

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



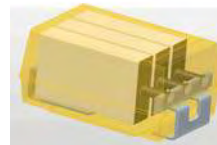
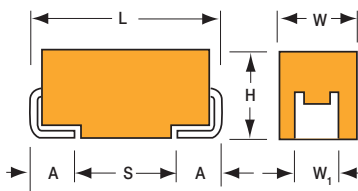
RoHS COMPLIANT



NON-BURN
NON-SMOKE



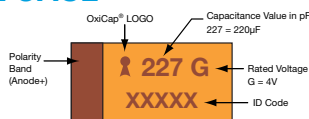
Elektra Award
2005



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) |

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 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 274.

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

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QUALIFICATION TABLE

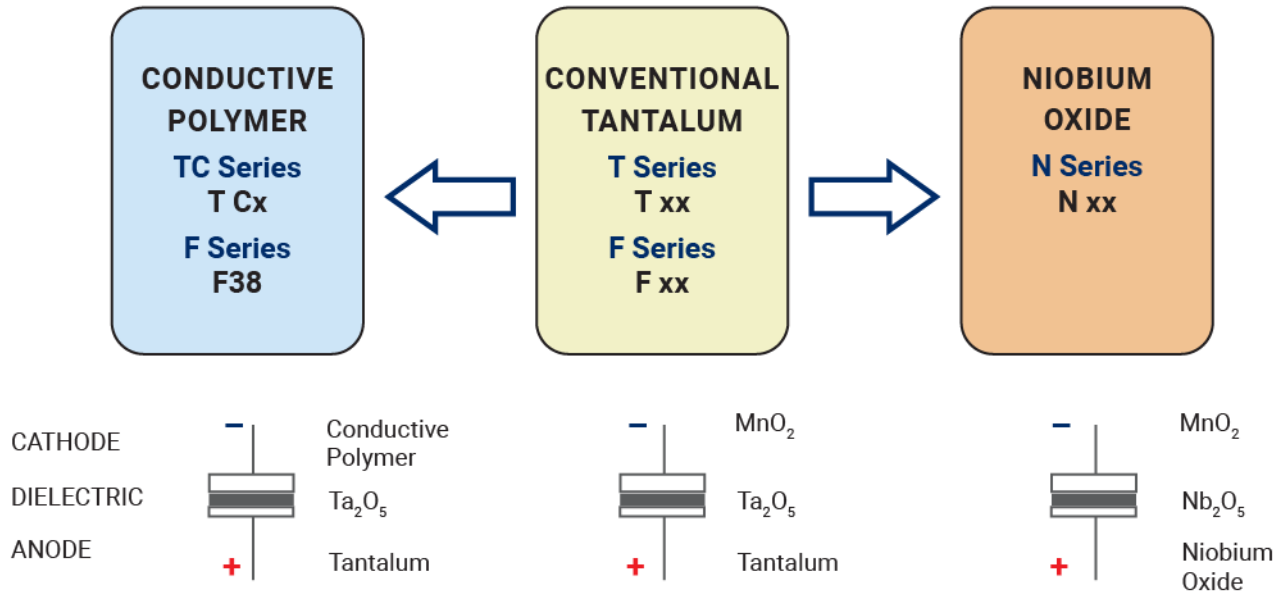
| TEST | NOS series (Temperature range -55°C to +125°C) | | | | | | | | | |
|------------------------------|---|---------------|---------------|--------------------|------------------------------------|-----------|------------|------------|------------|------------|
| | Condition | | | Characteristics | | | | | | |
| Endurance | Apply rated voltage (Ur) at 85°C and / or category voltage (Uc) at 125°C for 2000 hours through a circuit impedance of $\leq 0.1\Omega/V$. 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 | | | | | |
| 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 | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ 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 | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ 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 | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ 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 | 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 | | | | | | | |
| 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 1000 Ω | | | 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 | | | | | |
| Mechanical Shock | 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 | | | | | |
| Vibration | 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

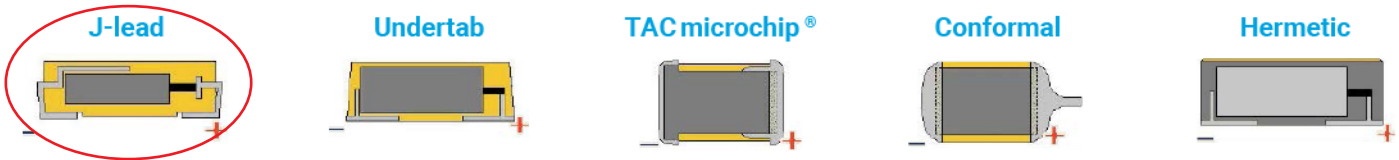
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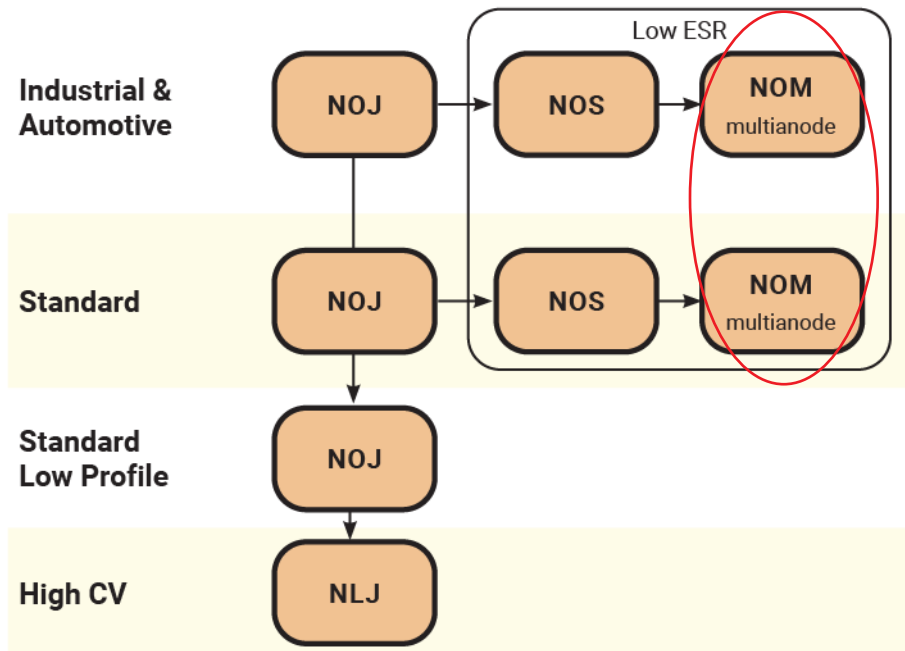
AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP



FIVE CAPACITOR CONSTRUCTION STYLES



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[NOJA475M010RWJV](#) [NOJE477M006RWJ](#)