

TAJ Series

Standard Tantalum



FEATURES

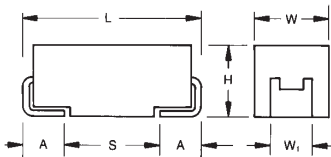
- General purpose SMT chip tantalum series
- 7 case sizes available
- Low profile options available
- CV range: 0.10-2200µF / 2.5-50V



SnPb termination option is not RoHS compliant.

APPLICATIONS

- General low power DC/DC and LDO



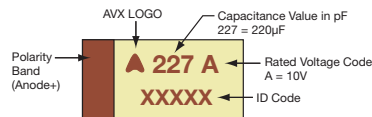
CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	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	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)

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

MARKING

A, B, C, D, E, U, V CASE



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 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 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 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/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/B	A/B	A/B/C	A/B/C	B/C
4.7	475		A	A	A/B	A/B	A/B/C	A/B/C	A/B/C	B/C/D
6.8	685		A	A/B	A/B	A/B/C	A/B/C	B/C	B/C	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	C/D	V
33	336	A	A/B	A/B/C	A/B/C/D	B/C/D	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	C/D/E	D/E	E/V
68	686	A	A/B/C	B/C/D	B/C/D	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	D/E/V	E ^(M) /V	
150	157	B	B/C	B ^(M) /C/D	C/D/E	D/E/V	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.

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @ 100kHz	MSL	100kHz RMS Current (mA)		
											25°C	85°C	125°C
TAJB225*035#NJ	B	2.2	35	85	23	125	0.8	6	4.2	1	142	128	57
TAJC225*035#NJ	C	2.2	35	85	23	125	0.8	6	3.5	1	177	160	71
TAJB335*035#NJ	B	3.3	35	85	23	125	1.2	6	3.5	1	156	140	62
TAJC335*035#NJ	C	3.3	35	85	23	125	1.2	6	2.5	1	210	189	84
TAJB475*035#NJ	B	4.7	35	85	23	125	1.6	6	3.1	1	166	149	66
TAJC475*035#NJ	C	4.7	35	85	23	125	1.6	6	2.2	1	224	201	89
TAJD475*035#NJ	D	4.7	35	85	23	125	1.6	6	1.5	1	316	285	126
TAJC685*035#NJ	C	6.8	35	85	23	125	2.4	6	1.8	1	247	222	99
TAJD685*035#NJ	D	6.8	35	85	23	125	2.4	6	1.3	1	340	306	136
TAJC106*035#NJ	C	10	35	85	23	125	3.5	6	1.6	1	262	236	105
TAJD106*035#NJ	D	10	35	85	23	125	3.5	6	1	1	387	349	155
TAJE106*035#NJ	E	10	35	85	23	125	3.5	6	0.9	1 ¹⁾	428	385	171
TAJC156*035#NJ	C	15	35	85	23	125	5.3	6	1.4	1	280	252	112
TAJD156*035#NJ	D	15	35	85	23	125	5.3	6	0.9	1	408	367	163
TAJD226*035#NJ	D	22	35	85	23	125	7.7	6	0.9	1	408	367	163
TAJE226*035#NJ	E	22	35	85	23	125	7.7	6	0.5	1 ¹⁾	574	517	230
TAJD336*035#NJ	D	33	35	85	23	125	11.6	6	0.9	1	408	367	163
TAJE336*035#NJ	E	33	35	85	23	125	11.6	6	0.9	1 ¹⁾	428	385	171
TAJV336*035#NJ	V	33	35	85	23	125	11.6	6	0.5	1 ¹⁾	707	636	283
TAJE476*035#NJ	E	47	35	85	23	125	16.5	6	0.9	1 ¹⁾	428	385	171
TAJV476*035#NJ	V	47	35	85	23	125	16.5	6	0.4	1 ¹⁾	791	712	316
TAJV686*035#NJ	V	68	35	85	23	125	23.8	6	0.5	1 ¹⁾	707	363	283
50 Volt @ 85°C													
TAJA104*050#NJ	A	0.1	50	85	33	125	0.5	4	22	1	58	53	23
TAJA154*050#NJ	A	0.15	50	85	33	125	0.5	4	15	1	71	64	28
TAJB154*050#NJ	B	0.15	50	85	33	125	0.5	4	17	1	71	64	28
TAJA224*050#NJ	A	0.22	50	85	33	125	0.5	4	18	1	65	58	26
TAJB224*050#NJ	B	0.22	50	85	33	125	0.5	4	14	1	78	70	31
TAJA334*050#NJ	A	0.33	50	85	33	125	0.5	4	17	1	66	60	27
TAJB334*050#NJ	B	0.33	50	85	33	125	0.5	4	12	1	84	76	34
TAJA474*050#NJ	A	0.47	50	85	33	125	0.5	4	9.5	1	89	80	36
TAJB474*050#NJ	B	0.47	50	85	33	125	0.7	4	9.5	1	95	85	38
TAJC474*050#NJ	C	0.47	50	85	33	125	0.5	4	8	1	117	106	47
TAJA684*050#NJ	A	0.68	50	85	33	125	0.5	4	7.9	1	97	88	39
TAJB684*050#NJ	B	0.68	50	85	33	125	0.5	4	8	1	103	93	41
TAJC684*050#NJ	C	0.68	50	85	33	125	0.5	4	7	1	125	113	50
TAJA105*050#NJ	A	1	50	85	33	125	0.5	4	6.6	1	107	96	43
TAJB105*050#NJ	B	1	50	85	33	125	0.5	6	7	1	110	99	44
TAJC105*050#NJ	C	1	50	85	33	125	0.5	4	5.5	1	141	127	57
TAJB155*050#NJ	B	1.5	50	85	33	125	0.8	8	5.4	1	125	113	50
TAJC155*050#NJ	C	1.5	50	85	33	125	0.8	6	4.5	1	156	141	63
TAJD155*050#NJ	D	1.5	50	85	33	125	0.8	6	4	1	194	174	77
TAJB225*050#NJ	B	2.2	50	85	33	125	1.1	8	4.5	1	137	124	55
TAJC225*050#NJ	C	2.2	50	85	33	125	1.1	8	2.5	1	210	189	84
TAJD225*050#NJ	D	2.2	50	85	33	125	1.1	6	2.5	1	245	220	98
TAJC335*050#NJ	C	3.3	50	85	33	125	1.6	6	2.5	1	210	189	84
TAJD335*050#NJ	D	3.3	50	85	33	125	1.7	6	2	1	274	246	110
TAJC475*050#NJ	C	4.7	50	85	33	125	0.5	4	1.4	1	280	252	112
TAJD475*050#NJ	D	4.7	50	85	33	125	2.4	6	1.4	1	327	295	131
TAJC685*050#NJ	C	6.8	50	85	33	125	3.4	6	1	1	332	298	133
TAJD685*050#NJ	D	6.8	50	85	33	125	3.4	6	1	1	387	349	155
TAJD106*050#NJ	D	10	50	85	33	125	5	6	0.8	1	433	390	173
TAJE106*050#NJ	E	10	50	85	33	125	5	6	1	1 ¹⁾	406	366	162
TAJV106*050#NJ	V	10	50	85	33	125	5	6	0.65	1 ¹⁾	620	558	248
TAJD156*050#NJ	D	15	50	85	33	125	7.5	6	0.6	1	500	450	200
TAJE156*050#NJ	E	15	50	85	33	125	7.5	6	0.6	1 ¹⁾	524	472	210
TAJV156*050#NJ	V	15	50	85	33	125	7.5	6	0.6	1 ¹⁾	645	581	258
TAJV226*050#NJ	V	22	50	85	33	125	11	8	0.6	1 ¹⁾	645	581	258

1¹⁾ – 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 202.

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.

QUALIFICATION TABLE

TEST	TAJ series (Temperature range -55°C to +125°C)									
	Condition			Characteristics						
Endurance	Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V.			Visual examination	no visible damage					
				DCL	1.25 x initial limit					
				ΔC/C	within ±10% of initial value					
				DF	initial limit					
Humidity	Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature.			Visual examination	no visible damage					
				DCL	initial limit					
				ΔC/C	within ±10% of initial value					
				DF	1.2 x initial limit					
Temperature Stability	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+85°C	+125°C	+20°C
	1	+20±2	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*
	2	-55+0/-3	15		ΔC/C	n/a	+0/-10%	±5%	+10/-0%	+12/-0%
	3	+20±2	15	DF		IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*
	4	+85+3/-0	15							
	5	+125+3/-0	15							
6	+20±2	15								
Surge Voltage	Test temperature: 125°C+3/0°C Test voltage: Category voltage at 125°C Surge voltage: 1.3 x category voltage at 125°C Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge			Visual examination	no visible damage					
				DCL	initial limit					
				ΔC/C	within ±5% of initial value					
				DF	initial limit					

*Initial Limit

TAJ Automotive Range



Standard Tantalum - Automotive Product Range

TAJ AUTOMOTIVE RANGE CAPACITANCE AND RATED VOLTAGE 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							
0.22	224							A
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 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 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Packaging T = Automotive Lead Free 7" Reel U = Automotive Lead Free 13" Reel	Specification Suffix NJ = Std Suffix	Dry Pack Option (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:	±10%; ±20%							
Rated Voltage (V _R)	≤ +85°C:	6.3	10	16	20	25	35	50
Category Voltage (V _C)	≤ +125°C:	4	7	10	13	17	23	33
Surge Voltage (V _S)	≤ +85°C:	8	13	20	26	32	46	65
Surge Voltage (V _S)	≤ +125°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 0.1Ω/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	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (Ω) @ 100kHz	MSL	100kHz RMS Current (mA)		
											25°C	85°C	125°C
TAJD226*035TNJV	D	22	35	85	23	125	7.7	6	0.9	3	408	367	163
TAJE226*035TNJV	E	22	35	85	23	125	7.7	6	0.5	3	574	517	230
TAJE336*035TNJV	E	33	35	85	23	125	11.6	6	0.9	3	428	385	171
50 Volt @ 85°C													
TAJA224*050TNJ	A	0.22	50	85	33	125	0.5	4	18	1	65	58	26
TAJA334*050TNJ	A	0.33	50	85	33	125	0.5	4	17	1	66	60	27
TAJA474*050TNJ	A	0.47	50	85	33	125	0.5	4	9.5	1	89	80	36
TAJB474*050TNJ	B	0.47	50	85	33	125	0.7	4	9.5	1	95	85	38
TAJB684*050TNJ	B	0.68	50	85	33	125	0.5	4	8	1	103	93	41
TAJB105*050TNJ	B	1	50	85	33	125	0.5	6	7	1	110	99	44
TAJC105*050TNJ	C	1	50	85	33	125	0.5	4	5.5	1	141	127	57
TAJC155*050TNJ	C	1.5	50	85	33	125	0.8	6	4.5	1	156	141	63
TAJC225*050TNJ	C	2.2	50	85	33	125	1.1	8	2.5	1	210	189	84
TAJD225*050TNJV	D	2.2	50	85	33	125	1.1	6	2.5	3	245	220	98
TAJC335*050TNJ	C	3.3	50	85	33	125	1.6	6	2.5	1	210	189	84
TAJD335*050TNJV	D	3.3	50	85	33	125	1.7	6	2	3	274	246	110
TAJC475*050TNJ	C	4.7	50	85	33	125	0.5	4	1.4	1	280	252	112
TAJD475*050TNJV	D	4.7	50	85	33	125	2.4	6	1.4	3	327	295	131
TAJD685*050TNJV	D	6.8	50	85	33	125	3.4	6	1	3	387	349	155
TAJD106*050TNJV	D	10	50	85	33	125	5	6	0.8	3	433	390	173
TAJE106*050TNJV	E	10	50	85	33	125	5	6	1	3	406	366	162
TAJE156*050TNJV	E	15	50	85	33	125	7.5	6	0.6	3	524	472	210

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 202.

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

QUALIFICATION TABLE

TEST	TAJ automotive series (Temperature range -55°C to +125°C)										
	Condition			Characteristics							
Endurance	Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V.			Visual examination	no visible damage						
				DCL	1.25 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	initial limit						
				ESR	initial limit						
Storage Life	125°C, 0V, 2000h			Visual examination	no visible damage						
				DCL	1.25 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	initial limit						
				ESR	initial limit						
Humidity	Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature.			Visual examination	no visible damage						
				DCL	1.5 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	1.2 x initial limit						
				ESR	initial limit						
Biased Humidity	Determine after leaving for 1000 hours at 85±2°C, 85% relative humidity and rated voltage and then recovery 1-2 hours at room temperature.			Visual examination	no visible damage						
				DCL	2 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	1.2 x initial limit						
				ESR	initial limit						
Temperature Stability	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+85°C	+125°C	+20°C	
	1	+20±2	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*	
	2	-55+0/-3	15	ΔC/C	n/a	+0/-10%	±5%	+10/-0%	+12/-0%	±5%	
	3	+20±2	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*	
	4	+85+3/-0	15	ESR	IL*	2 x IL*	IL*	IL*	IL*	IL*	
	5	+125+3/-0	15								
	6	+20±2	15								
Surge Voltage	Test temperature: 125°C±3/0°C Test voltage: Category voltage at 125°C Surge voltage: 1.3 x category voltage at 125°C Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	initial limit						

*Initial Limit