

# DATA SHEET

## INDUCTOR

Power Inductors

BWVT Series

RoHS compliant & Halogen Free



## 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.

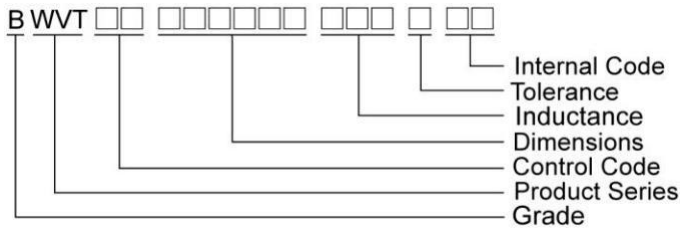
#### Features

- 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

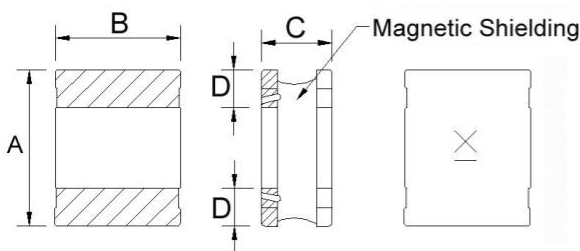
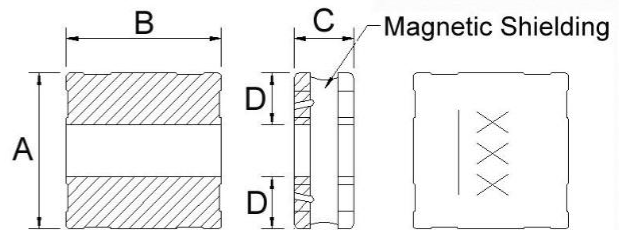


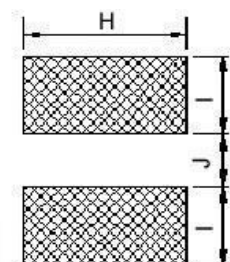
Figure 2



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

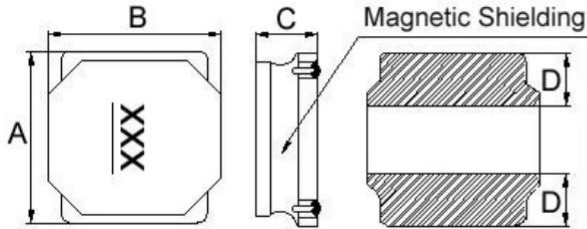
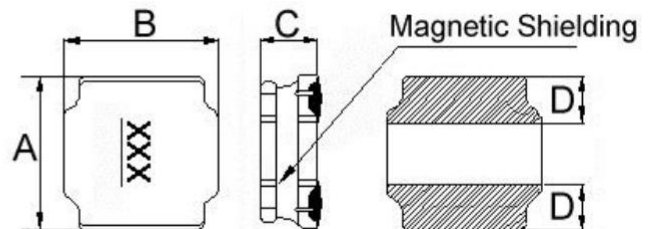


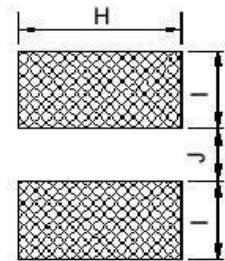
Figure 4



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 <sup>+0.2</sup> <sub>-0.30</sub> | 2.3±0.3 | 7.5 | 2.5 | 3.4 |

**Recommended Pattern**



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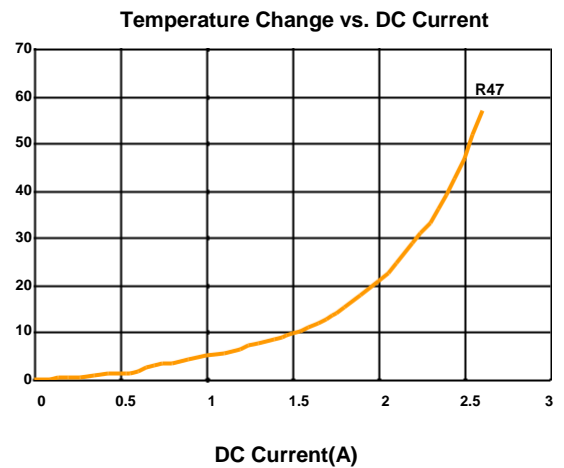
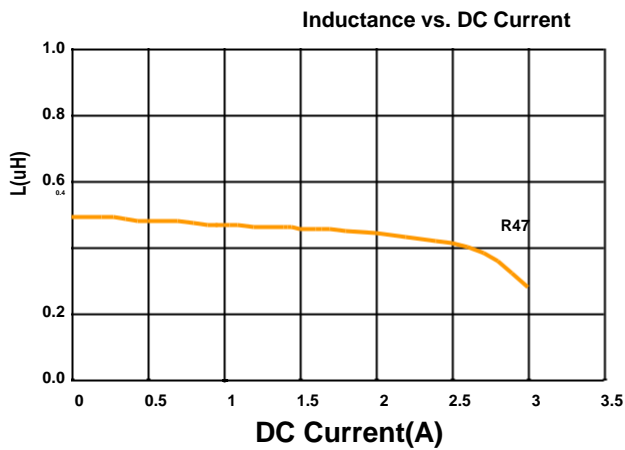
### Electrical Characteristics

| 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°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
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- Measure Equipment :
- L : Agilent HP4287A+Agilent HP16197A, 1MHz 200mV
- RDC : DIGITAL MILLINHM METER CHROMA 16502, or equivalent
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### Test Instruments : HP4284A Material/Impedance Analyzer



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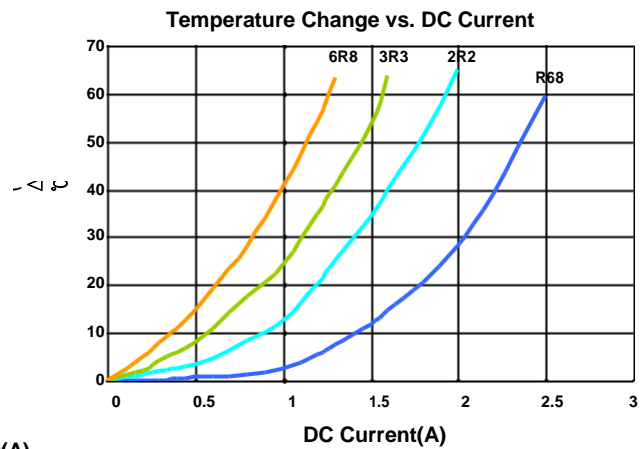
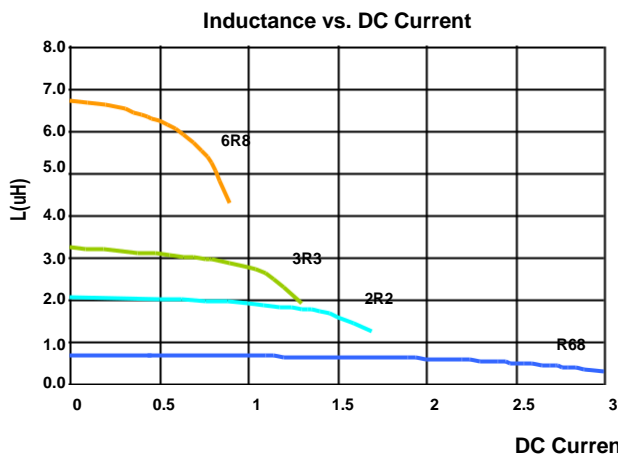
### Electrical Characteristics

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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| 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       |

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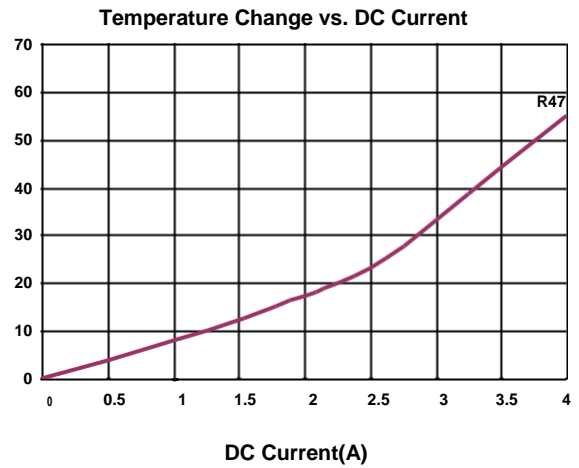
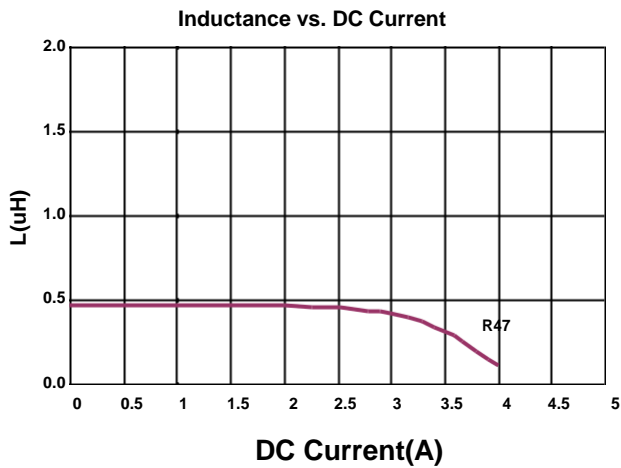
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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVT00252012R47□00 | 0.47            | 20, 30         | 1                    | 0.027        | 3.70(3.330)         | 3.10(2.790)         | A       |

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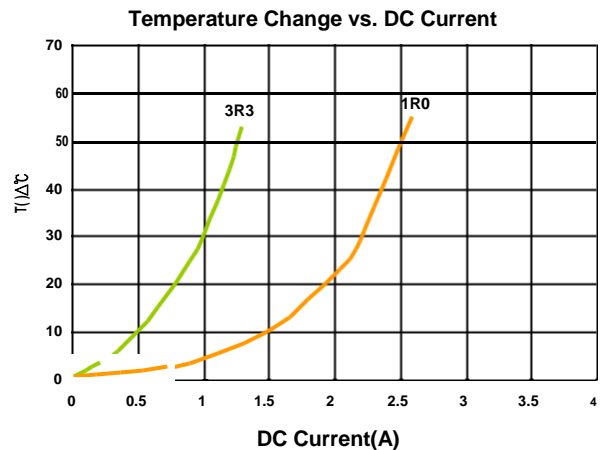
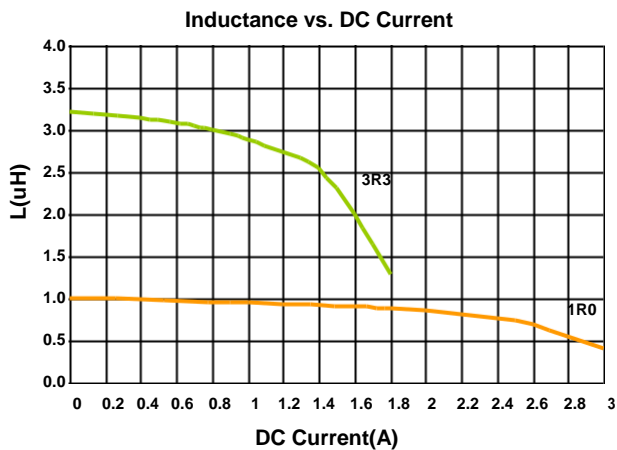
### Electrical Characteristics

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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| 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     |

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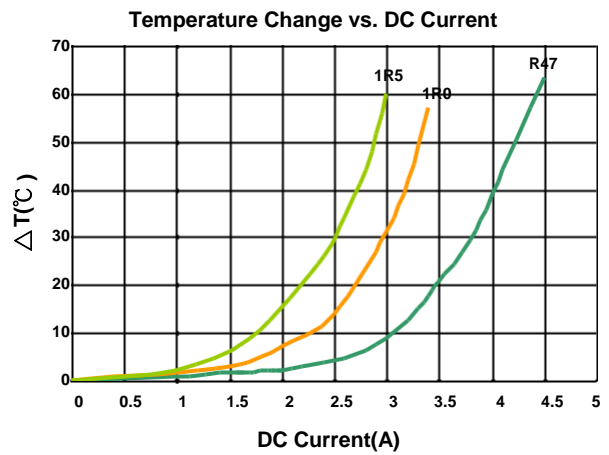
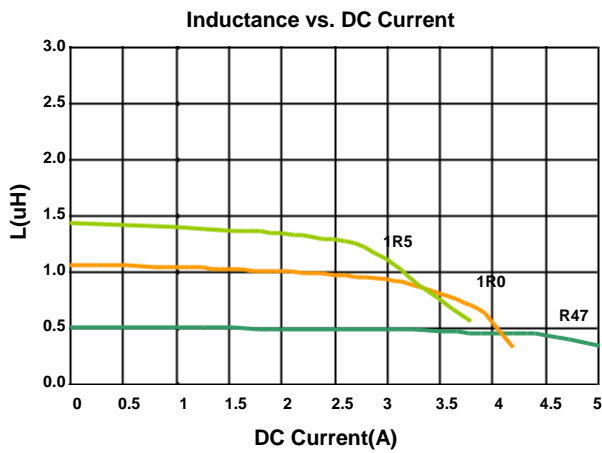
### Electrical Characteristics

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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| 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     |

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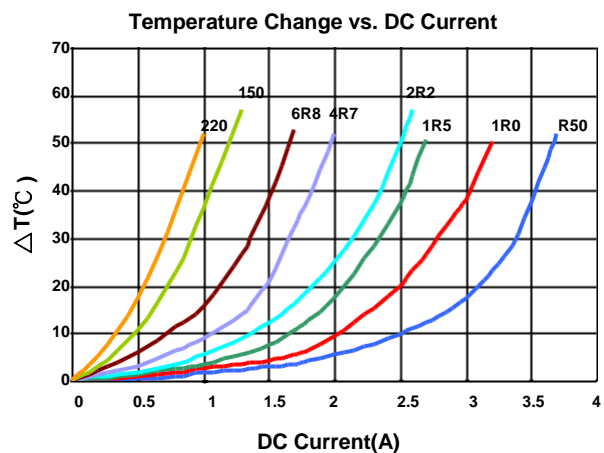
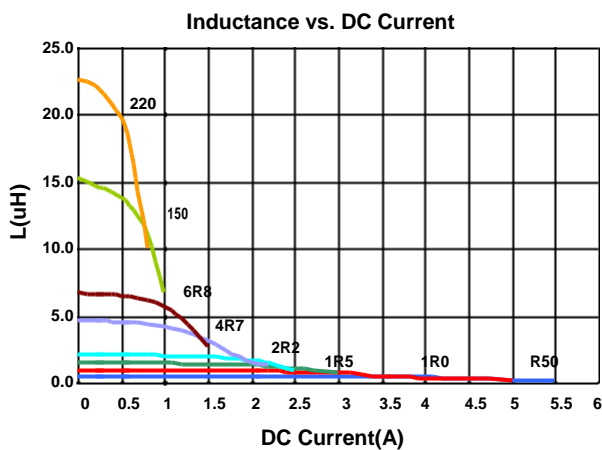
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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVT00404012R50□00 | 0.5             | 20, 30         | 1                    | 0.030        | 3.90(3.51)          | 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     |

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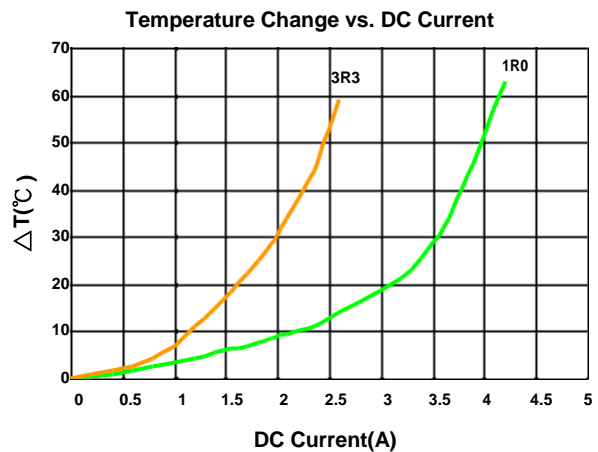
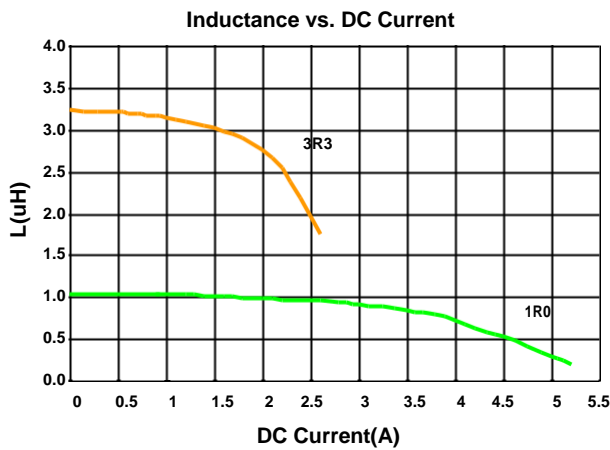
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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVT004040151R0□00 | 1.0             | 20, 30         | 1                    | 0.034        | 3.60(3.24)          | 3.70(3.33)          | 1R0     |
| BWVT004040153R3□00 | 3.3             | 20, 30         | 1                    | 0.080        | 2.00(1.80)          | 2.20(1.98)          | 3R3     |

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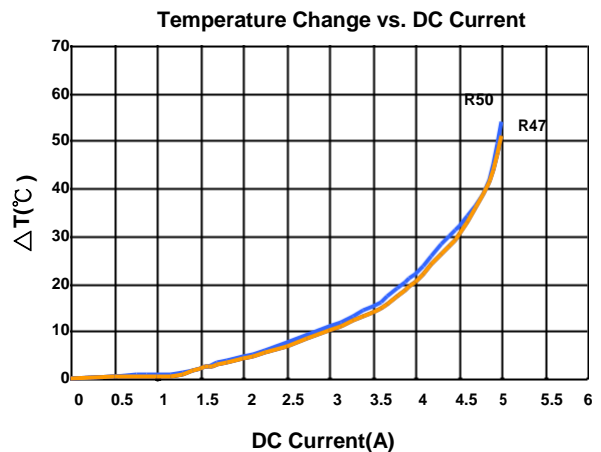
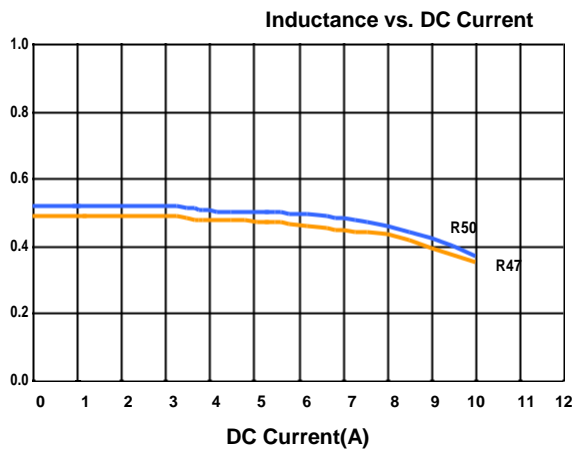
### Electrical Characteristics

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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| 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%**

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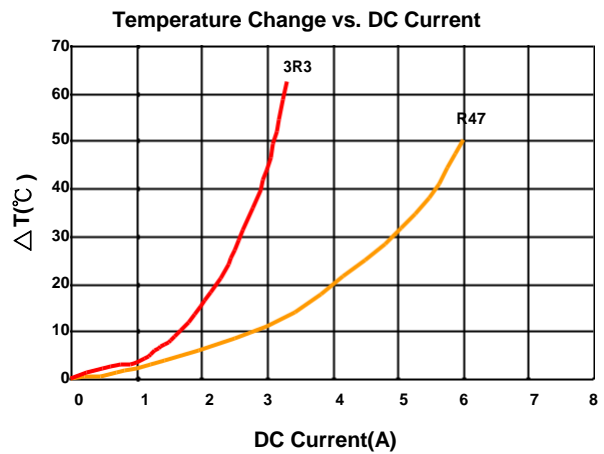
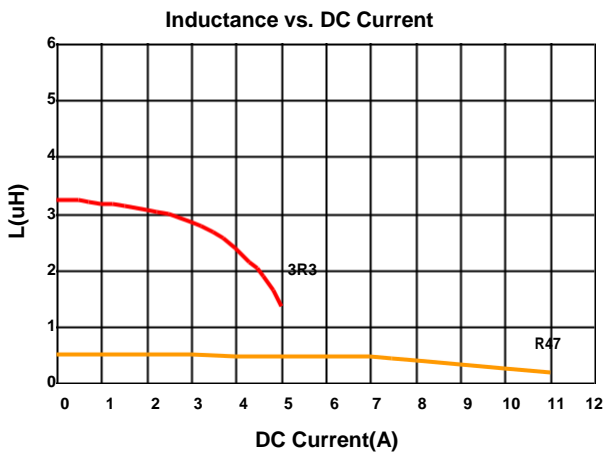
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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVT00505020R47□00 | 0.47            | 20, 30         | 100                  | 0.0135       | 8.0(7.2)            | 5.5(5.0)            | R47     |
| BWVT005050203R3□00 | 3.3             | 20, 30         | 100                  | 0.050        | 3.4(3.06)           | 2.7(2.43)           | 3R3     |

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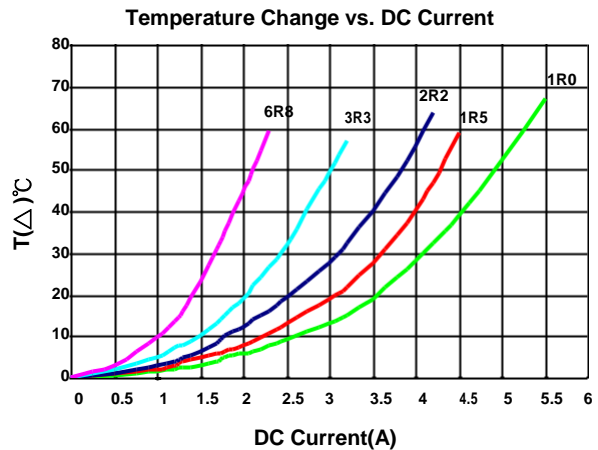
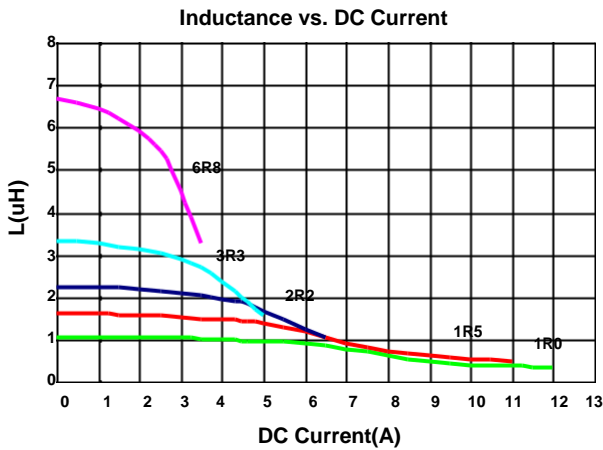
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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVT006060201R0□00 | 1.0             | 20, 30         | 100                  | 0.019        | 6.4(5.76)           | 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     |

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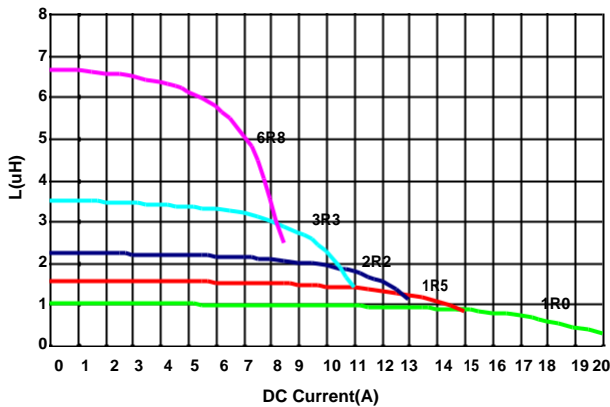
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|--------------------|-----------------|----------------|----------------------|--------------|---------------------|---------------------|---------|
| BWVT008080401R0□00 | 1.0             | 20, 30         | 100                  | 0.0075       | 13.5(12.15)         | 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%

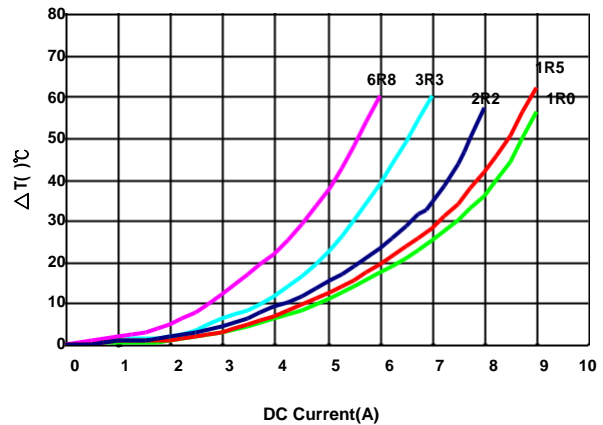
- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Iirms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :
- L : Agilent HP4284A+Agilent HP42841A, 100kHz 1V
- RDC : DIGITAL MILLINHM METER CHROMA 16502, or equivalent
- Isat & Iirms : Agilent HP4284A

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

**Inductance vs. DC Current**



**Temperature Change vs. DC Current**

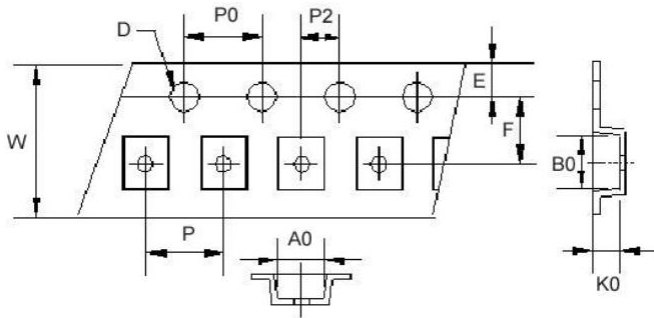


## Sealed Power Inductors – BWVT Series

### Packaging Specifications

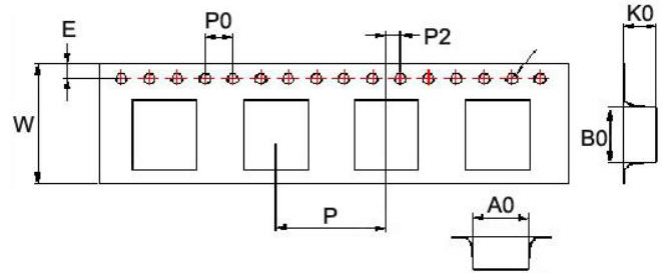
Tape Dimensions

Figure 1



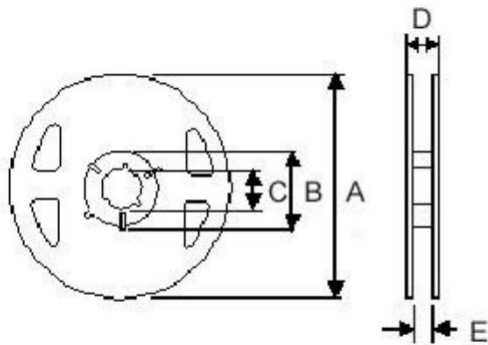
Tape Dimensions

Figure 2



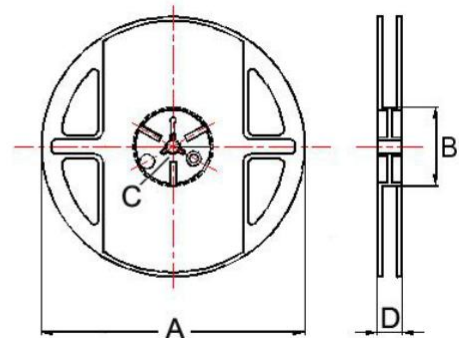
Reel Dimensions

Figure 1



Reel Dimensions

Figure 2



**Dimensions in mm**

| TYPE         | Fig | Tape Dimensions |      |      |      |      |     |    |    |    |    | Reel Dimensions |     |    |      |     | Quantity<br>PCS / Reel |
|--------------|-----|-----------------|------|------|------|------|-----|----|----|----|----|-----------------|-----|----|------|-----|------------------------|
|              |     | A0              | B0   | K0   | D    | E    | F   | W  | P  | P0 | P2 | A               | B   | C  | D    | E   |                        |
| 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                   |