

OxiCap® 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



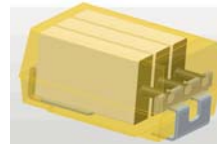
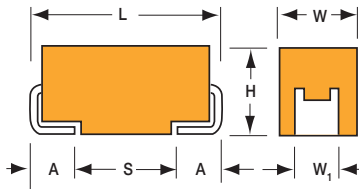
RoHS
COMPLIANT



NON-BURN
NON-SMOKE



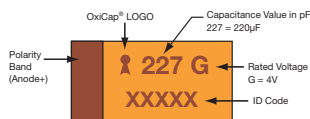
Elektra Award
2005



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 ₁ ±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)

W₁ 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 _R)	≤ +85°C:	1.8	2.5	4	6.3
Category Voltage (V _C)	≤ +125°C:	0.9	1.3	2	3
Surge Voltage (V _S)	≤ +85°C:	2.3	3.3	5.2	8
Surge Voltage (V _S)	≤ +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 _R , 0.1Ω/V series impedance, 60% confidence level Meets requirements of AEC-Q200				

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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R) 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 parenthesis)

Engineering samples - please contact AVX

*Ratings 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 Max. (µA)	DF Max. (%)	ESR Max. @ 100kHz (mΩ)	MSL	100kHz RMS Current (A)		
											25°C	85°C	125°C
1.8 Volt @ 85°C													
NOME687M001#0023	E	680	1.8	85	0.9	125	24.5	6	23	3	3.753	3.378	1.501
2.5 Volt @ 85°C													
NOME477M002#0030	E	470	2.5	85	1.3	125	23.5	10	30	3	3.286	2.958	1.315
NOME687M002#0023	E	680	2.5	85	1.3	125	34	6	23	3	3.753	3.378	1.501
4 Volt @ 85°C													
NOME337M004#0035	E	330	4	85	2	125	26.4	8	35	3	3.043	2.738	1.217
NOME477M004#0023	E	470	4	85	2	125	37.6	6	23	3	3.753	3.378	1.501
NOME477M004#0030	E	470	4	85	2	125	37.6	6	30	3	3.286	2.958	1.315
6.3 Volt @ 85°C													
NOME227M006#0040	E	220	6.3	85	3	125	26.4	12	40	3	2.846	2.561	1.138
NOME337M006#0023	E	330	6.3	85	3	125	39.6	6	23	3	3.753	3.378	1.501
NOME337M006#0035	E	330	6.3	85	3	125	39.6	6	35	3	3.043	2.738	1.217

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 222.

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.

Niobium Oxide Capacitor

QUALIFICATION TABLE

TEST	NOM 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	initial limit						
				ΔC/C	within ±10% of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
Storage Life	125°C, 0V, 2000h			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±10% of initial value						
				DF	initial limit						
				ESR	1.25 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	1.5 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	1.2 x initial limit						
				ESR	1.25 x 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	1.25 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*	12 x IL*	15 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	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+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 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	1.25 x initial limit						
Mechanical Shock	MIL-STD-202, Method 213, Condition F			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
Vibration	MIL-STD-202, Method 204, Condition D			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						

*Initial Limit