

# 0603 HIGH Q NPO CERAMIC CAPACITORS FOR RF & MICROWAVE

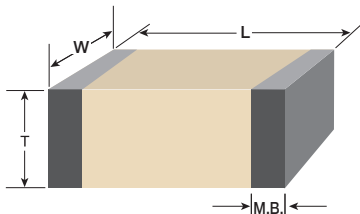
| PRESIDIO<br>PART NUMBER | CAP.<br>(pF) | TOL.    | WVDC     |
|-------------------------|--------------|---------|----------|
| 0603NPO05M&N1N-         | 0.05         | M       | 100, 250 |
| 0603NPO0R1_&N1N-        | 0.1          | A,B     | 100, 250 |
| 0603NPO0R2_&N1N-        | 0.2          | A,B     | 100, 250 |
| 0603NPO0R3_&N1N-        | 0.3          | A,B,C   | 100, 250 |
| 0603NPO0R4_&N1N-        | 0.4          | A,B,C   | 100, 250 |
| 0603NPO0R5_&N1N-        | 0.5          | A,B,C   | 100, 250 |
| 0603NPO0R6_&N1N-        | 0.6          | A,B,C   | 100, 250 |
| 0603NPO0R7_&N1N-        | 0.7          | A,B,C   | 100, 250 |
| 0603NPO0R8_&N1N-        | 0.8          | A,B,C   | 100, 250 |
| 0603NPO0R9_&N1N-        | 0.9          | A,B,C   | 100, 250 |
| 0603NPO1R0_&N1N-        | 1.0          | A,B,C   | 100, 250 |
| 0603NPO1R1_&N1N-        | 1.1          | A,B,C,D | 100, 250 |
| 0603NPO1R2_&N1N-        | 1.2          | A,B,C,D | 100, 250 |
| 0603NPO1R3_&N1N-        | 1.3          | A,B,C,D | 100, 250 |
| 0603NPO1R5_&N1N-        | 1.5          | A,B,C,D | 100, 250 |
| 0603NPO1R6_&N1N-        | 1.6          | A,B,C,D | 100, 250 |
| 0603NPO1R8_&N1N-        | 1.8          | A,B,C,D | 100, 250 |
| 0603NPO2R0_&N1N-        | 2.0          | A,B,C,D | 100, 250 |
| 0603NPO2R2_&N1N-        | 2.2          | A,B,C,D | 100, 250 |
| 0603NPO2R4_&N1N-        | 2.4          | A,B,C,D | 100, 250 |

| PRESIDIO<br>PART NUMBER | CAP.<br>(pF) | TOL.    | WVDC     |
|-------------------------|--------------|---------|----------|
| 0603NPO2R7_&N1N-        | 2.7          | A,B,C,D | 100, 250 |
| 0603NPO3R0_&N1N-        | 3.0          | A,B,C,D | 100, 250 |
| 0603NPO3R3_&N1N-        | 3.3          | A,B,C,D | 100, 250 |
| 0603NPO3R6_&N1N-        | 3.6          | A,B,C,D | 100, 250 |
| 0603NPO3R9_&N1N-        | 3.9          | A,B,C,D | 100, 250 |
| 0603NPO4R3_&N1N-        | 4.3          | A,B,C,D | 100, 250 |
| 0603NPO4R7_&N1N-        | 4.7          | A,B,C,D | 100, 250 |
| 0603NPO5R1_&N1N-        | 5.1          | A,B,C,D | 100, 250 |
| 0603NPO5R6_&N1N-        | 5.6          | A,B,C,D | 100, 250 |
| 0603NPO6R2_&N1N-        | 6.2          | A,B,C,D | 100, 250 |
| 0603NPO6R8_&N1N-        | 6.8          | A,B,C,D | 100, 250 |
| 0603NPO7R5_&N1N-        | 7.5          | A,B,C,D | 100, 250 |
| 0603NPO8R2_&N1N-        | 8.2          | A,B,C,D | 100, 250 |
| 0603NPO9R1_&N1N-        | 9.1          | A,B,C,D | 100, 250 |
| 0603NPO100_&N1N-        | 10           | F,G,J,K | 100, 250 |
| 0603NPO110_&N1N-        | 11           | F,G,J,K | 100, 250 |
| 0603NPO120_&N1N-        | 12           | F,G,J,K | 100, 250 |
| 0603NPO130_&N1N-        | 13           | F,G,J,K | 100, 250 |
| 0603NPO150_&N1N-        | 15           | F,G,J,K | 100, 250 |
| 0603NPO160_&N1N-        | 16           | F,G,J,K | 100, 250 |

| PRESIDIO<br>PART NUMBER | CAP.<br>(pF) | TOL.    | WVDC     |
|-------------------------|--------------|---------|----------|
| 0603NPO180_&N1N-        | 18           | F,G,J,K | 100, 250 |
| 0603NPO200_&N1N-        | 20           | F,G,J,K | 100, 250 |
| 0603NPO220_&N1N-        | 22           | F,G,J,K | 100, 250 |
| 0603NPO240_&N1N-        | 24           | F,G,J,K | 100, 250 |
| 0603NPO270_&N1N-        | 27           | F,G,J,K | 100, 250 |
| 0603NPO300_&N1N-        | 30           | F,G,J,K | 100, 250 |
| 0603NPO330_&N1N-        | 33           | F,G,J,K | 100, 250 |
| 0603NPO360_&N1N-        | 36           | F,G,J,K | 100, 250 |
| 0603NPO390_&N1N-        | 39           | F,G,J,K | 100, 250 |
| 0603NPO430_&N1N-        | 43           | F,G,J,K | 100, 250 |
| 0603NPO470_&N1N-        | 47           | F,G,J,K | 100, 250 |
| 0603NPO510_&N1N-        | 51           | F,G,J,K | 100, 250 |
| 0603NPO560_&N1N-        | 56           | F,G,J,K | 100, 250 |
| 0603NPO620_&N1N-        | 62           | F,G,J,K | 100, 250 |
| 0603NPO680_&N1N-        | 68           | F,G,J,K | 100, 250 |
| 0603NPO750_&N1N-        | 75           | F,G,J,K | 100, 250 |
| 0603NPO820_&N1N-        | 82           | F,G,J,K | 100, 250 |
| 0603NPO910_&N1N-        | 91           | F,G,J,K | 100, 250 |
| 0603NPO101_&N1N-        | 100          | F,G,J,K | 100, 250 |

For other cap values contact factory.  
Voltages in **BOLD** are for military and space.

## PART NUMBER CODES AND DIMENSIONS



### Capacitance Codes for Multilayer Capacitor

**First Two Digits** = Significant Figures of Capacitance in Picofarads  
**Third Digit** = Additional Number of Zeros  
**Examples:**  
0R1 = 0.1 pF  
1R0 = 1 pF  
100 = 10 pF  
101 = 100 pF  
102 = 1,000 pF  
103 = 10,000 pF

### Capacitance Tolerance Codes

| Code | Tolerance | Cap Range |
|------|-----------|-----------|
| A    | ± 0.05 pF | < 10 pF   |
| B    | ± 0.1 pF  | < 10 pF   |
| C    | ± 0.25 pF | < 10 pF   |
| D    | ± 0.5 pF  | < 10 pF   |
| E    | ± 0.5%    | ≥ 10 pF   |
| F    | ± 1%      | ≥ 10 pF   |
| G    | ± 2%      | ≥ 10 pF   |
| J    | ± 5%      | ≥ 10 pF   |
| K    | ± 10%     | ≥ 10 pF   |
| M    | ± 20%     | ≥ 10 pF   |

| LENGTH (L)<br>INCH (mm)        | WIDTH (W)<br>INCH (mm)         | THICKNESS (T)<br>INCH (mm) | METALIZATION BAND (M.B.)<br>INCH (mm)               |
|--------------------------------|--------------------------------|----------------------------|-----------------------------------------------------|
| 0.063 ± 0.006<br>(1.60 ± 0.15) | 0.032 ± 0.006<br>(0.81 ± 0.15) | 0.035 MAX<br>(0.89 MAX)    | 0.005 (0.127) min. band<br>0.020 (0.508) min. space |

### Termination Codes

| Code | RoHS<br>Comp. | Typical<br>Application | Termination<br>Build up                                  | Recommended<br>Reflow Temp.               |
|------|---------------|------------------------|----------------------------------------------------------|-------------------------------------------|
| N    | No            | Solder Reflow          | 90% Tin/10% Lead Plated<br>Nickel Barrier<br>Silver Base | 220°C to 260°C Typical                    |
| T    | Yes           | Solder Reflow          | 100% Tin Plated<br>Nickel Barrier<br>Silver Base         | 220°C to 260°C Typical                    |
| P    | Yes           | Conductive Epoxy       | <b>Palladium-Silver<br/>Non-Magnetic</b>                 | Cure Epoxy as per<br>Manufacturer's Spec. |

Other terminations available. Please contact factory.

### Working Voltage

| Code | WVDC |
|------|------|
| 1    | 25   |
| 2    | 50   |
| 3    | 100  |
| A    | 150  |
| 4    | 200  |
| &    | 250  |

### Packaging Codes

|                                                             |
|-------------------------------------------------------------|
| 1 = Unmarked, Tape & Reel                                   |
| 2 = Laser Marked, Tape & Reel                               |
| 5 = Unmarked, Waffle Pack                                   |
| 6 = Laser Marked, Waffle Pack                               |
| Laser Marking available<br>at extra cost (except 0402 size) |

### RoHS

| Code | Compliant |
|------|-----------|
| N    | No        |
| C    | Yes       |

Call factory for digital copy of S2P files.

Presidio's NPO capacitors can be upscreened to SPACE LEVEL testing.  
Consult the factory for details. Some voltage derating may apply.

## PART NUMBER EXAMPLE (How to Order)

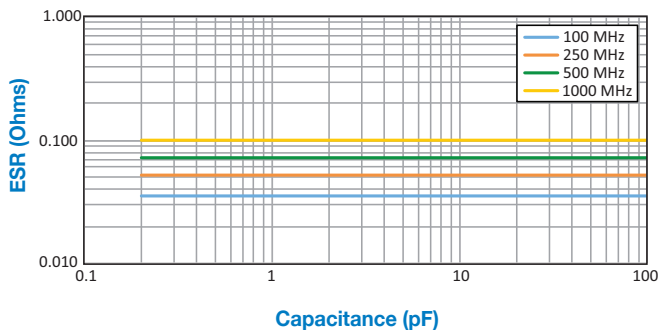
| 0603 | NPO        | 270                    | F                              | &                 | N                            | 1                          | N                     | —                                |
|------|------------|------------------------|--------------------------------|-------------------|------------------------------|----------------------------|-----------------------|----------------------------------|
| Size | Dielectric | Capacitance<br>(27 pF) | Capacitance Tolerance<br>(±1%) | Voltage<br>(250V) | Termination<br>(Plated SnPb) | Packaging<br>(Tape & Reel) | Not RoHS<br>Compliant | Design-In Code<br>(See Web Link) |



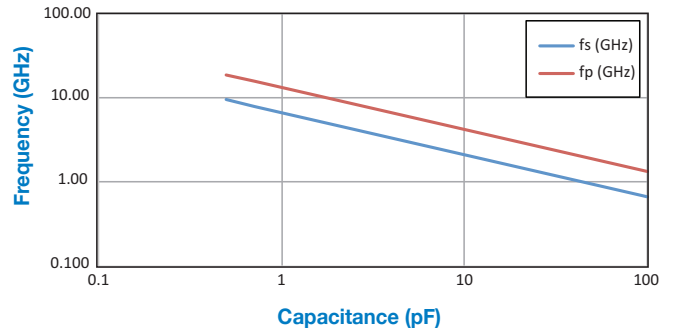
PRESIDIO COMPONENTS, INC.

# 0603 HIGH Q NPO CERAMIC CAPACITORS PERFORMANCE CHARTS

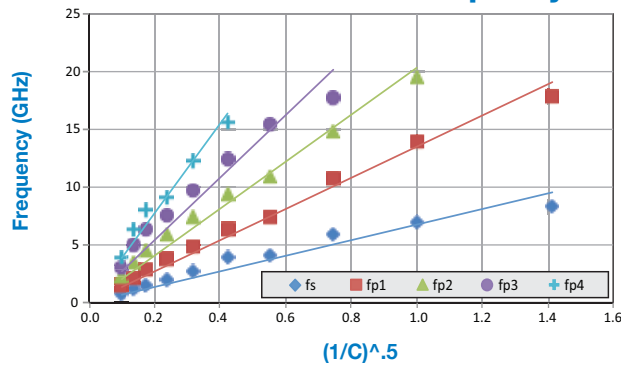
## 0603NPO ESR vs. Frequency



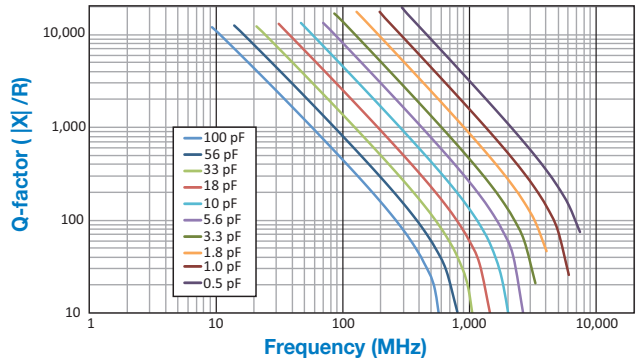
## 0603NPO Resonant Frequency



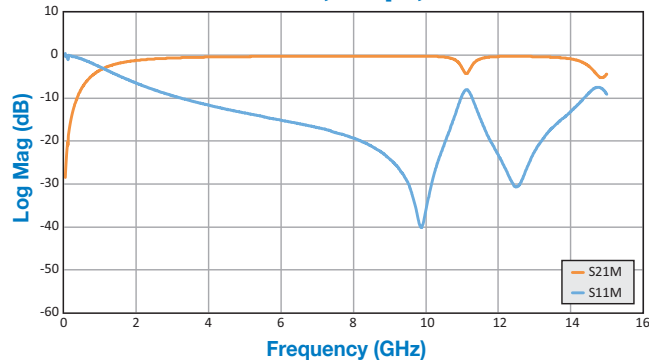
## 0603NPO Resonant Frequency



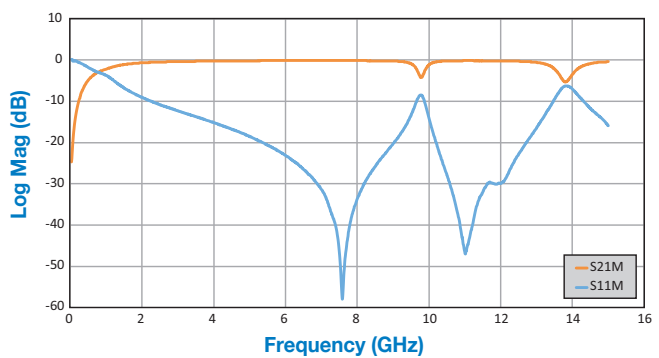
## 0603NPO Q vs. FREQUENCY



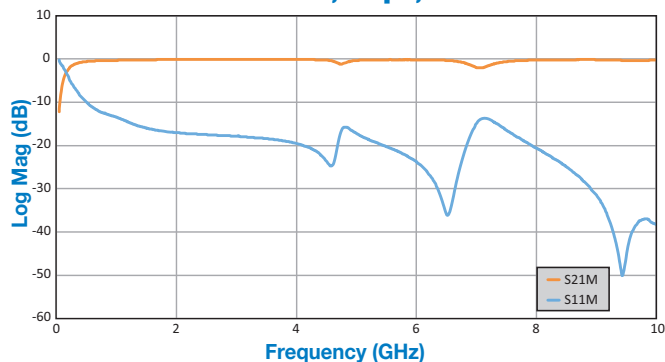
## 0603NPO, 1.5pF, S2P



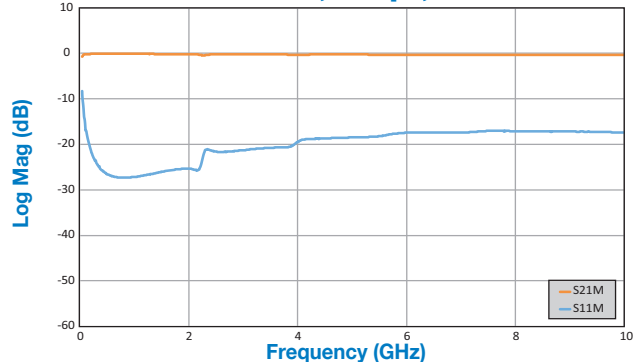
## 0603NPO, 2.2pF, S2P



## 0603NPO, 10pF, S2P



## 0603NPO, 100pF, S2P



Call factory for digital copy of  
the 0603 NPO S2P files.



PRESIDIO COMPONENTS, INC.

7169 Construction Court, San Diego, CA 92121 • +1-858-578-9390 • info@presidiocomponents.com

## A WORD TO THE DESIGN ENGINEER About Presidio “Design In” Codes

After the design work is done, outsourcing manufacturing on a global basis is a management option. At Presidio Components, we are striving for complete customer satisfaction which includes “after” service for all of our products.

We added a “Design In” locator code for quick traceability, if needed. Please select your location from the list below and add the appropriate code at the end of the part number.

If you need assistance give us a call at **(858) 578-9390** or email us at **[info@presidiocomponents.com](mailto:info@presidiocomponents.com)**.

**UNITED STATES**

| USA                  | Code | USA               |
|----------------------|------|-------------------|
| Alabama              | G    | Nebraska          |
| Alaska               | P    | Nevada, North     |
| Arizona              | D    | Nevada, South     |
| Arkansas             | P    | New Hampshire     |
| California, North    | B    | New Jersey        |
| California, South    | C    | New Mexico        |
| Colorado             | E    | New York, Metro   |
| Connecticut          | L    | New York, Upstate |
| Delaware             | I    | North Carolina    |
| District of Columbia | H    | North Dakota      |
| Florida              | G    | Ohio              |
| Georgia              | G    | Oklahoma          |
| Hawaii               | P    | Oregon            |
| Idaho                | A    | Pennsylvania      |
| Illinois             | N    | Rhode Island      |
| Indiana              | M    | South Carolina    |
| Iowa                 | O    | South Dakota      |
| Kansas               | P    | Tennessee         |
| Kentucky             | M    | Texas             |
| Louisiana            | P    | Utah              |
| Maine                | L    | Vermont           |
| Maryland             | H    | Virginia          |
| Massachusetts        | L    | Washington        |
| Michigan             | N    | West Virginia     |
| Minnesota            | O    | Wisconsin, East   |
| Mississippi          | G    | Wisconsin, West   |
| Missouri             | N    | Wyoming           |
| Montana              | A    |                   |

## OUTSIDE THE UNITED STATES

| Code | Americas                    | Code | Europe                   | Code |
|------|-----------------------------|------|--------------------------|------|
| P    | Canada                      | R    | Austria                  | 3    |
| B    | Mexico                      | R    | Belgium                  | 1    |
| C    | Caribbean                   | R    | Denmark                  | 5    |
| L    | Central America             | R    | Finland                  | 5    |
| J    | South America               | R    | France                   | 2    |
| D    |                             |      | Germany                  | 3    |
| J    | <b>Pacific Rim</b>          |      | Ireland                  | 6    |
| K    | Australia                   | S    | Italy                    | 4    |
| G    | China                       | T    | Luxembourg               | 1    |
| O    | Japan                       | U    | Netherlands              | 1    |
| M    | Korea, South                | V    | Norway                   | 5    |
| P    | Malaysia                    | W    | Sweden                   | 5    |
| A    | Singapore                   | X    | Switzerland              | 3    |
| I    | Other Pacific Rim Countries | Y    | United Kingdom           | 6    |
| L    |                             |      | Other European Countries | 7    |
| G    |                             |      |                          |      |
| O    |                             |      | <b>Other</b>             |      |
| G    |                             |      | India                    | Z    |
| F    |                             |      | Israel                   | 8    |
| E    |                             |      | Rest of World            | 9    |

## PART NUMBER EXAMPLE:

0505NPO101FAN1NA

**PART DESCRIPTION: Ceramic Capacitor,  
0505, NPO, 100pF  $\pm$  1%,  
150 VDC, Plated SnPb, Tape and Reel,  
Non RoHS, Design-In Code A for  
Washington State.**


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7169 Construction Court, San Diego, CA 92121 • Tel: 858-578-9390 • Fax: 858-578-6225  
www.presidiocomponents.com • info@presidiocomponents.com