt @ 85°C (4 Volt @ 125°C)							
TAJA335*006TNJ	A	3.3	6.3	0.5	6	7	1
TAJA106*006TNJ	A	10	6.3	0.6	6	4	1
TAJB106*006TNJ	B	10	6.3	0.6	6	3	1
TAJA156*006TNJ	A	15	6.3	0.9	6	3.5	1
TAJA226*006TNJ	A	22	6.3	1.4	6	3	1
TAJB226*006TNJ	B	22	6.3	1.4	6	2.5	1
TAJC226*006TNJ	C	22	6.3	1.4	6	2	1
TAJA336*006TNJ	A	33	6.3	2.1	8	2.2	1
TAJB336*006TNJ	B	33	6.3	2.1	6	2.2	1
TAJB476*006TNJ	B	47	6.3	3	6	2	1
TAJC476*006TNJ	C	47	6.3	3	6	1.6	1
TAJB686*006TNJ	B	68	6.3	4	8	0.9	1
TAJC686*006TNJ	C	68	6.3	4.3	6	1.5	1
TAJC107*006TNJ	C	100	6.3	6.3	6	0.9	1
TAJD107*006TNJV	D	100	6.3	6.3	6	0.9	3
TAJC157*006TNJ	C	150	6.3	9.5	6	1.3	1
TAJD157*006TNJV	D	150	6.3	9.5	6	0.9	3
TAJD227*006TNJV	D	220	6.3	13.9	8	0.4	3
TAJD337*006TNJV	D	330	6.3	20.8	8	0.4	3
TAJE337*006TNJV	E	330	6.3	20.8	8	0.4	3
TAJD477*006TNJV	D	470	6.3	28	12	0.4	3
TAJE477*006TNJV	E	470	6.3	28	10	0.4	3
TAJE687*006TNJV	E	680	6.3	42.8	10	0.5	3
10 Volt @ 85°C (7 Volt @ 125°C)							
TAJA225*010TNJ	A	2.2	10	0.5	6	7	1
TAJA475*010TNJ	A	4.7	10	0.5	6	5	1
TAJB475*010TNJ	B	4.7	10	0.5	6	4	1
TAJA685*010TNJ	A	6.8	10	0.7	6	4	1
TAJB685*010TNJ	B	6.8	10	0.7	6	3	1
TAJA106*010TNJ	A	10	10	1	6	3	1
TAJB106*010TNJ	B	10	10	1	6	2.1	1
TAJA156*010TNJ	A	15	10	1.5	6	3.2	1
TAJB156*010TNJ	B	15	10	1.5	6	2.8	1
TAJC156*010TNJ	C	15	10	1.5	6	2	1
TAJA226*010TNJ	A	22	10	2.2	8	3	1
TAJB226*010TNJ	B	22	10	2.2	6	2.4	1
TAJC226*010TNJ	C	22	10	2.2	6	1.8	1
TAJB336*010TNJ	B	33	10	3.3	6	1.8	1
TAJC336*010TNJ	C	33	10	3.3	6	1.6	1
TAJB476*010TNJ	B	47	10	4.7	8	1	1
TAJC476*010TNJ	C	47	10	4.7	6	1.2	1
TAJD476*010TNJV	D	47	10	4.7	6	0.4	3
TAJC686*010TNJ	C	68	10	6.8	6	1.3	1
TAJD686*010TNJV	D	68	10	6.8	6	0.9	3
TAJC107*010TNJ	C	100	10	10	8	1.2	1
TAJD107*010TNJV	D	100	10	10	6	0.9	3
TAJD157*010TNJV	D	150	10	15	8	0.9	3
TAJE157*010TNJV	E	150	10	15	8	0.9	3
TAJD227*010TNJV	D	220	10	22	8	0.5	3
TAJE227*010TNJV	E	220	10	22	8	0.5	3
TAJE337*010TNJV	E	330	10	33	8	0.9	3
16 Volt @ 85°C (10 Volt @ 125°C)							
TAJA105*016TNJ	A	1	16	0.5	4	11	1
TAJA225*016TNJ	A	2.2	16	0.5	6	6.5	1
TAJA335*016TNJ	A	3.3	16	0.5	6	5	1
TAJB335*016TNJ	B	3.3	16	0.5	6	4.5	1
TAJA475*016TNJ	A	4.7	16	0.8	6	4	1
TAJB475*016TNJ	B	4.7	16	0.8	6	3.5	1

AVX Part No.*	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
TAJA685*016TNJ	A	6.8	16	1.1	6	3.5	1
TAJB685*016TNJ	B	6.8	16	1.1	6	2.5	1
TAJA106*016TNJ	A	10	16	1.6	6	3	1
TAJB106*016TNJ	B	10	16	1.6	6	2.8	1
TAJC106*016TNJ	C	10	16	1.6	6	2	1
TAJB156*016TNJ	B	15	16	2.4	6	2.5	1
TAJC156*016TNJ	C	15	16	2.4	6	1.8	1
TAJB226*016TNJ	B	22	16	3.5	6	2.3	1
TAJC226*016TNJ	C	22	16	3.5	6	1	1
TAJD226*016TNJV	D	22	16	3.5	6	1.1	3
TAJC336*016TNJ	C	33	16	5.3	6	1.5	1
TAJD336*016TNJV	D	33	16	5.3	6	0.9	3
TAJC476*016TNJ	C	47	16	7.5	6	0.5	1
TAJD476*016TNJV	D	47	16	7.5	6	0.9	3
TAJC686*016TNJ	C	68	16	10.9	6	1.3	1
TAJD686*016TNJV	D	68	16	10.9	6	0.9	3
TAJD107*016TNJV	D	100	16	16	6	0.6	3
TAJE107*016TNJV	E	100	16	16	6	0.9	3
TAJE157*016TNJV	E	150	16	23	8	0.3	3
20 Volt @ 85° (13 Volt @ 125°C)							
TAJA105*020TNJ	A	1	20	0.5	4	9	1
TAJA155*020TNJ	A	1.5	20	0.5	6	6.5	1
TAJA225*020TNJ	A	2.2	20	0.5	6	5.3	1
TAJB225*020TNJ	B	2.2	20	0.5	6	3.5	1
TAJA335*020TNJ	A	3.3	20	0.7	6	4.5	1
TAJB335*020TNJ	B	3.3	20	0.7	6	3	1
TAJA475*020TNJ	A	4.7	20	0.9	6	4	1
TAJB475*020TNJ	B	4.7	20	0.9	6	3	1
TAJB685*020TNJ	B	6.8	20	1.4	6	2.5	1
TAJC685*020TNJ	C	6.8	20	1.4	6	2	1
TAJB106*020TNJ	B	10	20	2	6	2.1	1
TAJC106*020TNJ	C	10	20	2	6	1.2	1
TAJB156*020TNJ	B	15	20	3	6	2	1
TAJC156*020TNJ	C	15	20	3	6	1.7	1
TAJC226*020TNJ	C	22	20	4.4	6	1.6	1
TAJD226*020TNJV	D	22	20	4.4	6	0.9	3
TAJC336*020TNJ	C	33	20	6.6	6	1.5	1
TAJD336*020TNJV	D	33	20	6.6	6	0.9	3
TAJD476*020TNJV	D	47	20	9.4	6	0.9	3
TAJD686*020TNJV	D	68	20	13.6	6	0.4	3
TAJE686*020TNJV	E	68	20	13.6	6	0.9	3
TAJE107*020TNJV	E	100	20	20	6	0.4	3
25 Volt @ 85°C (17 Volt @ 125°C)							
TAJA474*025TNJ	A	0.47	25	0.5	4	14	1
TAJA684*025TNJ	A	0.68	25	0.5	4	10	1
TAJA105*025TNJ	A	1	25	0.5	4	8	1
TAJA155*025TNJ	A	1.5	25	0.5	6	7.5	1
TAJA225*025TNJ	A	2.2	25	0.6	6	7	1
TAJB225*025TNJ	B	2.2	25	0.6	6	4.5	1
TAJB335*025TNJ	B	3.3	25	0.8	6	3.5	1
TAJB475*025TNJ	B	4.7	25	1.2	6	1.5	1
TAJC475*025TNJ	C	4.7	25	1.2	6	2.4	1
TAJB685*025TNJ	B	6.8	25	1.7	6	2.8	1
TAJC685*025TNJ	C	6.8	25	1.7	6	2	1
TAJC106*025TNJ	C	10	25	2.5	6	1.8	1
TAJD106*025TNJV	D	10	25	2.5	6	1.2	3
TAJC156*025TNJ	C	15	25	3.8	6	1.6	1
TAJD156*025TNJV	D	15	25	3.8	6	1	3
TAJC226*025TNJ	C	22	25	5.5	6	1.4	1

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

*Please use "U" instead of "T" in the suffix letter for 13" reel packaging

Please use specific PN for automotive version – see "HOW TO ORDER".

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 144.

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.



TAJ Automotive Range



Standard Tantalum - Automotive Product Range

RATINGS & PART NUMBER REFERENCE

AVX Part No.*	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
TAJD226*025TNJV	D	22	25	5.5	6	0.9	3
TAJD336*025TNJV	D	33	25	8.3	6	0.9	3
TAJD476*025TNJV	D	47	25	11.8	6	0.9	3
TAJE476*025TNJV	E	47	25	11.8	6	0.9	3
35 Volt @ 85°C (23 Volt @ 125°C)							
TAJA334*035TNJ	A	0.33	35	0.5	4	15	1
TAJA474*035TNJ	A	0.47	35	0.5	4	12	1
TAJA684*035TNJ	A	0.68	35	0.5	4	8	1
TAJA105*035TNJ	A	1	35	0.5	4	7.5	1
TAJB105*035TNJ	B	1	35	0.5	4	6.5	1
TAJA155*035TNJ	A	1.5	35	0.5	6	7.5	1
TAJB155*035TNJ	B	1.5	35	0.5	6	5.2	1
TAJB225*035TNJ	B	2.2	35	0.8	6	4.2	1
TAJC225*035TNJ	C	2.2	35	0.8	6	3.5	1
TAJB335*035TNJ	B	3.3	35	1.2	6	3.5	1
TAJC335*035TNJ	C	3.3	35	1.2	6	2.5	1
TAJB475*035TNJ	B	4.7	35	1.6	6	3.1	1
TAJC475*035TNJ	C	4.7	35	1.6	6	2.2	1
TAJD475*035TNJV	D	4.7	35	1.6	6	1.5	3
TAJC685*035TNJ	C	6.8	35	2.4	6	1.8	1
TAJD685*035TNJV	D	6.8	35	2.4	6	1.3	3
TAJC106*035TNJ	C	10	35	3.5	6	1.6	1
TAJD106*035TNJV	D	10	35	3.5	6	1	3
TAJD156*035TNJV	D	15	35	5.3	6	0.9	3
TAJD226*035TNJV	D	22	35	7.7	6	0.9	3
TAJE226*035TNJV	E	22	35	7.7	6	0.5	3
TAJE336*035TNJV	E	33	35	11.6	6	0.9	3
50 Volt @ 85°C (33 Volt @ 125°C)							
TAJA224*050TNJ	A	0.22	50	0.5	4	18	1
TAJA334*050TNJ	A	0.33	50	0.5	4	17	1
TAJA474*050TNJ	A	0.47	50	0.5	4	9.5	1
TAJB474*050TNJ	B	0.47	50	0.7	4	9.5	1
TAJB684*050TNJ	B	0.68	50	0.5	4	8	1
TAJB105*050TNJ	B	1	50	0.5	6	7	1
TAJC105*050TNJ	C	1	50	0.5	4	5.5	1
TAJC155*050TNJ	C	1.5	50	0.8	6	4.5	1
TAJC225*050TNJ	C	2.2	50	1.1	8	2.5	1
TAJD225*050TNJV	D	2.2	50	1.1	6	2.5	3
TAJC335*050TNJ	C	3.3	50	1.6	6	2.5	1
TAJD335*050TNJV	D	3.3	50	1.7	6	2	3
TAJC475*050TNJ	C	4.7	50	0.5	4	1.4	1
TAJD475*050TNJV	D	4.7	50	2.4	6	1.4	3
TAJD685*050TNJV	D	6.8	50	3.4	6	1	3
TAJD106*050TNJV	D	10	50	5	6	0.8	3
TAJE106*050TNJV	E	10	50	5	6	1	3
TAJE156*050TNJV	E	15	50	7.5	6	0.6	3

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

*Please use "U" instead of "T" in the suffix letter for 13" reel packaging

Please use specific PN for automotive version – see "HOW TO ORDER".

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 144.

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.

F93 Series

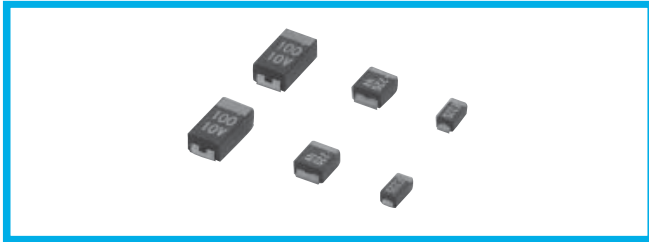


Resin-Molded Chip, Standard Tantalum J-Lead

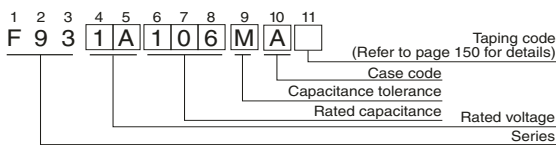


For SMD

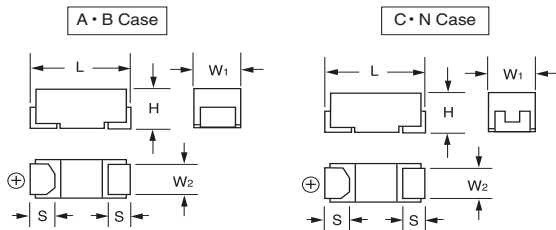
- Compliant to the RoHS directive (2002/95/EC).



Type numbering system (Example: 10V 10µF)



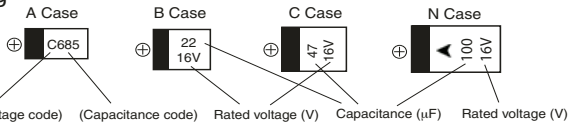
Drawing



Dimensions

Case code	L	W ₁	W ₂	H	S
A	3.2 ± 0.2	1.6 ± 0.2	1.2 ± 0.1	1.6 ± 0.2	0.8 ± 0.2
B	3.5 ± 0.2	2.8 ± 0.2	2.2 ± 0.1	1.9 ± 0.2	0.8 ± 0.2
C	6.0 ± 0.2	3.2 ± 0.2	2.2 ± 0.1	2.5 ± 0.2	1.3 ± 0.2
N	7.3 ± 0.2	4.3 ± 0.2	2.4 ± 0.1	2.8 ± 0.2	1.3 ± 0.2

Marking



4V	G	20V	D
6.3V	J	25V	E
10V	A	35V	V
16V	C		

Standard Ratings

Cap. (µF)	Code	V							
		4	6.3	10	16	20	25	35	
0.68	684	OG	OJ	1A	1C	1D	1E	1V	
1	105				A		A	A	
1.5	155						A	A	
2.2	225				A	A	A	A · B	
3.3	335				A	A	A	B	
4.7	475				A	A · B	A · B	B · C	
6.8	685			A	A	A · B	A · B	C	
10	106		A	A	A · B	A · B	B · C	C	
15	156		A	A	A · B	A · B	C	N	
22	226	A	A	A · B	A · B · C	B · C	C · N	N	
33	336	A	A	A · B	B · C	C · N	N		
47	476	A	A · B	A · B · C	(B) · C · N	C · N	N		
68	686	A	A · B	B · C	N	(N)			
100	107	A · B	A · B · C	B · C · N	C · N				
150	157	B	B · C	C · N	N				
220	227	(A) · B · C	B · C · N	N	N				
330	337	C	N	N					
470	477	N	N						
680	687	N							

() The series in parentheses are being developed.

Please contact to your local AVX sales office when these series are being designed in your application.

Specifications

Item	Performance Characteristics
Category	
Temperature Range	-55 to +125°C (Rated temperature : +85°C)
Capacitance Tolerance	±20%, ±10% (at 120Hz)
Dissipation Factor (120Hz)	Refer to next page
ESR (100kHz)	Refer to next page
Leakage Current	<ul style="list-style-type: none"> After 1 minute's application of rated voltage, leakage current at 20°C is not more than 0.01CV or 0.5µA, whichever is greater. After 1 minute's application of rated voltage, leakage current at 85°C is not more than 0.1CV or 5µA, whichever is greater. After 1 minute's application of derated voltage, leakage current at 125°C is not more than 0.125CV or 6.3µA, whichever is greater.
Capacitance Change by Temperature	+15% Max. (at +125°C) +10% Max. (at +85°C) -10% Max. (at -55°C)
Damp Heat (Steady State)	At 40°C 90 to 95% R.H. 500 hours (No voltage applied) Capacitance Change...Refer to next page (* 1) Dissipation Factor...Initial specified value or less Leakage Current...Initial specified value or less
Temperature Cycles	-55°C / +125°C 30 minutes each 5 cycles Capacitance Change...Refer to next page (* 1) Dissipation Factor...Initial specified value or less Leakage Current...Initial specified value or less
Resistance to Soldering Heat	10 seconds reflow at 260°C, 5 seconds immersion at 260°C Capacitance Change...Refer to next page (* 1) Dissipation Factor...Initial specified value or less Leakage Current...Initial specified value or less
Surge	After application of surge voltage in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements table below. Capacitance Change...Refer to next page (* 1) Dissipation Factor...Initial specified value or less Leakage Current...Initial specified value or less
Endurance	After 2000 hours' application of rated voltage in series with a 3Ω resistor at 85°C, or derated voltage in series with a 3Ω resistor at 125°C, capacitors shall meet the characteristic requirements table below. Capacitance Change...Refer to next page (* 1) Dissipation Factor...Initial specified value or less Leakage Current...Initial specified value or less
Shear Test	After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode. 5N (0.51kg · f) For 10±1 seconds
Terminal Strength	Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals. R230 20 45 45
Failure Rate	1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level.

We can supply the type of compliance to AEC-Q200. Please contact to your local AVX sales office when these series are being designed in your application.



F93 Series



Resin-Molded Chip, Standard Tantalum J-Lead

■ Standard Ratings

Rated Volt	Rated Capacitance (μF)	Case code	Part Number	Leakage Current (μA)	Dissipation Factor (%@120Hz)	ESR (Ω@100kHz)	*1 ΔC/C (%)
4V	22	A	F930G226MAA	0.9	6	2.5	*
	33	A	F930G336MAA	1.3	8	2.5	*
	47	A	F930G476MAA	1.9	18	2.5	*
	68	A	F930G686MAA	2.7	24	2.5	*
	100	A	F930G107MAA	4.0	30	2.0	*
	100	B	F930G107MBA	4.0	14	0.9	*
	150	B	F930G157MBA	6.0	16	0.7	*
	220	B	F930G227MBA	8.8	18	0.7	*
	220	C	F930G227MCC	8.8	12	0.7	*
	330	C	F930G337MCC	13.2	14	0.7	*
470	N	F930G477MNC	18.8	16	0.3	*	
680	N	F930G687MNC	27.2	18	0.3	*	
6.3V	10	A	F930J106MAA	0.6	6	3.0	*
	15	A	F930J156MAA	0.9	6	2.9	*
	22	A	F930J226MAA	1.4	8	2.5	*
	33	A	F930J336MAA	2.1	8	2.5	*
	47	A	F930J476MAA	3.0	18	2.5	*
	47	B	F930J476MBA	3.0	6	1.0	*
	68	A	F930J686MAA	4.3	20	2.0	*
	68	B	F930J686MBA	4.3	8	1.0	*
	100	A	F930J107MAA	6.3	35	2.0	±15
	100	B	F930J107MBA	6.3	14	0.9	*
	100	C	F930J107MCC	6.3	8	0.7	*
	150	B	F930J157MBA	9.5	18	0.9	*
	150	C	F930J157MCC	9.5	12	0.7	*
	220	B	F930J227MBA	13.9	30	1.2	±15
	220	C	F930J227MCC	13.9	14	0.7	*
	220	N	F930J227MNC	13.9	10	0.5	*
330	N	F930J337MNC	20.8	14	0.5	*	
470	N	F930J477MNC	29.6	16	0.3	*	
10V	6.8	A	F931A685MAA	0.7	6	3.5	*
	10	A	F931A106MAA	1.0	6	3.0	*
	15	A	F931A156MAA	1.5	8	2.9	*
	22	A	F931A226MAA	2.2	12	2.5	*
	22	B	F931A226MBA	2.2	6	1.9	*
	33	A	F931A336MAA	3.3	18	2.5	*
	33	B	F931A336MBA	3.3	8	1.4	*
	47	A	F931A476MAA	4.7	40	2.0	±15
	47	B	F931A476MBA	4.7	8	1.0	*
	47	C	F931A476MCC	4.7	6	0.9	*
	68	B	F931A686MBA	6.8	12	0.9	±15
	68	C	F931A686MCC	6.8	8	0.8	*
	100	B	F931A107MBA	10.0	18	1.2	±15
	100	C	F931A107MCC	10.0	10	0.7	*
	100	N	F931A107MNC	10.0	8	0.6	*
	150	C	F931A157MCC	15.0	14	0.7	*
	150	N	F931A157MNC	15.0	10	0.6	*
	220	N	F931A227MNC	22.0	12	0.5	*
	330	N	F931A337MNC	33.0	18	0.5	*

1 : ΔC/C Marked ""

Item	A·B·C·N Case (%)
Damp Heat	±10
Temperature cycles	±5
Resistance soldering heat	±5
Surge	±5
Endurance	±10

Rated Volt	Rated Capacitance (μF)	Case code	Part Number	Leakage Current (μA)	Dissipation Factor (%@120Hz)	ESR (Ω@100kHz)	*1 ΔC/C (%)
16V	1	A	F931C105MAA	0.5	4	7.5	*
	2.2	A	F931C225MAA	0.5	4	5.0	*
	3.3	A	F931C335MAA	0.5	4	4.5	*
	4.7	A	F931C475MAA	0.8	6	4.0	*
	6.8	A	F931C685MAA	1.1	6	3.5	*
	10	A	F931C106MAA	1.6	6	3.0	*
	10	B	F931C106MBA	1.6	6	2.0	*
	15	A	F931C156MAA	2.4	10	3.0	*
	15	B	F931C156MBA	2.4	6	2.0	*
	22	A	F931C226MAA	3.5	15	3.0	±15
	22	B	F931C226MBA	3.5	8	1.9	*
	22	C	F931C226MCC	3.5	6	1.1	*
	33	B	F931C336MBA	5.3	8	1.9	*
	33	C	F931C336MCC	5.3	6	1.1	*
	47	C	F931C476MCC	7.5	8	0.9	*
	47	N	F931C476MNC	7.5	6	0.7	*
	68	N	F931C686MNC	10.9	6	0.6	*
	100	C	F931C107MCC	16.0	15	0.7	±10
100	N	F931C107MNC	16.0	10	0.6	*	
150	N	F931C157MNC	24.0	15	0.6	*	
220	N	F931C227MNC	35.2	25	0.7	±10	
20V	2.2	A	F931D225MAA	0.5	4	5.0	*
	3.3	A	F931D335MAA	0.7	4	4.5	*
	4.7	A	F931D475MAA	0.9	6	3.0	*
	4.7	B	F931D475MBA	0.9	6	2.8	*
	6.8	A	F931D685MAA	1.4	6	3.5	*
	6.8	B	F931D685MBA	1.4	6	2.5	*
	10	A	F931D106MAA	2.0	8	3.5	*
	10	B	F931D106MBA	2.0	6	2.1	*
	15	C	F931D156MCC	3.0	6	1.2	*
	22	B	F931D226MBA	4.4	8	1.9	*
	22	C	F931D226MCC	4.4	8	1.1	*
	33	C	F931D336MCC	6.6	8	1.1	*
33	N	F931D336MNC	6.6	6	0.7	*	
47	C	F931D476MCC	9.4	10	1.1	*	
47	N	F931D476MNC	9.4	8	0.7	*	
25V	1	A	F931E105MAA	0.5	4	7.5	*
	1.5	A	F931E155MAA	0.5	4	6.7	*
	2.2	A	F931E225MAA	0.6	6	6.3	*
	3.3	A	F931E335MAA	0.8	6	6.0	*
	4.7	A	F931E475MAA	1.2	8	4.0	*
	4.7	B	F931E475MBA	1.2	6	2.8	*
	10	B	F931E106MBA	2.5	12	1.9	*
	10	C	F931E106MCC	2.5	6	1.5	*
	15	C	F931E156MCC	3.8	8	1.2	*
	22	C	F931E226MCC	5.5	8	1.1	*
	22	N	F931E226MNC	5.5	6	0.7	*
	33	N	F931E336MNC	8.3	8	0.7	*
47	N	F931E476MNC	11.8	8	0.7	*	
35V	0.68	A	F931V684MAA	0.5	4	7.6	*
	1	A	F931V105MAA	0.5	4	7.5	*
	1.5	A	F931V155MAA	0.5	6	7.5	*
	2.2	A	F931V225MAA	0.8	6	7.0	*
	2.2	B	F931V225MBA	0.8	4	3.8	*
	3.3	B	F931V335MBA	1.2	4	3.5	*
	4.7	B	F931V475MBA	1.6	8	3.1	*
	4.7	C	F931V475MCC	1.6	6	1.8	*
	6.8	C	F931V685MCC	2.4	6	1.8	*
	10	C	F931V106MCC	3.5	6	1.6	*
	15	N	F931V156MNC	5.3	6	0.7	*
	22	N	F931V226MNC	7.7	8	0.7	*

* In case of capacitance tolerance ±10% type, [K] will be put at 9th digit of type numbering system.



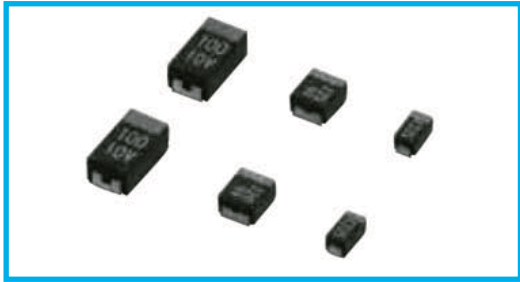
F93-AJ6 Series



Resin-Molded Chip - Automotive Product Range



- Compliant to the RoHS directive (2002/95/EC)
- Compliant to AEC-Q200

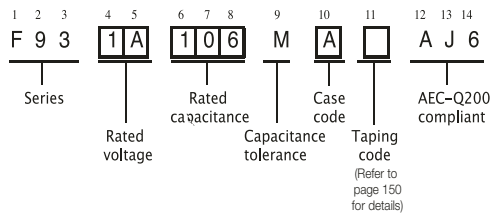


APPLICATIONS

- Cabin electronics
- Infotainment

HOW TO ORDER

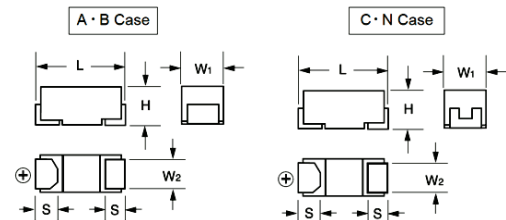
(Example : 10V 10µF)



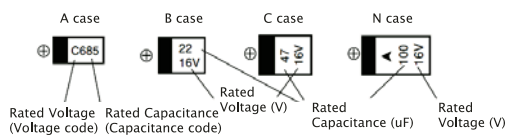
CASE DIMENSIONS

(mm)

Case Code	L	W ₁	W ₂	H	S
A	3.2 ± 0.2	1.6 ± 0.2	1.2 ± 0.1	1.6 ± 0.2	0.8 ± 0.2
B	3.5 ± 0.2	2.8 ± 0.2	2.2 ± 0.1	1.9 ± 0.2	0.8 ± 0.2
C	6.0 ± 0.2	3.2 ± 0.2	2.2 ± 0.1	2.5 ± 0.2	1.3 ± 0.2
N	7.3 ± 0.2	4.3 ± 0.2	2.4 ± 0.1	2.8 ± 0.2	1.3 ± 0.2



MARKING



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

Capacitance		Rated Voltage						
(µF)	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)	20V (1D)	25V (1E)	35V (1V)
1	105				A		A	A
1.5	155						A	A
2.2	225				A	A	A	A,B
3.3	335				A	A	A	B
4.7	475				A	A,B	A,B	B,C
6.8	685			A	A	A,B		C
10	106		A	A	A,B	A,B	B,C	C
15	156		A	A	A,B	C	C	N
22	226	A	A	A,B	B,C	B,C	C,N	N
33	336	A	A	A,B	B,C	C,N	N	
47	476	A	A,B	B,C	C,N	C,N	N	
68	686	A	A,B	B,C	N			
100	107	A,B	B,C	C,N	N			
150	157	B	B,C	N	N			
220	227	B,C	C,N	N				
330	337	C	N	N				
470	477	N	N					
680	687	N						

SPECIFICATIONS

ITEM	PERFORMANCE CHARACTERISTICS
Category Temperature Range	-55 to +125°C (Rated temperature : +85°C)
Capacitance Tolerance	±20%, ±10% (at 120Hz)
Dissipation Factor	Refer to next page
ESR (100kHz)	Refer to next page
Leakage Current	<ul style="list-style-type: none"> After 1 minute's application of rated voltage, leakage current at 20°C is not more than 0.01CV or 0.5µA, whichever is greater. After 1 minute's application of rated voltage, leakage current at 85°C is not more than 0.1CV or 5µA, whichever is greater. After 1 minute's application of derated voltage, leakage current at 125°C is not more than 0.125CV or 6.3µA, whichever is greater.
Capacitance Change by Temperature	+15% Max. (at +125°C) +10% Max. (at +85°C) -10% Max. (at -55°C)
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H. 500 hours (No voltage applied) Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Load Humidity	After 1000 hour's application of rated voltage in series with a 33Ω resistor at 85°C, 85% R.H., capacitors meet the characteristics requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current 125% or less than the initial specified value
Temperature Cycles	At -55°C / +125°C, For 30 minutes each, 1000 cycles Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Resistance to Soldering Heat	10 seconds reflow at 260°C, 10 seconds immersion at 260°C. Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Surge	After application of surge in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Endurance	After 2000 hours' application of rated voltage in series with a 3Ω resistor at 85°C, or derated voltage in series with a 3Ω resistor at 125°C, capacitors shall meet the characteristic requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Shear Test	After applying the pressure load of 17.7N for 60 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.
Terminal Strength	Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of the substrate so that substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.
Failure Rate	1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level.



F93-AJ6 Series



Resin-Molded Chip - Automotive Product Range

RATINGS & PART NUMBER REFERENCE

Rated Volt	Rated Capacitance (µF)	Case Code	Part Number	Leakage Current (µA)	Dissipation Factor (%@120Hz)	ESR (Ω@100kHz)	*1 ΔC/C (%)
4V	22	A	F930G226MAAAJ6	0.9	6	2.5	*
	33	A	F930G336MAAAJ6	1.3	8	2.5	*
	47	A	F930G476MAAAJ6	1.9	18	2.5	*
	68	A	F930G686MAAAJ6	2.7	24	2.5	*
	100	A	F930G107MAAAJ6	4	30	2	*
	100	B	F930G107MBAAJ6	4	14	0.9	*
	150	B	F930G157MBAAJ6	6	16	0.7	*
	220	B	F930G227MBAAJ6	8.8	18	0.7	*
	220	C	F930G227MCCAJ6	8.8	12	0.7	*
	330	C	F930G337MCCAJ6	13.2	14	0.7	*
6.3V	470	N	F930G477MNCAJ6	18.8	16	0.3	*
	680	N	F930G687MNCAJ6	27.2	18	0.3	*
	10	A	F930J106MAAAJ6	0.6	6	3	*
	15	A	F930J156MAAAJ6	0.9	6	2.9	*
	22	A	F930J226MAAAJ6	1.4	8	2.5	*
	33	A	F930J336MAAAJ6	2.1	8	2.5	*
	47	A	F930J476MAAAJ6	3	18	2.5	*
	47	B	F930J476MBAAJ6	3	6	1	*
	68	A	F930J686MAAAJ6	4.3	20	2	*
	68	B	F930J686MBAAJ6	4.3	8	1	*
10V	100	B	F930J107MBAAJ6	6.3	14	0.9	*
	100	C	F930J107MCCAJ6	6.3	8	0.7	*
	150	B	F930J157MBAAJ6	9.5	18	0.9	*
	150	C	F930J157MCCAJ6	9.5	12	0.7	*
	220	C	F930J227MCCAJ6	13.9	14	0.7	*
	220	N	F930J227MNCAJ6	13.9	10	0.5	*
	330	N	F930J337MNCAJ6	20.8	14	0.5	*
	470	N	F930J477MNCAJ6	29.6	16	0.3	*
	6.8	A	F931A685MAAAJ6	0.7	6	3.5	*
	10	A	F931A106MAAAJ6	1	6	3	*
15	A	F931A156MAAAJ6	1.5	8	2.9	*	
22	A	F931A226MAAAJ6	2.2	12	2.5	*	
22	B	F931A226MBAAJ6	2.2	6	1.9	*	
33	A	F931A336MAAAJ6	3.3	18	2.5	*	
33	B	F931A336MBAAJ6	3.3	8	1.4	*	
47	B	F931A476MBAAJ6	4.7	8	1	*	
47	C	F931A476MCCAJ6	4.7	6	0.9	*	
68	B	F931A686MBAAJ6	6.8	12	0.9	±15	
68	C	F931A686MCCAJ6	6.8	8	0.8	*	
100	C	F931A107MCCAJ6	10	10	0.7	*	
100	N	F931A107MNCAJ6	10	8	0.6	*	
150	N	F931A157MNCAJ6	15	10	0.6	*	
220	N	F931A227MNCAJ6	22	12	0.5	*	
330	N	F931A337MNCAJ6	33	18	0.5	*	

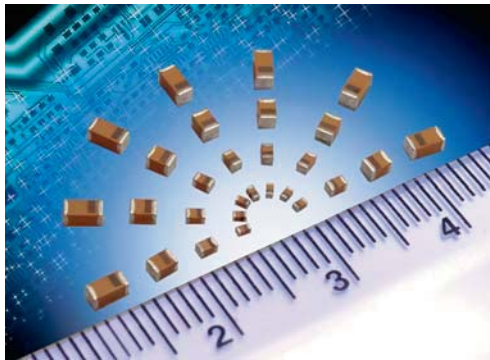
1: ΔC/C Marked “”

Item	All Case (%)
Damp heat, steady state	±10
Rapid change of temperature	±10
Resistance to soldering heat	±10
Surge	±10
Endurance	±10

Rated Volt	Rated Capacitance (µF)	Case Code	Part Number	Leakage Current (µA)	Dissipation Factor (%@120Hz)	ESR (Ω@100kHz)	*1 ΔC/C (%)
16V	1	A	F931C105MAAAJ6	0.5	4	7.5	*
	2.2	A	F931C225MAAAJ6	0.5	4	5	*
	3.3	A	F931C335MAAAJ6	0.5	4	4.5	*
	4.7	A	F931C475MAAAJ6	0.8	6	4	*
	6.8	A	F931C685MAAAJ6	1.1	6	3.5	*
	10	A	F931C106MAAAJ6	1.6	6	3	*
	10	B	F931C106MBAAJ6	1.6	6	2	*
	15	A	F931C156MAAAJ6	2.4	10	3	*
	15	B	F931C156MBAAJ6	2.4	6	2	*
	22	B	F931C226MBAAJ6	3.5	8	1.9	*
20V	22	C	F931C226MCCAJ6	3.5	6	1.1	*
	33	B	F931C336MBAAJ6	5.3	8	1.9	*
	33	C	F931C336MCCAJ6	5.3	6	1.1	*
	47	C	F931C476MCCAJ6	7.5	8	0.9	*
	47	N	F931C476MNCAJ6	7.5	6	0.7	*
	68	N	F931C686MNCAJ6	10.9	6	0.6	*
	100	N	F931C107MNCAJ6	16	10	0.6	*
	150	N	F931C157MNCAJ6	24	15	0.6	*
	2.2	A	F931D225MAAAJ6	0.5	4	5	*
	3.3	A	F931D335MAAAJ6	0.7	4	4.5	*
25V	4.7	A	F931D475MAAAJ6	0.9	6	3	*
	4.7	B	F931D475MBAAJ6	0.9	6	2.8	*
	6.8	A	F931D685MAAAJ6	1.4	6	3.5	*
	6.8	B	F931D685MBAAJ6	1.4	6	2.5	*
	10	A	F931D106MAAAJ6	2	8	3.5	*
	10	B	F931D106MBAAJ6	2	6	2.1	*
	15	C	F931D156MCCAJ6	3	6	1.2	*
	22	B	F931D226MBAAJ6	4.4	8	1.9	*
	22	C	F931D226MCCAJ6	4.4	8	1.1	*
	33	C	F931D336MCCAJ6	6.6	8	1.1	*
35V	33	N	F931D336MNCAJ6	6.6	6	0.7	*
	47	C	F931D476MCCAJ6	9.4	10	1.1	*
	47	N	F931D476MNCAJ6	9.4	8	0.7	*
	1	A	F931E105MAAAJ6	0.5	4	7.5	*
	1.5	A	F931E155MAAAJ6	0.5	4	6.7	*
	2.2	A	F931E225MAAAJ6	0.6	6	6.3	*
	3.3	A	F931E335MAAAJ6	0.8	6	6	*
	4.7	A	F931E475MAAAJ6	1.2	8	4	*
	4.7	B	F931E475MBAAJ6	1.2	6	2.8	*
	10	B	F931E106MBAAJ6	2.5	12	1.9	*
10	C	F931E106MCCAJ6	2.5	6	1.5	*	
15	C	F931E156MCCAJ6	3.8	8	1.2	*	
22	C	F931E226MCCAJ6	5.5	8	1.1	*	
22	N	F931E226MNCAJ6	5.5	6	0.7	*	
33	N	F931E336MNCAJ6	8.3	8	0.7	*	
47	N	F931E476MNCAJ6	11.8	8	0.7	*	
35V	1	A	F931V105MAAAJ6	0.5	4	7.5	*
	1.5	A	F931V155MAAAJ6	0.5	6	7.5	*
	2.2	A	F931V225MAAAJ6	0.8	6	7	*
	2.2	B	F931V225MBAAJ6	0.8	4	3.8	*
	3.3	B	F931V335MBAAJ6	1.2	4	3.5	*
	4.7	B	F931V475MBAAJ6	1.6	8	3.1	*
	4.7	C	F931V475MCCAJ6	1.6	6	1.8	*
	6.8	C	F931V685MCCAJ6	2.4	6	1.8	*
	10	C	F931V106MCCAJ6	3.5	6	1.6	*
	15	N	F931V156MNCAJ6	5.3	6	0.7	*
22	N	F931V226MNCAJ6	7.7	8	0.7	*	

* In case of capacitance tolerance ± 10% type, “K” will be put at 9th digit of type numbering system

Standard Microchip



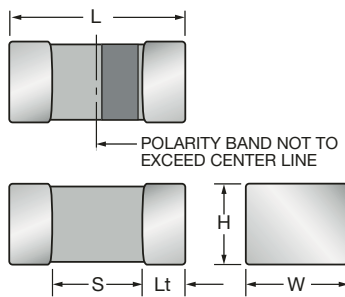
- The world's smallest surface mount tantalum capacitor
- CV range: 0.10-150µF / 2-25V
- 5 case sizes available
- Low profile options available
- Industrial and hi-rel medical applications



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



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 (0.06 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.80 (0.071) min	0.15 (0.006)
B	1210	3528-15	3.50 ± 0.20 (0.138 ± 0.008)	2.80 +0.20 -0.10 (0.110 +0.008 -0.004)	1.50 (0.059) max	2.00 (0.079) min	0.15 (0.006)
K	0402	1005-07	1.00 (0.039)	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 (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)
R	0805	2012-15	2.00 (0.079)	1.35 (0.053)	1.35 (0.053)	0.70 (0.027) min	0.15 (0.006)

HOW TO ORDER

TAC	L	226	M	004	R	TA
Type TACmicrochip®	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 K=±10% M=±20%	Rated DC Voltage 002=2Vdc 003=3Vdc 004=4Vdc 006=6.3Vdc 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	Alternative characters may be used for special requirements

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 _R)	≤ +85°C:	2	3	4	6.3	10	16	20	25	35	50
Category Voltage (V _C)	≤ +125°C:	1.3	2	2.7	4	7	10	13	17	23	33
Surge Voltage (V _S)	≤ +85°C:	2.7	3.9	5.2	8	13	20	26	32	46	65
Surge Voltage (V _S)	≤ +125°C:	1.7	2.6	3.2	5	8	12	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 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	6.3V	10V	16V	20V	25V	35V	50V
0.10	104						K ^(M)	K*		L*	
0.15	154						K ^(M)	K ^(M)			
0.22	224						K ^(M)	K ^(M)		L*	
0.33	334						K ^(M)				
0.47	474						K ^(M) /L	L			
0.68	684						K ^(M) /L	L			
1.0	105				K/L	K/L	L		R		A*
1.5	155			L	L	L					
2.2	225		K ^(M) /L	L	K ^(M) /L	L	L				
3.3	335	K ^(M) /L	K ^(M) /L	L	L	L/R	R*	R ^(M)			
4.7	475	K ^(M) /L	K ^(M) /L	L	L	L/R		R ^(M)	A*		
6.8	685	K ^(M) /L	L	L	L/R	L/R					
10	106	K ^(M) /L	L	L/R	L ^(M) /R	L/R	R				
15	156		R	L ^(M) /R	L ^(M) /R	R					
22	226	R	L ^(M) /R	L ^(M) /R	R	R					
33	336	R	R	R	R	A ^(M) /B ^(M) /R ^(M)					
47	476	R	R	R	A/R ^(M)	B					
68	686	R ^(M)	R ^(M)	A ^(M)	A ^{(M)*}						
100	107		A ^(M) /R ^(M)	A ^(M) /R ^(M)	A ^(M)						
150	157	A ^(M)									
220	227										

ESR limits quoted in brackets (Ohms)

Released codes ^(M tolerance only)

Engineering samples - please contact manufacturer

*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
2 Volt @ 85°C (1.3 Volt @ 125°C)									
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
TACK226*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
3 Volt @ 85°C (2 Volt @ 125°C)									
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
TACK226M003#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
TACR476*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
4 Volt @ 85°C (2.7 Volt @ 125°C)									
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
6.3 Volt @ 85°C (4 Volt @ 125°C)									
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
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

AVX Part No.	EIA Code	EIA Metric	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @100kHz	MSL
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
TACK226*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
10 Volt @ 85°C (7 Volt @ 125°C)									
TACK154M010#TA	0402	1005-07	K	0.15	10	0.5	6	40	1
TACK224M010#TA	0402	1005-07	K	0.22	10	0.5	6	30	1
TACK334M010#TA	0402	1005-07	K	0.33	10	0.5	6	20	1
TACK474M010#TA	0402	1005-07	K	0.47	10	0.5	6	15	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
16 Volt @ 85°C (10 Volt @ 125°C)									
TACK104M016#TA	0402	1005-07	K	0.1	16	0.5	6	40	1
TACK154M016#TA	0402	1005-07	K	0.15	16	0.5	6	30	1
TACK224M016#TA	0402	1005-07	K	0.22	16	0.5	6	20	1
TACK334M016#TA	0402	1005-07	K	0.33	16	0.5	6	20	1
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
20 Volt @ 85°C (13 Volt @ 125°C)									
TACK104*020#TA	0402	1005-07	K	0.10	20	0.5	6	40	1
TACK224M020#TA	0402	1005-07	K	0.22	20	0.5	6	20	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
25 Volt @ 85°C (17 Volt @ 125°C)									
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
50 Volt @ 85°C (33 Volt @ 125°C)									
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 144.

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.

F95 Series



Standard Conformal Coated Chip

FRAMELESS™



For SMD

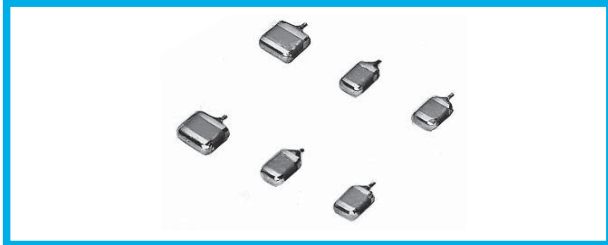


Smaller



For High Frequency

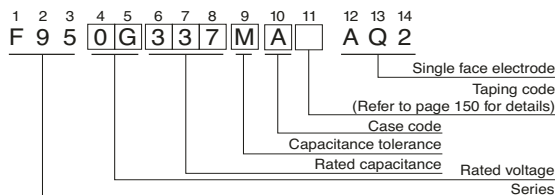
- Compliant to the RoHS directive (2002/95/EC).



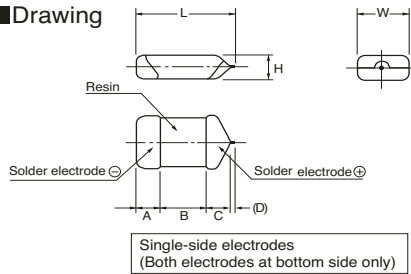
Applications

- Smartphone
- Wireless module
- Tablet PC
- e-book

Type numbering system (Example: 4V 330 μF)



Drawing



Dimensions

Case code	L	W	H	A	B	C	(D)
R	2.2 ± 0.3	1.25 ± 0.3	0.65MAX.	0.6 ± 0.3	0.8 ± 0.3	0.5MIN	(0.2)
P	2.2 ± 0.3	1.25 ± 0.3	1.0 ± 0.2	0.6 ± 0.3	0.8 ± 0.3	0.8 ± 0.3	(0.2)
Q	3.2 ± 0.2	1.6 ± 0.2	0.8 ± 0.2	0.8 ± 0.2	1.2 ± 0.2	0.8 ± 0.2	(0.2)
S	3.2 ± 0.3	1.6 ± 0.3	1.0 ± 0.2	0.8 ± 0.3	1.2 ± 0.3	0.8 ± 0.3	(0.2)
A	3.2 ± 0.3	1.7 ± 0.3	1.4 ± 0.2	0.8 ± 0.3	1.2 ± 0.3	0.8 ± 0.3	(0.2)
T	3.5 ± 0.2	2.7 ± 0.2	1.0 ± 0.2	0.8 ± 0.2	1.2 ± 0.2	1.1 ± 0.2	(0.2)
B	3.5 ± 0.2	2.8 ± 0.2	1.8 ± 0.2	0.8 ± 0.3	1.2 ± 0.3	1.1 ± 0.3	(0.2)

D dimension only for reference

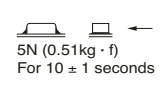
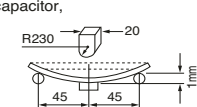
Standard Ratings

Cap. (μF)	Code	V							
		4	6.3	10	16	20	25	35	
1	105	0G	0J	1A	1C				
1.5	155								
2.2	225								
3.3	335								
4.7	475								
6.8	685								
10	106			R · P	P · Q · S · A	S · A · B			
15	156			P	S · A				
22	226		R	P · Q · S · A	Q · S · A · T · B	B			
33	336		(R) · P	P · Q · S · A	(A) · T · B				
47	476	(R)	P	P · (Q) · S · A · T · B	B				
68	686		P	B					
100	107	P · S · A	P · Q · S · A · T · B	(S) · A · T · B					
150	157	P · B	B						
220	227	(P) · Q · S · A · T · B	(S) · (A) · (T) · B						
330	337	(P) · (S) · A · T · B	B						
470	477	(P) · (A) · (T) · B	(B)						
680	687	(T)							

() The series in parentheses are being developed. Please contact to your local AVX sales office when these series are being designed in your application.



Specifications

Item	Performance Characteristics
Category	-55 to +125°C (Rated temperature : +85°C)
Temperature Range	
Capacitance Tolerance	±20%, ±10% (at 120Hz) (However R · P Case ±20%)
Dissipation Factor (at 120Hz)	Refer to next page
ESR(100kHz)	Refer to next page
Leakage Current	Refer to next page Provided that • After 1 minute's application of rated voltage, leakage current at 85°C, 10 times or less than 20°C specified value. • After 1 minute's application of rated voltage, leakage current at 125°C, 12.5 times or less than 20°C specified value.
Capacitance Change by Temperature	+15% Max. (at +125°C) +10% Max. (at +85°C) -10% Max. (at -55°C)
Damp Heat (Steady State)	At 40°C, 90 to 95% R.H., For 500 hours (No voltage applied) Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Temperature Cycles	At -55°C / +125°C, 30 minutes each, For 5 cycles, Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Resistance to Soldering Heat	10 seconds reflow at 260°C, 10 seconds immersion at 260°C Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Surge	After application of surge voltage in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Endurance	After 2000 hours' application of rated voltage at 85°C, capacitors shall meet the characteristic requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less
Shear Test	After applying the pressure load of 5N for 10 ± 1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.  5N (0.51kg · f) For 10 ± 1 seconds
Terminal Strength	Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals. 

Standard Conformal Coated Chip

■ Standard Ratings

Rated Volt	Rated Capacitance (μF)	Case code	Part Number	*2 Leakage Current (μA)	Dissipation Factor (% @ 120Hz)	ESR (Ω @ 100kHz)	*1 ΔC/C (%)
4V	100	P	F950G107MPAAQ2	4.0	30	1.2	±15
	100	S	F950G107MSAAQ2	4.0	14	0.8	*
	100	A	F950G107MAAAQ2	4.0	12	0.5	*
	150	P	F950G157MPAAQ2	12.0	31	1.1	±20
	150	B	F950G157MBAAQ2	6.0	14	0.4	*
	220	Q	F950G227MQAAQ2	8.8	30	1.5	±20
	220	S	F950G227MSAAQ2	8.8	30	0.8	±15
	220	A	F950G227MAAAQ2	8.8	25	0.8	±15
	220	T	F950G227MTAAQ2	8.8	25	0.6	*
	220	B	F950G227MBAAQ2	8.8	16	0.4	*
	330	A	F950G337MAAAQ2	13.2	40	0.8	±20
	330	T	F950G337MTAAQ2	13.2	40	0.8	±20
	330	B	F950G337MBAAQ2	13.2	30	0.6	±15
	470	B	F950G477MBAAQ2	18.8	40	0.4	±20
6.3V	22	R	F950J226MRAAQ2	1.4	20	2.0	±20
	33	P	F950J336MPAAQ2	2.1	14	1.1	*
	47	P	F950J476MPAAQ2	3.0	20	1.1	±15
	68	P	F950J686MPAAQ2	4.3	25	1.2	±15
	100	P	F950J107MPAAQ2	12.6	35	1.2	±20
	100	Q	F950J107MQAAQ2	6.3	30	1.1	±20
	100	S	F950J107MSAAQ2	6.3	20	0.9	±15
	100	A	F950J107MAAAQ2	6.3	14	0.5	*
	100	T	F950J107MTAAQ2	6.3	14	0.6	*
	100	B	F950J107MBAAQ2	6.3	14	0.4	*
	150	B	F950J157MBAAQ2	9.5	18	0.4	*
	220	B	F950J227MBAAQ2	13.9	30	0.4	*
	330	B	F950J337MBAAQ2	20.8	35	0.6	±20
	10V	10	R	F951A106MRAAQ2	1.0	18	3.0
10		P	F951A106MPAAQ2	1.0	8	3.0	*
15		P	F951A156MPAAQ2	1.5	10	3.0	*
22		P	F951A226MPAAQ2	2.2	14	3.0	*
22		Q	F951A226MQAAQ2	2.2	10	2.0	*
22		S	F951A226MSAAQ2	2.2	10	1.1	*
22		A	F951A226MAAAQ2	2.2	6	0.9	*
33		P	F951A336MPAAQ2	3.3	20	3.0	±15
33		Q	F951A336MQAAQ2	3.3	18	3.0	±15
33		S	F951A336MSAAQ2	3.3	10	1.1	*
33		A	F951A336MAAAQ2	3.3	10	0.8	*
47		P	F951A476MPAAQ2	4.7	30	3.0	±20
47		S	F951A476MSAAQ2	4.7	14	1.1	±15
47		A	F951A476MAAAQ2	4.7	10	0.8	*
47		T	F951A476MTAAQ2	4.7	12	0.8	*
47		B	F951A476MBAAQ2	4.7	8	0.4	*
68		B	F951A686MBAAQ2	6.8	12	0.4	*
100		A	F951A107MAAAQ2	10.0	35	1.0	±15
100		T	F951A107MTAAQ2	10.0	20	0.6	±15
100		B	F951A107MBAAQ2	10.0	14	0.4	*

Rated Volt	Rated Capacitance (μF)	Case code	Part Number	*2 Leakage Current (μA)	Dissipation Factor (% @ 120Hz)	ESR (Ω @ 100kHz)	*1 ΔC/C (%)
16V	4.7	R	F951C475MRAAQ2	0.8	12	6.0	±20
	4.7	P	F951C475MPAAQ2	0.8	10	4.0	*
	10	P	F951C106MPAAQ2	1.6	10	4.0	*
	10	Q	F951C106MQAAQ2	1.6	8	3.0	*
	10	S	F951C106MSAAQ2	1.6	8	2.0	*
	10	A	F951C106MAAAQ2	1.6	6	1.4	*
	15	S	F951C156MSAAQ2	2.4	8	2.0	*
	15	A	F951C156MAAAQ2	2.4	8	1.4	*
	22	Q	F951C226MQAAQ2	3.5	12	3.0	*
	22	S	F951C226MSAAQ2	3.5	10	2.0	±15
	22	A	F951C226MAAAQ2	3.5	8	1.4	*
	22	T	F951C226MTAAQ2	3.5	8	1.4	*
	22	B	F951C226MBAAQ2	3.5	6	0.5	*
	33	T	F951C336MTAAQ2	5.3	11	1.5	±10
33	B	F951C336MBAAQ2	5.3	8	0.5	*	
47	B	F951C476MBAAQ2	7.5	10	0.6	*	
20V	2.2	P	F951D225MPAAQ2	0.5	6	6.0	*
	4.7	S	F951D475MSAAQ2	0.9	8	4.0	*
	4.7	A	F951D475MAAAQ2	0.9	6	1.5	*
	10	S	F951D106MSAAQ2	2.0	10	4.0	±10
	10	A	F951D106MAAAQ2	2.0	8	1.5	*
	10	B	F951D106MBAAQ2	2.0	6	0.8	*
25V	22	B	F951D226MBAAQ2	4.4	8	0.8	*
	1	R	F951E105MRAAQ2	0.5	10	10.0	±10
	2.2	R	F951E225MRAAQ2	0.6	15	15.0	±20
	2.2	P	F951E225MPAAQ2	0.6	8	6.0	±15
	4.7	P	F951E475MPAAQ2	1.2	10	8.0	±15
	4.7	Q	F951E475MQAAQ2	1.2	10	4.0	±15
	4.7	S	F951E475MSAAQ2	1.2	8	4.0	*
	4.7	A	F951E475MAAAQ2	1.2	8	2.0	*
10	A	F951E106MAAAQ2	2.5	12	2.0	±15	
10	B	F951E106MBAAQ2	2.5	6	0.9	*	
35V	1	P	F951V105MPAAQ2	0.5	8	10.0	±10
	1	S	F951V105MSAAQ2	0.5	6	8.0	*
	2.2	A	F951V225MAAAQ2	0.8	6	4.4	*
	4.7	B	F951V475MBAAQ2	1.7	6	1.6	*

* In case of capacitance tolerance ±10% type, [K] will be put at 9th digit of type numbering system.

1 : ΔC/C Marked ""

Item	P·Q·S·A·T·B Case (%)
Damp Heat	±10
Temperature cycles	±5
Resistance soldering heat	±5
Surge	±5
Endurance	±10

*2 : Leakage Current After 1 minute's application of rated voltage, leakage current at 20°C.