

Sealed Power Inductors – BWVC Series

BWVC Series



BWVC series, an automatic assembly constructed power inductor, is shielded with magnetic resin and suitable for portable DC-DC converter application.

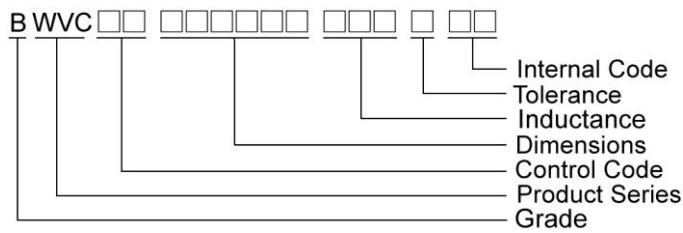
Features

- RoHS, Halogen Free and REACH Compliance
- Shielded with magnetic resin
- Various package size and wide inductance range
- Optimize electrical characteristics by using different ferrite core figures

Applications

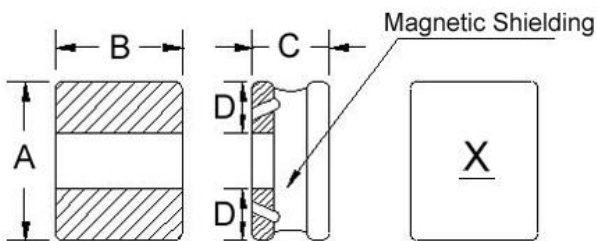
- Smartphones, tablets and wearable devices
- DSC, camcorders
- AP Routers
- STBs
- LCD TVs, monitors and panels
- Game consoles
- DC/DC converters

Product Identification

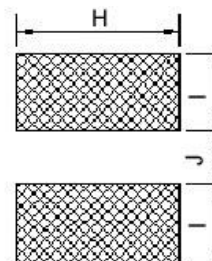


Shape and Dimensions

Figure 1



Recommended Pattern



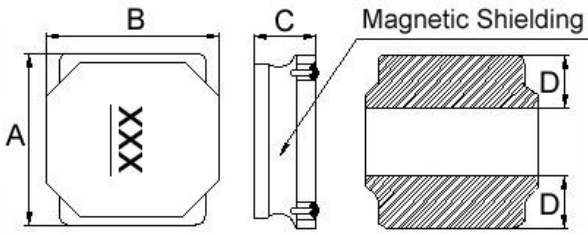
Dimensions in mm

| TYPE | FIG | A | B | C | D | H | I | J |
|--------------|-----|----------|----------|----------|-----|-----|------|-----|
| BWVC00201610 | 1 | 2.0±0.25 | 1.6±0.25 | 1.00 Max | 0.6 | 1.8 | 0.80 | 0.8 |
| BWVC00201612 | 1 | 2.0±0.25 | 1.6±0.25 | 1.2±0.05 | 0.6 | 1.8 | 0.80 | 0.8 |
| BWVC00252012 | 1 | 2.5±0.25 | 2.0±0.25 | 1.2±0.05 | 0.8 | 2.2 | 0.85 | 0.8 |

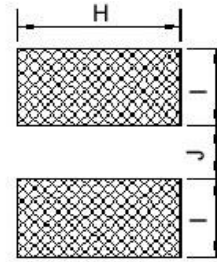
Sealed Power Inductors – BWVC Series

Shape and Dimensions

Figure 2



Recommended Pattern

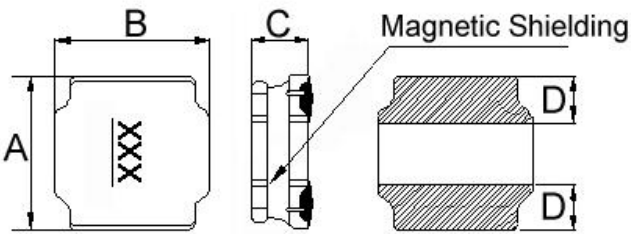


Dimensions in mm

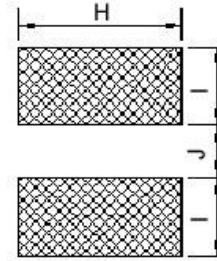
| TYPE | FIG | A | B | C | D | H | I | J |
|--------------|-----|----------|----------|---------|-----|-----|-----|-----|
| BWVC00404018 | 2 | 4.0±0.20 | 4.0±0.20 | 1.9 Max | 1.3 | 3.7 | 1.5 | 1.2 |

Shape and Dimensions

Figure 3



Recommended Pattern



Dimensions in mm

| TYPE | FIG | A | B | C | D | H | I | J |
|--------------|-----|----------|----------|--------------------------------------|---------|-----|-----|-----|
| BWVC00505040 | 3 | 5.0±0.20 | 5.0±0.20 | 4.0±0.2 | 1.5 | 4.2 | 1.6 | 2.0 |
| BWVC00606028 | 3 | 6.0±0.20 | 6.0±0.20 | 2.8±0.2 | 1.9±0.3 | 5.7 | 1.8 | 2.6 |
| BWVC00606045 | 3 | 6.0±0.20 | 6.0±0.20 | 4.5 ^{+0.2} _{-0.30} | 1.8±0.3 | 5.7 | 2.0 | 2.4 |

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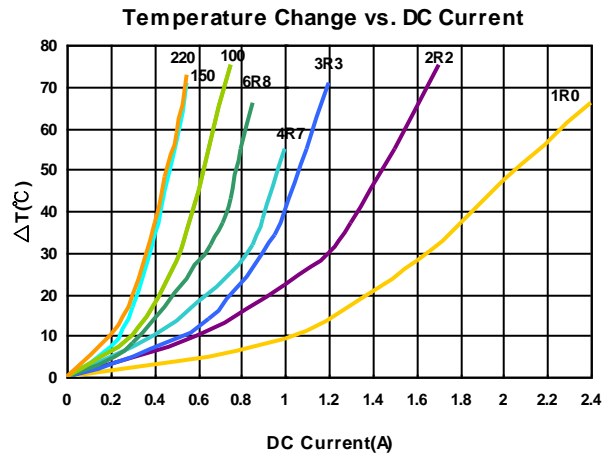
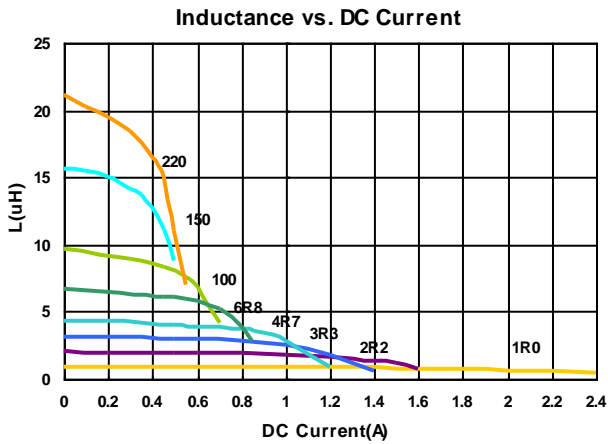
Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC00201610R24□00 | 0.24 | 20, 30 | 1 | 0.026 | 3.20(2.80) | 3.00(2.70) | M |
| BWVC002016101R0□00 | 1.0 | 20, 30 | 1 | 0.095 | 1.86(1.67) | 1.86(1.67) | B |
| BWVC002016101R5□00 | 1.5 | 20, 30 | 1 | 0.140 | 1.64(1.47) | 1.65(1.48) | C |
| BWVC002016102R2□00 | 2.2 | 20, 30 | 1 | 0.190 | 1.30(1.17) | 1.30(1.17) | D |
| BWVC002016103R3□00 | 3.3 | 20, 30 | 1 | 0.295 | 0.96(0.86) | 0.98(0.88) | E |
| BWVC002016104R7□00 | 4.7 | 20, 30 | 1 | 0.360 | 0.84(0.75) | 0.90(0.81) | F |
| BWVC002016106R8□00 | 6.8 | 20, 30 | 1 | 0.640 | 0.66(0.59) | 0.70(0.63) | G |
| BWVC00201610100□00 | 10 | 20, 30 | 1 | 1.000 | 0.54(0.48) | 0.56(0.50) | H |
| BWVC00201610150□00 | 15 | 20, 30 | 1 | 1.500 | 0.39(0.35) | 0.42(0.37) | K |
| BWVC00201610180□00 | 18 | 20, 30 | 1 | 1.600 | 0.39(0.35) | 0.41(0.36) | J |
| BWVC00201610220□00 | 22 | 20, 30 | 1 | 1.700 | 0.38(0.34) | 0.40(0.36) | I |

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :
- L : Agilent HP4287A+Agilent HP16197A, 1MHz 200mV
- RDC : DIGITAL MILLINHM METER CHROMA 16502, or equivalent
- Isat & Irms : Agilent HP4284A

Test Instruments : HP4284A Material/Impedance Analyzer



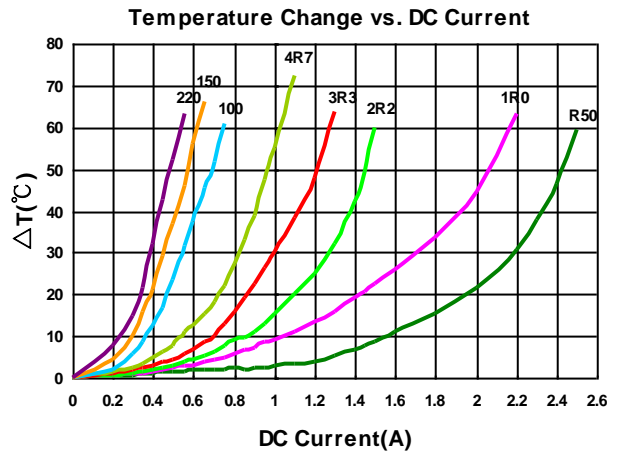
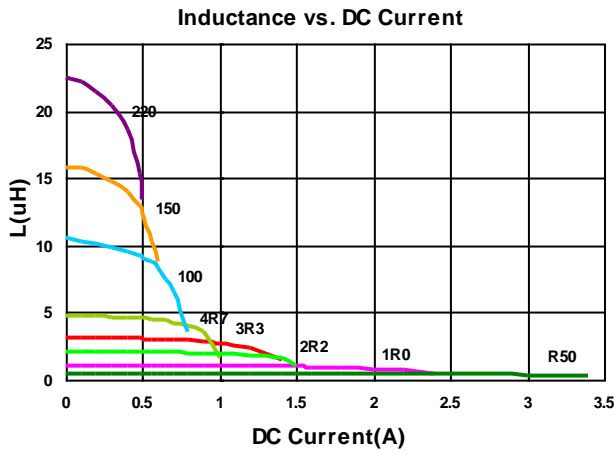
Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC00201612R50□00 | 0.5 | 20, 30 | 1 | 0.051 | 2.60(2.34) | 2.30(2.07) | B |
| BWVC002016121R0□00 | 1.0 | 20, 30 | 1 | 0.083 | 1.90(1.71) | 1.80(1.62) | C |
| BWVC002016122R2□00 | 2.2 | 20, 30 | 1 | 0.159 | 1.36(1.22) | 1.34(1.20) | E |
| BWVC002016123R3□00 | 3.3 | 20, 30 | 1 | 0.220 | 1.10(0.99) | 1.06(0.95) | F |
| BWVC002016124R7□00 | 4.7 | 20, 30 | 1 | 0.330 | 0.92(0.82) | 0.90(0.81) | G |
| BWVC00201612100□00 | 10 | 20, 30 | 1 | 0.580 | 0.62(0.55) | 0.58(0.52) | I |
| BWVC00201612150□00 | 15 | 20, 30 | 1 | 0.900 | 0.48(0.43) | 0.45(0.40) | J |
| BWVC00201612220□00 | 22 | 20, 30 | 1 | 1.400 | 0.40(0.36) | 0.40(0.36) | K |

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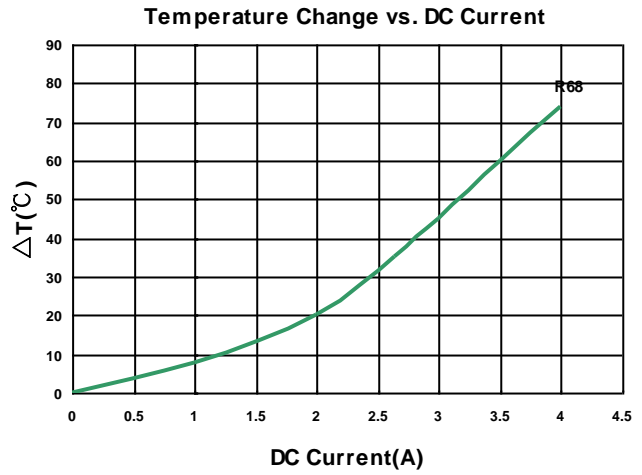
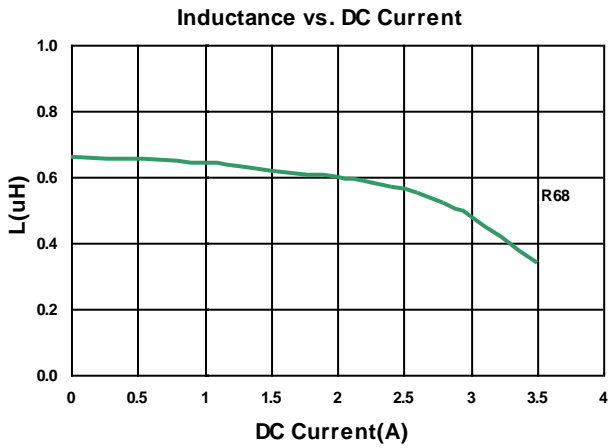
Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC00252012-R68□00 | 0.68 | 20, 30 | 1 | 0.035 | 2.80(2.52) | 2.60(2.34) | N |

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

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Sealed Power Inductors - BWVC Series

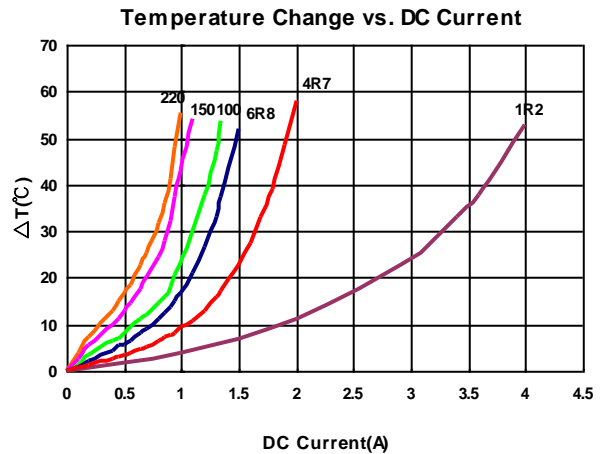
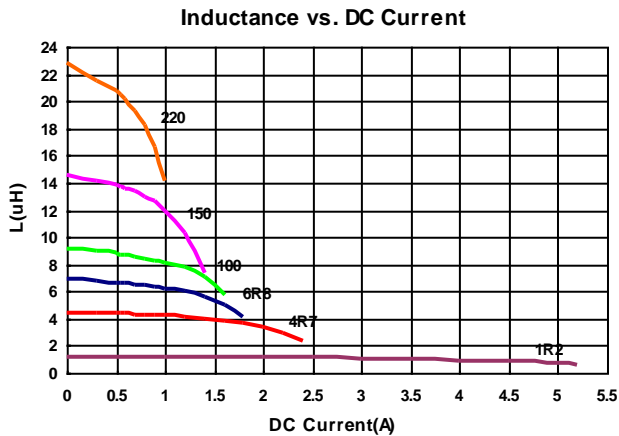
Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC004040181R2□00 | 1.2 | 20, 30 | 100 | 0.027 | 3.70(3.30) | 3.60(3.20) | 1R2 |
| BWVC004040184R7□00 | 4.7 | 20, 30 | 100 | 0.077 | 2.00(1.80) | 1.80(1.62) | 4R7 |
| BWVC004040186R8□00 | 6.8 | 20, 30 | 100 | 0.105 | 1.50(1.35) | 1.35(1.21) | 6R8 |
| BWVC00404018100□00 | 10 | 20, 30 | 100 | 0.160 | 1.40(1.26) | 1.20(1.08) | 100 |
| BWVC00404018150□00 | 15 | 20, 30 | 100 | 0.245 | 1.05(0.94) | 0.95(0.85) | 150 |
| BWVC00404018220□00 | 22 | 20, 30 | 100 | 0.335 | 0.90(0.81) | 0.88(0.79) | 220 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

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- Isat & I rms : Agilent HP4284A

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Electrical Characteristics

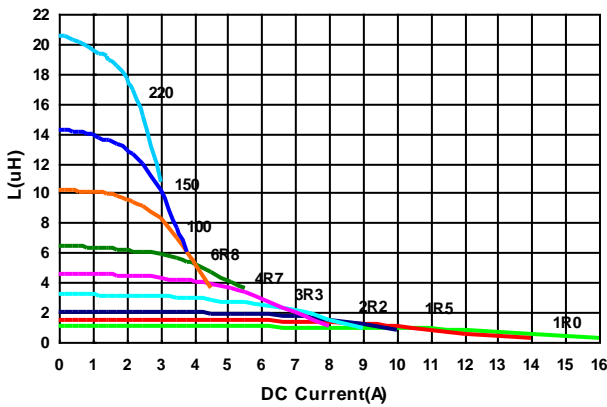
| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC005050401R0□00 | 1.0 | 20, 30 | 100 | 0.012 | 8.8(7.92) | 5.9(5.31) | 1R0 |
| BWVC005050401R5□00 | 1.5 | 20,30 | 100 | 0.014 | 7.9(7.11) | 5.4(4.86) | 1R5 |
| BWVC005050402R2□00 | 2.2 | 20, 30 | 100 | 0.020 | 6.8(6.12) | 4.5(4.05) | 2R2 |
| BWVC005050402R7□00 | 2.7 | 20, 30 | 100 | 0.026 | 6.0(5.40) | 4.2(3.70) | 2R7 |
| BWVC005050403R3□00 | 3.3 | 20, 30 | 100 | 0.026 | 5.3(4.77) | 4.2(3.78) | 3R3 |
| BWVC005050404R7□00 | 4.7 | 20, 30 | 100 | 0.032 | 4.4(3.96) | 3.2(2.88) | 4R7 |
| BWVC005050406R8□00 | 6.8 | 20, 30 | 100 | 0.050 | 3.8(3.42) | 3.0(2.70) | 6R8 |
| BWVC00505040100□00 | 10 | 20, 30 | 100 | 0.070 | 3.0(2.70) | 2.3(2.07) | 100 |
| BWVC00505040150□00 | 15 | 20, 30 | 100 | 0.115 | 2.4(2.16) | 1.8(1.62) | 150 |
| BWVC00505040220□00 | 22 | 20, 30 | 100 | 0.160 | 2.0(1.80) | 1.6(1.44) | 220 |
| BWVC00505040151□00 | 150 | 20, 30 | 100 | 1.180 | 0.74(0.66) | 0.58(0.52) | 151 |
| BWVC00505040181□00 | 180 | 20, 30 | 100 | 1.250 | 0.67(0.60) | 0.54(0.48) | 181 |
| BWVC00505040221□00 | 220 | 20, 30 | 100 | 1.450 | 0.65(0.58) | 0.50(0.45) | 221 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

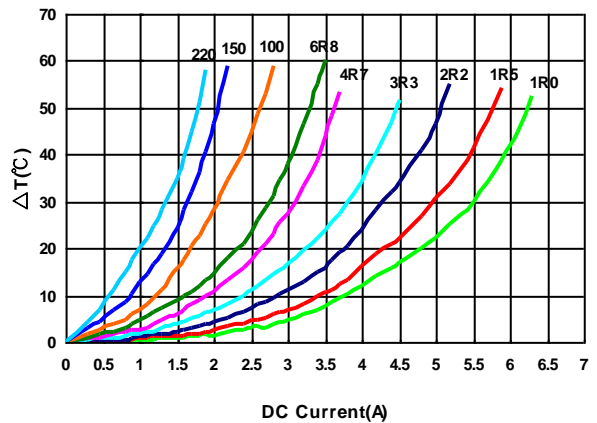
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Inductance vs. DC Current



Temperature Change vs. DC Current



Sealed Power Inductors - BWVC Series

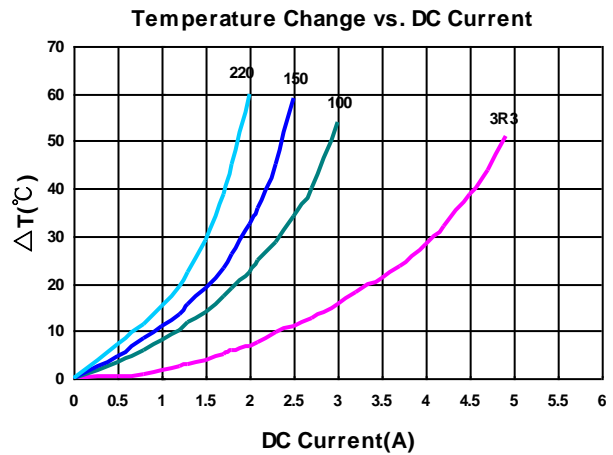
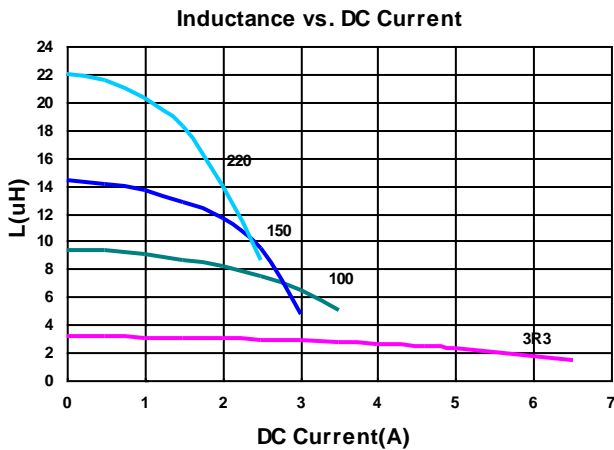
Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC006060283R3□00 | 3.3 | 20, 30 | 100 | 0.027 | 4.5(4.05) | 4.0(3.60) | 3R3 |
| BWVC00606028100□00 | 10 | 20, 30 | 100 | 0.065 | 2.6(2.34) | 2.5(2.25) | 100 |
| BWVC00606028150□00 | 15 | 20, 30 | 100 | 0.093 | 2.1(1.89) | 2.0(1.80) | 150 |
| BWVC00606028220□00 | 22 | 20, 30 | 100 | 0.135 | 1.7(1.53) | 1.65(1.48) | 220 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

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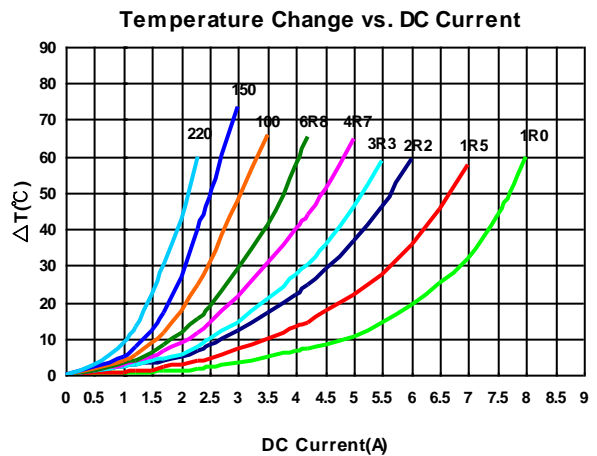
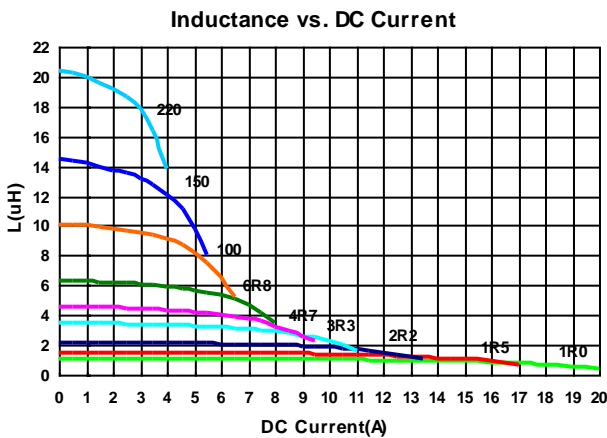
Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVC006060451R0□00 | 1.0 | 20,30 | 100 | 0.010 | 13(11.7) | 7.3(6.57) | 1R0 |
| BWVC006060451R5□00 | 1.5 | 20,30 | 100 | 0.012 | 12(10.8) | 6.6(5.94) | 1R5 |
| BWVC006060452R2□00 | 2.2 | 20, 30 | 100 | 0.018 | 9.5(8.55) | 5.2(4.68) | 2R2 |
| BWVC006060453R3□00 | 3.3 | 20, 30 | 100 | 0.022 | 7.8(7.02) | 4.4(3.96) | 3R3 |
| BWVC006060454R7□00 | 4.7 | 20, 30 | 100 | 0.030 | 6.8(6.12) | 4.0(3.60) | 4R7 |
| BWVC006060456R8□00 | 6.8 | 20, 30 | 100 | 0.042 | 5.7(5.13) | 3.3(2.97) | 6R8 |
| BWVC00606045100□00 | 10 | 20, 30 | 100 | 0.060 | 4.6(4.14) | 2.6(2.34) | 100 |
| BWVC00606045150□00 | 15 | 20, 30 | 100 | 0.090 | 3.8(3.42) | 2.2(1.98) | 150 |
| BWVC00606045220□00 | 22 | 20, 30 | 100 | 0.130 | 3.3(2.97) | 1.9(1.71) | 220 |

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

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Isat & Irms : Agilent HP4284A

Test Instruments : HP4284A Material/Impedance Analyzer



Sealed Power Inductors – BWVC Series

Packaging Specifications

Tape Dimensions

Figure 1

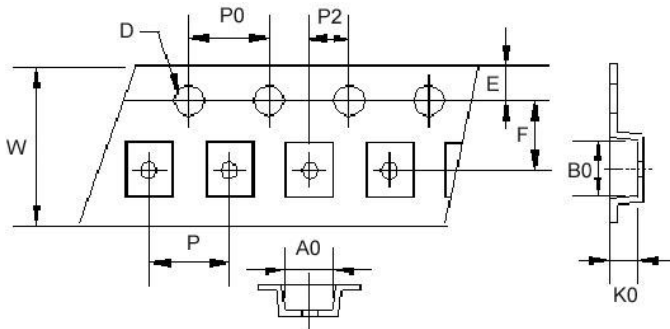
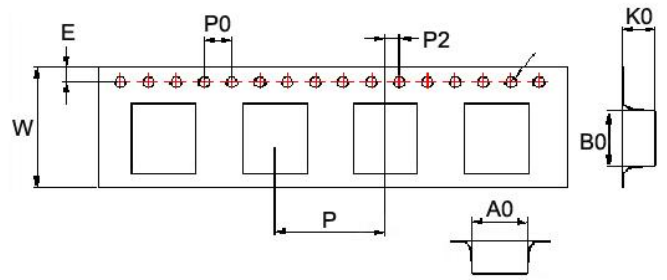


Figure 2



Reel Dimensions

Figure 1

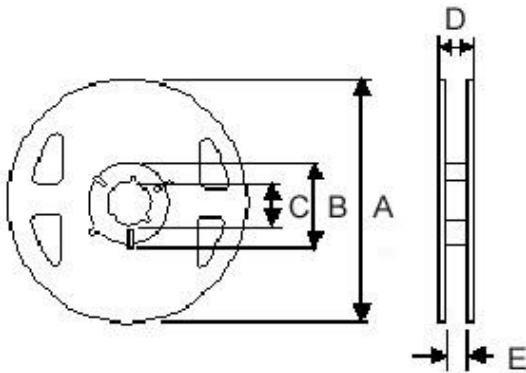
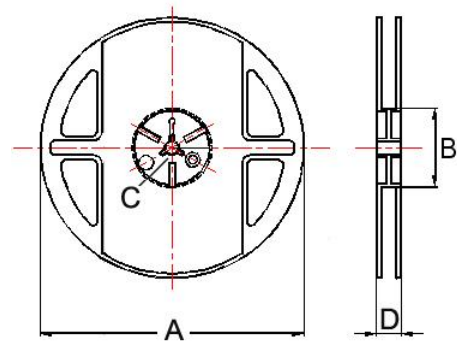


Figure 2



Dimensions in mm

| TYPE | Fig | Tape Dimensions | | | | | | | | | | Reel Dimensions | | | | | Quantity PCS / Reel |
|--------------|-----|-----------------|------|------|------|------|-----|----|----|----|----|-----------------|-----|----|------|-----|------------------------|
| | | A0 | B0 | K0 | D | E | F | W | P | P0 | P2 | A | B | C | D | E | |
| BWVC00201610 | 1 | 1.90 | 2.20 | 1.15 | 1.55 | 1.75 | 3.5 | 8 | 4 | 4 | 2 | 180 | 60 | 13 | 14.4 | 8.4 | 2000 |
| BWVC00201612 | 1 | 1.90 | 2.20 | 1.30 | 1.55 | 1.75 | 3.5 | 8 | 4 | 4 | 2 | 180 | 60 | 13 | 14.4 | 8.4 | 2000 |
| BWVC00252012 | 1 | 2.40 | 2.70 | 1.35 | 1.55 | 1.75 | 3.5 | 8 | 4 | 4 | 2 | 180 | 60 | 13 | 14.4 | 8.4 | 2000 |
| BWVC00404018 | 2 | 4.25 | 4.25 | 2.10 | 1.55 | 1.75 | 5.5 | 12 | 8 | 4 | 2 | 178 | 60 | 13 | 13.2 | - | 800 |
| BWVC00505040 | 2 | 5.20 | 5.20 | 4.20 | 1.55 | 1.75 | 5.5 | 12 | 8 | 4 | 2 | 330 | 100 | 13 | 13.4 | - | 1500 |
| BWVC00606028 | 2 | 6.25 | 6.25 | 3.00 | 1.55 | 1.75 | 7.5 | 16 | 12 | 4 | 2 | 330 | 100 | 13 | 16.0 | - | 1500 |
| BWVC00606045 | 2 | 6.25 | 6.25 | 4.65 | 1.55 | 1.75 | 7.5 | 16 | 12 | 4 | 2 | 330 | 100 | 13 | 16.0 | - | 1000 |