



Oxycap[®] NOS Low ESR Series

Niobium Oxide Capacitor

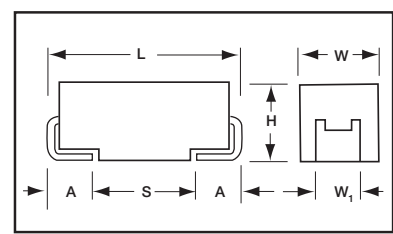


- Low ESR NbO capacitors
- Non-burn safe technology
- Reliability level: 0.2%/1000 hrs.
- CV range: 10-1000µF / 1.8-6.3V
- 9 case sizes available
- IBM global approval received in 2004
- Electra Award received in 2005



Electra Award
2005

CASE DIMENSIONS: millimeters (inches)



For part marking see page 132

| 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. |
|------|----------|------------|----------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| A | 1206 | 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 | 1210 | 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 | 2312 | 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 | 2917 | 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 | 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) |
| V | 2924 | 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 | 2312 | 6032-15 | 6.00 (0.236) | 3.20 (0.126) | 1.50 (0.059) max. | 2.20 (0.087) | 1.30 (0.051) | 2.90 (0.114) |
| X | 2917 | 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 | 2917 | 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) |

W₁ dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

KTTIC

| | | | | | | | |
|-------------|-------------------------------------|--|----------------------------|---|---|------------------|---|
| NOS | D | 107 | M | 006 | R | 0100 | - |
| 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 = Lead Free 7" Reel S = Lead Free 13" Reel | ESR in mΩ | Additional characters may be added for special requirements V = Dry pack Option (selected codes only) with exception of D, E, X, Y, V cases |

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 _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 | | | | |

OxiCap[®] NOS Low ESR Series

Niobium Oxide Capacitor

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Capacitance | | Rated Voltage DC (V _R) 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 | | | B(600) | B(600) C(500) W(250) |
| 47 | 476 | | B(500) | B(500) C(300) W(150) | B(500) C(300) |
| 68 | 686 | | C(200) W(150) | C(200) | C(75,200) X(100) Y(100) |
| 100 | 107 | B(350) W(150) | C(150) | C(70,150) X(100) | C(150) D(80,100) Y(100) |
| 150 | 157 | | 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 | Y(100) | D(35,50,100) Y(100) | D(35,55,100) E(100)/Y(150) | E(80,100) |
| 470 | 477 | Y(100) | D(35,55,100) E(100) | D(100) E(75,100) | V(75) |
| 680 | 687 | | E(60) | V(75) | |
| 1000 | 108 | | V(50) | | |



LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT



RoHS COMPLIANT



NON-BURN
NON-SMOKE

Available Ratings, (ESR ratings in mOhms in brackets)

Engineering samples - please contact manufacturer

*Codes 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.



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 | |
| 1.8 Volt @ 85°C (1.2 Volt @ 105°C, 0.9 Volt @ 125°C) | | | | | | | | | | | | | |
| 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 | |
| 2.5 Volt @ 85°C (1.7 Volt @ 105°C, 1.3 Volt @ 125°C) | | | | | | | | | | | | | |
| NOSA226M002#0900 | A | 22 | 2.5 | 1.1 | 6 | 900 | 0.316 | 0.285 | 0.126 | 0.285 | 0.256 | 0.114 | |
| 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 | |
| 4 Volt @ 85°C (2.6 Volt @ 105°C, 2 Volt @ 125°C) | | | | | | | | | | | | | |
| 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 | |
| NOSY337M004#0150 | Y | 330 | 4 | 26.4 | 12 | 150 | 1.000 | 0.900 | 0.400 | 0.150 | 0.135 | 0.060 | |
| 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 | |

- Insert R for 7" reel or S for 13" reel

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

MSL level: See page 123 (6. Moisture Sensitivity Level) or packaging and reel label.

ESR allowed to move up to 1.25 times catalog limit post mounting.

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 |
| 6.3 Volt @ 85°C (4 Volt @ 105°C, 3 Volt @ 125°C) | | | | | | | | | | | | |
| 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 |
| NOSB476M006#0500 | B | 47 | 6.3 | 5.6 | 6 | 500 | 0.452 | 0.406 | 0.181 | 0.226 | 0.203 | 0.090 |
| 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 |

- Insert R for 7" reel or S for 13" reel

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

MSL level: See page 123 (6. Moisture Sensitivity Level) or packaging and reel label.

ESR allowed to move up to 1.25 times catalog limit post mounting.

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