

# TCJ Series



## Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode



### FEATURES

- Conductive polymer electrode reduces ignition failure mode
- Lower ESR
- 3x reflow 260°C compatible
- CV range: 0.47-470µF / 2.5-125V
- 17 case sizes available

### APPLICATIONS

- Smart phone, Tablets, Notebook, LCD TV, Power supplies



Elektra Award 2010



LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



RoHS  
COMPLIANT



### 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 <sub>1</sub> ±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)
G	1206	3216-15	3.20 (0.126)	1.60 (0.063)	1.50 (0.059) max	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
H	1210	3528-15	3.50 (0.138)	2.80 (0.110)	1.50 (0.059) max	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
K	1206	3216-10	3.20 (0.126)	1.60 (0.063)	1.00 (0.039) max	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
N	0805	2012-10	2.05 (0.081)	1.30 (0.051)	1.00 (0.039) max	1.00 (0.039)	0.50 (0.020)	0.85 (0.033)
P	0805	2012-15	2.05 (0.081)	1.35 (0.050)	1.50 (0.059) max	1.00±0.10 (0.039±0.004)	0.50 (0.020)	0.85 (0.033)
R	0805	2012-12	2.05 (0.081)	1.30 (0.051)	1.20 (0.047) max	1.00±0.10 (0.039±0.004)	0.50 (0.020)	0.85 (0.033)
S	1206	3216-12	3.20 (0.126)	1.60 (0.063)	1.20 (0.047) max	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
T	1210	3528-12	3.50 (0.138)	2.80 (0.110)	1.20 (0.047) max	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
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	2312	6032-15	6.00 (0.236)	3.20 (0.126)	1.50 (0.059) max	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
X	2917	7343-15	7.30 (0.287)	4.30 (0.169)	1.50 (0.059) max	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
Y	2917	7343-20	7.30 (0.287)	4.30 (0.169)	2.00 (0.079) max	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

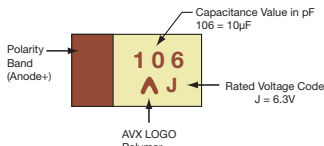
W1 dimension applies to the termination width for A dimensional area only.

### MARKING

A, B, C, D, E, G, H, K, S, T, V, W, X, Y CASE



N, P, R CASE



### HOW TO ORDER

TCJ	A	226	M	004	R	0300
Type	Case Size	Capacitance Code	Tolerance	Rated DC Voltage	Packaging	ESR in mΩ
	See table above	pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	M = ±20%	002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc 063 = 63Vdc 075 = 75Vdc 100 = 100Vdc 125 = 125Vdc	R = Pure Tin 7" Reel S = Pure Tin 13" Reel	

### TECHNICAL SPECIFICATIONS (Common for all TCJ series)

Technical Data:	All technical data relate to an ambient temperature of +25°C
Capacitance Tolerance:	±20%
Leakage Current DCL:	0.1CV
Reliability:	1% per 1000 hours at 85°C, V <sub>R</sub> with 0.1Ω/V series impedance, 60% confidence level
Resistance to soldering heat:	3x260°C peak for max. 10s reflow



## Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

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

Cap		Rated Voltage DC (V <sub>R</sub> ) 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)	63V (J)	75V (P)	100V (A)	125V (B)
0.47	474													B(400)
0.68	684									B(400)	B(300)			
1.0	105							P(500)		B(300)	B(300) C(300)			
1.5	155								B(200)	B(300) C(300)	C(300)			
2.2	225								B(200)	C(300)	C(200)			
3.3	335								B(200)	C(200)	C(200)			D(250)
4.7	475				K(500) R(500)			B(100,150)	B(200) C(200)	C(200)	C(200) D(120)	D(150)	D(250)	
6.8	685					A(200)		B(90,150) T(100,150)	C(200)	C(200) D(120)	D(120) E(100,150)	D(120)		
10	106			A(300) N(250,500) R(500)	A(300)	A(200) B(200) T(150,200)		B(90,100,150)	B(200) C(200) Y(70)	D(120) E(70,100)	E(100,150)	U*	U*	
15	156		A(300)	A(300)	A(200)	B(150)		B(100,150) Y(90)	B(200), C(200) D(70,100) Y(70,100)	E(70,100)				
22	226		A(300)	A(300), K(400) N(500), R(500) S(400), T(150)	B(300) T(70,150)	B(150)	B(90,150) Y(70)	B(100,150), C(100) D(60,100) Y(70)	D(70,100) Y*					
33	336		A(300)	A(200) B(70,200) T(150)	B(70,200) C(100) T(70,150)	Y(45,60,70)	Y(70)	D(60,100) X(70,100) Y(60,70,100)	D(70,100) E(55,70)					
47	476		A(200) T(80)	A(70,100,200), B(70) K(150,200,400) P(500), R(500) T(55,69,70,80,120)	B(70) C(100)	X(45,70) Y(45,70)	D(55) X(55,70) Y(70)	D(60,100) E(50)	E(55)					
68	686	A(250)	A(250) B(70) T(80)	B(55,70) C(100) T(200), W(70)	D(45,55) Y(45,55)	D(50) Y(50)	D(55) E(45)	D(70) E(50)						
100	107	A(200), B(70)	A(200) B(40,70) G(300) T(150)	A(100,150) B(45,55,69,70) T(70,200)	D(45,55,80) Y(25,45,55)	D(50), E(40) Y(50)	D(55) E(45)	D(55,70) E(80)						
150	157	B(70)	B(70), Y(25,45)	B(25,35,45,55,69,70) D(15,25,40) H(70,200), W(40,70) Y(15,25,40)	D(25,40,45,55) Y(25,40,45,55)	D(40,50) E(40) Y(40,50)								
220	227	B(35,45,70)	B(35,45,55,60,70) D(15,25,40) Y(15,25,40)	B(70,200) D(25,35,40,50) Y(15,25,35,40,50)	D(15,18,25,40,50) Y(25,40,50)									
330	337	B(35,45,70) Y(25,40)	D(25,40,50) Y(25,40,50)	D(25,40,50) Y(25,40,50)		E*								
470	477	D(15,25,40,50) Y(15,25,40,50)	D(15,25,40,50) Y(15,25,40,50)	X(55,100)										
3300	208			U*										

Available Ratings, (ESR ratings in mOhms in brackets)

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.

# TCJ Series



## Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	Rated Temp. (°C)	Category Voltage (V)	Category Temp. (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @ 100kHz	MSL	100kHz RMS Current (mA)				Product Category
											25°C	85°C	105°C	125°C	
<b>2.5 Volt @ 85°C</b>															
TCJA686M002#0250	A	68	2.5	85	2	105	17	6	250	3	600	400	300	–	105°C
TCJA107M002#0200	A	100	2.5	85	2	105	25	6	200	3	700	500	300	–	105°C
TCJB107M002#0070	B	100	2.5	85	1.7	125	25	6	70	3	1300	900	600	300	125°C
TCJB157M002#0070	B	150	2.5	85	2	105	37.5	6	70	3	1300	900	600	–	105°C
TCJB227M002#0035	B	220	2.5	85	2	105	55	8	35	3	1900	1300	900	–	105°C
TCJB227M002#0045	B	220	2.5	85	2	105	55	8	45	3	1700	1200	800	–	105°C
TCJB227M002#0070	B	220	2.5	85	2	105	55	8	70	3	1300	900	600	–	105°C
TCJB337M002#0035	B	330	2.5	85	2	105	82.5	8	35	3	1900	1300	900	–	105°C
TCJB337M002#0045	B	330	2.5	85	2	105	82.5	8	45	3	1700	1200	800	–	105°C
TCJB337M002#0070	B	330	2.5	85	2	105	82.5	8	70	3	1300	900	600	–	105°C
TCJY337M002#0025	Y	330	2.5	85	2	105	82.5	6	25	3	2700	1900	1200	–	105°C
TCJY337M002#0040	Y	330	2.5	85	2	105	82.5	6	40	3	2200	1500	1000	–	105°C
TCJD477M002#0015	D	470	2.5	105	2.5	105	117.5	6	15	3	3900	2700	1800	–	105°C
TCJD477M002#0025	D	470	2.5	85	2	105	117.5	6	25	3	3000	2100	1400	–	105°C
TCJD477M002#0040	D	470	2.5	85	2	105	117.5	6	40	3	2400	1700	1100	–	105°C
TCJD477M002#0050	D	470	2.5	85	2	105	117.5	6	50	3	2100	1500	900	–	105°C
TCJY477M002#0015	Y	470	2.5	85	2.5	85	117.5	6	15	3	3500	2500	–	–	85°C
TCJY477M002#0025	Y	470	2.5	85	2	105	117.5	6	25	3	2700	1900	1200	–	105°C
TCJY477M002#0040	Y	470	2.5	85	2	105	117.5	6	40	3	2200	1500	1000	–	105°C
TCJY477M002#0050	Y	470	2.5	85	2	105	117.5	6	50	3	1900	1300	900	–	105°C
<b>4 Volt @ 85°C</b>															
TCJA156M004#0300	A	15	4	85	2.7	125	6	6	300	3	600	400	300	200	125°C
TCJA226M004#0300	A	22	4	85	2.7	125	8.8	6	300	3	600	400	300	200	125°C
TCJA336M004#0300	A	33	4	85	2.7	125	13.2	6	300	3	600	400	300	200	125°C
TCJA476M004#0200	A	47	4	85	3.2	105	18.8	6	200	3	700	500	300	–	105°C
TCJT476M004#0080	T	47	4	85	3.2	105	18.8	8	80	3	1100	800	500	–	105°C
TCJA686M004#0250	A	68	4	85	3.2	105	27.2	6	250	3	600	400	300	–	105°C
TCJB686M004#0070	B	68	4	85	2.7	125	27.2	6	70	3	1300	900	600	300	125°C
TCJT686M004#0080	T	68	4	85	3.2	105	27.2	8	80	3	1100	800	500	–	105°C
TCJA107M004#0200	A	100	4	85	3.2	105	40	6	200	3	700	500	300	–	105°C
TCJB107M004#0040	B	100	4	85	3.2	105	40	8	40	3	1800	1300	800	–	105°C
TCJB107M004#0070	B	100	4	85	2.7	125	40	8	70	3	1300	900	600	300	125°C
TCJG107M004#0300	G	100	4	85	3.2	105	40	10	300	3	600	400	300	–	105°C
TCJT107M004#0150	T	100	4	85	3.2	105	40	8	150	3	800	600	400	–	105°C
TCJB157M004#0070	B	150	4	85	3.2	105	60	6	70	3	1300	900	600	–	105°C
TCJY157M004#0025	Y	150	4	85	3.2	105	60	6	25	3	2700	1900	1200	–	105°C
TCJY157M004#0045	Y	150	4	85	3.2	105	60	6	45	3	2000	1400	900	–	105°C
TCJB227M004#0035	B	220	4	85	3.2	105	88	10	35	3	1900	1300	900	–	105°C
TCJB227M004#0045	B	220	4	85	3.2	105	88	10	45	3	1700	1200	800	–	105°C
TCJB227M004#0055	B	220	4	85	3.2	105	88	10	55	3	1500	1100	700	–	105°C
TCJB227M004#0060	B	220	4	85	3.2	105	88	10	60	3	1400	1000	600	–	105°C
TCJB227M004#0070	B	220	4	85	3.2	105	88	10	70	3	1300	900	600	–	105°C
TCJD227M004#0015	D	220	4	105	4	105	88	6	15	3	3900	2700	1800	–	105°C
TCJD227M004#0025	D	220	4	105	4	105	88	6	25	3	3000	2100	1400	–	105°C
TCJD227M004#0040	D	220	4	105	4	105	88	6	40	3	2400	1700	1100	–	105°C
TCJY227M004#0015	Y	220	4	85	4	85	88	6	15	3	3500	2500	–	–	85°C
TCJY227M004#0025	Y	220	4	85	3.2	105	88	6	25	3	2700	1900	1200	–	105°C
TCJY227M004#0040	Y	220	4	85	3.2	105	88	6	40	3	2200	1500	1000	–	105°C
TCJD337M004#0025	D	330	4	85	3.2	105	132	6	25	3	3000	2100	1400	–	105°C
TCJD337M004#0040	D	330	4	85	3.2	105	132	6	40	3	2400	1700	1100	–	105°C
TCJD337M004#0050	D	330	4	85	3.2	105	132	6	50	3	2100	1500	900	–	105°C
TCJY337M004#0025	Y	330	4	85	3.2	105	132	6	25	3	2700	1900	1200	–	105°C
TCJY337M004#0040	Y	330	4	85	3.2	105	132	6	40	3	2200	1500	1000	–	105°C
TCJY337M004#0050	Y	330	4	85	3.2	105	132	6	50	3	1900	1300	900	–	105°C
TCJD477M004#0015	D	470	4	105	4	105	188	6	15	3	3900	2700	1800	–	105°C
TCJD477M004#0025	D	470	4	85	3.2	105	188	6	25	3	3000	2100	1400	–	105°C
TCJD477M004#0040	D	470	4	105	4	105	188	6	40	3	2400	1700	1100	–	105°C
TCJD477M004#0050	D	470	4	105	4	105	188	6	50	3	2100	1500	900	–	105°C
TCJY477M004#0015	Y	470	4	85	4	85	188	6	15	3	3500	2500	–	–	85°C
TCJY477M004#0025	Y	470	4	85	3.2	105	188	6	25	3	2700	1900	1200	–	105°C
TCJY477M004#0040	Y	470	4	85	3.2	105	188	6	40	3	2200	1500	1000	–	105°C
TCJY477M004#0050	Y	470	4	85	3.2	105	188	6	50	3	1900	1300	900	–	105°C
<b>6.3 Volt @ 85°C</b>															
TCJA106M006#0300	A	10	6.3	85	4	125	6	6	300	3	600	400	300	200	125°C
TCJN106M006#0250	N	10	6.3	85	5	105	6	6	250	3	600	400	300	–	105°C
TCJN106M006#0500	N	10	6.3	85	5	105	6	6	500	3	400	300	200	–	105°C
TCJR106M006#0500	R	10	6.3	85	5	105	6	6	500	3	400	300	200	–	105°C
TCJA156M006#0300	A	15	6.3	85	4	125	9	6	300	3	600	400	300	200	125°C
TCJA226M006#0300	A	22	6.3	85	4	125	13.2	6	300	3	600	400	300	200	125°C
TCJK226M006#0400	K	22	6.3	85	5	105	13.2	8	400	3	500	400	200	–	105°C
TCJN226M006#0500	N	22	6.3	85	5	105	13.2	10	500	3	400	300	200	–	105°C
TCJR226M006#0500	R	22	6.3	85	5	105	13.2	10	500	3	400	300	200	–	105°C









# TCJ Series



## Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Cap (µF)	Rated Voltage (V)	Rated Temp. (°C)	Category Voltage (V)	Category Temp. (°C)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @ 100kHz	MSL	100kHz RMS Current (mA)				Product Category
											25°C	85°C	105°C	125°C	
TCJE685M063#0100	E	6.8	63	85	50	105	42.8	6	100	3	1600	1100	700	-	105°C
TCJE685M063#0150	E	6.8	63	85	50	105	42.8	6	150	3	1300	900	600	-	105°C
TCJE106M063#0100	E	10	63	85	50	105	63	6	100	3	1600	1100	700	-	105°C
TCJE106M063#0150	E	10	63	85	50	105	63	6	150	3	1300	900	600	-	105°C
<b>75 Volt @ 85°C</b>															
TCJD475M075#0150	D	4.7	75	85	60	105	35.3	6	150	3	1200	800	500	-	105°C
TCJD685M075#0120	D	6.8	75	85	60	105	51	6	120	3	1400	1000	600	-	105°C
<b>100 Volt @ 85°C</b>															
TCJD475M100#0250	D	4.7	100	85	80	105	47	8	250	3	900	600	400	-	105°C
<b>125 Volt @ 85°C</b>															
TCJD335M125#0250	D	3.3	125	85	100	105	41.2	8	250	3	900	600	400	-	105°C

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, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

ESR allowed to move up to 1.25 times catalog limit post mounting.

For typical weight and composition see page 214.

**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.**

### PRODUCT CATEGORY 125°C

TEST	125°C series (Temperature range -55°C to +125°C)									
	Condition			Characteristics						
<b>Endurance</b>	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 +20/-30% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
<b>Storage Life</b>	125°C, 0V, 2000h			Visual examination	no visible damage					
				DCL	2 x initial limit					
				ΔC/C	within ±20% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
<b>Humidity</b>	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	3 x initial limit					
				ΔC/C	within +30/-20% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
<b>Temperature Stability</b>	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+85°C	+125°C	+20°C
	1	+20±2	15							
	2	-55+0/-3	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*
	3	+20±2	15	ΔC/C	n/a	+0/-20%	±5%	+20/-0%	+30/-0%	±5%
	4	+85+3/-0	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*
	5	+125+3/-0	15							
	6	+20±2	15							
<b>Surge Voltage</b>	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 +20/-30% of initial value					
				DF	1.25 x initial limit					

\*Initial Limit

## Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

### PRODUCT CATEGORY 105°C

TEST	105°C series (Temperature range -55°C to +105°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 after application of 105°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 +20/-30% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
Storage Life	105°C, 0V, 2000h			Visual examination	no visible damage					
				DCL (V <sub>R</sub> ≤ 75V)	1.25 x initial limit					
				DCL (V <sub>R</sub> > 75V)	2 x initial limit					
				ΔC/C	within ±20% of initial value					
				DF	1.5 x 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	3 x initial limit					
				ΔC/C	within +30/-20% of initial value					
				DF	1.5 x initial limit					
				ESR	2 x initial limit					
Temperature Stability	Step	Temperature°C	Duration(min)							
	1	+20±2	15							
	2	-55+0/-3	15							
	3	+20±2	15							
	4	+85+3/-0	15							
	5	+105+3/-0	15							
6	+20±2	15								
Surge Voltage	Test temperature: 105°C+3/0°C Test voltage: Category voltage at 105°C Surge voltage: 1.3 x category voltage at 105°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 +20/-30% of initial value					
				DF	1.25 x initial limit					
				DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*
				ΔC/C	n/a	+0/-20%	±5%	+20/-0%	+30/-0%	±5%
				DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*

\*Initial Limit

### PRODUCT CATEGORY 85°C

TEST	85°C series (Temperature range -55°C to +85°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. Power supply impedance to be ≤0.1Ω/V.			Visual examination	no visible damage				
				DCL	1.25 x initial limit				
				ΔC/C	within +20/-30% of initial value				
				DF	1.5 x initial limit				
				ESR	2 x initial limit				
Storage Life	85°C, 0V, 2000h			Visual examination	no visible damage				
				DCL	1.25 x initial limit				
				ΔC/C	within ±20% of initial value				
				DF	1.5 x initial limit				
				ESR	2 x 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	5 x initial limit				
				ΔC/C	within +40/-20% of initial value				
				DF	1.5 x initial limit				
				ESR	2 x initial limit				
Temperature Stability	Step	Temperature°C	Duration(min)						
	1	+20±2	15						
	2	-55+0/-3	15						
	3	+20±2	15						
	4	+85+3/-0	15						
	5	+20±2	15						
Surge Voltage	Test temperature: 85+3/0°C Test voltage: Rated voltage Surge voltage: 1.3 x rated voltage 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 +20/-30% of initial value				
				DF	1.25 x initial limit				
				DCL	IL*	n/a	IL*	10 x IL*	IL*
				ΔC/C	n/a	+0/-20%	±5%	+20/-0%	±5%
				DF	IL*	1.5 x IL*	IL*	1.5 x IL*	IL*

\*Initial Limit





## Стандарт Электрон Связь

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