

RF series

Ultra High Q & Low ESR capacitor series

◆ Features

- » High Q and low ESR performance at high frequency
- » Ultra low capacitance to 0.1pF
- » Can offer high precision tolerance to $\pm 0.05\text{pF}$
- » Quality improvement of telephone calls for low power loss and better performance

◆ Application

- » Telecommunication products & equipments:
 - Mobile phone, WLAN, Base station
- » RF module: Power amplifier, VCO
- » Tuners

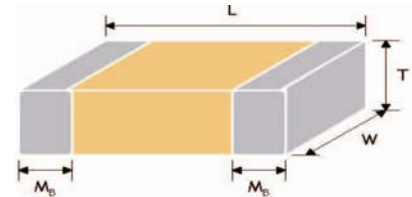
◆ Part Number

| RF | 0402 | N | 100 | J | 500 |
|--------|-------|-----------------|--|--|--|
| Series | Size | Dielectric | Capacitance | Tolerance | Rated voltage |
| | Inch: | N: NPO (COG) | Two significant Digits followed by no. of zeros and P is in place of decimal point Eg.: 0P5 = 0.5pF 1P0 = 1.0pF 100 = 10×10^0 = 10pF | A= $\pm 0.05\text{pF}$ B= $\pm 0.1\text{pF}$ C= $\pm 0.25\text{pF}$ D= $\pm 0.5\text{pF}$ F= $\pm 1\%$ G= $\pm 2\%$ J= $\pm 5\%$ | Two significant Digits followed by no. of zeros and V is in place of decimal point 6V3 = 6.3 VDC 100= 10 VDC 250= 25 VDC 500= 50 VDC 101= 100 VDC 251= 250 VDC |

◆ External Dimensions

| Size Inch | L (mm) | W (mm) | T (mm) / Symbol | M _B (mm) |
|-----------|-----------------|-----------------|-----------------|---------------------|
| 0201 | 0.60 \pm 0.03 | 0.30 \pm 0.03 | 0.30 \pm 0.03 | 0.15 \pm 0.05 |
| 0402 | 1.00 \pm 0.05 | 0.50 \pm 0.05 | 0.50 \pm 0.05 | 0.25+0.05/-0.10 |
| 0603 | 1.60 \pm 0.10 | 0.80 \pm 0.10 | 0.80 \pm 0.07 | 0.40 \pm 0.15 |
| 0805 | 2.00 \pm 0.20 | 1.25 \pm 0.20 | 0.85 \pm 0.10 | 0.50 \pm 0.20 |

Reflow soldering only is recommended



◆ General Electrical Data

| | |
|---|---|
| Dielectric | NPO (COG) |
| Size | 0201, 0402, 0603, 0805 |
| Capacitance* | 0201: 0.1pF to 33pF; 0402: 0.1pF to 22pF; 0603: 0.3pF to 47pF; 0805: 0.3pF to 100pF |
| Capacitance tolerance | Cap \leq 5pF: A ($\pm 0.05\text{pF}$), B ($\pm 0.1\text{pF}$), C ($\pm 0.25\text{pF}$) 5pF<Cap<10pF: B ($\pm 0.1\text{pF}$), C ($\pm 0.25\text{pF}$), D ($\pm 0.5\text{pF}$) Cap \geq 10pF: F ($\pm 1\%$), G ($\pm 2\%$), J ($\pm 5\%$) |
| Rated voltage (WVDC) | 6.3V, 10V, 25V, 50V, 100V, 250V |
| Q* | Cap \geq 30pF, Q \geq 1000; Cap<30pF, Q \geq 400+20C |
| Insulation resistance at U _R | $\geq 10\text{G}\Omega$ |
| Operating temperature | -55 to +125°C |
| Capacitance change | $\pm 30\text{ppm}/^\circ\text{C}$; 0201Cap \geq 22pF, $\pm 60\text{ppm}/^\circ\text{C}$ |
| Termination | Ni/Sn (lead-free termination) |

* Measured at the conditions of 25°C ambient temperature and 30~70% related humidity.

** Apply 1.0 \pm 0.2Vrms, 1.0MHz \pm 10% for Cap \leq 1000pF and 1.0 \pm 0.2Vrms, 1.0kHz \pm 10% for Cap>1000pF.

◆ Capacitance Range

| Dielectric | | NPO (COG) | | | | | Tolerance |
|---------------|-------------|-----------|------|----|-----|---------|-----------|
| Size | 0201 | | 0402 | | | | |
| Rated Voltage | 6.3 | 10 | 25 | 50 | 100 | | |
| Capacitance | 0.1pF (0P1) | | | | | | B |
| | 0.2pF (0P2) | | | | | | A, B |
| | 0.3pF (0P3) | | | | | | A, B |
| | 0.4pF (0P4) | | | | | | A, B |
| | 0.5pF (0P5) | | | | | | A, B, C |
| | 0.6pF (0P6) | | | | | | A, B, C |
| | 0.7pF (0P7) | | | | | | A, B, C |
| | 0.8pF (0P8) | | | | | | A, B, C |
| | 0.9pF (0P9) | | | | | | A, B, C |
| | 1.0pF (1P0) | | | | | | A, B, C |
| | 1.1pF (1P1) | | | | | | A, B, C |
| | 1.2pF (1P2) | | | | | | A, B, C |
| | 1.3pF (1P3) | | | | | | A, B, C |
| | 1.4pF (1P4) | | | | | | A, B, C |
| | 1.5pF (1P5) | | | | | | A, B, C |
| | 1.6pF (1P6) | | | | | | A, B, C |
| | 1.7pF (1P7) | | | | | | A, B, C |
| | 1.8pF (1P8) | | | | | | A, B, C |
| | 1.9pF (1P9) | | | | | | A, B, C |
| | 2.0pF (2P0) | | | | | | A, B, C |
| | 2.1pF (2P1) | | | | | | A, B, C |
| | 2.2pF (2P2) | | | | | | A, B, C |
| | 2.3pF (2P3) | | | | | | A, B, C |
| | 2.4pF (2P4) | | | | | | A, B, C |
| | 2.5pF (2P5) | | | | | | A, B, C |
| | 2.6pF (2P6) | | | | | | A, B, C |
| | 2.7pF (2P7) | | | | | | A, B, C |
| | 2.8pF (2P8) | | | | | | A, B, C |
| | 2.9pF (2P9) | | | | | | A, B, C |
| | 3.0pF (3P0) | | | | | | A, B, C |
| | 3.1pF (3P1) | | | | | | A, B, C |
| | 3.2pF (3P2) | | | | | | A, B, C |
| | 3.3pF (3P3) | | | | | | A, B, C |
| | 3.4pF (3P4) | | | | | | A, B, C |
| | 3.5pF (3P5) | | | | | | A, B, C |
| | 3.6pF (3P6) | | | | | | A, B, C |
| | 3.7pF (3P7) | | | | | | A, B, C |
| | 3.8pF (3P8) | | | | | | A, B, C |
| | 3.9pF (3P9) | | | | | | A, B, C |
| | 4.0pF (4P0) | | | | | | A, B, C |
| | 4.1pF (4P1) | | | | | | A, B, C |
| | 4.2pF (4P2) | | | | | | A, B, C |
| | 4.3pF (4P3) | | | | | | A, B, C |
| | 4.4pF (4P4) | | | | | | A, B, C |
| | 4.5pF (4P5) | | | | | | A, B, C |
| | 4.6pF (4P6) | | | | | | A, B, C |
| | 4.7pF (4P7) | | | | | | A, B, C |
| | 4.8pF (4P8) | | | | | | A, B, C |
| | 4.9pF (4P9) | | | | | | A, B, C |
| | 5.0pF (5P0) | | | | | | A, B, C |
| 5.1pF (5P1) | | | | | | B, C, D | |
| 5.2pF (5P2) | | | | | | B, C, D | |
| 5.3pF (5P3) | | | | | | B, C, D | |
| 5.4pF (5P4) | | | | | | B, C, D | |
| 5.5pF (5P5) | | | | | | B, C, D | |

◆ Capacitance Range

| Dielectric | | COG (NPO) | | | | | Tolerance |
|-------------|---------------|-----------|----|----|------|---------|-----------|
| | | 0201 | | | 0402 | | |
| Size | Rated Voltage | 6.3 | 10 | 25 | 50 | 100 | |
| Capacitance | 5.6pF (5P6) | | | | | | B, C, D |
| | 5.7pF (5P7) | | | | | | B, C, D |
| | 5.8pF (5P8) | | | | | | B, C, D |
| | 5.9pF (5P9) | | | | | | B, C, D |
| | 6.0pF (6P0) | | | | | | B, C, D |
| | 6.1pF (6P1) | | | | | | B, C, D |
| | 6.2pF (6P2) | | | | | | B, C, D |
| | 6.3pF (6P3) | | | | | | B, C, D |
| | 6.4pF (6P4) | | | | | | B, C, D |
| | 6.5pF (6P5) | | | | | | B, C, D |
| | 6.6pF (6P6) | | | | | | B, C, D |
| | 6.7pF (6P7) | | | | | | B, C, D |
| | 6.8pF (6P8) | | | | | | B, C, D |
| | 6.9pF (6P9) | | | | | | B, C, D |
| | 7.0pF (7P0) | | | | | | B, C, D |
| | 7.1pF (7P1) | | | | | | B, C, D |
| | 7.2pF (7P2) | | | | | | B, C, D |
| | 7.3pF (7P3) | | | | | | B, C, D |
| | 7.4pF (7P4) | | | | | | B, C, D |
| | 7.5pF (7P5) | | | | | | B, C, D |
| | 7.6pF (7P6) | | | | | | B, C, D |
| | 7.7pF (7P7) | | | | | | B, C, D |
| | 7.8pF (7P8) | | | | | | B, C, D |
| | 7.9pF (7P9) | | | | | | B, C, D |
| | 8.0pF (8P0) | | | | | | B, C, D |
| | 8.1pF (8P1) | | | | | | B, C, D |
| | 8.2pF (8P2) | | | | | | B, C, D |
| | 8.3pF (8P3) | | | | | | B, C, D |
| | 8.4pF (8P4) | | | | | | B, C, D |
| | 8.5pF (8P5) | | | | | | B, C, D |
| | 8.6pF (8P6) | | | | | | B, C, D |
| | 8.7pF (8P7) | | | | | | B, C, D |
| | 8.8pF (8P8) | | | | | | B, C, D |
| 8.9pF (8P9) | | | | | | B, C, D | |
| 9.0pF (9P0) | | | | | | B, C, D | |
| 9.1pF (9P1) | | | | | | B, C, D | |
| 9.2pF (9P2) | | | | | | B, C, D | |
| 9.3pF (9P3) | | | | | | B, C, D | |
| 9.4pF (9P4) | | | | | | B, C, D | |
| 9.5pF (9P5) | | | | | | B, C, D | |
| 9.6pF (9P6) | | | | | | B, C, D | |
| 9.7pF (9P7) | | | | | | B, C, D | |
| 9.8pF (9P8) | | | | | | B, C, D | |
| 9.9pF (9P9) | | | | | | B, C, D | |
| 10pF (100) | | | | | | F, G, J | |
| 11pF (110) | | | | | | F, G, J | |
| 12pF (120) | | | | | | F, G, J | |
| 13pF (130) | | | | | | F, G, J | |
| 15pF (150) | | | | | | F, G, J | |
| 16pF (160) | | | | | | F, G, J | |
| 18pF (180) | | | | | | F, G, J | |
| 20pF (200) | | | | | | F, G, J | |
| 22pF (220) | | | | | | F, G, J | |

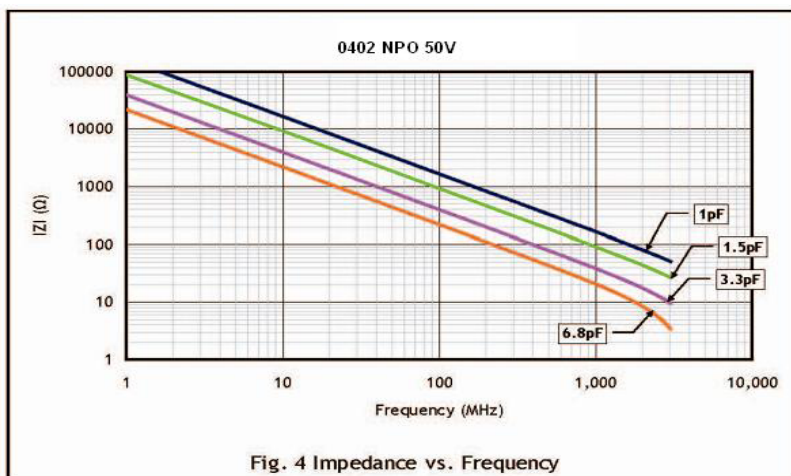
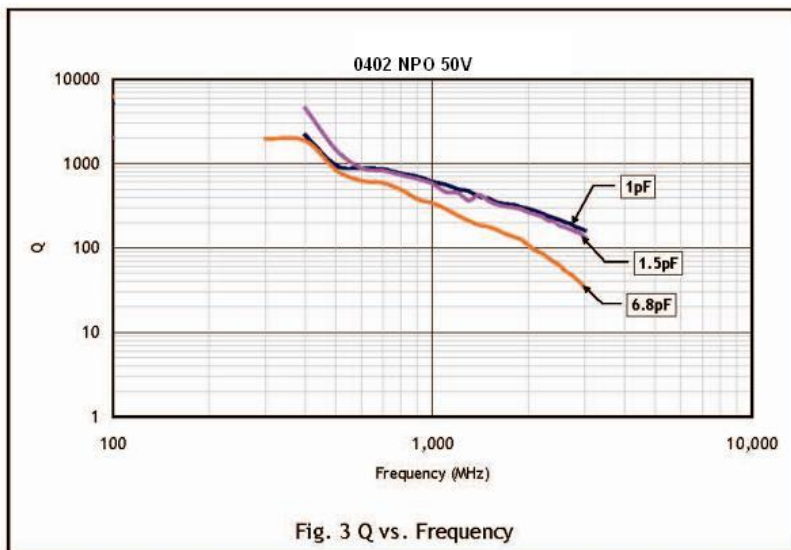
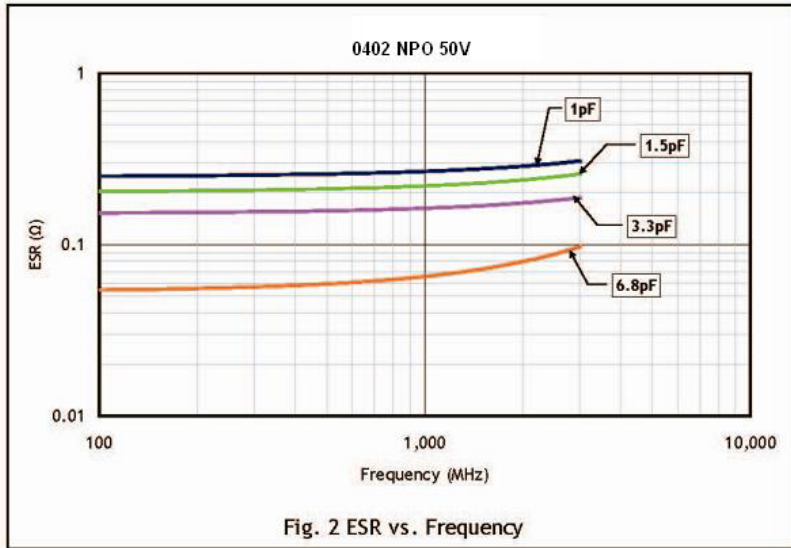
| Dielectric | | COG (NPO) | | | | | Tolerance |
|---------------|------------|-----------|----|------|-----|---------|-----------|
| Size | 0201 | | | 0402 | | | |
| Rated Voltage | 6.3 | 10 | 25 | 50 | 100 | | |
| Capacitance | 24pF (240) | | | | | | F, G, J |
| | 27pF (270) | | | | | | F, G, J |
| | 30pF (300) | | | | | | F, G, J |
| | 33pF(330) | | | | | | F, G, J |
| | 36pF(360) | | | | | | F, G, J |
| | 39pF(390) | | | | | | F, G, J |
| | 43pF(430) | | | | | | F, G, J |
| | 47pF(470) | | | | | | F, G, J |
| | 56pF(560) | | | | | | F, G, J |
| | 68pF(680) | | | | | | F, G, J |
| | 82pF(820) | | | | | | F, G, J |
| 100pF(101) | | | | | | F, G, J | |

◆ Capacitance Range

| Dielectric | | NPO (C0G) | | | | | | |
|---------------|------------|-----------|-----|-----|------|-----|---------|-----------|
| Size | | 0603 | | | 0805 | | | Tolerance |
| Rated Voltage | | 50 | 100 | 250 | 50 | 100 | 250 | |
| Capacitance | 0.1pF(0P1) | | | | | | | |
| | 0.2pF(0P2) | | | | | | | |
| | 0.3pF(0P3) | | | | | | | A, B |
| | 0.4pF(0P4) | | | | | | | A, B |
| | 0.5pF(0P5) | | | | | | | A, B, C |
| | 0.6pF(0P6) | | | | | | | A, B, C |
| | 0.7pF(0P7) | | | | | | | A, B, C |
| | 0.8pF(0P8) | | | | | | | A, B, C |
| | 0.9pF(0P9) | | | | | | | A, B, C |
| | 1.0pF(1P0) | | | | | | | A, B, C |
| | 1.2pF(1P2) | | | | | | | A, B, C |
| | 1.5pF(1P5) | | | | | | | A, B, C |
| | 1.8pF(1P8) | | | | | | | A, B, C |
| | 2.2pF(2P2) | | | | | | | A, B, C |
| | 2.7pF(2P7) | | | | | | | A, B, C |
| | 3.3pF(3P3) | | | | | | | A, B, C |
| | 3.9pF(3P9) | | | | | | | A, B, C |
| | 4.7pF(4P7) | | | | | | | A, B, C |
| | 5.6pF(5P6) | | | | | | | B, C, D |
| | 6.8pF(6P8) | | | | | | | B, C, D |
| | 8.2pF(8P2) | | | | | | | B, C, D |
| | 10pF(100) | | | | | | | F, G, J |
| | 11pF(110) | | | | | | | F, G, J |
| | 12pF(120) | | | | | | | F, G, J |
| | 13pF(130) | | | | | | | F, G, J |
| | 15pF(150) | | | | | | | F, G, J |
| | 16pF(160) | | | | | | | F, G, J |
| | 18pF(180) | | | | | | | F, G, J |
| | 20pF(200) | | | | | | | F, G, J |
| | 22pF(220) | | | | | | | F, G, J |
| | 24pF(240) | | | | | | | F, G, J |
| | 27pF(270) | | | | | | | F, G, J |
| | 30pF(300) | | | | | | | F, G, J |
| | 33pF(330) | | | | | | | F, G, J |
| | 36pF(360) | | | | | | | F, G, J |
| | 39pF(390) | | | | | | | F, G, J |
| | 43pF(430) | | | | | | | F, G, J |
| | 47pF(470) | | | | | | | F, G, J |
| | 56pF(560) | | | | | | | F, G, J |
| | 68pF(680) | | | | | | | F, G, J |
| 82pF(820) | | | | | | | F, G, J | |
| 100pF(101) | | | | | | | F, G, J | |

1. Faithful link provides E96 (IEC-63) product range with which capacitance $\leq 10\text{pF}$
2. For more information about products with special capacitance or other data, please contact Faithful link

◆ Electrical Characteristics



◆ Electrical Characteristics

