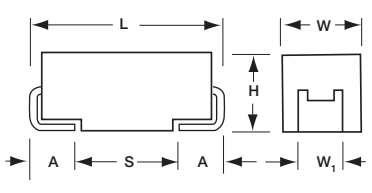
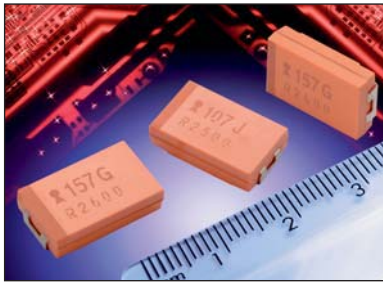


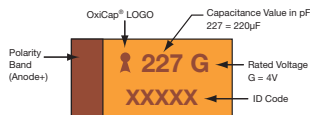
# OxiCap® NOJ Series

## Low Profile

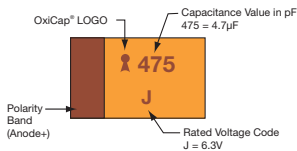


### MARKING

#### F, S, T, W, X, Y CASE



#### P CASE



### HOW TO ORDER

**NOJ**

Type

**Y**

Case Size  
See table above

**107**

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  
010 = 10Vdc

**R**

Packaging  
R = Pure Tin 7" Reel  
S = Pure Tin 13" Reel

**WJ**

Specification Suffix  
WJ = Standard Suffix

**—**

Additional characters may be added for special requirements  
V = Dry pack Option (selected codes only) with exception of X, Y cases

### FEATURES

- Non-burn safe technology
- Reliability level: 0.5%/1000 hrs.
- CV range: 2.2-470µF / 1.8-10V
- 7 case sizes in low profile available
- IBM global approval received in 2004
- Elektra Award received in 2005

### APPLICATIONS

- Downsized industrial and automotive DC/DCs



Elektra Award  
2005

### CASE DIMENSIONS: millimeters (inches)

| Code | EIA Code | EIA Metric | L±0.20 (0.008) | W+0.20 (0.008) -0.10 (0.004) | H Max        | W, ±0.20 (0.008)        | A+0.30 (0.012) -0.20 (0.008) | S Min.       |
|------|----------|------------|----------------|------------------------------|--------------|-------------------------|------------------------------|--------------|
| F    | 2312     | 6032-20    | 6.00 (0.236)   | 3.20 (0.126)                 | 2.00 (0.079) | 2.20 (0.087)            | 1.30 (0.051)                 | 2.90 (0.114) |
| P    | 0805     | 2012-15    | 2.05 (0.081)   | 1.35 (0.053)                 | 1.50 (0.059) | 1.00±0.10 (0.039±0.004) | 0.50 (0.020)                 | 0.85 (0.033) |
| S    | 1206     | 3216-12    | 3.20 (0.126)   | 1.60 (0.063)                 | 1.20 (0.047) | 1.20 (0.047)            | 0.80 (0.031)                 | 1.10 (0.043) |
| T    | 1210     | 3528-12    | 3.50 (0.138)   | 2.80 (0.110)                 | 1.20 (0.047) | 2.20 (0.087)            | 0.80 (0.031)                 | 1.40 (0.055) |
| W    | 2312     | 6032-15    | 6.00 (0.236)   | 3.20 (0.126)                 | 1.50 (0.059) | 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) | 2.40 (0.094)            | 1.30 (0.051)                 | 4.40 (0.173) |

W<sub>1</sub> dimension applies to the termination width for A dimensional area only.  
Pad Stand-off is 0.1±0.1.

### TECHNICAL SPECIFICATIONS

Technical Data:

All technical data relate to an ambient temperature of +25°C is not stated

Capacitance Range: 2.2 µF to 470 µF

Capacitance Tolerance: ±20%

Leakage Current DCL: 0.02CV or 1.0µA whichever is the greater

| 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

Meets requirements of AEC-Q200



# OxiCap® NOJ Series



## Low Profile

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

| Capacitance |      | Rated Voltage DC ( $V_R$ ) to 85°C / 0.66 DC to 105°C |          |        |          |         |
|-------------|------|-------------------------------------------------------|----------|--------|----------|---------|
| µF          | Code | 1.8V (x)                                              | 2.5V (e) | 4V (G) | 6.3V (J) | 10V (A) |
| 1.0         | 105  |                                                       |          |        |          |         |
| 1.5         | 155  |                                                       |          |        |          |         |
| 2.2         | 225  |                                                       |          |        |          | P       |
| 3.3         | 335  |                                                       |          |        |          | P       |
| 4.7         | 475  |                                                       |          |        | P/S      | T       |
| 6.8         | 685  |                                                       |          | P/S    | P/S/T    | T       |
| 10          | 106  |                                                       | P/S      | P/S/T  | P/T      | T       |
| 15          | 156  | P/S                                                   | P/S/T    | P/T    |          |         |
| 22          | 226  | P/S/T                                                 | P/T      | T      | T        |         |
| 33          | 336  | T                                                     | T        | T      | W        |         |
| 47          | 476  | T                                                     | T        | W      | W        |         |
| 68          | 686  |                                                       | W        | W      | X/Y      |         |
| 100         | 107  | W                                                     | W        | W/X    | F/Y      |         |
| 150         | 157  |                                                       | X        | Y      | F/Y      |         |
| 220         | 227  | X                                                     | Y        | F/Y    | Y        |         |
| 330         | 337  | Y                                                     | Y        | Y      |          |         |
| 470         | 477  | Y                                                     |          |        |          |         |

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

### 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> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJP156M001#WJ         | P         | 15               | 1.8               | 85                     | 1.2                  | 105                       | 1.0           | 10        | 4.1                   | 1   | 0.133                  | 0.119 | 0.053 |
| NOJS156M001#WJ         | S         | 15               | 1.8               | 85                     | 1.2                  | 105                       | 1.0           | 6         | 2                     | 1   | 0.197                  | 0.178 | 0.079 |
| NOJP226M001#WJ         | P         | 22               | 1.8               | 85                     | 1.2                  | 105                       | 1.0           | 10        | 3.8                   | 1   | 0.138                  | 0.124 | 0.055 |
| NOJS226M001#WJ         | S         | 22               | 1.8               | 85                     | 1.2                  | 105                       | 1.0           | 8         | 1.9                   | 1   | 0.203                  | 0.182 | 0.081 |
| NOJT226M001#WJ         | T         | 22               | 1.8               | 85                     | 1.2                  | 105                       | 1.0           | 6         | 1.8                   | 1   | 0.231                  | 0.208 | 0.092 |
| NOJT336M001#WJ         | T         | 33               | 1.8               | 85                     | 1.2                  | 105                       | 1.2           | 6         | 1.7                   | 1   | 0.238                  | 0.214 | 0.095 |
| NOJT476M001#WJ         | T         | 47               | 1.8               | 85                     | 1.2                  | 105                       | 1.7           | 10        | 1.6                   | 1   | 0.245                  | 0.220 | 0.098 |
| NOJW107M001#WJ         | W         | 100              | 1.8               | 85                     | 1.2                  | 105                       | 3.6           | 6         | 0.4                   | 1   | 0.520                  | 0.468 | 0.208 |
| NOJX227M001#WJ         | X         | 220              | 1.8               | 85                     | 1.2                  | 105                       | 8.0           | 8         | 0.4                   | 3   | 0.548                  | 0.493 | 0.219 |
| NOJY337M001#WJ         | Y         | 330              | 1.8               | 85                     | 1.2                  | 105                       | 11.9          | 8         | 0.3                   | 3   | 0.707                  | 0.636 | 0.283 |
| NOJY477M001#WJ         | Y         | 470              | 1.8               | 85                     | 1.2                  | 105                       | 17.0          | 8         | 0.3                   | 3   | 0.707                  | 0.636 | 0.283 |
| <b>2.5 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJP106M002#WJ         | P         | 10               | 2.5               | 85                     | 1.7                  | 105                       | 1.0           | 6         | 4.5                   | 1   | 0.126                  | 0.114 | 0.051 |
| NOJS106M002#WJ         | S         | 10               | 2.5               | 85                     | 1.7                  | 105                       | 1.0           | 6         | 2.2                   | 1   | 0.188                  | 0.169 | 0.075 |
| NOJP156M002#WJ         | P         | 15               | 2.5               | 85                     | 1.7                  | 105                       | 1.0           | 6         | 4                     | 1   | 0.134                  | 0.121 | 0.054 |
| NOJS156M002#WJ         | S         | 15               | 2.5               | 85                     | 1.7                  | 105                       | 1.0           | 8         | 2                     | 1   | 0.197                  | 0.178 | 0.079 |
| NOJT156M002#WJ         | T         | 15               | 2.5               | 85                     | 1.7                  | 105                       | 1.0           | 6         | 2                     | 1   | 0.219                  | 0.197 | 0.088 |
| NOJP226M002#WJ         | P         | 22               | 2.5               | 85                     | 1.7                  | 105                       | 1.1           | 10        | 3.8                   | 1   | 0.138                  | 0.124 | 0.055 |
| NOJT226M002#WJ         | T         | 22               | 2.5               | 85                     | 1.7                  | 105                       | 1.1           | 6         | 1.9                   | 1   | 0.225                  | 0.202 | 0.090 |
| NOJT336M002#WJ         | T         | 33               | 2.5               | 85                     | 1.7                  | 105                       | 1.7           | 6         | 1.7                   | 1   | 0.238                  | 0.214 | 0.095 |
| NOJT476M002#WJ         | T         | 47               | 2.5               | 85                     | 1.7                  | 105                       | 2.4           | 10        | 1.6                   | 1   | 0.245                  | 0.220 | 0.098 |
| NOJW686M002#WJ         | W         | 68               | 2.5               | 85                     | 1.7                  | 105                       | 3.4           | 6         | 0.4                   | 1   | 0.520                  | 0.468 | 0.208 |
| NOJW107M002#WJ         | W         | 100              | 2.5               | 85                     | 1.7                  | 105                       | 5.0           | 6         | 0.4                   | 1   | 0.520                  | 0.468 | 0.208 |
| NOJX157M002#WJ         | X         | 150              | 2.5               | 85                     | 1.7                  | 105                       | 7.5           | 6         | 0.4                   | 3   | 0.548                  | 0.493 | 0.219 |
| NOJY227M002#WJ         | Y         | 220              | 2.5               | 85                     | 1.7                  | 105                       | 11.0          | 8         | 0.4                   | 3   | 0.612                  | 0.551 | 0.245 |
| NOJY337M002#WJ         | Y         | 330              | 2.5               | 85                     | 1.7                  | 105                       | 16.5          | 10        | 0.3                   | 3   | 0.707                  | 0.636 | 0.283 |
| <b>4 Volt @ 85°C</b>   |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJP685M004#WJ         | P         | 6.8              | 4                 | 85                     | 2.7                  | 105                       | 1.0           | 6         | 5.3                   | 1   | 0.117                  | 0.105 | 0.047 |
| NOJS685M004#WJ         | S         | 6.8              | 4                 | 85                     | 2.7                  | 105                       | 1.0           | 6         | 2.6                   | 1   | 0.173                  | 0.156 | 0.069 |
| NOJP106M004#WJ         | P         | 10               | 4                 | 85                     | 2.7                  | 105                       | 1.0           | 20        | 4.5                   | 1   | 0.126                  | 0.114 | 0.051 |
| NOJS106M004#WJ         | S         | 10               | 4                 | 85                     | 2.7                  | 105                       | 1.0           | 8         | 2.2                   | 1   | 0.188                  | 0.169 | 0.075 |
| NOJT106M004#WJ         | T         | 10               | 4                 | 85                     | 2.7                  | 105                       | 1.0           | 6         | 2.2                   | 1   | 0.209                  | 0.188 | 0.084 |
| NOJP156M004#WJ         | P         | 15               | 4                 | 85                     | 2.7                  | 105                       | 1.2           | 10        | 4.1                   | 1   | 0.133                  | 0.119 | 0.053 |
| NOJT156M004#WJ         | T         | 15               | 4                 | 85                     | 2.7                  | 105                       | 1.2           | 6         | 2                     | 1   | 0.219                  | 0.197 | 0.088 |
| NOJT226M004#WJ         | T         | 22               | 4                 | 85                     | 2.7                  | 105                       | 1.8           | 6         | 1.8                   | 1   | 0.231                  | 0.208 | 0.092 |
| NOJT336M004#WJ         | T         | 33               | 4                 | 85                     | 2.7                  | 105                       | 2.6           | 14        | 2                     | 1   | 0.219                  | 0.197 | 0.088 |
| NOJW476M004#WJ         | W         | 47               | 4                 | 85                     | 2.7                  | 105                       | 3.8           | 6         | 0.5                   | 1   | 0.465                  | 0.418 | 0.186 |
| NOJW686M004#WJ         | W         | 68               | 4                 | 85                     | 2.7                  | 105                       | 5.4           | 6         | 0.4                   | 1   | 0.520                  | 0.468 | 0.208 |
| NOJW107M004#WJ         | W         | 100              | 4                 | 85                     | 2.7                  | 105                       | 8.0           | 8         | 0.4                   | 1   | 0.520                  | 0.468 | 0.208 |
| NOJX107M004#WJ         | X         | 100              | 4                 | 85                     | 2.7                  | 105                       | 8.0           | 6         | 0.4                   | 3   | 0.548                  | 0.493 | 0.219 |
| NOJY157M004#WJ         | Y         | 150              | 4                 | 85                     | 2.7                  | 105                       | 12.0          | 6         | 0.4                   | 3   | 0.612                  | 0.551 | 0.245 |
| NOJF227M004#WJ         | F         | 220              | 4                 | 85                     | 2.7                  | 105                       | 17.6          | 10        | 0.4                   | 1   | 0.548                  | 0.493 | 0.219 |
| NOJY227M004#WJ         | Y         | 220              | 4                 | 85                     | 2.7                  | 105                       | 17.6          | 10        | 0.4                   | 3   | 0.612                  | 0.551 | 0.245 |
| NOJY337M004#WJ         | Y         | 330              | 4                 | 85                     | 2.7                  | 105                       | 26.4          | 12        | 0.3                   | 3   | 0.707                  | 0.636 | 0.283 |
| <b>6.3 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJP475M006#WJ         | P         | 4.7              | 6.3               | 85                     | 4                    | 105                       | 1.0           | 6         | 6.1                   | 1   | 0.109                  | 0.098 | 0.043 |
| NOJS475M006#WJ         | S         | 4.7              | 6.3               | 85                     | 4                    | 105                       | 1.0           | 6         | 3.2                   | 1   | 0.156                  | 0.141 | 0.062 |
| NOJP685M006#WJ         | P         | 6.8              | 6.3               | 85                     | 4                    | 105                       | 1.0           | 10        | 5.2                   | 1   | 0.118                  | 0.106 | 0.047 |
| NOJS685M006#WJ         | S         | 6.8              | 6.3               | 85                     | 4                    | 105                       | 1.0           | 8         | 2.7                   | 1   | 0.170                  | 0.153 | 0.068 |
| NOJT685M006#WJ         | T         | 6.8              | 6.3               | 85                     | 4                    | 105                       | 1.0           | 6         | 2.6                   | 1   | 0.192                  | 0.173 | 0.077 |
| NOJP106M006#WJ         | P         | 10               | 6.3               | 85                     | 4                    | 105                       | 1.2           | 10        | 4.5                   | 1   | 0.126                  | 0.114 | 0.051 |
| NOJT106M006#WJ         | T         | 10               | 6.3               | 85                     | 4                    | 105                       | 1.2           | 6         | 2.2                   | 1   | 0.209                  | 0.188 | 0.084 |
| NOJT226M006#WJ         | T         | 22               | 6.3               | 85                     | 4                    | 105                       | 2.6           | 8         | 1.8                   | 1   | 0.231                  | 0.208 | 0.092 |
| NOJW336M006#WJ         | W         | 33               | 6.3               | 85                     | 4                    | 105                       | 4.0           | 6         | 0.5                   | 1   | 0.465                  | 0.418 | 0.186 |
| NOJW476M006#WJ         | W         | 47               | 6.3               | 85                     | 4                    | 105                       | 5.7           | 6         | 0.5                   | 1   | 0.465                  | 0.418 | 0.186 |
| NOJX686M006#WJ         | X         | 68               | 6.3               | 85                     | 4                    | 105                       | 8.2           | 6         | 0.5                   | 3   | 0.490                  | 0.441 | 0.196 |
| NOJY686M006#WJ         | Y         | 68               | 6.3               | 85                     | 4                    | 105                       | 8.2           | 6         | 0.5                   | 3   | 0.548                  | 0.493 | 0.219 |
| NOJF107M006#WJ         | F         | 100              | 6.3               | 85                     | 4                    | 105                       | 12            | 8         | 0.4                   | 1   | 0.548                  | 0.493 | 0.219 |
| NOJY107M006#WJ         | Y         | 100              | 6.3               | 85                     | 4                    | 105                       | 12.0          | 6         | 0.4                   | 3   | 0.612                  | 0.551 | 0.245 |
| NOJF157M006#WJ         | F         | 150              | 6.3               | 85                     | 4                    | 105                       | 18.0          | 8         | 0.4                   | 1   | 0.548                  | 0.493 | 0.219 |
| NOJY157M006#WJ         | Y         | 150              | 6.3               | 85                     | 4                    | 105                       | 18.0          | 6         | 0.4                   | 3   | 0.612                  | 0.551 | 0.245 |
| NOJY227M006#WJ         | Y         | 220              | 6.3               | 85                     | 4                    | 105                       | 26.4          | 10        | 0.4                   | 3   | 0.612                  | 0.551 | 0.245 |
| <b>10 Volt @ 85°C</b>  |           |                  |                   |                        |                      |                           |               |           |                       |     |                        |       |       |
| NOJP225M010#WJ         | P         | 2.2              | 10                | 85                     | 7                    | 105                       | 1.0           | 8         | 8.3                   | 1   | 0.093                  | 0.084 | 0.037 |
| NOJP335M010#WJ         | P         | 3.3              | 10                | 85                     | 7                    | 105                       | 1.0           | 8         | 7                     | 1   | 0.101                  | 0.091 | 0.041 |
| NOJT475M010#WJ         | T         | 4.7              | 10                | 85                     | 7                    | 105                       | 1.0           | 6         | 3.1                   | 1   | 0.176                  | 0.158 | 0.070 |
| NOJT685M010#WJ         | T         | 6.8              | 10                | 85                     | 7                    | 105                       | 1.4           | 6         | 2.6                   | 1   | 0.192                  | 0.173 | 0.077 |
| NOJT106M010#WJ         | T         | 10               | 10                | 85                     | 7                    | 105                       | 2.0           | 6         | 2.2                   | 1   | 0.209                  | 0.188 | 0.084 |

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.**

\*Initial Limit