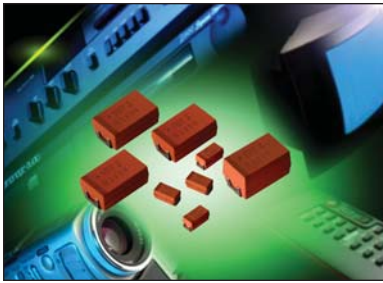


# OxiCap® NOJ Series



## Niobium Oxide Capacitor



### FEATURES

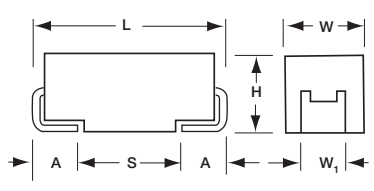
- Non-burn safe technology
- Reliability level: 0.5%/1000 hrs.
- 6 case sizes available
- Environmentally friendly
- IBM global approval received in 2004
- Elektra Award received in 2005
- CV range: 4.7-1000µF / 1.8-10V



Elektra Award  
2005

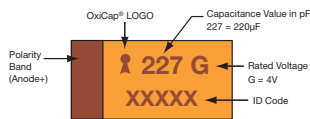
### APPLICATIONS

- Automotive
- NB PCs
- Civil aircraft
- Industrial low voltage control circuits



### MARKING

#### A, B, C, D, E, V 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) -0.10 (0.004) | 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)                 | 3.55 (0.140)                 | 3.10 (0.120)                               | 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

|             |                                     |                                                                                                                |                            |                                                                                                      |                                                                   |                                                                    |                                                                                                                                                 |
|-------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NOJ</b>  | <b>D</b>                            | <b>107</b>                                                                                                     | <b>M</b>                   | <b>006</b>                                                                                           | <b>R</b>                                                          | <b>WJ</b>                                                          | <b>-</b>                                                                                                                                        |
| <b>Type</b> | <b>Case Size</b><br>See table above | <b>Capacitance Code</b><br>1st two digits represent significant figures, 3rd digit represents multiplier in pF | <b>Tolerance</b><br>M=±20% | <b>Rated DC Voltage</b><br>001 = 1.8Vdc<br>002 = 2.5Vdc<br>004 = 4Vdc<br>006 = 6.3Vdc<br>010 = 10Vdc | <b>Packaging</b><br>R = Pure Tin 7" Reel<br>S = Pure Tin 13" Reel | <b>Standard Suffix</b><br>OR<br><b>WB</b><br><b>Low ESR Suffix</b> | <b>Additional characters may be added for special requirements</b><br>V = Dry pack Option (selected codes only) with exception of D, E, V cases |

### TECHNICAL SPECIFICATIONS

|                                    |                                                                                                                               |     |     |     |     |    |  |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|----|--|
| Technical Data:                    | All technical data relate to an ambient temperature of +25°C is not stated                                                    |     |     |     |     |    |  |
| Capacitance Range:                 | 4.7 µF to 1000 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 | 10 |  |
| Category Voltage (V <sub>C</sub> ) | ≤ +105°C:                                                                                                                     | 1.2 | 1.7 | 2.7 | 4   | 7  |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:                                                                                                                      | 2.3 | 3.3 | 5.2 | 8   | 13 |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +105°C:                                                                                                                     | 1.6 | 2.2 | 3.4 | 5   | 8  |  |
| Temperature Range:                 | -55°C to +105°C                                                                                                               |     |     |     |     |    |  |
| Reliability:                       | 0.5% per 1000 hours at 85°C, V <sub>R</sub> , 0.1Ω/V series impedance, 60% confidence level<br>Meets requirements of AEC-Q200 |     |     |     |     |    |  |



# OxiCap® NOJ Series



## Niobium Oxide Capacitor

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

| Capacitance |      | Rated Voltage DC (V <sub>R</sub> ) to 85°C / 0.66 DC to 105°C |          |            |              |            |
|-------------|------|---------------------------------------------------------------|----------|------------|--------------|------------|
| μF          | Code | 1.8V (x)                                                      | 2.5V (e) | 4V (G)     | 6.3V (J)     | 10V (A)    |
| 4.7         | 475  |                                                               |          |            | A            | A          |
| 6.8         | 685  |                                                               |          |            | A            | A          |
| 10          | 106  |                                                               |          |            | A            | A/B        |
| 15          | 156  |                                                               |          | A          | A/B          | A/B        |
| 22          | 226  |                                                               | A        | A/B        | A/B          | B/C/B(700) |
| 33          | 336  |                                                               | A/B      | A/B        | B/C/B(700)   | C          |
| 47          | 476  | A                                                             | A/B      | A/B/C      | B/C          | C          |
| 68          | 686  | B                                                             | B/C      | B/C        | B/C          | C          |
| 100         | 107  | B/C                                                           | B/C      | B/C/B(250) | B/C/D/B(400) | D/D(150)   |
| 150         | 157  | C                                                             | C        | C/D        | C/D          |            |
| 220         | 227  | C                                                             | C        | C/D        | C/D/E        |            |
| 330         | 337  | C                                                             | C/D      | D          | D/E          |            |
| 470         | 477  |                                                               | D/E      | D/E        | E/V/E(75)    |            |
| 680         | 687  |                                                               | E        | E/V        |              |            |
| 1000        | 108  |                                                               | V        | V          |              |            |

Released codes

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.



LEAD-FREE

LEAD-FREE COMPATIBLE  
COMPONENT



RoHS  
COMPLIANT



NON-BURN  
NON-SMOKE

# OxiCap® NOJ Series



## Niobium Oxide Capacitor

### RATINGS & PART NUMBER REFERENCE

| AVX Part No.           | Case Size | Capacitance (µF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL (µA) Max. | DF % Max. | ESR Max. (Ω) @ 100kHz | MSL | 100kHz RMS Current (A) |       |       |
|------------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-----------|-----------------------|-----|------------------------|-------|-------|
|                        |           |                  |                   |                        |                      |                           |               |           |                       |     | 25°C                   | 85°C  | 105°C |
| <b>1.8 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJA476M001#WJ         | A         | 47               | 1.8               | 85                     | 1.2                  | 105                       | 1.7           | 8         | 1.6                   | 1   | 0.237                  | 0.213 | 0.095 |
| NOJB476M001#WJ         | B         | 47               | 1.8               | 85                     | 1.2                  | 105                       | 1.7           | 6         | 1.6                   | 1   | 0.252                  | 0.227 | 0.101 |
| NOJB686M001#WJ         | B         | 68               | 1.8               | 85                     | 1.2                  | 105                       | 2.5           | 6         | 1.5                   | 1   | 0.261                  | 0.235 | 0.104 |
| NOJB107M001#WJ         | B         | 100              | 1.8               | 85                     | 1.2                  | 105                       | 3.6           | 6         | 1.4                   | 1   | 0.270                  | 0.243 | 0.108 |
| NOJC107M001#WJ         | C         | 100              | 1.8               | 85                     | 1.2                  | 105                       | 3.6           | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC157M001#WJ         | C         | 150              | 1.8               | 85                     | 1.2                  | 105                       | 5.4           | 8         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC227M001#WJ         | C         | 220              | 1.8               | 85                     | 1.2                  | 105                       | 8.0           | 8         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC337M001#WJ         | C         | 330              | 1.8               | 85                     | 1.2                  | 105                       | 11.9          | 8         | 0.3                   | 1   | 0.663                  | 0.597 | 0.265 |
| <b>2.5 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJA226M002#WJ         | A         | 22               | 2.5               | 85                     | 1.7                  | 105                       | 1.1           | 6         | 1.9                   | 1   | 0.218                  | 0.196 | 0.087 |
| NOJA336M002#WJ         | A         | 33               | 2.5               | 85                     | 1.7                  | 105                       | 1.7           | 6         | 1.7                   | 1   | 0.230                  | 0.207 | 0.092 |
| NOJB336M002#WJ         | B         | 33               | 2.5               | 85                     | 1.7                  | 105                       | 1.7           | 6         | 1.7                   | 1   | 0.245                  | 0.220 | 0.098 |
| NOJA476M002#WJ         | A         | 47               | 2.5               | 85                     | 1.7                  | 105                       | 2.4           | 8         | 1.6                   | 1   | 0.237                  | 0.213 | 0.095 |
| NOJB476M002#WJ         | B         | 47               | 2.5               | 85                     | 1.7                  | 105                       | 2.4           | 6         | 1.6                   | 1   | 0.252                  | 0.227 | 0.101 |
| NOJB686M002#WJ         | B         | 68               | 2.5               | 85                     | 1.7                  | 105                       | 3.4           | 6         | 1.5                   | 1   | 0.261                  | 0.235 | 0.104 |
| NOJC686M002#WJ         | C         | 68               | 2.5               | 85                     | 1.7                  | 105                       | 3.4           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJB107M002#WJ         | B         | 100              | 2.5               | 85                     | 1.7                  | 105                       | 5.0           | 6         | 1.4                   | 1   | 0.270                  | 0.243 | 0.108 |
| NOJC107M002#WJ         | C         | 100              | 2.5               | 85                     | 1.7                  | 105                       | 5.0           | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC157M002#WJ         | C         | 150              | 2.5               | 85                     | 1.7                  | 105                       | 7.5           | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC227M002#WJ         | C         | 220              | 2.5               | 85                     | 1.7                  | 105                       | 11.0          | 8         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC337M002#WJ         | C         | 330              | 2.5               | 85                     | 1.7                  | 105                       | 16.5          | 10        | 0.3                   | 1   | 0.663                  | 0.597 | 0.265 |
| NOJD337M002#WJ         | D         | 330              | 2.5               | 85                     | 1.7                  | 105                       | 16.5          | 10        | 0.3                   | 3   | 0.775                  | 0.697 | 0.310 |
| NOJD477M002#WJ         | D         | 470              | 2.5               | 85                     | 1.7                  | 105                       | 23.5          | 12        | 0.3                   | 3   | 0.775                  | 0.697 | 0.310 |
| NOJE477M002#WJ         | E         | 470              | 2.5               | 85                     | 1.7                  | 105                       | 23.5          | 10        | 0.3                   | 3   | 0.812                  | 0.731 | 0.325 |
| NOJE687M002#WJ         | E         | 680              | 2.5               | 85                     | 1.7                  | 105                       | 34.0          | 14        | 0.3                   | 3   | 0.812                  | 0.731 | 0.325 |
| NOJV108M002#WJ         | V         | 1000             | 2.5               | 85                     | 1.7                  | 105                       | 50.0          | 16        | 0.3                   | 3   | 1.000                  | 0.900 | 0.400 |
| <b>4 Volt @ 85°C</b>   |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJA156M004#WJ         | A         | 15               | 4                 | 85                     | 2.7                  | 105                       | 1.2           | 6         | 2                     | 1   | 0.212                  | 0.191 | 0.085 |
| NOJA226M004#WJ         | A         | 22               | 4                 | 85                     | 2.7                  | 105                       | 1.8           | 6         | 1.9                   | 1   | 0.218                  | 0.196 | 0.087 |
| NOJB226M004#WJ         | B         | 22               | 4                 | 85                     | 2.7                  | 105                       | 1.8           | 6         | 1.9                   | 1   | 0.232                  | 0.209 | 0.093 |
| NOJA336M004#WJ         | A         | 33               | 4                 | 85                     | 2.7                  | 105                       | 2.6           | 10        | 1.7                   | 1   | 0.230                  | 0.207 | 0.092 |
| NOJB336M004#WJ         | B         | 33               | 4                 | 85                     | 2.7                  | 105                       | 2.6           | 6         | 1.7                   | 1   | 0.245                  | 0.220 | 0.098 |
| NOJA476M004#WJ         | A         | 47               | 4                 | 85                     | 2.7                  | 105                       | 3.8           | 18        | 2.2                   | 1   | 0.202                  | 0.182 | 0.081 |
| NOJB476M004#WJ         | B         | 47               | 4                 | 85                     | 2.7                  | 105                       | 3.8           | 6         | 1.6                   | 1   | 0.252                  | 0.227 | 0.101 |
| NOJC476M004#WJ         | C         | 47               | 4                 | 85                     | 2.7                  | 105                       | 3.8           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJB686M004#WJ         | B         | 68               | 4                 | 85                     | 2.7                  | 105                       | 5.4           | 6         | 1.5                   | 1   | 0.261                  | 0.235 | 0.104 |
| NOJC686M004#WJ         | C         | 68               | 4                 | 85                     | 2.7                  | 105                       | 5.4           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJB107M004#WJ         | B         | 100              | 4                 | 85                     | 2.7                  | 105                       | 8.0           | 16        | 1.4                   | 1   | 0.270                  | 0.243 | 0.108 |
| NOJB107M004#WB         | B         | 100              | 4                 | 85                     | 2.7                  | 105                       | 8.0           | 16        | 0.25                  | 3   | 0.639                  | 0.575 | 0.255 |
| NOJC107M004#WJ         | C         | 100              | 4                 | 85                     | 2.7                  | 105                       | 8.0           | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC157M004#WJ         | C         | 150              | 4                 | 85                     | 2.7                  | 105                       | 12.0          | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJD157M004#WJ         | D         | 150              | 4                 | 85                     | 2.7                  | 105                       | 12.0          | 6         | 0.3                   | 3   | 0.775                  | 0.697 | 0.310 |
| NOJC227M004#WJ         | C         | 220              | 4                 | 85                     | 2.7                  | 105                       | 17.6          | 8         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJD227M004#WJ         | D         | 220              | 4                 | 85                     | 2.7                  | 105                       | 17.6          | 8         | 0.4                   | 3   | 0.671                  | 0.604 | 0.268 |
| NOJD337M004#WJ         | D         | 330              | 4                 | 85                     | 2.7                  | 105                       | 26.4          | 8         | 0.3                   | 3   | 0.775                  | 0.697 | 0.310 |
| NOJD477M004#WJ         | D         | 470              | 4                 | 85                     | 2.7                  | 105                       | 37.6          | 12        | 0.3                   | 3   | 0.775                  | 0.697 | 0.310 |
| NOJE477M004#WJ         | E         | 470              | 4                 | 85                     | 2.7                  | 105                       | 37.6          | 12        | 0.3                   | 3   | 0.812                  | 0.731 | 0.325 |
| NOJE687M004#WJ         | E         | 680              | 4                 | 85                     | 2.7                  | 105                       | 54.4          | 14        | 0.3                   | 3   | 0.812                  | 0.731 | 0.325 |
| NOJV687M004#WJ         | V         | 680              | 4                 | 85                     | 2.7                  | 105                       | 54.4          | 14        | 0.3                   | 3   | 1.000                  | 0.900 | 0.400 |
| NOJV108M004#WJ         | V         | 1000             | 4                 | 85                     | 2.7                  | 105                       | 80.0          | 18        | 0.3                   | 3   | 1.000                  | 0.900 | 0.400 |
| <b>6.3 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJA475M006#WJ         | A         | 4.7              | 6.3               | 85                     | 4                    | 105                       | 1.1           | 6         | 3.2                   | 1   | 0.168                  | 0.151 | 0.067 |
| NOJA685M006#WJ         | A         | 6.8              | 6.3               | 85                     | 4                    | 105                       | 1.1           | 6         | 2.6                   | 1   | 0.186                  | 0.167 | 0.074 |
| NOJA106M006#WJ         | A         | 10               | 6.3               | 85                     | 4                    | 105                       | 1.2           | 6         | 2.2                   | 1   | 0.202                  | 0.182 | 0.081 |
| NOJA156M006#WJ         | A         | 15               | 6.3               | 85                     | 4                    | 105                       | 1.8           | 8         | 2                     | 1   | 0.212                  | 0.191 | 0.085 |
| NOJB156M006#WJ         | B         | 15               | 6.3               | 85                     | 4                    | 105                       | 1.8           | 6         | 2                     | 1   | 0.226                  | 0.203 | 0.090 |
| NOJA226M006#WJ         | A         | 22               | 6.3               | 85                     | 4                    | 105                       | 2.6           | 8         | 1.8                   | 1   | 0.224                  | 0.201 | 0.089 |
| NOJB226M006#WJ         | B         | 22               | 6.3               | 85                     | 4                    | 105                       | 2.6           | 6         | 1.9                   | 1   | 0.232                  | 0.209 | 0.093 |
| NOJB336M006#WJ         | B         | 33               | 6.3               | 85                     | 4                    | 105                       | 4.0           | 6         | 1.7                   | 1   | 0.245                  | 0.220 | 0.098 |
| NOJB336M006#WB         | B         | 33               | 6.3               | 85                     | 4                    | 105                       | 4.0           | 6         | 0.7                   | 3   | 0.382                  | 0.344 | 0.153 |
| NOJC336M006#WJ         | C         | 33               | 6.3               | 85                     | 4                    | 105                       | 4.0           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJB476M006#WJ         | B         | 47               | 6.3               | 85                     | 4                    | 105                       | 5.6           | 6         | 0.8                   | 1   | 0.357                  | 0.321 | 0.143 |
| NOJC476M006#WJ         | C         | 47               | 6.3               | 85                     | 4                    | 105                       | 5.7           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJB686M006#WJ         | B         | 68               | 6.3               | 85                     | 4                    | 105                       | 8.2           | 20        | 1.5                   | 1   | 0.261                  | 0.235 | 0.104 |
| NOJC686M006#WJ         | C         | 68               | 6.3               | 85                     | 4                    | 105                       | 8.2           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJB107M006#WJ         | B         | 100              | 6.3               | 85                     | 4                    | 105                       | 60.0          | 20        | 1.7                   | 1   | 0.245                  | 0.220 | 0.098 |
| NOJB107M006#WB         | B         | 100              | 6.3               | 85                     | 4                    | 105                       | 60.0          | 20        | 0.4                   | 3   | 0.505                  | 0.454 | 0.202 |
| NOJC107M006#WJ         | C         | 100              | 6.3               | 85                     | 4                    | 105                       | 12.0          | 8         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJD107M006#WJ         | D         | 100              | 6.3               | 85                     | 4                    | 105                       | 12.0          | 6         | 0.4                   | 3   | 0.671                  | 0.604 | 0.268 |
| NOJC157M006#WJ         | C         | 150              | 6.3               | 85                     | 4                    | 105                       | 18.0          | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |



# OxiCap® NOJ Series



## Niobium Oxide Capacitor

### RATINGS & PART NUMBER REFERENCE

| AVX Part No.          | Case Size | Capacitance (µF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL (µA) Max. | DF % Max. | ESR Max. (Ω) @ 100kHz | MSL | 100kHz RMS Current (A) |       |       |
|-----------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-----------|-----------------------|-----|------------------------|-------|-------|
|                       |           |                  |                   |                        |                      |                           |               |           |                       |     | 25°C                   | 85°C  | 105°C |
| NOJD157M006#WJ        | D         | 150              | 6.3               | 85                     | 4                    | 105                       | 18.0          | 6         | 0.4                   | 3   | 0.671                  | 0.604 | 0.268 |
| NOJC227M006#WJ        | C         | 220              | 6.3               | 85                     | 4                    | 105                       | 26.4          | 14        | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJD227M006#WJ        | D         | 220              | 6.3               | 85                     | 4                    | 105                       | 26.4          | 8         | 0.4                   | 3   | 0.671                  | 0.604 | 0.268 |
| NOJE227M006#WJ        | E         | 220              | 6.3               | 85                     | 4                    | 105                       | 26.4          | 12        | 0.4                   | 3   | 0.704                  | 0.633 | 0.281 |
| NOJD337M006#WJ        | D         | 330              | 6.3               | 85                     | 4                    | 105                       | 39.6          | 10        | 0.3                   | 3   | 0.775                  | 0.697 | 0.310 |
| NOJE337M006#WJ        | E         | 330              | 6.3               | 85                     | 4                    | 105                       | 39.6          | 12        | 0.3                   | 3   | 0.812                  | 0.731 | 0.325 |
| NOJE477M006#WJ        | E         | 470              | 6.3               | 85                     | 4                    | 105                       | 56.4          | 16        | 0.3                   | 3   | 0.812                  | 0.731 | 0.325 |
| NOJE477M006#WB        | E         | 470              | 6.3               | 85                     | 4                    | 105                       | 56.4          | 16        | 0.075                 | 3   | 1.625                  | 1.462 | 0.650 |
| NOJV477M006#WJ        | V         | 470              | 6.3               | 85                     | 4                    | 105                       | 56.4          | 14        | 0.3                   | 3   | 1.000                  | 0.900 | 0.400 |
| <b>10 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJA475M010#WJ        | A         | 4.7              | 10                | 85                     | 7                    | 105                       | 1.0           | 6         | 3.1                   | 1   | 0.170                  | 0.153 | 0.068 |
| NOJA685M010#WJ        | A         | 6.8              | 10                | 85                     | 7                    | 105                       | 1.4           | 6         | 2.6                   | 1   | 0.186                  | 0.167 | 0.074 |
| NOJA106M010#WJ        | A         | 10               | 10                | 85                     | 7                    | 105                       | 2.0           | 6         | 2.2                   | 1   | 0.202                  | 0.182 | 0.081 |
| NOJB106M010#WJ        | B         | 10               | 10                | 85                     | 7                    | 105                       | 2.0           | 6         | 1                     | 1   | 0.319                  | 0.287 | 0.128 |
| NOJA156M010#WJ        | A         | 15               | 10                | 85                     | 7                    | 105                       | 3.0           | 6         | 2                     | 1   | 0.212                  | 0.191 | 0.085 |
| NOJB156M010#WJ        | B         | 15               | 10                | 85                     | 7                    | 105                       | 3.0           | 6         | 2                     | 1   | 0.226                  | 0.203 | 0.090 |
| NOJB226M010#WJ        | B         | 22               | 10                | 85                     | 7                    | 105                       | 4.4           | 6         | 1.8                   | 1   | 0.238                  | 0.214 | 0.095 |
| NOJB226M010#WB        | B         | 22               | 10                | 85                     | 7                    | 105                       | 4.4           | 6         | 0.7                   | 3   | 0.382                  | 0.344 | 0.153 |
| NOJC226M010#WJ        | C         | 22               | 10                | 85                     | 7                    | 105                       | 4.4           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJC336M010#WJ        | C         | 33               | 10                | 85                     | 7                    | 105                       | 6.6           | 6         | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJC476M010#WJ        | C         | 47               | 10                | 85                     | 7                    | 105                       | 9.4           | 6         | 0.4                   | 1   | 0.574                  | 0.517 | 0.230 |
| NOJC686M010#WJ        | C         | 68               | 10                | 85                     | 7                    | 105                       | 13.6          | 12        | 0.5                   | 1   | 0.514                  | 0.462 | 0.206 |
| NOJD107M010#WJ        | D         | 100              | 10                | 85                     | 7                    | 105                       | 20.0          | 12        | 0.4                   | 3   | 0.671                  | 0.604 | 0.268 |
| NOJD107M010#WB        | D         | 100              | 10                | 85                     | 7                    | 105                       | 20.0          | 12        | 0.15                  | 3   | 1.095                  | 0.986 | 0.438 |

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.

The EIA & CECC standards for capacitors allow an ESR movement to 1.25 times catalog limit post mounting.

For typical weight and composition see page 202.

**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                         | NOJ series (Temperature range -55°C to +105°C)                                                                                                                                                                                                                                                 |               |               |                    |                              |           |            |            |            |            |  |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------|------------------------------|-----------|------------|------------|------------|------------|--|
|                              | Condition                                                                                                                                                                                                                                                                                      |               |               | Characteristics    |                              |           |            |            |            |            |  |
| <b>Endurance</b>             | 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 105°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         |           |            |            |            |            |  |
| <b>Storage Life</b>          | 105°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         |           |            |            |            |            |  |
| <b>Humidity</b>              | Determine after storage without applied voltage at 40±2°C and 93±2% relative humidity for 56 days 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         |           |            |            |            |            |  |
| <b>Biased Humidity</b>       | 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         |           |            |            |            |            |  |
| <b>Temperature Stability</b> | Step                                                                                                                                                                                                                                                                                           | Temperature°C | Duration(min) |                    | +20°C                        | -55°C     | +20°C      | +85°C      | +105°C     | +20°C      |  |
|                              | 1                                                                                                                                                                                                                                                                                              | +20±2         | 15            | DCL                | IL*                          | n/a       | IL*        | 10 x IL*   | 12.5 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                                                                                                                                                                                                                                                                                              | +105+3/-0     | 15            |                    |                              |           |            |            |            |            |  |
|                              | 6                                                                                                                                                                                                                                                                                              | +20±2         | 15            |                    |                              |           |            |            |            |            |  |
| <b>Surge Voltage</b>         | <u>Test temperature: 105°C+3/0°C</u><br>Test voltage: 1.3 x category voltage at 105°C<br>Series protection resistance 1000±100Ω<br>Discharge resistance: 1000Ω<br>Number of cycles: 1000x<br>Cycle duration: 6 min; 30 sec charge,<br>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         |           |            |            |            |            |  |

\*Initial Limit