## **OxiCap<sup>®</sup> NLJ Series** Niobium Oxide Capacitors High CV Consumer Series





MARKING

#### A, B, G, S, T CASE



#### Polarity Band (Anode+) Capacitance Value in pF 156 = 15µF OxiCap® LOGO G 1 Related Voltage Code G = 4V

### FEATURES

- High Volumetric Efficiency
- Environmentally Friendly
- 3x Reflow 260°C Compatible
- 100% Surge Current Tested
- Consumer Applications
- OxiCap<sup>®</sup> Non-Burn Technology
- RoHS Compliance
- Lead-Free Solution
- 6 Case Sizes Available
- CV Range: 22-150µF / 4-10V

#### **APPLICATIONS**

**CASE DIMENSIONS:** 

Consumer Handhelds and Entertainment



LEAD-FREE COMPATIBLE COMPONENT

**RoHS** 

COMPLIANT



Elektra Award 2005



## 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.
Α	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)
В	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)
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)
Ρ	0805	2012-15	2.05 (0.081)	1.35 (0.053)	1.50 (0.059) 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)
т	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)

 $W_{_{\rm 1}}$  dimension applies to the termination width for A dimensional area only.

## **HOW TO ORDER**



## **TECHNICAL SPECIFICATIONS**

Technical Data:	All technical data relate to an ambient temperature of +25°C								
Capacitance Range:	22 μF to 150 μF								
Capacitance Tolerance:			±20%						
Leakage Current DCL:		0.1CV							
Rated Voltage (V <sub>R</sub> )	-55°C ≤ +40°C:	4	6.3	10					
Category Voltage (V <sub>c</sub> )	at 85°C:	2	3.2	5					
Category Voltage (V <sub>c</sub> )	at 105°C:	1.3	2	3.3					
Temperature Range:		-55°C to	+105°C v	vith cate	gory voltage				
Reliability:	0.2% per 1000 hours at 85°C, 0.5xV <sub>R</sub> , 0.1 $\Omega$ /V series impedance with 60% confidence level								



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

Capacitance		Rated Voltage DC to 40°C								
μF	Code	4V (G)	6.3V (J)	10V (A)						
22	226	P(4000)	S(1800)	A(4000)/G(3000)						
33	336		G(2200)	A(1700)						
47	476		A(1600)/T(1600)	B(1000)						
68	686									
100	107		B(1700)							
150	157	B(1500)								

Released ratings, (ESR ratings in mOhms in parentheses)

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

#### **RATINGS & PART NUMBER REFERENCE**

Δ\/X	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	Maximum Surge Current (A)	DCL Max. (µA)	ESR Max. @100kHz (mΩ)	100kHz RMS Current (mA)			
Part No.										25°C	85°C	105°C	MSL
4 Volt @ 85°C													
NLJP226M004#4000	P	22	4	85	1.3	105	0.4	8.8	4000	134	121	54	3
NLJB157M004#1500	В	150	4	85	1.3	105	1.0	60.0	1500	261	235	104	3
6.3 Volt @ 85°C													
NLJS226M006#1800	S	22	6.3	85	2	105	1.4	13.2	1800	208	187	83	3
NLJG336M006#2200	G	33	6.3	85	2	105	1.2	19.8	2200	195	176	78	3
NLJA476M006#1600	A	47	6.3	85	2	105	1.5	28.2	1600	237	213	98	3
NLJT476M006#1600	Т	47	6.3	85	2	105	1.5	28.2	1600	245	220	98	3
NLJB107M006#1700	В	100	6.3	85	2	105	1.5	60.0	1700	245	220	98	3
10 Volt @ 85°C													
NLJA226M010#4000	A	22	10	85	3.3	105	1.1	22.0	4000	150	135	60	3
NLJG226M010#3000	G	22	10	85	3.3	105	1.4	22.0	3000	167	151	67	3
NLJA336M010#1700	A	33	10	85	3.3	105	2.3	33.0	1700	230	207	92	3
NLJB476M010#1000	В	47	10	85	3.3	105	3.4	47.0	1000	319	287	128	3

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

All technical data relates to an ambient temperature of  $\pm 25^{\circ}$ 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.

ESR allowed to move up to 1.25 times catalogue limit post mounting

DCL allowed to move up to 2.00 times catalogue limit post mounting For typical weight and composition see page 259.

NOTE: AVX reserves the right to supply higher voltage ratings or tighter tolerance part in the same case size, to the same reliability standards.

Voltage vs Temperature Rating



## **OxiCap® NLJ Series** Niobium Oxide Capacitors High CV Consumer Series



## **QUALIFICATION TABLE**

TFOT	NLJ series (Temperature range -55°C to +105°C)										
1531		Condition	Characteristics								
		e (Ur) at 40°C and /	Visual examination	no visible damage							
	voltage (Uc) at 85	°C for 2000 hours th	DCL	2 x initial	2 x initial limit						
Endurance	impedance of ≤0.1	IΩ/V. Stabilize at roo	ΔC/C	within ±1	within ±10% of initial value						
	for 1-2 hours befo	re measuring.	ESR	1.25 x ini	1.25 x initial limit						
	Store at 65°C and	90-95% relative hum	Visual examination	no visible damage							
Llumidity	hours, with no app	olied voltage. Stabiliz	DCL	2 x initial	2 x initial limit						
Humidity	temperature and humidity for 1-2 hours before			ΔC/C	within ±10% of initial value						
	measuring.		ESR	1.25 x ini	1.25 x initial limit						
	Step	Temperature°C	Duration(min)	-	+20°C	-55°C	+20°C	+85°C	+105°C	+20°C	
Temperature	2	-55	15	DCL	2 x IL*	n/a	2 x IL**	10 x IL*	12.5 x IL*	2xIL*	
Stability	3 4	+20 +85	15	ΔC/C	n/a	+0/-20%	±5%	+20/-0%	+25/-0%	±5%	
	5	+105	15	- FSR	125 x ll *	25x#*	125xll*	125 x II *	125 x II *	125 x ll *	
	6	+20	15		1.20 AIL		1.20 A IL	1.20 AIL	1.20 XIL	1.20 AIL	
	Apply 1 2x roted y	oltogo (Ur) at 4000 f	Visual examination	no visible damage							
Surge	duration 6 min (20 see charge 5 min 20 see discharge)			DCL	2 x initial limit						
Voltage	through a charge /	/ discharge resistan	ΔC/C	within ±5% of initial value							
Humidity         nours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.         DCL           Temperature Stability         Step         Temperature*C         Duration(min)           1         +20         15         DCL           3         +20         15         DCL           3         +20         15         DCL           5         +105         15         C/C           5         +105         15         ESR           Voltage         Apply 1.3x rated voltage (Ur) at 40°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000Ω         Visual examination DCL           Mechanical Shock         MIL-STD-202, Method 213, Condition C         DCL           Visual examination DCL         DCL         DCL	ESR	1.25 x initial limit									
				Visual examination	no visibl	e damage					
Machanical				DCL	initial limit						
Shook	MIL-STD-202, Met	hod 213, Condition (	ΔC/C	within ±5% of initial value							
SHUCK					initial lin	initial limit					
			ESR	initial lin	initial limit						
					no visible damage						
	MIL-STD-202, Method 204, Condition D			DCL	initial lin	initial limit					
Vibration				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	initial limit						

\*Initial Limit



040320

## **OxiCap<sup>®</sup> NLJ Series** Niobium Oxide Capacitors High CV Consumer Series



## AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP



## **FIVE CAPACITOR CONSTRUCTION STYLES**



## SERIES LINE UP : NIOBIUM OXIDE OxiCap® CAPACITORS



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# **Mouser Electronics**

Authorized Distributor

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Kyocera AVX:

 NLJB107M006R1700
 NLJA476M006R1600
 NLJP226M004R4000
 NLJT476M006R1600
 NLJB157M004R1500

 NLJA336M010R1700
 NLJG336M006R2200
 NLJS226M006R1800
 NLJB476M010R1000
 NLJG226M010R3000

 NLJA226M010R4000
 NLJA226M010R4000
 NLJG226M010R3000
 NLJG226M010R3000