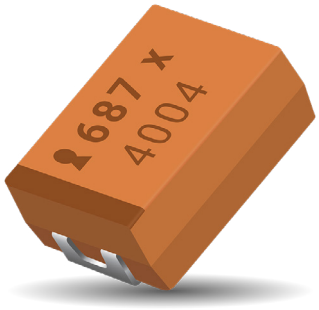
OxiCap® NOM Low ESR Multianodes

Niobium Oxide Capacitor



FEATURES

- Multi-anode Construction
- Super Low ESR
- 100% Surge Current Tested
- 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

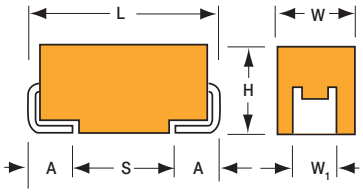
LEAD-FREE

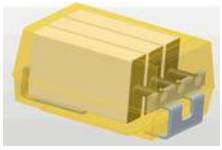
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

NON-BURN NON-SMOKE

Elektra Award 2005

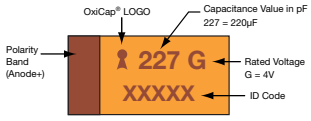




NOM MULTIANODE CONSTRUCTION

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)

W_1 dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

NOM	E	227	M	006	R	0040
Type	**Case Size** See table above	**Capacitance Code** 1st two digits represent significant figures, 3rd digit represents multiplier in pF	**Tolerance** M = ±20%	**Rated DC Voltage** 001 = 1.8Vdc 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc	**Packaging** R = Pure Tin 7" Reel S = Pure Tin 13" Reel	**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				

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 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	
1.8 Volt @ 85°C													
NOME687M001#0023	E	680	1.8	85	0.9	125	24.5	6	23	3.753	3.378	1.501	3
2.5 Volt @ 85°C													
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
4 Volt @ 85°C													
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
6.3 Volt @ 85°C													
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

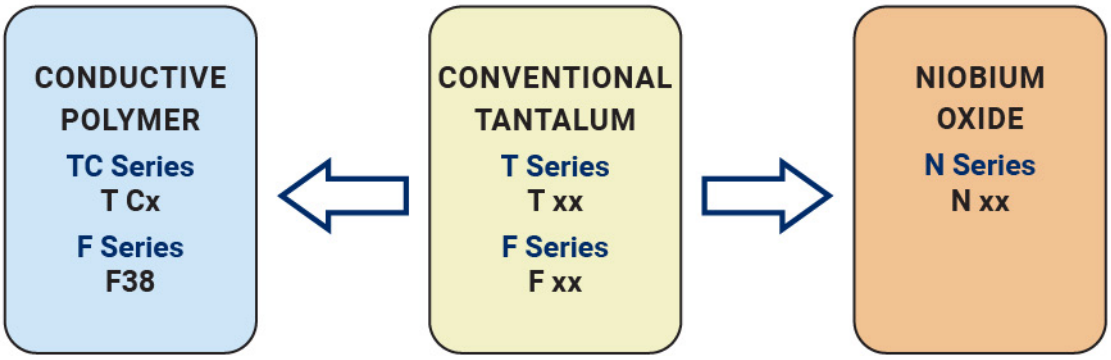
Moisture Sensitivity Level (MSL) is defined according to J-STD-020.
All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts.
DCL is measured at rated voltage after 5 minutes.
ESR allowed to move up to 125 times catalog limit post mounting.
For typical weight and composition see page 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.

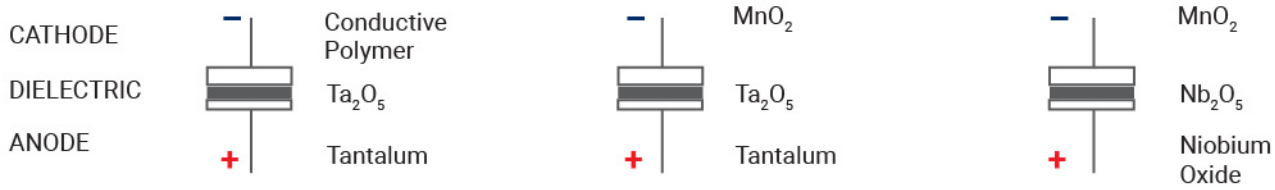
QUALIFICATION TABLE

TEST	NOM series (Temperature range -55°C to +125°C)		
	Condition	Characteristics	
Endurance	Apply rated voltage (Ur) at 85°C and / or category voltage (Uc) at 125°C for 2000 hours through a circuit impedance of ≤0.1Ω/V. Stabilize at room temperature for 1-2 hours before measuring.	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	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
		ΔC/C	within ±10% of initial value
		DF	initial limit
		ESR	1.25 x initial limit
Humidity	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
		ΔC/C	within ±10% of initial value
		DF	1.2 x initial limit
		ESR	1.25 x initial limit
Biased Humidity	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
		ΔC/C	within ±10% of initial value
		DF	1.2 x initial limit
		ESR	1.25 x initial limit
Temperature Stability	Step 1: Temperature °C +20, Duration (min) 15 Step 2: Temperature °C -55, Duration (min) 15 Step 3: Temperature °C +20, Duration (min) 15 Step 4: Temperature °C +85, Duration (min) 15 Step 5: Temperature °C +125, Duration (min) 15 Step 6: Temperature °C +20, Duration (min) 15		+20°C / -55°C / +20°C / +85°C / +125°C / +20°C
		DCL	IL* / n/a / IL* / 12 x IL* / 15 x IL* / IL*
		ΔC/C	n/a / +0/-10% / ±5% / +10/-0% / +12/-0% / ±5%
		DF	IL* / 1.5 x IL* / IL* / 1.5 x IL* / 2 x IL* / IL*
		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*
Surge Voltage	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 1000Ω	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

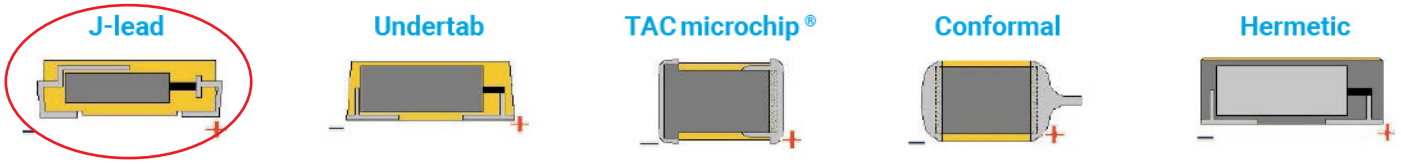
*Initial Limit

AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP





FIVE CAPACITOR CONSTRUCTION STYLES



SERIES LINE UP : NIOBIUM OXIDE OxiCap® CAPACITORS