Innovative Service Around the Globe YAGEO

# DATA SHEET

## INDUCTOR

### Power Inductors

BWVT Series

**RoHS compliant & Halogen Free**

YAGEO

Product specification – June 11, 2021 V.0

# Sealed Power Inductors – BWVT Series

## BWVT Series

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

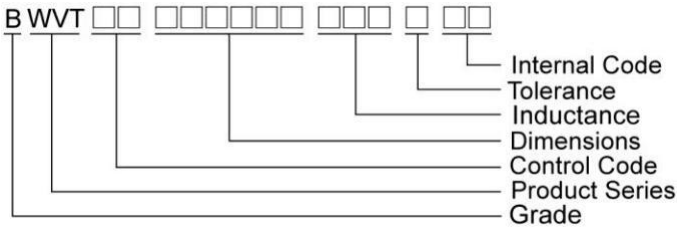
### Features

- 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

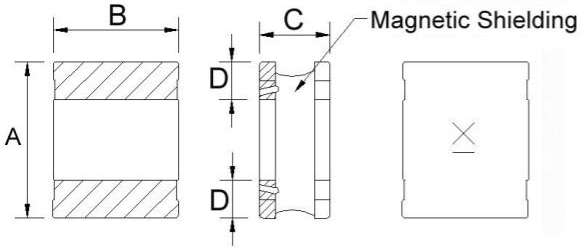
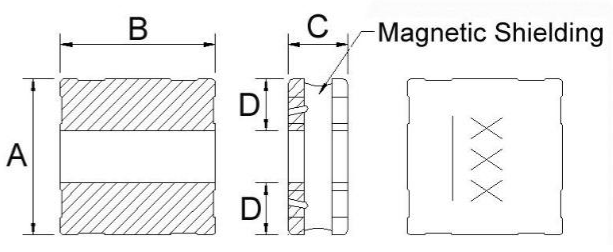


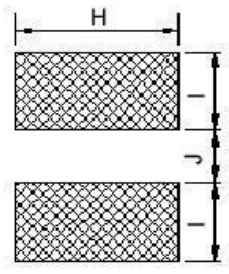

Figure 2




Dimensions in mm

| TYPE | FIG | A | B | C | D | H | I | J |
|---|---|---|---|---|---|---|---|---|
| BWVT00201610 | 1 | 2.0±0.25 | 1.6±0.25 | 1.00Max | 0.6 | 1.8 | 0.80 | 0.8 |
| BWVT00252010 | 1 | 2.5±0.25 | 2.0±0.25 | 1.02 Max | 0.8 | 2.2 | 0.85 | 0.8 |
| BWVT00252012 | 1 | 2.5±0.25 | 2.0±0.25 | 1.2±0.05 | 0.8 | 2.2 | 0.85 | 0.8 |
| BWVT00303010 | 2 | 3.0±0.20 | 3.0±0.20 | 1.02 Max | 1.0 | 3.2 | 1.1 | 1.0 |
| BWVT00303012 | 2 | 3.0±0.20 | 3.0±0.20 | 1.20 Max | 1.0 | 3.2 | 1.1 | 1.0 |
| BWVT00404012 | 2 | 4.0±0.20 | 4.0±0.20 | 1.2±0.1 | 1.5 | 4.2 | 1.5 | 1.2 |

### Recommended Pattern



# Sealed Power Inductors – BWVT Series

## Shape and Dimensions

Figure 3

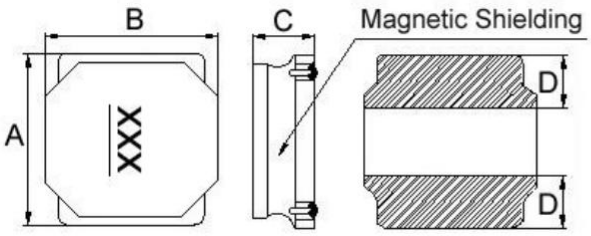
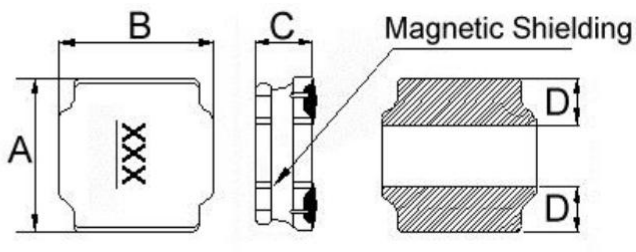


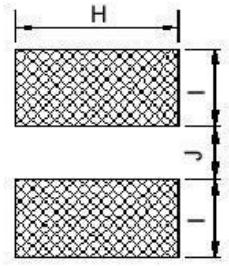

Figure 4




Dimensions in mm

| TYPE | FIG | A | B | C | D | H | I | J |
|---|---|---|---|---|---|---|---|---|
| BWVT00404015 | 3 | 4.0±0.25 | 4.0±0.25 | 1.5±0.2 | 1.3 | 3.7 | 1.5 | 1.2 |
| BWVT00404026 | 3 | 4.0±0.20 | 4.0±0.20 | 2.6±0.2 | 1.4 | 3.7 | 1.6 | 1.2 |
| BWVT00505020 | 4 | 5.0±0.2 | 5.0±0.2 | 2.0±0.2 | 1.8±0.3 | 4.2 | 1.6 | 2.0 |
| BWVT00606020 | 4 | 6.0±0.2 | 6.0±0.2 | 2.0±0.2 | 1.7±0.3 | 5.7 | 1.7 | 2.8 |
| BWVT00808040 | 4 | 8.0±0.2 | 8.0±0.2 | $4.0^{+0.2}_{-0.30}$ | 2.3±0.3 | 7.5 | 2.5 | 3.4 |

**Recommended Pattern**



# Sealed Power Inductors – BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (mΩ) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00201610R47□00 | 0.47 | 20, 30 | 1 | 72 | 2.4(2.16) | 2.4(2.16) | A |

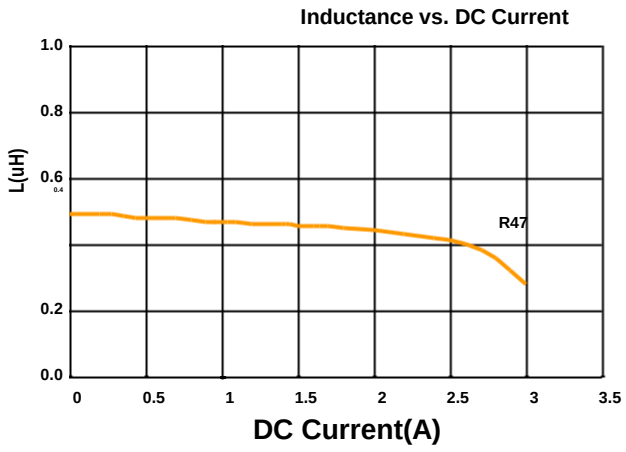
**Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%**

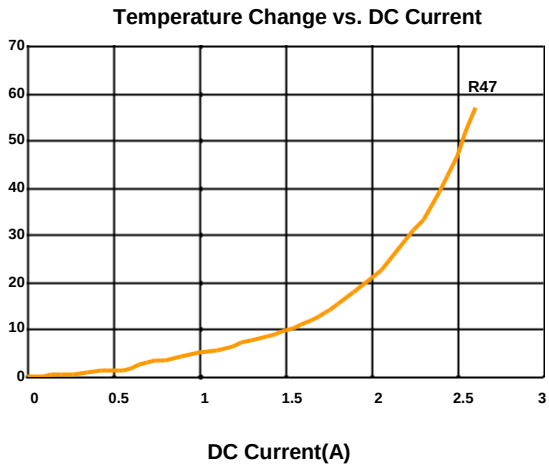
- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Measure Equipment：
- L：Agilent HP4287A+Agilent HP16197A, 1MHz 200mV

  RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

  Isat & Irms：Agilent HP4284A

**Test Instruments**：HP4284A Material/Impedance Analyzer



# Sealed Power Inductors – BWVT Series

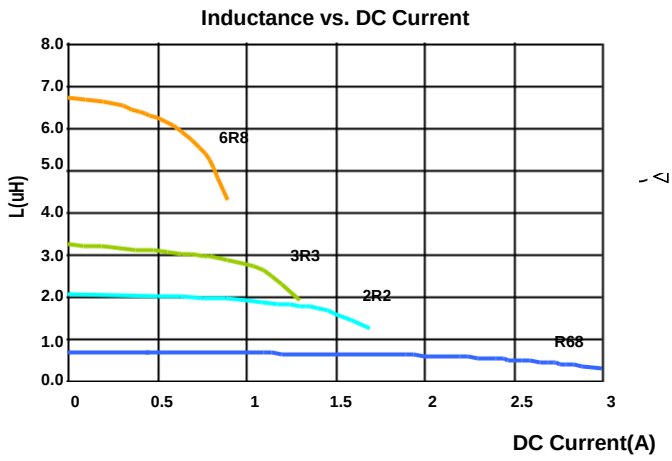
## Electrical Characteristics

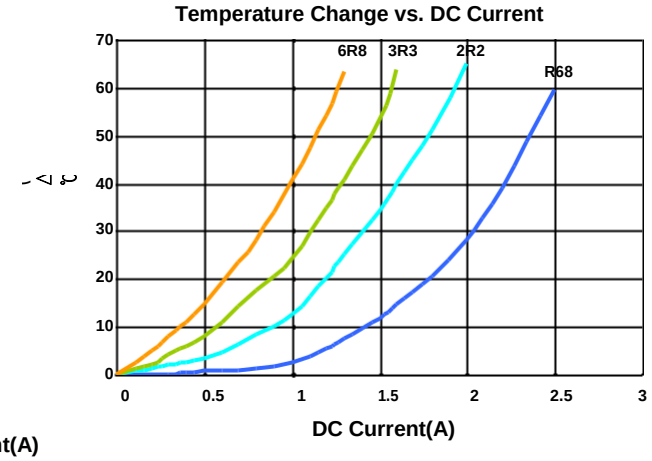
| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00252010R68□00 | 0.68 | 20, 30 | 1 | 0.050 | 2.40(2.160) | 2.20(1.980) | K |
| BWVT002520102R2□00 | 2.2 | 20, 30 | 1 | 0.135 | 1.42(1.270) | 1.55(1.390) | D |
| BWVT002520103R3□00 | 3.3 | 20, 30 | 1 | 0.220 | 1.12(1.000) | 1.20(1.080) | E |
| BWVT002520106R8□00 | 6.8 | 20, 30 | 1 | 0.435 | 0.78(0.700) | 0.84(0.750) | G |

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

- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ 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



# Sealed Power Inductors – BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00252012R47□00 | 0.47 | 20, 30 | 1 | 0.027 | 3.70(3.330) | 3.10(2.790) | A |

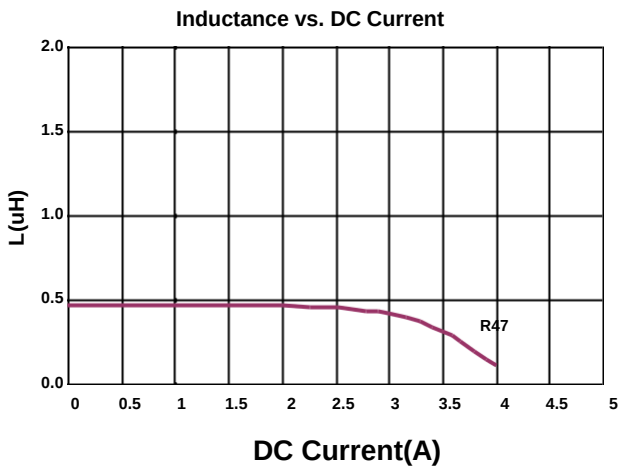
**Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%**

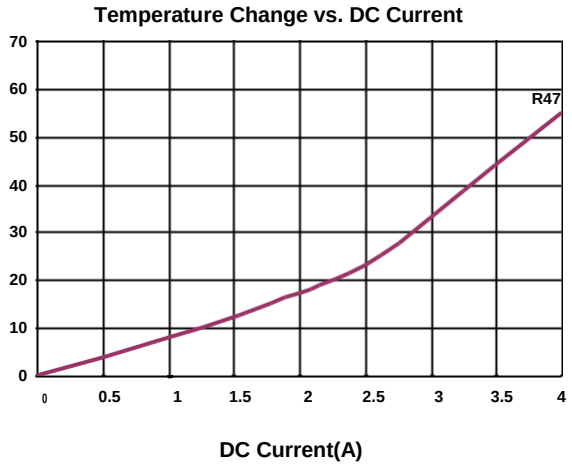
- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Measure Equipment：
- L：Agilent HP4287A+Agilent HP16197A, 1MHz 200mV

  RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

  Isat & Irms：Agilent HP4284A

**Test Instruments**：HP4284A Material/Impedance Analyzer



# Sealed Power Inductors – BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT003030101R0□00 | 1.0 | 20, 30 | 1 | 0.063 | 2.4(2.16) | 2.3(2.07) | 1R0 |
| BWVT003030103R3□00 | 3.3 | 20, 30 | 1 | 0.165 | 1.2(1.08) | 1.1(0.99) | 3R3 |

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

- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
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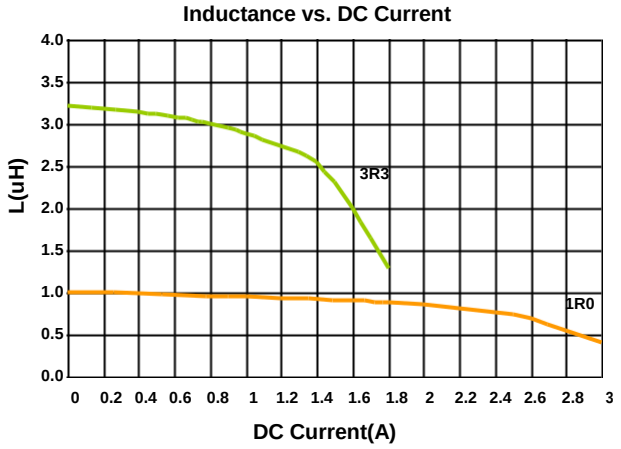


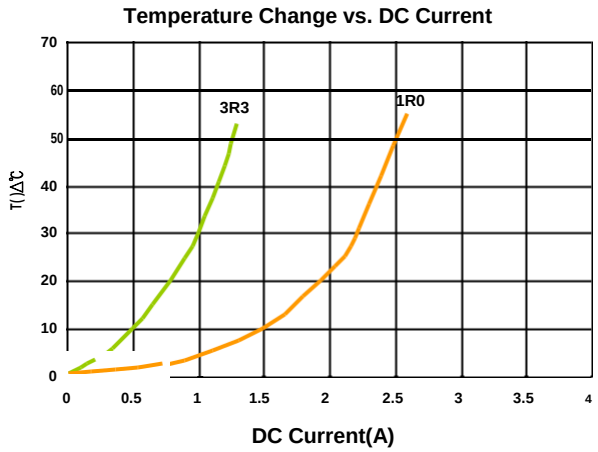

# Sealed Power Inductors – BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00303012R47□00 | 0.47 | 20, 30 | 1 | 0.032 | 4.3(3.87) | 4.0(3.60) | R47 |
| BWVT003030121R0□00 | 1.0 | 20, 30 | 1 | 0.060 | 3.1(2.79) | 3.0(2.70) | 1R0 |
| BWVT003030121R5□00 | 1.5 | 20, 30 | 1 | 0.072 | 2.7(2.43) | 2.6(2.34) | 1R5 |

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

- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
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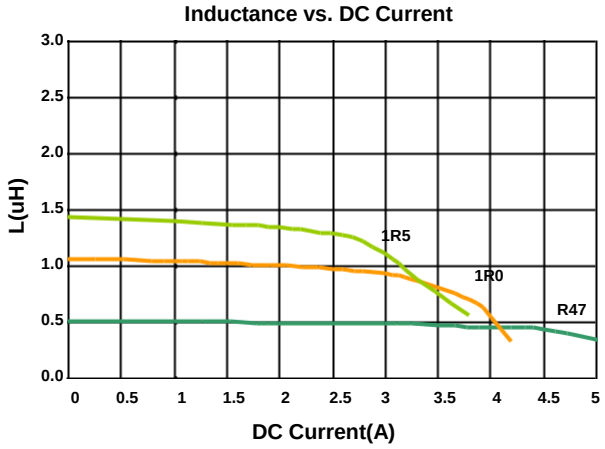


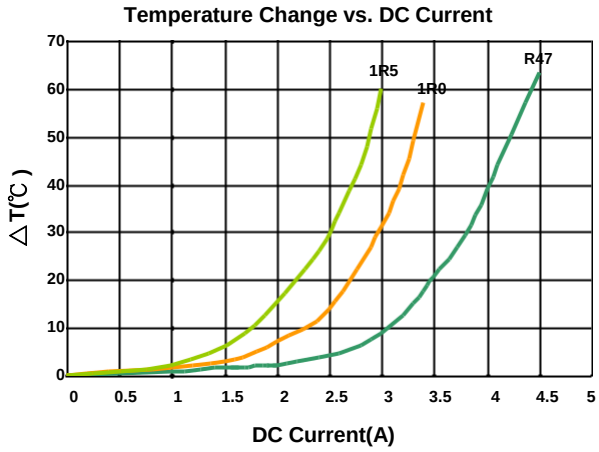

# Sealed Power Inductors – BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00404012R50□00 | 0.5 | 20, 30 | 1 | 0.030 | 3.90(3.51) | 3.50(3.15) | R50 |
| BWVT004040121R0□00 | 1.0 | 20, 30 | 1 | 0.040 | 2.90(2.60) | 3.00(2.70) | 1R0 |
| BWVT004040121R5□00 | 1.5 | 20, 30 | 1 | 0.051 | 2.30(2.07) | 2.50(2.25) | 1R5 |
| BWVT004040122R2□00 | 2.2 | 20, 30 | 1 | 0.060 | 1.90(1.71) | 2.30(2.07) | 2R2 |
| BWVT004040124R7□00 | 4.7 | 20, 30 | 1 | 0.094 | 1.32(1.18) | 1.80(1.62) | 4R7 |
| BWVT004040126R8□00 | 6.8 | 20, 30 | 1 | 0.135 | 1.08(0.97) | 1.50(1.35) | 6R8 |
| BWVT00404012150□00 | 15 | 20, 30 | 1 | 0.260 | 0.78(0.70) | 1.00(0.90) | 150 |
| BWVT00404012220□00 | 22 | 20, 30 | 1 | 0.390 | 0.62(0.55) | 0.80(0.72) | 220 |

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

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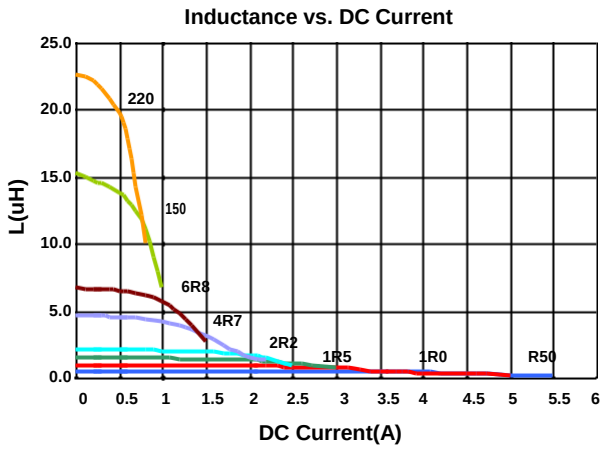
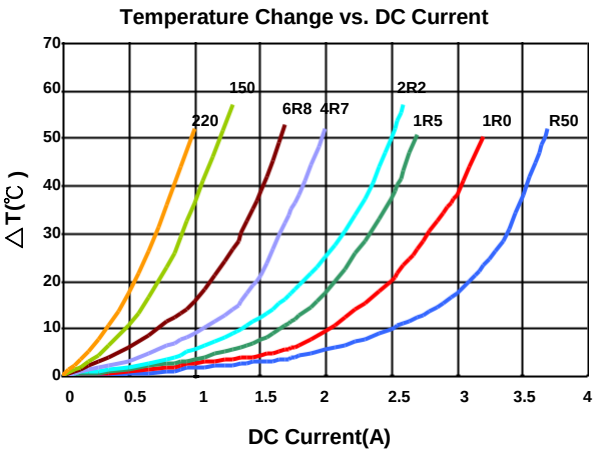
RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

Isat & Irms：Agilent HP4284A

**Test Instruments**：HP4284A Material/Impedance Analyzer



# Sealed Power Inductors – BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (MHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT004040151R0□00 | 1.0 | 20, 30 | 1 | 0.034 | 3.60(3.24) | 3.70(3.33) | 1R0 |
| BWVT004040153R3□00 | 3.3 | 20, 30 | 1 | 0.080 | 2.00(1.80) | 2.20(1.98) | 3R3 |

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

- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
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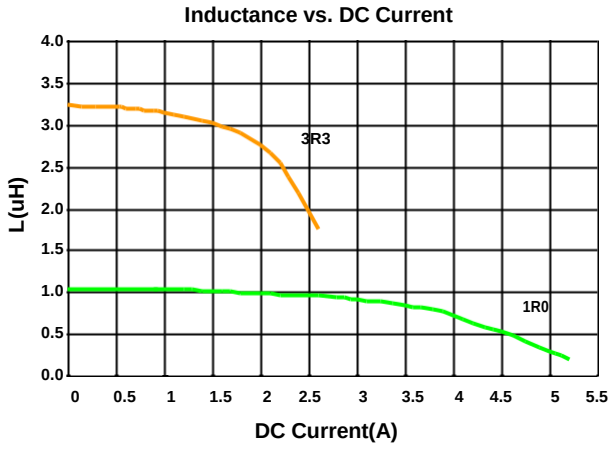


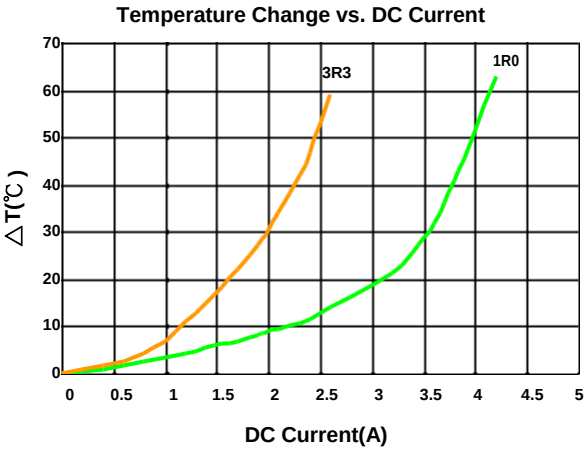

# Sealed Power Inductors - BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00404026R47□00 | 0.47 | 20, 30 | 100 | 0.024 | 7.20(6.48) | 4.80(4.32) | R47 |
| BWVT00404026R50□00 | 0.50 | 20, 30 | 100 | 0.024 | 7.20(6.48) | 4.80(4.32) | R50 |

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

- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Measure Equipment：
- L：Agilent HP4284A+Agilent HP42841A, 100kHz 1V

RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

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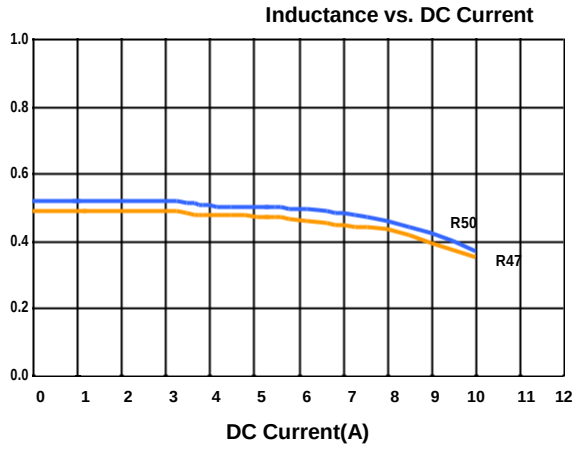


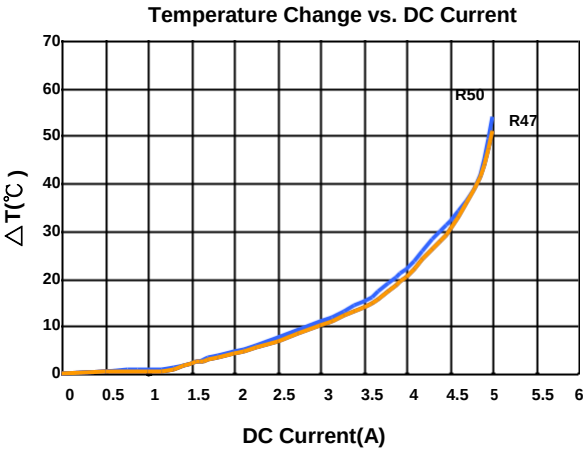

# Sealed Power Inductors - BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT00505020R47□00 | 0.47 | 20, 30 | 100 | 0.0135 | 8.0(7.2) | 5.5(5.0) | R47 |
| BWVT005050203R3□00 | 3.3 | 20, 30 | 100 | 0.050 | 3.4(3.06) | 2.7(2.43) | 3R3 |

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

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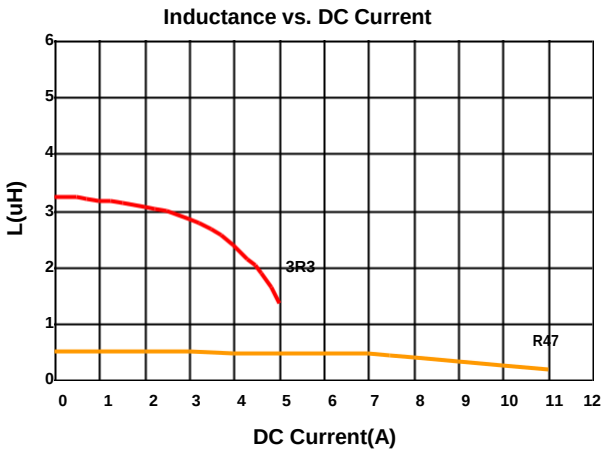


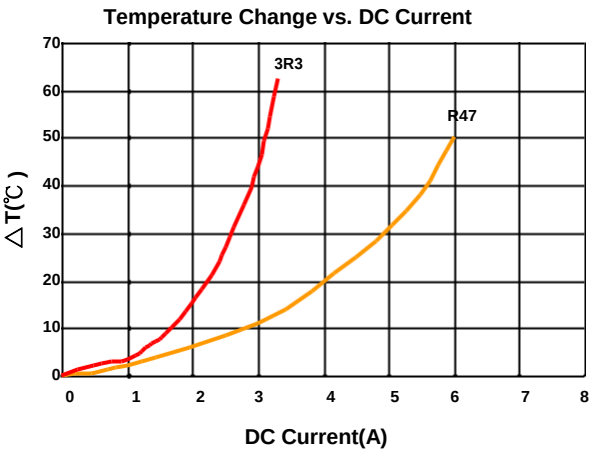

# Sealed Power Inductors - BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT006060201R0□00 | 1.0 | 20, 30 | 100 | 0.019 | 6.4(5.76) | 4.2(3.78) | 1R0 |
| BWVT006060201R5□00 | 1.5 | 20, 30 | 100 | 0.026 | 5.4(4.86) | 3.7(3.33) | 1R5 |
| BWVT006060202R2□00 | 2.2 | 20, 30 | 100 | 0.034 | 4.5(4.05) | 3.3(2.97) | 2R2 |
| BWVT006060203R3□00 | 3.3 | 20, 30 | 100 | 0.045 | 3.6(3.24) | 2.8(2.52) | 3R3 |
| BWVT006060206R8□00 | 6.8 | 20, 30 | 100 | 0.085 | 2.6(2.34) | 1.9(1.71) | 6R8 |

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

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- Isat for Inductance drop 30% from its value without current
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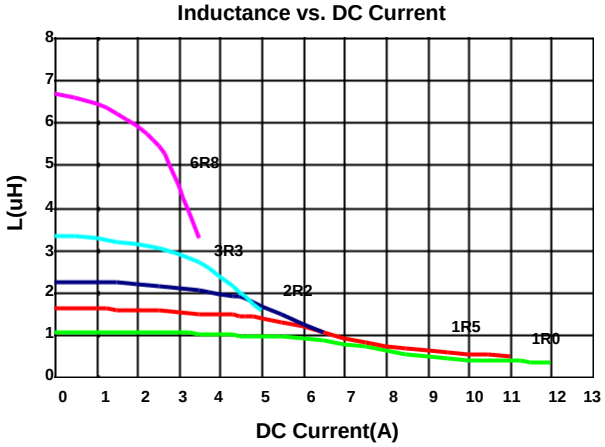
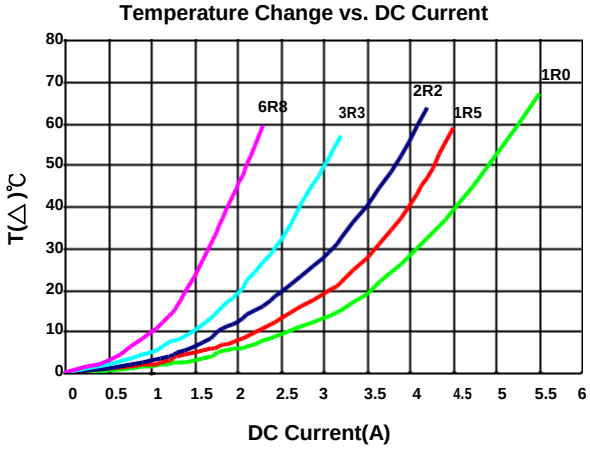
RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

Isat & Irms：Agilent HP4284A

**Test Instruments**：HP4284A Material/Impedance Analyzer



# Sealed Power Inductors - BWVT Series

## Electrical Characteristics

| Part Number | Inductance (uH) | Tolerance (±%) | Test Frequency (kHz) | RDC (Ω) ±30% | Isat (A) Typ. (Max) | Irms (A) Typ. (Max) | Marking |
|---|---|---|---|---|---|---|---|
| BWVT008080401R0□00 | 1.0 | 20, 30 | 100 | 0.0075 | 13.5(12.15) | 8.1(7.29) | 1R0 |
| BWVT008080401R5□00 | 1.5 | 20, 30 | 100 | 0.0097 | 10.5(9.45) | 7.7(6.93) | 1R5 |
| BWVT008080402R2□00 | 2.2 | 20, 30 | 100 | 0.012 | 9.7(8.73) | 7.2(6.48) | 2R2 |
| BWVT008080403R3□00 | 3.3 | 20, 30 | 100 | 0.047 | 8.0(7.20) | 5.9(5.31) | 3R3 |
| BWVT008080406R8□00 | 6.8 | 20, 30 | 100 | 0.029 | 5.8(5.22) | 4.9(4.41) | 6R8 |

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

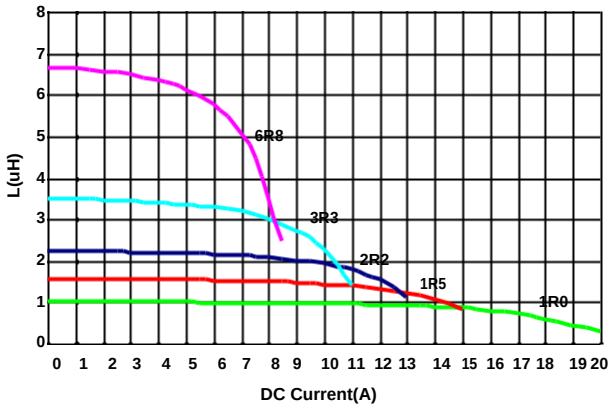
- Operating temperature range - 55℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Measure Equipment：
- L：Agilent HP4284A+Agilent HP42841A, 100kHz 1V

RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

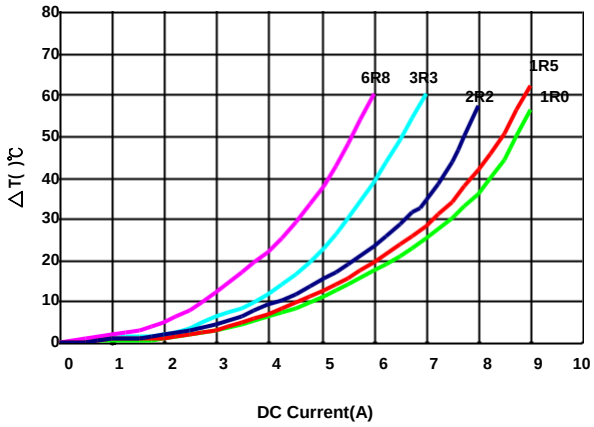
Isat & Irms：Agilent HP4284A

**Test Instruments**：HP4284A Material/Impedance Analyzer

**Inductance vs. DC Current**




**Temperature Change vs. DC Current**

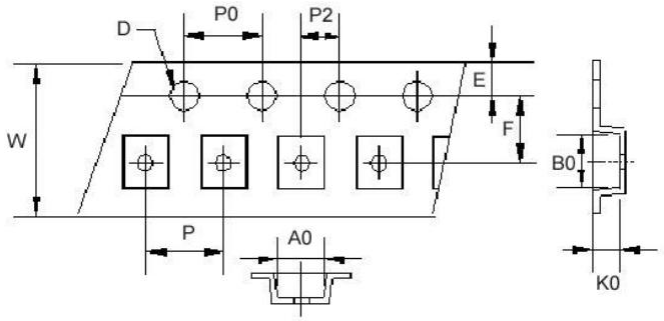


# Sealed Power Inductors – BWVT Series

## Packaging Specifications

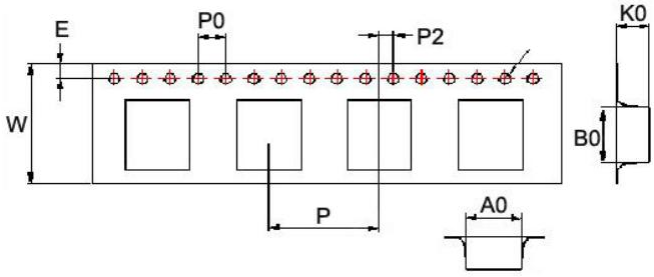
**Tape Dimensions**

Figure 1



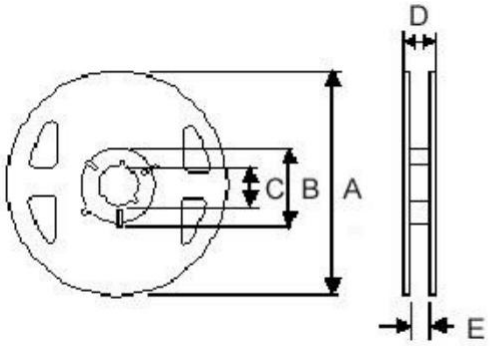

**Tape Dimensions**

Figure 2



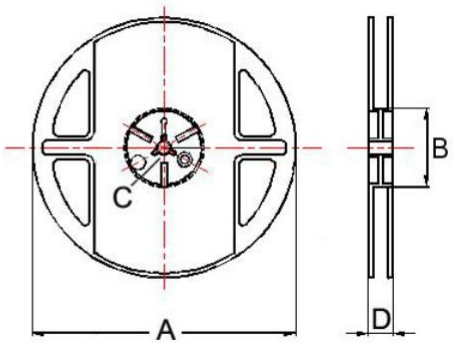

**Reel Dimensions**

Figure 1




**Reel Dimensions**

Figure 2




**Dimensions in mm**

| TYPE | Fig | Tape Dimensions | | | | | | | | | | Reel Dimensions | | | | | Quantity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A0 | B0 | K0 | D | E | F | W | P | P0 | P2 | A | B | C | D | E | PCS / Reel |
| BWVT00201610 | 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 |
| BWVT00252010 | 1 | 2.40 | 2.70 | 1.15 | 1.55 | 1.75 | 3.5 | 8 | 4 | 4 | 2 | 180 | 60 | 13 | 14.4 | 8.4 | 2000 |
| BWVT00252012 | 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 |
| BWVT00303010 | 1 | 3.20 | 3.20 | 1.40 | 1.55 | 1.75 | 3.5 | 8 | 4 | 4 | 2 | 180 | 60 | 13 | 14.4 | 8.4 | 2000 |
| BWVT00303012 | 1 | 3.20 | 3.20 | 1.40 | 1.55 | 1.75 | 3.5 | 8 | 4 | 4 | 2 | 180 | 60 | 13 | 14.4 | 8.4 | 2000 |
| BWVT00404012 | 2 | 4.25 | 4.25 | 1.30 | 1.55 | 1.75 | 5.5 | 12 | 8 | 4 | 2 | 178 | 60 | 13 | 13.2 | - | 1000 |
| BWVT00404015 | 2 | 4.25 | 4.25 | 1.70 | 1.55 | 1.75 | 5.5 | 12 | 8 | 4 | 2 | 178 | 60 | 13 | 13.2 | - | 1000 |
| BWVT00404026 | 2 | 4.25 | 4.25 | 3.00 | 1.55 | 1.75 | 5.5 | 12 | 8 | 4 | 2 | 178 | 60 | 13 | 13.2 | - | 500 |
| BWVT00505020 | 2 | 5.25 | 5.25 | 2.20 | 1.55 | 1.75 | 5.5 | 12 | 8 | 4 | 2 | 330 | 100 | 13 | 13.4 | - | 2000 |
| BWVT00606020 | 2 | 6.25 | 6.25 | 2.20 | 1.55 | 1.75 | 7.5 | 16 | 12 | 4 | 2 | 330 | 100 | 13 | 16.0 | - | 2000 |
| BWVT00808040 | 2 | 8.25 | 8.25 | 4.15 | 1.55 | 1.75 | 7.5 | 16 | 12 | 4 | 2 | 330 | 100 | 13 | 16.0 | - | 1000 |