

# OxiCap<sup>®</sup> NOM Low ESR Multianodes



## Niobium Oxide Capacitor



### FEATURES

- Multi-anode construction
- Super low ESR
- Non-burn safe technology
- CV range: 220-680µF / 1.8-6.3V
- IBM global approval received in 2004
- Elektra award received in 2005

### APPLICATIONS

- High power low voltage industrial power supplies



LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



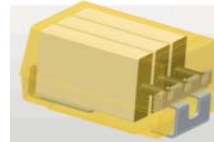
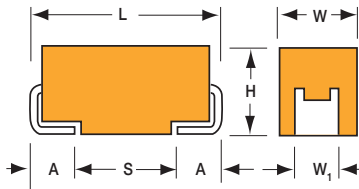
RoHS  
COMPLIANT



NON-BURN  
NON-SMOKE



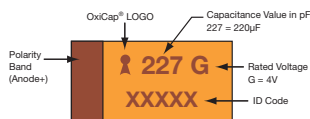
Elektra Award  
2005



NOM MULTIANODE  
CONSTRUCTION

### MARKING

#### E CASE



### 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.
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)

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

### HOW TO ORDER

**NOM**

Type

**E**

Case Size  
See table above

**227**

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

**M**

Tolerance  
M=±20%

**006**

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

**R**

Packaging  
R = Pure Tin 7" Reel  
S = Pure Tin 13" Reel

**0040**

ESR in mΩ

### TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C is not stated				
Capacitance Range:	220 µF to 680 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
Surge Voltage (V <sub>S</sub> )	≤ +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				

## Niobium Oxide Capacitor

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

Capacitance		Rated Voltage DC (V <sub>R</sub> ) to 85°C			
µF	Code	1.8V (x)	2.5V (e)	4.0V (G)	6.3V (J)
220	227				E(40)
330	337			E(35)	E(23,35)
470	477		E(30)	E(23,30)	
680	687	E(23)	E(23)		

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

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL Max. (µA)	DF Max. (%)	ESR Max. @ 100kHz (mΩ)	100kHz RMS Current (A)			MSL
										25°C	85°C	125°C	
<b>1.8 Volt @ 85°C</b>													
NOME687M001#0023	E	680	1.8	85	0.9	125	24.5	6	23	3.753	3.378	1.501	3
<b>2.5 Volt @ 85°C</b>													
NOME477M002#0030	E	470	2.5	85	1.3	125	23.5	10	30	3.286	2.958	1.315	3
NOME687M002#0023	E	680	2.5	85	1.3	125	34	6	23	3.753	3.378	1.501	3
<b>4 Volt @ 85°C</b>													
NOME337M004#0035	E	330	4	85	2	125	26.4	8	35	3.043	2.738	1.217	3
NOME477M004#0023	E	470	4	85	2	125	37.6	6	23	3.753	3.378	1.501	3
NOME477M004#0030	E	470	4	85	2	125	37.6	6	30	3.286	2.958	1.315	3
<b>6.3 Volt @ 85°C</b>													
NOME227M006#0040	E	220	6.3	85	3	125	26.4	12	40	2.846	2.561	1.138	3
NOME337M006#0023	E	330	6.3	85	3	125	39.6	6	23	3.753	3.378	1.501	3
NOME337M006#0035	E	330	6.3	85	3	125	39.6	6	35	3.043	2.738	1.217	3

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.

ESR allowed to move up to 125 times catalog limit post mounting.

For typical weight and composition see page 273.

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

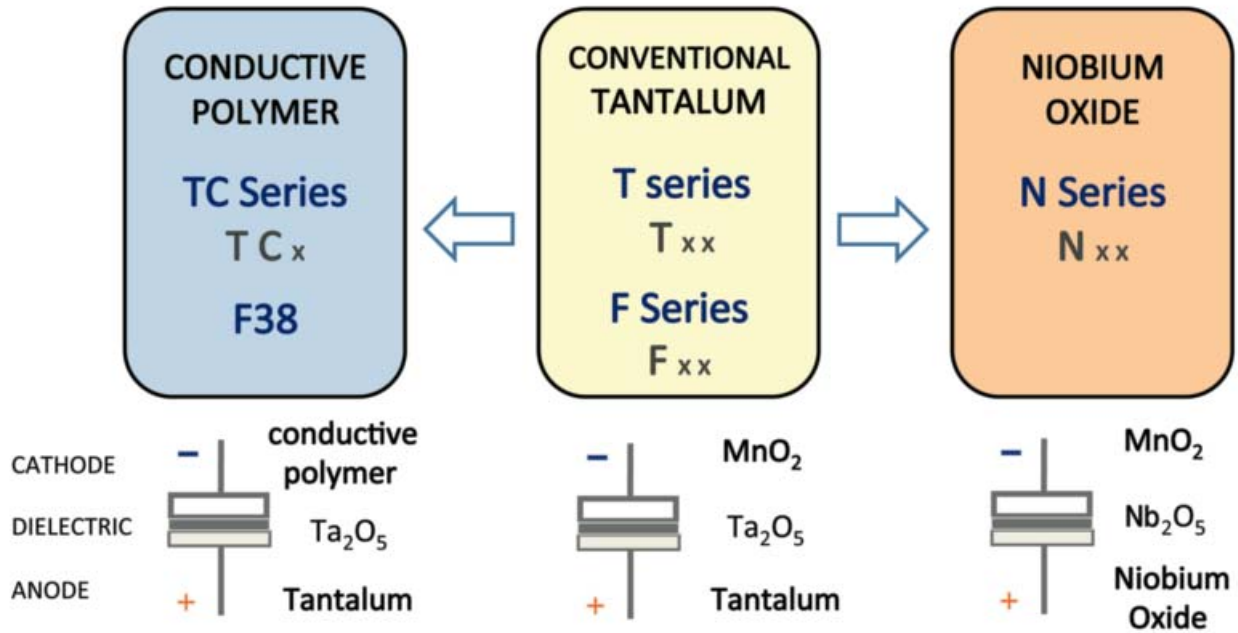
## Niobium Oxide Capacitor

### QUALIFICATION TABLE

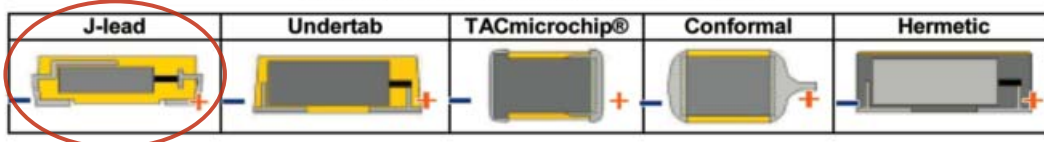
TEST	NOM series (Temperature range -55°C to +125°C)										
	Condition			Characteristics							
<b>Endurance</b>	Apply rated voltage (Ur) at 85°C and / or category voltage (Uc) at 125°C for 2000 hours through a circuit impedance of $\leq 0.1\Omega/V$ . Stabilize at room temperature for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	initial limit						
				$\Delta C/C$	within $\pm 10\%$ of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
<b>Storage Life</b>	Store at 125°C, no voltage applied, for 2000 hours. Stabilize at room temperature for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	initial limit						
				$\Delta C/C$	within $\pm 10\%$ of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
<b>Humidity</b>	Store at 65°C and 95% relative humidity for 500 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	1.5 x initial limit						
				$\Delta C/C$	within $\pm 10\%$ of initial value						
				DF	1.2 x initial limit						
				ESR	1.25 x initial limit						
<b>Biased Humidity</b>	Apply rated voltage (Ur) at 85°C, 85% relative humidity for 1000 hours. Stabilize at room temperature and humidity for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	2 x initial limit						
				$\Delta C/C$	within $\pm 10\%$ of initial value						
				DF	1.2 x initial limit						
				ESR	1.25 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	15	DCL	IL*	n/a	IL*	12 x IL*	15 x IL*	IL*	
	2	-55	15	$\Delta C/C$	n/a	+0/-10%	$\pm 5\%$	+10/-0%	+12/-0%	$\pm 5\%$	
	3	+20	15	DF	IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*	
	4	+85	15	ESR	1.25 x IL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*	
	5	+125	15								
	6	+20	15								
<b>Surge Voltage</b>	Apply 1.3x category voltage (Uc) at 125°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000 $\Omega$ .			Visual examination	no visible damage						
				DCL	initial limit						
				$\Delta C/C$	within $\pm 5\%$ of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
<b>Mechanical Shock</b>	MIL-STD-202, Method 213, Condition F			Visual examination	no visible damage						
				DCL	initial limit						
				$\Delta C/C$	within $\pm 5\%$ of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
<b>Vibration</b>	MIL-STD-202, Method 204, Condition D			Visual examination	no visible damage						
				DCL	initial limit						
				$\Delta C/C$	within $\pm 5\%$ of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						

\*Initial Limit

### AVX SOLID ELECTROLYTE CAPACITOR ROADMAP



### Five Capacitor Construction Styles



### SERIES LINE UP: NIOBIUM OXIDE OXICAP® CAPACITORS

