

## FEATURES

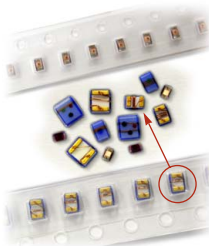
Ceramic body, wire wound construction to provide highest SRFs available in 0603 size. Ultra-compact inductors provide best Q values at high frequencies.

Available in 3 sizes:

1008 for 4.7 nH to 4700 nH  
0805 for 2.8 nH to 820 nH  
0603 for 1.6 nH to 270 nH

## APPLICATIONS

- IF Impedance matching
- RF Oscillation circuit
- IG choke
- Circuits where large currents flow (IPA, LNA applications)
- Circuits where high Q characteristics (DCC, LNA applications)

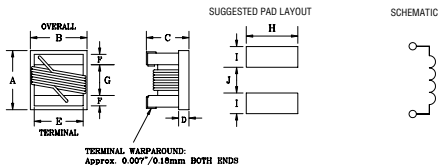


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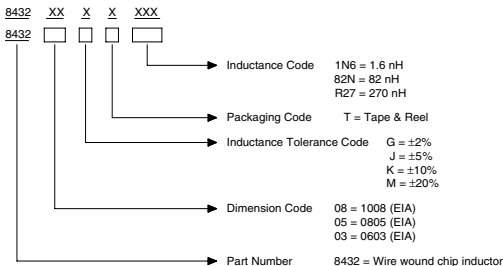
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## MECHANICAL AND SCHEMATIC (All dimensions in millimeters)



| SIZE | Range (nH) | A Max. | B Max. | C Max. | D Ref. | E    | F    | G    | H    | I    | J    |
|------|------------|--------|--------|--------|--------|------|------|------|------|------|------|
| 1008 | 4.7 - 4700 | 2.92   | 2.79   | 2.10   | 0.51   | 2.03 | 0.51 | 1.52 | 2.54 | 1.02 | 1.27 |
| 0805 | 2.8 - 820  | 2.29   | 1.73   | 1.52   | 0.51   | 1.27 | 0.51 | 1.02 | 1.78 | 1.02 | 0.76 |
| 0603 | 1.6 - 270  | 1.80   | 1.12   | 1.02   | 0.38   | 0.76 | 0.33 | 0.86 | 1.02 | 0.64 | 0.64 |

## PART NUMBERING



Continued



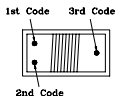
## ELECTRICAL SPECIFICATIONS @ 25 °C

## 1008 Wire Wound Chip Inductors

| Inductance<br>(nH) | Test<br>Frequency<br>(MHz) | Q<br>Min. | Test<br>Frequency<br>(MHz) | SRF<br>Min.<br>(MHz) | RDC<br>Max.<br>(Ω) | IDC<br>Max.<br>(mA) | COLOR CODING    |                 |                 |
|--------------------|----------------------------|-----------|----------------------------|----------------------|--------------------|---------------------|-----------------|-----------------|-----------------|
|                    |                            |           |                            |                      |                    |                     | 1 <sup>ST</sup> | 2 <sup>ND</sup> | 3 <sup>RD</sup> |
| 4.7                | 50                         | 50        | 500                        | 4100                 | 0.08               | 1000                | Black           | Yellow          | Violet          |
| 5.6                | 50                         | 50        | 500                        | 4100                 | 0.15               | 1000                | Black           | Green           | Blue            |
| 10                 | 50                         | 50        | 500                        | 4100                 | 0.08               | 1000                | Brown           | Black           | Black           |
| 12                 | 50                         | 50        | 500                        | 3300                 | 0.09               | 1000                | Brown           | Red             | Black           |
| 15                 | 50                         | 50        | 500                        | 2500                 | 0.10               | 1000                | Brown           | Green           | Black           |
| 18                 | 50                         | 50        | 350                        | 2500                 | 0.11               | 1000                | Brown           | Gray            | Black           |
| 22                 | 50                         | 55        | 350                        | 2400                 | 0.12               | 1000                | Red             | Red             | Black           |
| 27                 | 50                         | 55        | 350                        | 1600                 | 0.13               | 1000                | Red             | Violet          | Black           |
| 33                 | 50                         | 60        | 350                        | 1600                 | 0.14               | 1000                | Orange          | Orange          | Black           |
| 39                 | 50                         | 60        | 350                        | 1500                 | 0.15               | 1000                | Orange          | White           | Black           |
| 47                 | 50                         | 65        | 350                        | 1500                 | 0.16               | 1000                | Yellow          | Violet          | Black           |
| 56                 | 50                         | 65        | 350                        | 1300                 | 0.18               | 1000                | Green           | Blue            | Black           |
| 68                 | 50                         | 65        | 350                        | 1300                 | 0.20               | 1000                | Blue            | Gray            | Black           |
| 82                 | 50                         | 60        | 350                        | 1000                 | 0.22               | 1000                | Gray            | Red             | Black           |
| 100                | 25                         | 60        | 350                        | 1000                 | 0.56               | 650                 | Brown           | Black           | Brown           |
| 120                | 25                         | 60        | 350                        | 950                  | 0.63               | 650                 | Brown           | Red             | Brown           |
| 150                | 25                         | 45        | 100                        | 850                  | 0.70               | 580                 | Brown           | Green           | Brown           |
| 180                | 25                         | 45        | 100                        | 750                  | 0.77               | 620                 | Brown           | Gray            | Brown           |
| 220                | 25                         | 45        | 100                        | 700                  | 0.84               | 500                 | Red             | Red             | Brown           |
| 270                | 25                         | 45        | 100                        | 600                  | 0.91               | 500                 | Red             | Violet          | Brown           |
| 330                | 25                         | 45        | 100                        | 570                  | 1.05               | 450                 | Orange          | Orange          | Brown           |
| 390                | 25                         | 45        | 100                        | 500                  | 1.12               | 470                 | Orange          | White           | Brown           |
| 470                | 25                         | 45        | 100                        | 450                  | 1.19               | 470                 | Yellow          | Violet          | Brown           |
| 560                | 25                         | 45        | 100                        | 415                  | 1.33               | 400                 | Green           | Blue            | Brown           |
| 620                | 25                         | 45        | 100                        | 375                  | 1.40               | 300                 | Blue            | Red             | Brown           |
| 680                | 25                         | 45        | 100                        | 375                  | 1.47               | 400                 | Blue            | Gray            | Brown           |
| 750                | 25                         | 45        | 100                        | 360                  | 1.54               | 360                 | Violet          | Green           | Brown           |
| 820                | 25                         | 45        | 100                        | 350                  | 1.61               | 400                 | Gray            | Red             | Brown           |
| 910                | 25                         | 35        | 50                         | 320                  | 1.68               | 380                 | White           | Brown           | Brown           |
| 1000               | 25                         | 35        | 50                         | 220                  | 1.75               | 370                 | Brown           | Black           | Brown           |
| 1200               | 7.9                        | 35        | 50                         | 186                  | 2.0                | 310                 | Brown           | Red             | Red             |
| 1500               | 7.9                        | 28        | 50                         | 200                  | 2.3                | 330                 | Brown           | Green           | Red             |
| 1800               | 7.9                        | 25        | 50                         | 170                  | 2.6                | 300                 | Brown           | Gray            | Red             |
| 2200               | 7.9                        | 20        | 50                         | 110                  | 2.8                | 280                 | Red             | Red             | Red             |
| 2700               | 7.9                        | 15        | 25                         | 140                  | 3.2                | 290                 | Red             | Violet          | Red             |
| 3300               | 7.9                        | 15        | 25                         | 100                  | 3.4                | 290                 | Orange          | Orange          | Red             |
| 3900               | 7.9                        | 15        | 25                         | 100                  | 3.6                | 260                 | Orange          | White           | Red             |
| 4700               | 7.9                        | 13        | 25                         | 90                   | 4.0                | 260                 | Yellow          | Violet          | Red             |

When ordering, please specify tolerance and packaging codes.

Ex: 8432-08JT3N3  
 Tolerance: J = ±5%, K = 10%  
 Packaging: Clear tape and reel (standard).  
 Operating temperature range: -40 °C to 125 °C



Continued



## ELECTRICAL SPECIFICATIONS @ 25°C

## 0805 Wire Wound Chip Inductors

| Inductance (nH) | Test Frequency (MHz) | Q Min. | Test Frequency (MHz) | SRF Min. (MHz) | RDC Max. (Ω) | IDC Max. (mA) | COLOR CODING |
|-----------------|----------------------|--------|----------------------|----------------|--------------|---------------|--------------|
| 2.8             | 250                  | 70     | 1500                 | 7900           | 0.06         | 800           | Gray         |
| 3.0             | 250                  | 65     | 1500                 | 7900           | 0.06         | 800           | White        |
| 3.3             | 250                  | 50     | 1500                 | 7900           | 0.08         | 600           | Black        |
| 5.6             | 250                  | 65     | 1000                 | 5500           | 0.08         | 600           | Orange       |
| 6.8             | 250                  | 50     | 1000                 | 5500           | 0.11         | 600           | Brown        |
| 7.5             | 250                  | 50     | 1000                 | 4500           | 0.14         | 600           | Green        |
| 8.2             | 250                  | 50     | 1000                 | 4700           | 0.12         | 600           | Red          |
| 10              | 250                  | 60     | 500                  | 4200           | 0.10         | 600           | Blue         |
| 12              | 250                  | 50     | 500                  | 4000           | 0.15         | 600           | Orange       |
| 15              | 250                  | 50     | 500                  | 3400           | 0.17         | 600           | Yellow       |
| 18              | 250                  | 50     | 500                  | 3300           | 0.20         | 600           | Green        |
| 22              | 250                  | 55     | 500                  | 2600           | 0.22         | 500           | Blue         |
| 24              | 250                  | 50     | 500                  | 2000           | 0.22         | 500           | Gray         |
| 27              | 250                  | 55     | 500                  | 2500           | 0.25         | 500           | Violet       |
| 33              | 250                  | 60     | 500                  | 2050           | 0.27         | 500           | Gray         |
| 36              | 250                  | 55     | 500                  | 1700           | 0.27         | 500           | Orange       |
| 39              | 250                  | 60     | 500                  | 2000           | 0.29         | 500           | White        |
| 43              | 200                  | 60     | 500                  | 1650           | 0.34         | 500           | Yellow       |
| 47              | 200                  | 60     | 500                  | 1650           | 0.31         | 500           | Black        |
| 56              | 200                  | 60     | 500                  | 1550           | 0.34         | 500           | Brown        |
| 68              | 200                  | 60     | 500                  | 1450           | 0.38         | 500           | Red          |
| 82              | 150                  | 65     | 500                  | 1300           | 0.42         | 400           | Orange       |
| 91              | 150                  | 65     | 500                  | 1200           | 0.48         | 400           | Black        |
| 100             | 150                  | 65     | 500                  | 1200           | 0.46         | 400           | Yellow       |
| 110             | 150                  | 50     | 250                  | 1000           | 0.48         | 400           | Brown        |
| 120             | 150                  | 50     | 250                  | 1100           | 0.51         | 400           | Green        |
| 150             | 100                  | 50     | 250                  | 920            | 0.56         | 400           | Blue         |
| 180             | 100                  | 50     | 250                  | 870            | 0.64         | 400           | Violet       |
| 200             | 100                  | 50     | 250                  | 860            | 0.68         | 400           | Red          |
| 220             | 100                  | 50     | 250                  | 850            | 0.70         | 400           | Gray         |
| 240             | 100                  | 44     | 250                  | 690            | 1.00         | 350           | Red          |
| 250             | 100                  | 45     | 250                  | 660            | 1.20         | 350           | Yellow       |
| 270             | 100                  | 48     | 250                  | 650            | 1.30         | 350           | White        |
| 330             | 100                  | 48     | 250                  | 600            | 1.65         | 310           | Black        |
| 390             | 100                  | 48     | 250                  | 560            | 1.80         | 290           | Brown        |
| 470             | 50                   | 33     | 100                  | 375            | 2.0          | 250           | Violet       |
| 560             | 25                   | 23     | 50                   | 340            | 2.1          | 230           | Orange       |
| 680             | 25                   | 23     | 50                   | 188            | 2.3          | 190           | Green        |
| 820             | 25                   | 18     | 50                   | 215            | 2.5          | 180           | Blue         |

When ordering, please specify tolerance and packaging codes.

Ex: 8432-05JT3N3  
 Tolerance: J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$   
 Packaging: Clear tape and reel (standard).  
 Operating temperature range: -40 °C to 125 °C

1st Code



COLOR CODING

Continued



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## ELECTRICAL SPECIFICATIONS @ 25 °C

## 0603 Wire Wound Chip Inductors

| Inductance<br>(nH) | Tol % | Q<br>Min | SRF<br>Min.<br>(MHz) | RDC<br>Max.<br>(Ω) | IDC<br>Max.<br>(mA) | 900 MHz  |          | 1.7 GHz  |          | Color |
|--------------------|-------|----------|----------------------|--------------------|---------------------|----------|----------|----------|----------|-------|
|                    |       |          |                      |                    |                     | L<br>Typ | Q<br>Typ | L<br>Typ | Q<br>Typ |       |
| 1.6                | 10    | 24       | 12500                | 0.030              | 700                 | 1.67     | 49       | 1.65     | 63       | Re    |
| 1.8                | 10    | 16       | 12500                | 0.045              | 700                 | 1.63     | 35       | 1.66     | 50       | Bk    |
| 3.6                | 10    | 22       | 5900                 | 0.063              | 700                 | 3.72     | 53       | 3.71     | 65       | Re    |
| 3.9                | 10    | 22       | 6900                 | 0.080              | 700                 | 3.95     | 49       | 3.96     | 67       | Br    |
| 4.3                | 10    | 22       | 5900                 | 0.063              | 700                 | 4.32     | 50       | 4.33     | 70       | Or    |
| 4.7                | 10    | 20       | 5800                 | 0.116              | 700                 | 4.72     | 47       | 4.75     | 57       | Vit   |
| 5.1                | 10    | 20       | 5700                 | 0.140              | 700                 | 4.93     | 47       | 4.95     | 56       | Gr    |
| 6.3                | 10    | 20       | 5700                 | 0.140              | 700                 | 5.5      | 47       | 6.1      | 60       | Wt    |
| 6.8                | 10    | 27       | 5800                 | 0.110              | 700                 | 6.75     | 60       | 7.1      | 81       | Re    |
| 7.5                | 10    | 28       | 4800                 | 0.106              | 700                 | 7.70     | 60       | 7.82     | 65       | Br    |
| 8.2                | 10    | 28       | 4700                 | 0.109              | 700                 | 8.30     | 60       | 8.50     | 60       | Wt    |
| 8.7                | 5     | 28       | 4600                 | 0.109              | 700                 | 8.86     | 62       | 9.32     | 58       | Ye    |
| 9.5                | 5     | 28       | 5400                 | 0.135              | 700                 | 9.70     | 59       | 9.92     | 61       | Bk    |
| 10                 | 5     | 31       | 4800                 | 0.130              | 700                 | 10       | 66       | 10.6     | 83       | Or    |
| 11                 | 5     | 33       | 4000                 | 0.086              | 700                 | 11       | 53       | 11.5     | 56       | Gry   |
| 12                 | 5     | 35       | 4000                 | 0.130              | 700                 | 12.3     | 72       | 13.5     | 83       | Ye    |
| 15                 | 5     | 35       | 4000                 | 0.170              | 700                 | 15.4     | 64       | 16.8     | 89       | Gr    |
| 16                 | 5     | 34       | 3300                 | 0.104              | 700                 | 16.2     | 55       | 17.3     | 52       | Wt    |
| 18                 | 5     | 35       | 3100                 | 0.170              | 700                 | 18.7     | 70       | 21.4     | 69       | Bk    |
| 22                 | 5     | 38       | 3000                 | 0.190              | 700                 | 22.8     | 73       | 26.1     | 71       | Vit   |
| 24                 | 5     | 37       | 2650                 | 0.135              | 700                 | 24.5     | 45       | 28.7     | 39       | Bk    |
| 27                 | 5     | 40       | 2800                 | 0.220              | 600                 | 29.2     | 74       | 34.6     | 65       | Gry   |
| 30                 | 5     | 37       | 2250                 | 0.114              | 600                 | 31.4     | 47       | 39.9     | 28       | Br    |
| 33                 | 5     | 40       | 2300                 | 0.220              | 600                 | 36       | 67       | 49.5     | 42       | Wt    |
| 36                 | 5     | 38       | 2080                 | 0.250              | 600                 | 39.4     | 47       | 52.7     | 24       | Re    |
| 39                 | 5     | 40       | 2200                 | 0.250              | 600                 | 42.7     | 60       | 60.2     | 40       | Bk    |
| 43                 | 5     | 39       | 2000                 | 0.280              | 600                 | 47       | 44       | 64.9     | 21       | Or    |
| 47                 | 5     | 38       | 2000                 | 0.280              | 600                 | 52.2     | 62       | 77.2     | 35       | Br    |
| 56                 | 5     | 38       | 1900                 | 0.310              | 600                 | 62.5     | 56       | 97       | 26       | Re    |
| 68                 | 5     | 37       | 1700                 | 0.340              | 600                 | 80.5     | 54       | 168      | 21       | Or    |
| 72                 | 5     | 34       | 1700                 | 0.490              | 400                 | 82       | 53       | 135      | 20       | Ye    |
| 82                 | 5     | 34       | 1700                 | 0.540              | 400                 | 96.2     | 54       | 177      | 21       | Gr    |
| 100                | 5     | 34       | 1400                 | 0.580              | 400                 | 124      | 49       |          |          | Bk    |
| 110                | 5     | 32       | 1350                 | 0.610              | 300                 | 138      | 43       |          |          | Vit   |
| 120                | 5     | 32       | 1300                 | 0.650              | 300                 | 166      | 39       |          |          | Gry   |
| 150                | 5     | 28       | 990                  | 0.920              | 280                 | 250      | 25       |          |          | Wt    |
| 180                | 5     | 25       | 990                  | 1.250              | 240                 | 305      | 22       |          |          | Bk    |
| 220                | 5     | 25       | 900                  | 1.900              | 200                 | 480      | 8        |          |          | Br    |
| 270                | 5     | 24       | 900                  | 2.800              | 170                 | 980      | 4        |          |          | Re    |

When ordering, please specify tolerance and packaging codes.

Ex: 8432-03JT3N3

Tolerance: G =  $\pm 2\%$ , J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$

Packaging: Clear tape and reel (standard).

Operating temperature range: -40 °C to 125 °C

Continued



## ENVIRONMENTAL CHARACTERISTICS

## Mechanical Performance

| Item                           | Specification                                                                       | Test Method                                                                                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Vibration                    | Appearance: No damage<br>L change: within $\pm 10\%$<br>Q change: within $\pm 30\%$ | Test device shall be soldered on the substrate<br>Oscillation Frequency: 10 to 55 to 10Hz for 1min<br>Amplitude: 1.5mm<br>Time: 2 hrs for each axis (X, Y & Z), total 6 hrs |
| 2 Resistance to Soldering-test | Appearance: No damage                                                               | Pre-heating: 150 °C, 1min<br>Solder Composition: Sn/Pb=63/67<br>Solder Temperature: 260 $\pm 5$ °C<br>Immersion Time: 10 $\pm 1$ sec                                        |
| 3 Solderability                | The electrodes shall be at least 90% covered with new solder coating                | Pre-heating: 150 °C, 1min<br>Solder Composition: Sn/Pb=63/67<br>Solder Temperature: 230 $\pm 5$ °C<br>Immersion Time: 4 $\pm 1$ sec                                         |

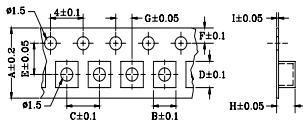
## Environmental Performance

| Item                          | Specification                                                                       | Test Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
|-------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------|------------|---|-------------|----|---|------------|---|---|------------|----|---|------------|---|
| 1 Temperature Cycle           | Appearance: No damage<br>L change: within $\pm 10\%$<br>Q change: within $\pm 30\%$ | One cycle:<br><table border="1"> <thead> <tr> <th>Step</th><th>Temperature (°C)</th><th>Time (min)</th></tr> </thead> <tbody> <tr> <td>1</td><td>-25<math>\pm 3</math></td><td>30</td></tr> <tr> <td>2</td><td>25<math>\pm 2</math></td><td>3</td></tr> <tr> <td>3</td><td>85<math>\pm 3</math></td><td>30</td></tr> <tr> <td>4</td><td>25<math>\pm 2</math></td><td>3</td></tr> </tbody> </table> Total: 100 cycles<br>Measured after exposure in the room condition for 24 hrs | Step | Temperature (°C) | Time (min) | 1 | -25 $\pm 3$ | 30 | 2 | 25 $\pm 2$ | 3 | 3 | 85 $\pm 3$ | 30 | 4 | 25 $\pm 2$ | 3 |
| Step                          | Temperature (°C)                                                                    | Time (min)                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 1                             | -25 $\pm 3$                                                                         | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 2                             | 25 $\pm 2$                                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 3                             | 85 $\pm 3$                                                                          | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 4                             | 25 $\pm 2$                                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 2 Humidity Resistance         |                                                                                     | Temperature: 40 $\pm 2$ °C<br>Relative Humidity: 90-95%<br>Time: 1000 hrs<br>Measured after exposure in the room condition for 24 hrs                                                                                                                                                                                                                                                                                                                                            |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 3 High Temperature Resistance |                                                                                     | Temperature: -85 $\pm 3$ °C<br>Relative Humidity: 20%<br>Time: 1000 hrs<br>Measured after exposure in the room condition for 24 hrs                                                                                                                                                                                                                                                                                                                                              |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |
| 4 Low Temperature Resistance  |                                                                                     | Temperature: -25 $\pm 3$ °C<br>Relative Humidity: 0%<br>Time: 1000 hrs<br>Measured after exposure in the room condition for 24 hrs                                                                                                                                                                                                                                                                                                                                               |      |                  |            |   |             |    |   |            |   |   |            |    |   |            |   |

## PACKAGING

Packaging Quantity Unit: pcs

| Series  | Packaging | pcs/wheel |
|---------|-----------|-----------|
| 8432-03 |           | 4,000     |
| 8432-05 |           | 2,500     |
| 8432-08 |           | 2,000     |



Tape Dimensions

Unit: mm

| Series  | A | B    | C | D    | E   | F    | G | H    | I    |
|---------|---|------|---|------|-----|------|---|------|------|
| 8432-03 | 8 | 1.1  | 4 | 1.75 | 3.5 | 1.75 | 2 | 1.15 | 0.25 |
| 8432-05 | 8 | 1.88 | 4 | 2.38 | 3.5 | 1.75 | 2 | 1.48 | 0.2  |
| 8432-08 | 8 | 2.73 | 4 | 2.88 | 3.5 | 1.75 | 2 | 2.33 | 0.2  |

