

# OxiCap® NOS Low ESR Series



## Niobium Oxide Capacitor

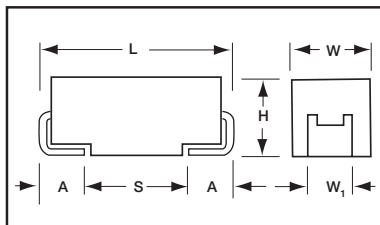


**NOS Low ESR** series of **OxiCap®** niobium oxide capacitors have been developed in order to offer significant **Cost versus Performance** value as the key requirement for mass manufactured electronic products. A new solid electrolyte capacitor **OxiCap®** has been developed by AVX in standard EIA SMT case sizes. The **OxiCap® non-burn** technology is based on **NbO niobium oxide ceramic material** as the anodic material processed through the same manufacturing process as tantalum capacitors. Nb<sub>2</sub>O<sub>5</sub> dielectric in combina-

tion to self-healing MnO<sub>2</sub> cathode is a basis for an excellent reliability level **0.2%/1000 hrs.** within a temperature range up to **125°C** and rated voltage **<6V** (rail voltage <5V). Electrical parameters are similar to general **low ESR** tantalum specifications. NbO and MnO<sub>2</sub> are widely available materials. The laser coded **orange molded body** gives total traceability.

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

### CASE DIMENSIONS: millimeters (inches)



Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W <sub>1</sub> ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	3528-21	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	7361-38	7.30 (0.287)	6.10 (0.240)	3.45 ±0.30 (0.136±0.012)	3.10 (0.120)	1.40 (0.055)	4.40 (0.173)
W	6032-15	6.00 (0.236)	3.20 (0.126)	1.50 (0.059)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
X	7343-15	7.30 (0.287)	4.30 (0.169)	1.50 (0.059)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
Y	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)
Z	7361-45	7.30 (0.287)	6.10 (0.240)	4.30 (0.169)	3.10 (0.120)	1.40 (0.055)	4.40 (0.173)

W<sub>1</sub> dimension applies to the termination width for A dimensional area only. Under development

### HOW TO ORDER

**NOS**

Type

**D**

Case Size

**107**

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

**M**

Capacitance Tolerance  
M = ±20%

**006**

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

**R**

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

**0100**

ESR  
ESR value in mOhms@100kHz

### TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C is not stated				
Capacitance Range:	10 µF to 1000 µF				
Capacitance Tolerance:	±20%				
Leakage Current DCL:	0.02CV				
Rated Voltage DC (V <sub>R</sub> )	≤+85°C:	1.8	2.5	4	6.3
Category Voltage (V <sub>C</sub> )	≤+125°C:	0.9	1.3	2	3
Surge Voltage (V <sub>S</sub> )	≤+85°C:	2.3	3.3	5.2	8
	≤+125°C:	1.2	1.7	2.6	4
Temperature Range:	-55°C to +125°C				
Reliability:	0.2% per 1000 hours at 85°C, V <sub>R</sub> , 0.1Ω/V series impedance, 60% confidence level Meets requirements of AEC-Q200				



# OxiCap® NOS Low ESR Series



## Niobium Oxide Capacitor

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

Capacitance		Rated Voltage DC (V <sub>R</sub> ) to 85°C / 0.66 DC to 105°C / 0.5 DC to 125°C			
μF	Code	1.8V (x)	2.5V (e)	4.0V (G)	6.3V (J)
4.7	475				
6.8	685				
10	106				A(800, 1000, 2000)
15	156			A(1500)	B(600)
22	226		A(900)	B(600)	B(600)
33	336	A(900)	B(600)*	B(600)	B(600) C(500) W(250)
47	476	B(500)	B(500)	B(500) C(300) W(150)	C(300)
68	686	B(500)	C(200) W(150)	C(200)	C(75,200) X(100) Y(100)
100	107	B(350) C(200) W(150)	C(150)	C(70,150) X(100)	C(150) D(80,100) Y(100)
150	157	C(150)	C(65,150) X(100)	C(90,150) Y(100)	D(50,70,100) Y(100)
220	227	C(125) X(100)	C(80,125) Y(100)	D(40,60,100) Y(100)	D(45,60,100) E(80,100)
330	337	C(125) Y(100)	D(35,50,100) Y(100)	D(35,55,100) E(100)	E(80,100)
470	477	D(100) Y(100)	D(35,55,100) E(100)	D(35*,40*,100) E(75,100)	V(75)
680	687	D(100) E(100)	D(35) E(60)	V(75)	
1000	108	E(60)	V(50)		
1500	158	V(50)	Z		
2200	228	Z			



LEAD-FREE

LEAD-FREE COMPATIBLE  
COMPONENT



RoHS  
COMPLIANT



NON-BURN  
NON-SMOKE

Developmental Ratings - subject to change

\*Violet - Please Contact Manufacturer

# OxiCap<sup>®</sup> NOS Low ESR Series



## Niobium Oxide Capacitor

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage(V)	DCL (µA)	DF %	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25°C	85°C	125°C	25°C	85°C	125°C
<b>1.8 Volt @ 85°C (1.2 Volt @ 105°C, 0.9V @ 125°C)</b>												
NOSB107M001#0350	B	100	1.8	3.6	6	350	0.540	0.486	0.216	0.189	0.170	0.076
NOSW107M001#0150	W	100	1.8	3.6	6	150	0.849	0.764	0.339	0.127	0.115	0.051
NOSC227M001#0125	C	220	1.8	8.0	8	125	1.028	0.925	0.411	0.128	0.116	0.051
NOSX227M001#0100	X	220	1.8	8.0	8	100	1.095	0.986	0.438	0.110	0.099	0.044
NOSY337M001#0100	Y	330	1.8	11.9	8	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSY477M001#0100	Y	470	1.8	16.9	8	100	1.225	1.102	0.490	0.122	0.110	0.049
<b>2.5 Volt @ 85°C (1.7 Volt @ 105°C, 1.3V @ 125°C)</b>												
NOSA226M002#0900	A	22	2.5	1.1	6	900	0.316	0.285	0.126	0.285	0.256	0.114
NOSB336M002#0600*	B	33	2.5	1.7	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NOSB476M002#0500	B	47	2.5	2.4	6	500	0.452	0.406	0.181	0.226	0.203	0.090
NOSC686M002#0200	C	68	2.5	3.4	6	200	0.812	0.731	0.325	0.162	0.146	0.065
NOSW686M002#0150	W	68	2.5	3.4	6	150	0.849	0.764	0.339	0.127	0.115	0.051
NOSC107M002#0150	C	100	2.5	5.0	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NOSC157M002#0065	C	150	2.5	7.6	6	65	1.425	1.283	0.570	0.093	0.083	0.037
NOSC157M002#0150	C	150	2.5	7.6	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NOSX157M002#0100	X	150	2.5	7.5	6	100	1.095	0.986	0.438	0.110	0.099	0.044
NOSC227M002#0080	C	220	2.5	11.0	8	80	1.285	1.156	0.514	0.103	0.092	0.041
NOSC227M002#0125	C	220	2.5	11.0	8	125	1.028	0.925	0.411	0.128	0.116	0.051
NOSY227M002#0100	Y	220	2.5	11.0	8	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSD337M002#0035	D	330	2.5	16.5	6	35	2.268	2.041	0.907	0.079	0.071	0.032
NOSD337M002#0100	D	330	2.5	16.5	10	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSY337M002#0100	Y	330	2.5	16.5	10	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSD477M002#0035	D	470	2.5	23.5	6	35	2.268	2.041	0.907	0.079	0.071	0.032
NOSD447M002#0055	D	470	2.5	23.5	10	55	1.809	1.628	0.724	0.099	0.090	0.040
NOSD447M002#0100	D	470	2.5	23.5	10	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSE477M002#0100	E	470	2.5	23.5	10	100	1.407	1.266	0.563	0.141	0.127	0.056
NOSE687M002#0060	E	680	2.5	34.0	12	60	1.817	1.635	0.727	0.109	0.098	0.044
NOSV108M002#0050	V	1000	2.5	50.0	18	50	2.449	2.205	0.980	0.122	0.110	0.049
<b>4 Volt @ 85°C (2.7 Volt @ 105°C, 2V @ 125°C)</b>												
NOSA156M004#1500	A	15	4	1.2	6	1500	0.245	0.220	0.098	0.367	0.331	0.147
NOSB226M004#0600	B	22	4	1.8	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NOSB336M004#0600	B	33	4	2.6	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NOSB476M004#0500	B	47	4	3.8	6	500	0.452	0.406	0.181	0.226	0.203	0.090
NOSC476M004#0300	C	47	4	3.8	6	300	0.663	0.597	0.265	0.199	0.179	0.080
NOSW476M004#0150	W	47	4	3.8	6	150	0.849	0.764	0.339	0.127	0.115	0.051
NOSC686M004#0200	C	68	4	5.4	6	200	0.812	0.731	0.325	0.162	0.146	0.065
NOSC107M004#0070	C	100	4	8.0	6	70	1.373	1.236	0.549	0.096	0.087	0.038
NOSC107M004#0150	C	100	4	8.0	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NOSX107M004#0100	X	100	4	8.0	6	100	1.095	0.986	0.438	0.110	0.099	0.044
NOSC157M004#0090	C	150	4	12.0	6	90	1.211	1.090	0.484	0.109	0.098	0.044
NOSC157M004#0150	C	150	4	12.0	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NOSY157M004#0100	Y	150	4	12.0	6	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSD227M004#0040	D	220	4	17.6	6	40	2.121	1.909	0.849	0.085	0.076	0.034
NOSD227M004#0060	D	220	4	17.6	8	60	1.732	1.559	0.693	0.104	0.094	0.042
NOSD227M004#0100	D	220	4	17.6	8	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSY227M004#0100	Y	220	4	17.6	10	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSD337M004#0035	D	330	4	26.4	6	35	2.268	2.041	0.907	0.079	0.071	0.032
NOSD337M004#0100	D	330	4	26.4	8	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSE337M004#0100	E	330	4	26.4	8	100	1.407	1.266	0.563	0.141	0.127	0.056
NOSD477M004#0100	D	470	4	37.6	12	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSE477M004#0075	E	470	4	37.6	12	75	1.625	1.462	0.650	0.122	0.110	0.049
NOSE477M004#0100	E	470	4	37.6	12	100	1.407	1.266	0.563	0.141	0.127	0.056
NOSV687M004#0075	V	680	4	54.4	14	75	2.000	1.800	0.800	0.150	0.135	0.060

\*Violet - Please Contact Manufacturer

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

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



# OxiCap® NOS Low ESR Series



## Niobium Oxide Capacitor

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage(V)	DCL (µA)	DF %	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25°C	85°C	125°C	25°C	85°C	125°C
<b>6.3 Volt @ 85°C (4 Volt @ 105°C, 3V @ 125°C)</b>												
NOSA106M006#0800	A	10	6.3	1.2	6	800	0.335	0.302	0.134	0.268	0.241	0.107
NOSA106M006#1000	A	10	6.3	1.2	6	1000	0.300	0.270	0.120	0.300	0.270	0.120
NOSA106M006#2000	A	10	6.3	1.2	6	2000	0.212	0.191	0.085	0.424	0.382	0.170
NOSB156M006#0600	B	15	6.3	1.8	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NOSB226M006#0600	B	22	6.3	2.6	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NOSB336M006#0600	B	33	6.3	4.0	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NOSC336M006#0500	C	33	6.3	4.0	6	500	0.514	0.462	0.206	0.257	0.231	0.103
NOSW336M006#0250	W	33	6.3	4.0	6	250	0.657	0.592	0.263	0.164	0.148	0.066
NOSC476M006#0300	C	47	6.3	5.7	6	300	0.663	0.597	0.265	0.199	0.179	0.080
NOSC686M006#0075	C	68	6.3	8.2	6	75	1.327	1.194	0.531	0.099	0.090	0.040
NOSC686M006#0200	C	68	6.3	8.2	6	200	0.812	0.731	0.325	0.162	0.146	0.065
NOSX686M006#0100	X	68	6.3	8.2	6	100	1.095	0.986	0.438	0.110	0.099	0.044
NOSY686M006#0100	Y	68	6.3	8.2	6	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSC107M006#0150	C	100	6.3	12.0	8	150	0.938	0.844	0.375	0.141	0.127	0.056
NOSD107M006#0080	D	100	6.3	12.0	6	80	1.500	1.350	0.600	0.120	0.108	0.048
NOSD107M006#0100	D	100	6.3	12.0	6	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSY107M006#0100	Y	100	6.3	12.0	6	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSD157M006#0050	D	150	6.3	18.0	6	50	1.897	1.708	0.759	0.095	0.085	0.038
NOSD157M006#0070	D	150	6.3	18.0	6	70	1.604	1.443	0.641	0.112	0.101	0.045
NOSD157M006#0100	D	150	6.3	18.0	6	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSY157M006#0100	Y	150	6.3	18.0	6	100	1.225	1.102	0.490	0.122	0.110	0.049
NOSD227M006#0045	D	220	6.3	26.4	6	45	2.000	1.800	0.800	0.090	0.081	0.036
NOSD227M006#0060	D	220	6.3	26.4	8	60	1.732	1.559	0.693	0.104	0.094	0.042
NOSD227M006#0100	D	220	6.3	26.4	8	100	1.342	1.207	0.537	0.134	0.121	0.054
NOSE227M006#0080	E	220	6.3	26.4	12	80	1.573	1.416	0.629	0.126	0.113	0.050
NOSE227M006#0100	E	220	6.3	26.4	12	100	1.407	1.266	0.563	0.141	0.127	0.056
NOSE337M006#0080	E	330	6.3	39.6	12	80	1.573	1.416	0.629	0.126	0.113	0.050
NOSE337M006#0100	E	330	6.3	39.6	12	100	1.407	1.266	0.563	0.141	0.127	0.056
NOSV477M006#0075	V	470	6.3	56.4	12	75	2.000	1.800	0.800	0.150	0.135	0.060

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

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