

BWHQ Series



Due to accurate wire winding technology, these chip inductors are designed for filtering, impedance matching, resonance and choke circuits for RF designer. Both standard series custom designs are available.

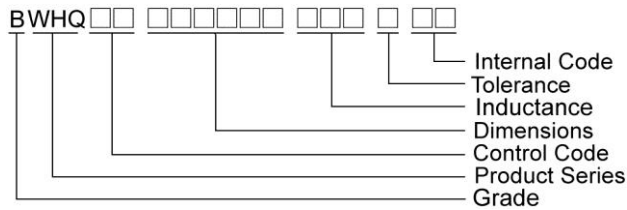
Features

- RoHS compliant.
- Ceramic body and wire wound construction provide highest SRFs
- Exceptional Q values even at high frequencies
- Highest possible SRFs as well as excellent Q values
- The non-magnetic coil form assures utmost thermal stability, predictability and batch consistency
- The highest Q factors and low RDC to fulfill the needs of mobile applications

Applications

- RF products for cellular phone
- GPS receiver
- Base Station
- Repeater
- Wireless LAN/ mouse/ keyboard/ earphone
- Remote control
- Security system and other RF modules

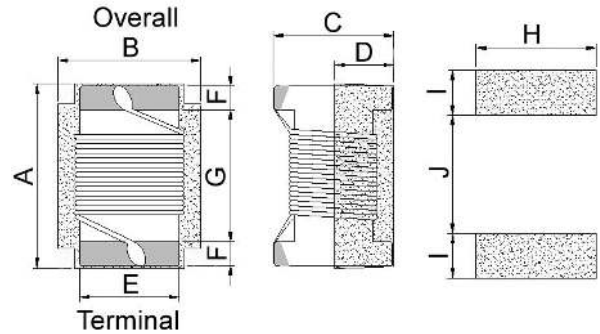
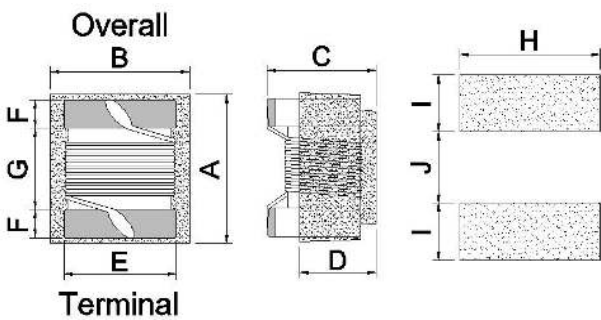
Product Identification



Shape and Dimensions/ Recommended Pattern

BWHQ00231816/ 302821

BWHQ00493834



Dimensions

| | | A Max | B Max | C Max | D | E | F | G | H | I | J |
|---------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BWHQ00231816 | inch | 0.090 | 0.070 | 0.061 | 0.020 | 0.050 | 0.017 | 0.050 | 0.070 | 0.040 | 0.030 |
| | mm | 2.29 | 1.78 | 1.56 | 0.50 | 1.27 | 0.44 | 1.27 | 1.78 | 1.02 | 0.76 |
| BWHQ00302821 | inch | 0.117 | 0.110 | 0.083 | 0.028 | 0.080 | 0.020 | 0.060 | 0.100 | 0.040 | 0.050 |
| | mm | 2.96 | 2.79 | 2.10 | 0.70 | 2.03 | 0.51 | 1.52 | 2.54 | 1.02 | 1.27 |
| BWHQ00493834 | inch | 0.197 | 0.154 | 0.135 | 0.070 | 0.1 | 0.025 | 0.128 | 0.120 | 0.045 | 0.118 |
| | mm | 4.95 | 3.810 | 3.43 | 1.78 | 2.54 | 0.64 | 3.25 | 3.05 | 1.14 | 3.00 |

SMD Wire Wound Ceramic Chip Inductors – BWHQ Series

Electrical Characteristics

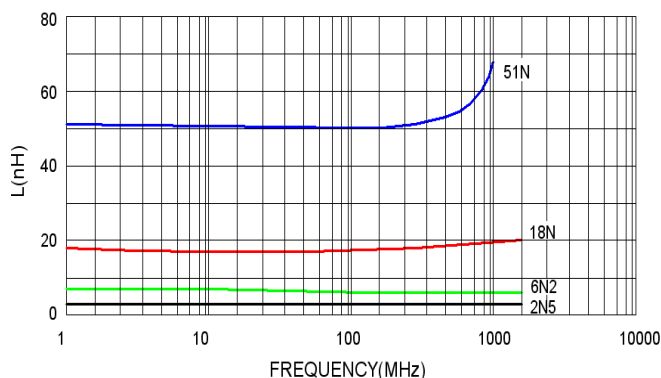
| Part Number | Inductance (nH) | Tolerance (±%) | Test Frequency (MHz) | Q Min | Test Frequency (MHz) | SRF (MHz) Min | RDC (Ω) Max | Irms (mA) Max | Color |
|--------------------|-----------------|----------------|----------------------|-------|----------------------|---------------|-------------|---------------|--------|
| BWHQ002318162N5□00 | 2.5 | 10 / 5 | 250 | 80 | 1500 | 6000 | 0.020 | 1600 | Black |
| BWHQ002318165N6□00 | 5.6 | 10 / 5 | 250 | 98 | 1500 | 6000 | 0.035 | 1600 | Brown |
| BWHQ002318166N2□00 | 6.2 | 10 / 5 | 250 | 88 | 1000 | 4750 | 0.035 | 1600 | Red |
| BWHQ0023181612N□00 | 12 | 10 / 5 | 250 | 80 | 1000 | 3000 | 0.045 | 1600 | Orange |
| BWHQ0023181616N□00 | 16 | 10 / 5 / 2 | 250 | 72 | 500 | 2950 | 0.060 | 1500 | Yellow |
| BWHQ0023181618N□00 | 18 | 10 / 5 / 2 | 250 | 75 | 500 | 2550 | 0.060 | 1400 | Green |
| BWHQ0023181620N□00 | 20 | 10 / 5 / 2 | 250 | 70 | 500 | 2050 | 0.055 | 1400 | Blue |
| BWHQ0023181627N□00 | 27 | 10 / 5 / 2 | 250 | 75 | 500 | 2000 | 0.070 | 1300 | Violet |
| BWHQ0023181630N□00 | 30 | 10 / 5 / 2 | 250 | 65 | 500 | 1950 | 0.095 | 1200 | Gray |
| BWHQ0023181639N□00 | 39 | 10 / 5 / 2 | 250 | 65 | 500 | 1600 | 0.095 | 1100 | White |
| BWHQ0023181648N□00 | 48 | 10 / 5 / 2 | 200 | 65 | 500 | 1400 | 0.110 | 1200 | Black |
| BWHQ0023181651N□00 | 51 | 10 / 5 / 2 | 200 | 65 | 500 | 1400 | 0.120 | 1000 | Brown |

Note: When ordering, please specify tolerance code. Tolerance : G=±2% , J=±5% , K=±10%

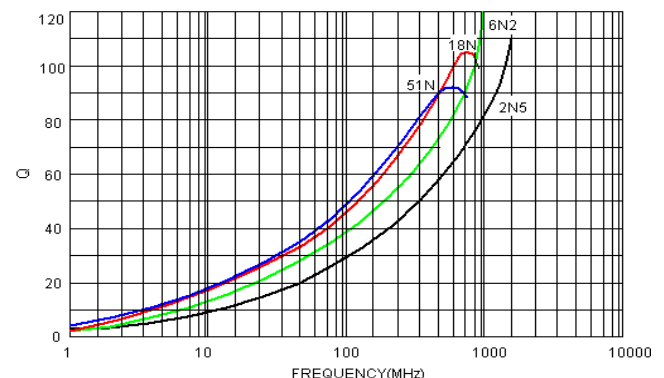
- Operating temperature range - 40°C ~ 125°C(Including self - temperature rise)
- I rms for a 15°C temperature rise from 25°C ambient with current
- Measure Equipment :
 L & Q : Agilent E4991A+Agilent HP16197A
 SRF : Agilent HP8753D/Agilent E4991A
 RDC : HP 4338B or Chroma 16502
 I rms : HP4284A+HP42841A/HP4285A+HP42841A

Test Instruments : Agilent E4991A Material/Impedance Analyzer

Typical L vs. Frequency



Typical Q vs. Frequency



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Electrical Characteristics

| Part Number | Inductance (nH) | Tolerance (±%) | Test Frequency (MHz) | Q Min | Test Frequency (MHz) | SRF (MHz) Min | RDC (Ω) Max | I _{rms} (mA) Max | Color Coding | | |
|--------------------|--------------------|-------------------|----------------------------|----------|----------------------------|------------------|----------------|------------------------------|-----------------|-----------------|-----------------|
| | | | | | | | | | 1 ST | 2 ND | 3 RD |
| BWHQ003028214N1□00 | 4.1 | 10 / 5 | 50 | 75 | 1500 | 6000 | 0.05 | 1600 | Black | Yellow | Black |
| BWHQ003028218N2□00 | 8.2 | 10 / 5 | 50 | 60 | 500 | 3600 | 0.06 | 1600 | Gray | Red | White |
| BWHQ0030282110N□00 | 10 | 10 / 5 | 50 | 60 | 500 | 3600 | 0.06 | 1600 | Brown | Black | Black |
| BWHQ0030282112N□00 | 12 | 10 / 5 / 2 | 50 | 70 | 500 | 2800 | 0.06 | 1500 | Brown | Red | Black |
| BWHQ0030282118N□00 | 18 | 10 / 5 / 2 | 50 | 62 | 350 | 2700 | 0.07 | 1400 | Brown | Gray | Black |
| BWHQ0030282122N□00 | 22 | 10 / 5 / 2 | 50 | 62 | 350 | 2050 | 0.07 | 1400 | Red | Red | Black |
| BWHQ0030282133N□00 | 33 | 10 / 5 / 2 | 50 | 75 | 350 | 1700 | 0.09 | 1300 | Orange | Orange | Black |
| BWHQ0030282139N□00 | 39 | 10 / 5 / 2 | 50 | 75 | 350 | 1300 | 0.09 | 1300 | Orange | White | Black |
| BWHQ0030282147N□00 | 47 | 10 / 5 / 2 | 50 | 75 | 350 | 1450 | 0.12 | 1200 | Yellow | Violet | Black |
| BWHQ0030282156N□00 | 56 | 10 / 5 / 2 | 50 | 75 | 350 | 1230 | 0.12 | 1200 | Green | Blue | Black |
| BWHQ0030282168N□00 | 68 | 10 / 5 / 2 | 50 | 80 | 350 | 1150 | 0.13 | 1100 | Blue | Gray | Black |
| BWHQ0030282182N□00 | 82 | 10 / 5 / 2 | 50 | 80 | 350 | 1060 | 0.16 | 1100 | Gray | Red | Black |
| BWHQ00302821R10□00 | 100 | 10 / 5 / 2 | 50 | 62 | 350 | 1000 | 0.16 | 1000 | Brown | Black | Brown |
| BWHQ00302821R12□00 | 120 | 10 / 5 / 2 | 25 | 50 | 100 | 950 | 0.20 | 1000 | Brown | Red | Brown |
| BWHQ00302821R15□00 | 150 | 10 / 5 / 2 | 25 | 48 | 100 | 820 | 0.23 | 1000 | Brown | Green | Brown |
| BWHQ00302821R22□00 | 220 | 10 / 5 / 2 | 25 | 48 | 100 | 730 | 0.45 | 1000 | Red | Red | Brown |
| BWHQ00302821R27□00 | 270 | 10 / 5 / 2 | 25 | 48 | 100 | 650 | 0.50 | 900 | Red | Violet | Brown |
| BWHQ00302821R33□00 | 330 | 10 / 5 / 2 | 25 | 48 | 100 | 570 | 0.65 | 900 | Orange | Orange | Brown |
| BWHQ00302821R39□00 | 390 | 10 / 5 / 2 | 25 | 48 | 100 | 530 | 0.70 | 900 | Orange | White | Brown |

Note: When ordering, please specify tolerance code. Tolerance : G=±2% , J=±5% , K=±10%

- Operating temperature range - 40°C ~ 125°C(Including self - temperature rise)
- I_{rms} for a 15°C temperature rise from 25°C ambient with current
- Measure Equipment :

L & Q : Agilent E4991A+Agilent HP16197A

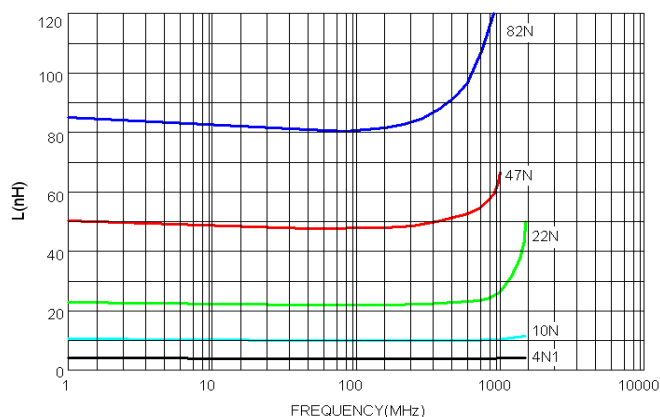
SRF : Agilent HP8753D/Agilent E4991A

RDC : HP 4338B or Chroma 16502

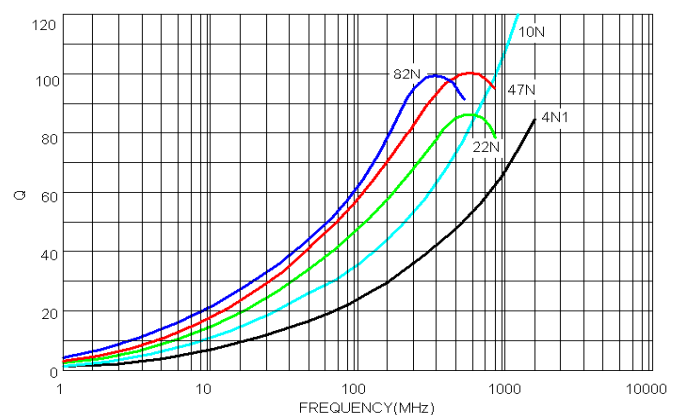
I_{rms} : HP4284A+HP42841A/HP4285A+HP42841A

Test Instruments : Agilent E4991A Material/Impedance Analyzer

Typical L vs. Frequency



Typical Q vs. Frequency



Please be sure to request approval specifications that provide further details of the products. Kindly note that the content of these specifications are subject to change or may be discontinued without prior notice. This product may not be designed/used in medical or high risk applications without Chilisin approval. Please contact our sales department before ordering.

SMD Wire Wound Ceramic Chip Inductors – BWHQ Series

Electrical Characteristics

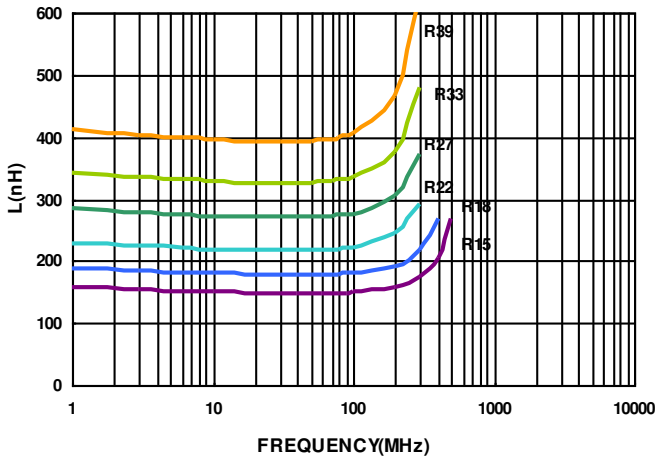
| Part Number | Inductance (nH) | Tolerance (±%) | Q Typ. | Test Frequency (MHz) | SRF (MHz) Typ. | RDC (Ω) Max | I _{rms} (mA) Max |
|---------------------|-----------------|----------------|--------|----------------------|----------------|-------------|---------------------------|
| BWHQ00493834-R15□00 | 150 | 2 | 75 | 50 | 860 | 0.100 | 1150 |
| BWHQ00493834-R18□00 | 180 | 2 | 80 | 50 | 850 | 0.105 | 1150 |
| BWHQ00493834-R22□00 | 220 | 2 | 80 | 50 | 700 | 0.110 | 940 |
| BWHQ00493834-R27□00 | 270 | 2 | 85 | 50 | 730 | 0.120 | 940 |
| BWHQ00493834-R33□00 | 330 | 2 | 80 | 50 | 600 | 0.135 | 850 |
| BWHQ00493834-R39□00 | 390 | 2 | 80 | 50 | 600 | 0.150 | 850 |

Note: When ordering, please specify tolerance code. Tolerance : G=±2% ,

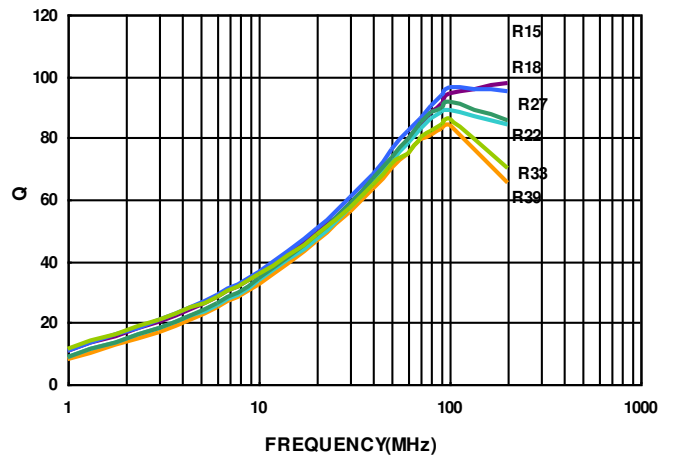
- Operating temperature range - 40°C ~ 125°C(Including self - temperature rise)
- I_{rms} for a 15°C temperature rise from 25°C ambient with current
- Measure Equipment :
 L & Q : HP4286A/HP4287A/AgilentE4991/Keysight E4982A
 SRF : Agilent HP8753D/AgilentE4991
 RDC : Chroma 16502
 I_{rms} : HP4284A+HP42841A/HP4285A+HP42841A

Test Instruments : Agilent E4991A Material/Impedance Analyzer

Typical L vs. Frequency



Typical Q vs. Frequency



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Packaging Specifications

Tape Dimensions

Reel Dimensions

Figure 1

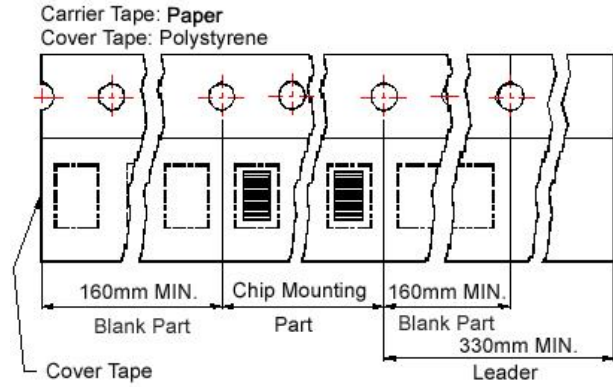
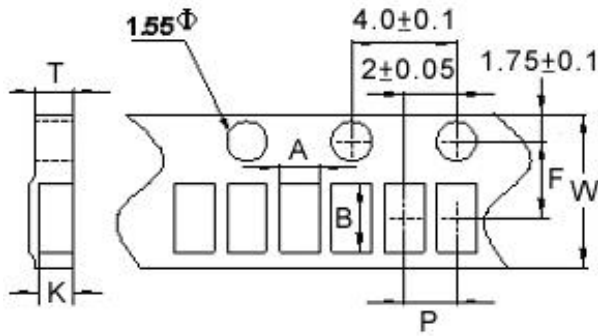
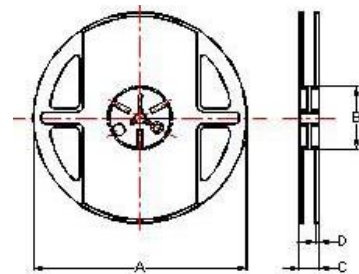
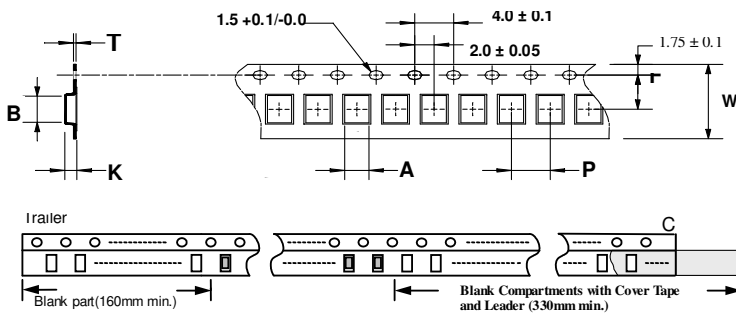


Figure 2



Dimensions in mm

| TYPE | Fig. | Tape Dimensions | | | | | | | Reel Dimensions | | | | Quantity PCS / REEL |
|--------------|------|-----------------|------|------|----|---|-----|------|-----------------|----|----|-----|------------------------|
| | | A | B | T | W | P | F | K | A | B | C | D | |
| BWHQ00231816 | 2 | 1.85 | 2.45 | 0.23 | 8 | 4 | 3.5 | 1.45 | 178 | 60 | 12 | 1.5 | 2000 |
| BWHQ00302821 | 2 | 2.80 | 2.95 | 0.23 | 8 | 4 | 3.5 | 2.20 | 178 | 60 | 12 | 1.5 | 2000 |
| BWHQ00493834 | 2 | 3.90 | 4.90 | 0.30 | 12 | 8 | 5.5 | 3.20 | 178 | 60 | 16 | 1.4 | 600 |