

DATA SHEET

INDUCTOR

Chip Beads

BBUP Series

RoHS compliant & Halogen Free

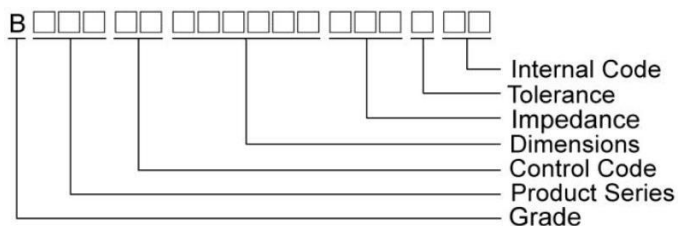


Multilayer Ferrite Chip Beads

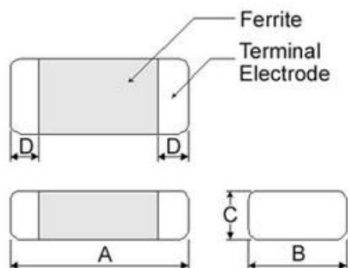


Yageo offers a wide range of multi-layered ferrite chip beads with various sizes, frequency characteristics, and impedance values for EMI solutions. These ferrite formulas are used to compose seven types of EMI suppression chip beads: BBSY, BBBK, BBSJ, BBGK, BBPY, BBUP, BBNQ, BBFY, BBFJ and BBHV series.

Product Identification



Shape and Dimensions

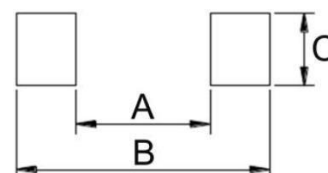


Dimensions in mm

| TYPE | A | B | C | D |
|---------|----------|-----------|----------|-----------|
| ①060303 | 0.6±0.03 | 0.30±0.03 | 0.3±0.03 | 0.15±0.05 |
| ②100505 | 1.0±0.10 | 0.50±0.10 | 0.5±0.10 | 0.25±0.10 |
| ③160805 | 1.6±0.15 | 0.80±0.15 | 0.5±0.15 | 0.3±0.2 |
| ④160808 | 1.6±0.15 | 0.80±0.15 | 0.8±0.15 | 0.3±0.2 |
| ⑤201209 | 2.0±0.20 | 1.25±0.20 | 0.9±0.20 | 0.5±0.3 |
| ⑥321611 | 3.2±0.20 | 1.60±0.20 | 1.1±0.20 | 0.5±0.3 |
| ⑦453215 | 4.5±0.25 | 3.20±0.20 | 1.5±0.20 | 0.5±0.3 |

- ① : BBSY / BBSJ / BBNQ / BBPY
- ② : BBSY / BBSJ / BBNQ / BBPY / BBUP / BBFY / BBFJ
- ③ : BBUP ④ : BBBK / BBSJ / BBGK / BBPY / BBNQ / BBUP / BBHV
- ⑤ : BBBK / BBGK / BBPY / BBUP ⑥ : BBSY / BBBK / BBPY / BBUP
- ⑦ : BBPY / BBUP

Recommended Pattern



Dimensions in mm

| TYPE | A | B | C |
|---------|-----------|-------------|-----------|
| ①060303 | 0.2 ~ 0.3 | 0.75 ~ 1.05 | 0.3 |
| ②100505 | 0.4 | 1.2 ~ 1.4 | 0.5 |
| ③160805 | 0.7 ~ 0.8 | 1.8 ~ 2.0 | 0.6 ~ 0.8 |
| ④160808 | 0.7 ~ 0.8 | 1.8 ~ 2.0 | 0.6 ~ 0.8 |
| ⑤201209 | 1.0 ~ 1.2 | 2.6 ~ 4.0 | 1.0 ~ 1.4 |
| ⑥321611 | 2.0 ~ 2.4 | 4.2 ~ 5.2 | 1.3 ~ 1.9 |
| ⑦453215 | 3.0 | 5.5 ~ 6.5 | 2.4 |

* Don't apply narrower pattern than listed above to BBPY and BBUP
Narrow pattern might cause excessive heat or open circuit.

Dimension Conversion

| Code | Dimension in mm (AxBxC) | EIA |
|--------|-------------------------|------|
| 060303 | 0.6X0.3X0.3 | 0201 |
| 100505 | 1.0X0.5X0.5 | 0402 |
| 160805 | 1.6x0.8x0.5 | 0603 |
| 160808 | 1.6x0.8x0.8 | 0603 |
| 201209 | 2.0x1.2x0.9 | 0805 |
| 321611 | 3.2x1.6x1.1 | 1206 |
| 453215 | 4.5x3.2x1.5 | 1812 |

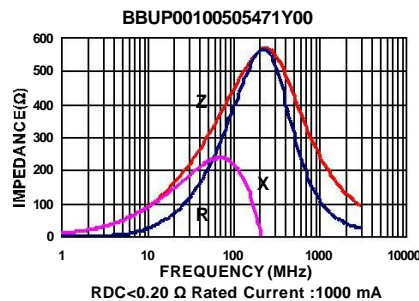
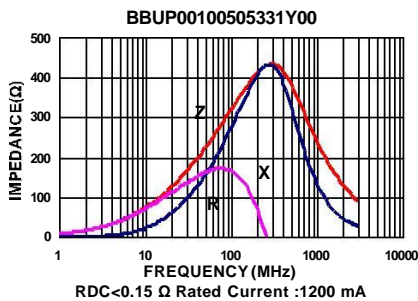
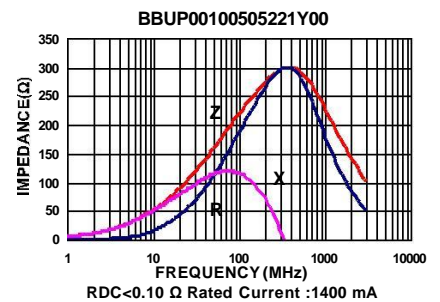
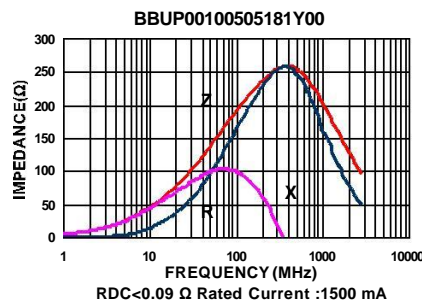
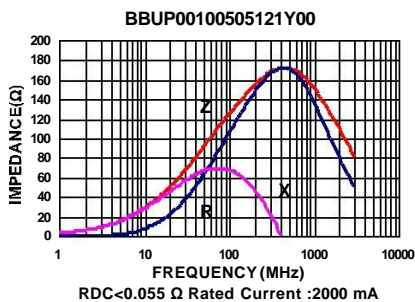
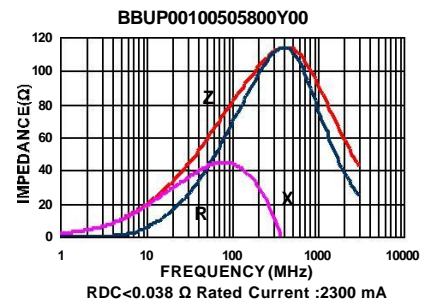
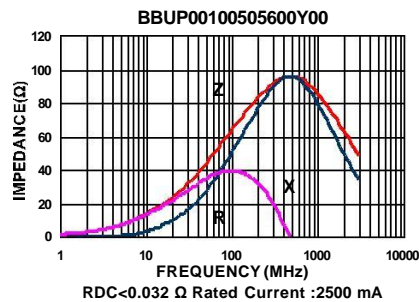
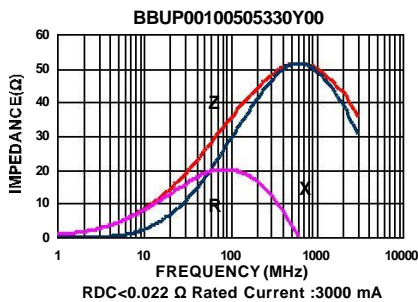
Electrical Characteristics

| Part Number | Impedance ($\Omega \pm 25\%$) | Test Frequency (MHz) | RDC (Ω) Max | Rated current (mA) Max |
|--------------------|------------------------------------|-------------------------|-------------------------|---------------------------|
| BBUP00100505330Y00 | 33 | 100 | 0.022 | 3000 |
| BBUP00100505600Y00 | 60 | 100 | 0.032 | 2500 |
| BBUP00100505800Y00 | 80 | 100 | 0.038 | 2300 |
| BBUP00100505121Y00 | 120 | 100 | 0.055 | 2000 |
| BBUP00100505181Y00 | 180 | 100 | 0.090 | 1500 |
| BBUP00100505221Y00 | 220 | 100 | 0.100 | 1400 |
| BBUP00100505331Y00 | 330 | 100 | 0.150 | 1200 |
| BBUP00100505471Y00 | 470 | 100 | 0.200 | 1000 |

Note: When ordering, please specify tolerance code. Tolerance : Y= $\pm 25\%$

- Operating temperature range - 55°C ~ 125°C (Including self - temperature rise)
- Rate Current : Applied the current to coils, the temperature rise shall not be more than 30°C
- Measure Equipment :
Z : HP4291A
RDC : HP4338B or CHEN HWA 502

Test Instruments : Agilent E4991A Impedance / Material Analyzer



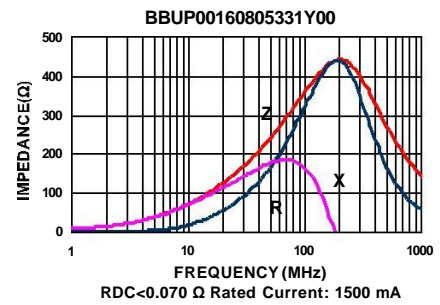
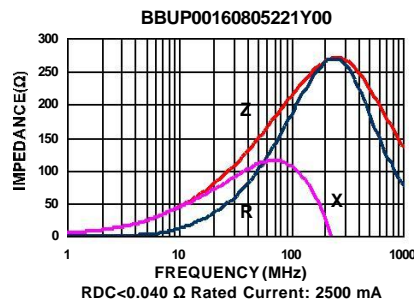
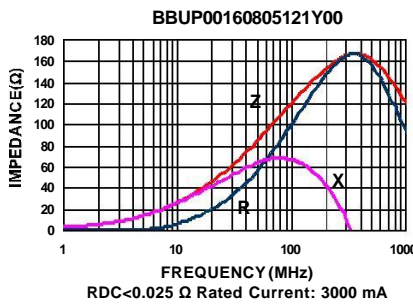
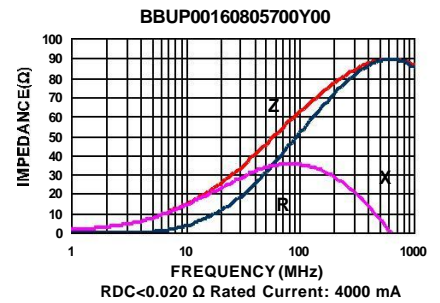
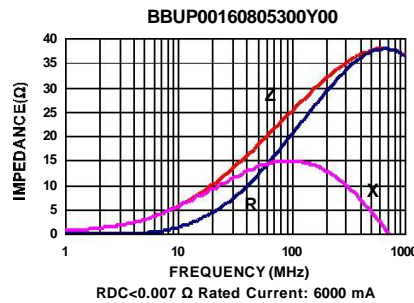
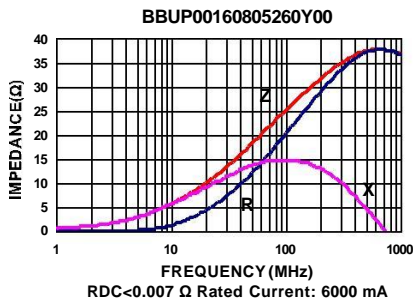
Electrical Characteristics

| Part Number | Impedance ($\Omega \pm 25\%$) | Test Frequency (MHz) | RDC (Ω) Max | Rated current (mA) Max |
|--------------------|------------------------------------|-------------------------|-------------------------|---------------------------|
| BBUP00160805260Y00 | 26 | 100 | 0.007 | 6000 |
| BBUP00160805300Y00 | 30 | 100 | 0.007 | 6000 |
| BBUP00160805700Y00 | 70 | 100 | 0.020 | 4000 |
| BBUP00160805121Y00 | 120 | 100 | 0.025 | 3000 |
| BBUP00160805221Y00 | 220 | 100 | 0.040 | 2500 |
| BBUP00160805331Y00 | 330 | 100 | 0.070 | 1500 |

Note: When ordering, please specify tolerance code. Tolerance : Y=±25%

- Operating temperature range -55°C ~ 125°C (Including self - temperature rise)
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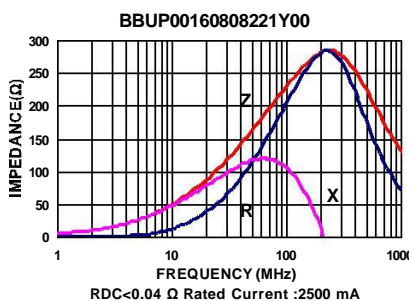
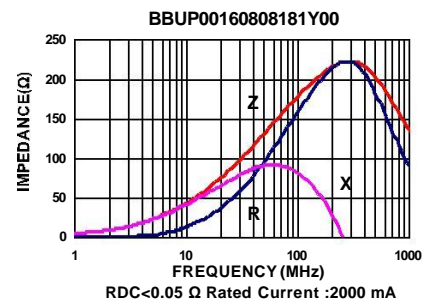
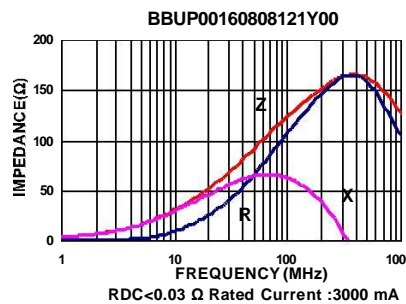
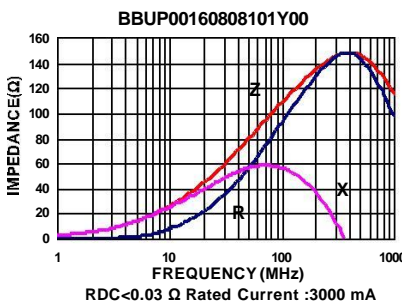
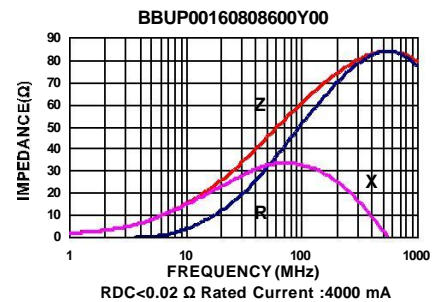
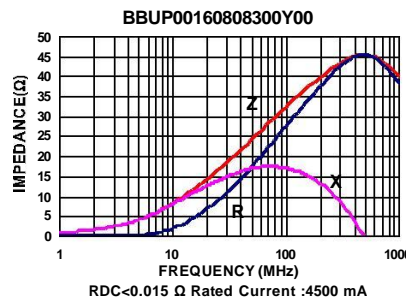
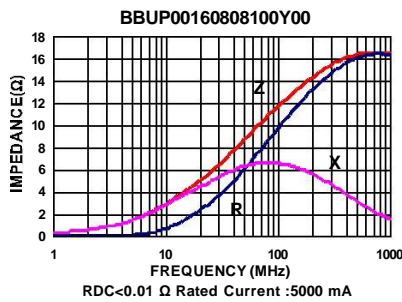
Electrical Characteristics

| Part Number | Impedance ($\Omega \pm 25\%$) | Test Frequency (MHz) | RDC (Ω) Max | Rated current (mA) Max |
|--------------------|------------------------------------|-------------------------|-------------------------|---------------------------|
| BBUP00160808100Y00 | 10 | 100 | 0.010 | 5000 |
| BBUP00160808300Y00 | 30 | 100 | 0.015 | 4500 |
| BBUP00160808600Y00 | 60 | 100 | 0.020 | 4000 |
| BBUP00160808700Y00 | 70 | 100 | 0.020 | 4000 |
| BBUP00160808101Y00 | 100 | 100 | 0.030 | 3000 |
| BBUP00160808121Y00 | 120 | 100 | 0.030 | 3000 |
| BBUP00160808181Y00 | 180 | 100 | 0.050 | 2000 |
| BBUP00160808221Y00 | 220 | 100 | 0.040 | 2500 |

Note: When ordering, please specify tolerance code. Tolerance : Y= $\pm 25\%$

- Operating temperature range – 55°C ~ 125°C (Including self - temperature rise)
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RDC : HP4338B or CHEN HWA 502

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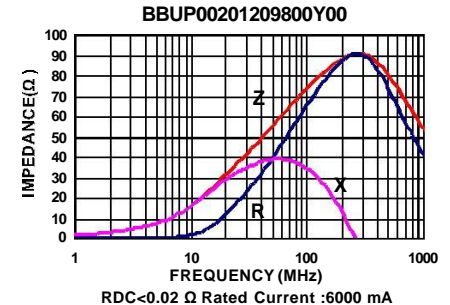
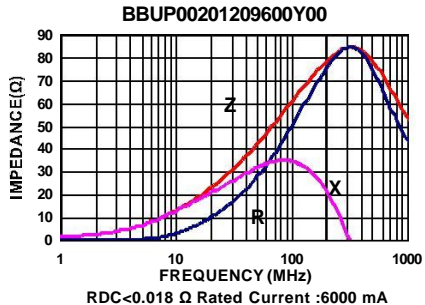
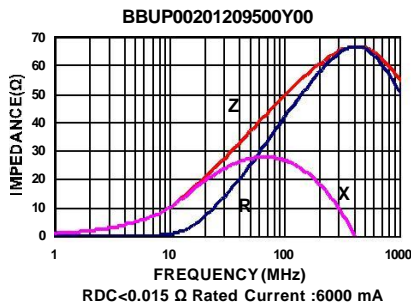
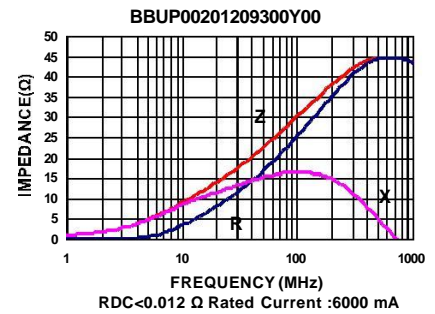
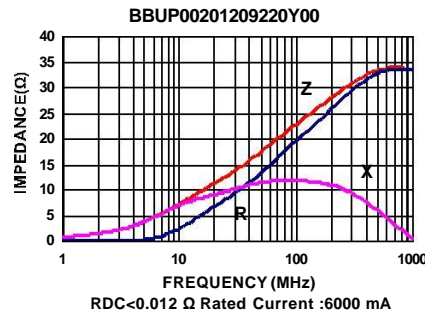
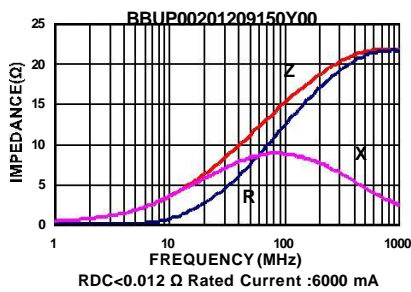
Electrical Characteristics

| Part Number | Impedance ($\Omega \pm 25\%$) | Test Frequency (MHz) | RDC (Ω) Max | Rated current (mA) Max |
|--------------------|------------------------------------|-------------------------|-------------------------|---------------------------|
| BBUP00201209150Y00 | 15 | 100 | 0.012 | 6000 |
| BBUP00201209220Y00 | 22 | 100 | 0.012 | 6000 |
| BBUP00201209300Y00 | 30 | 100 | 0.012 | 6000 |
| BBUP00201209500Y00 | 50 | 100 | 0.015 | 6000 |
| BBUP00201209600Y00 | 60 | 100 | 0.018 | 6000 |
| BBUP00201209800Y00 | 80 | 100 | 0.02 | 6000 |
| BBUP00201209101Y00 | 100 | 100 | 0.02 | 5000 |
| BBUP00201209121Y00 | 120 | 100 | 0.02 | 5000 |
| BBUP00201209201Y00 | 200 | 100 | 0.04 | 3000 |
| BBUP00201209221Y00 | 220 | 100 | 0.04 | 3000 |
| BBUP00201209301Y00 | 300 | 100 | 0.05 | 3000 |
| BBUP00201209331Y00 | 330 | 100 | 0.05 | 3000 |

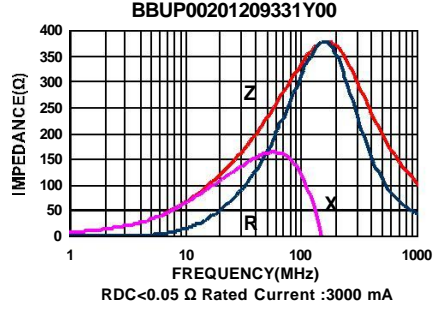
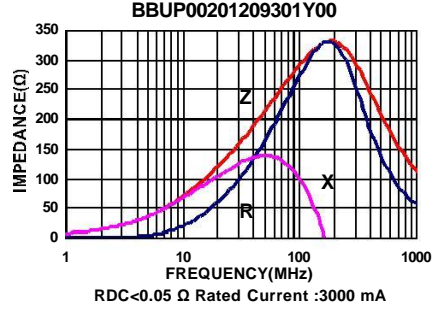
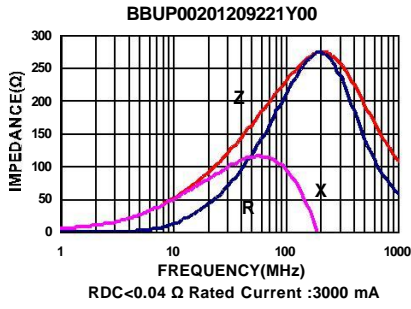
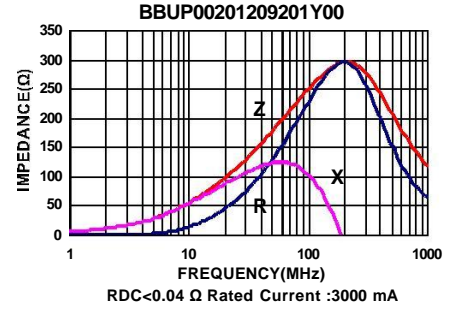
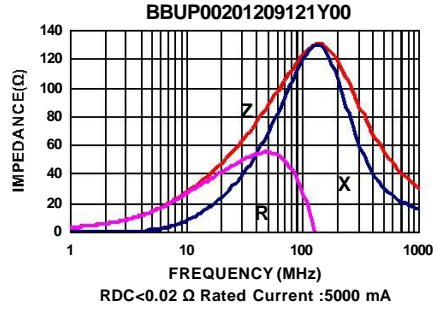
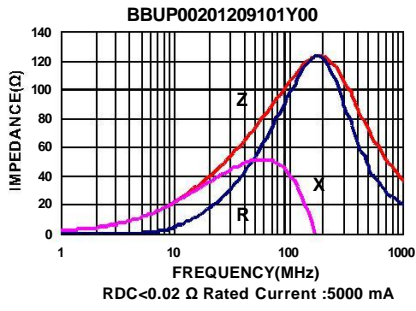
Note: When ordering, please specify tolerance code. Tolerance : Y= $\pm 25\%$

- Operating temperature range $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)
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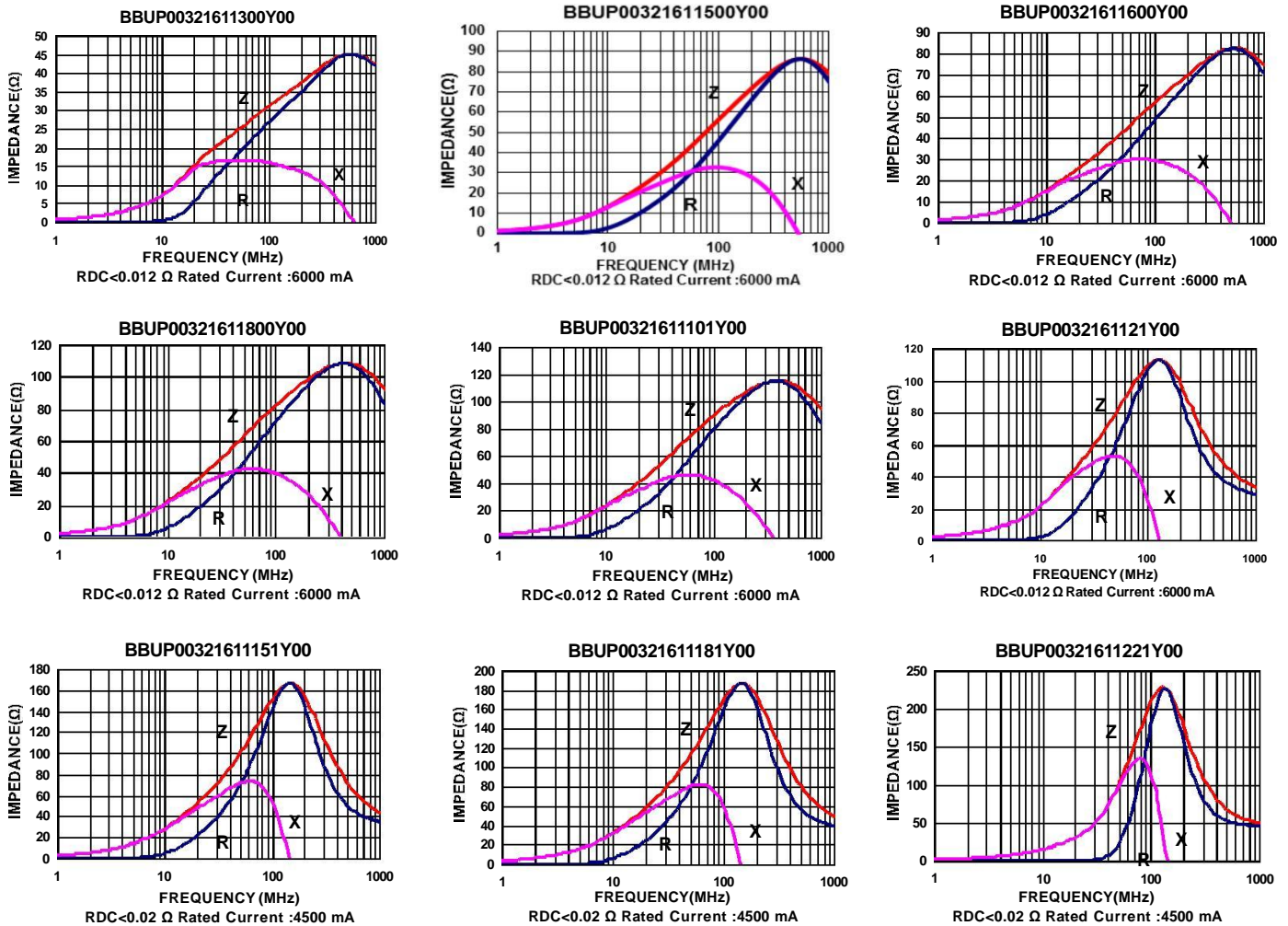
Electrical Characteristics

| Part Number | Impedance ($\Omega \pm 25\%$) | Test Frequency (MHz) | RDC (Ω) Max | Rated current (mA) Max |
|--------------------|------------------------------------|-------------------------|-------------------------|---------------------------|
| BBUP00321611300Y00 | 30 | 100 | 0.012 | 6000 |
| BBUP00321611500Y00 | 50 | 100 | 0.012 | 6000 |
| BBUP00321611600Y00 | 60 | 100 | 0.012 | 6000 |
| BBUP00321611800Y00 | 80 | 100 | 0.012 | 6000 |
| BBUP00321611101Y00 | 100 | 100 | 0.012 | 6000 |
| BBUP00321611121Y00 | 120 | 100 | 0.012 | 6000 |
| BBUP00321611151Y00 | 150 | 100 | 0.020 | 4500 |
| BBUP00321611181Y00 | 180 | 100 | 0.020 | 4500 |
| BBUP00321611221Y00 | 220 | 100 | 0.020 | 4500 |

Note: When ordering, please specify tolerance code. Tolerance : Y \pm 25%

- Operating temperature range $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)
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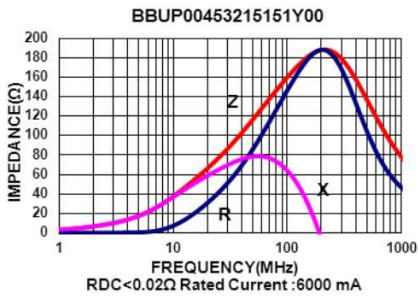
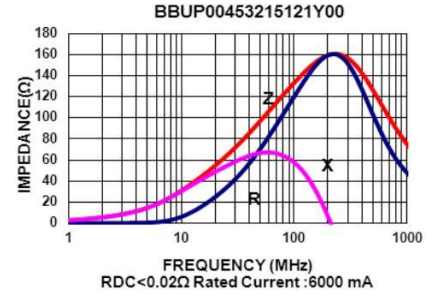
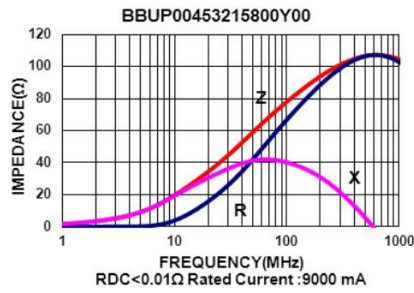
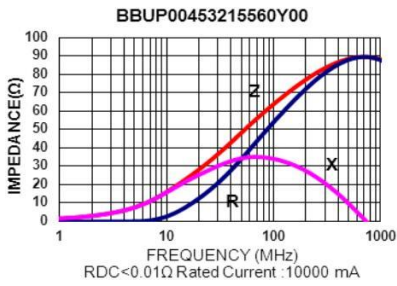
Test Instruments : Agilent E4991A Impedance / Material Analyzer



Electrical Characteristics

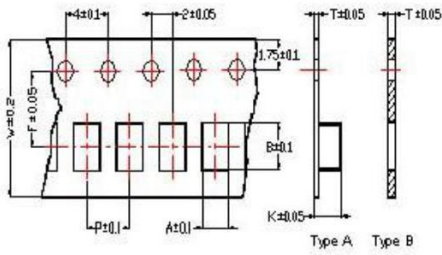
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|--------------------|------------------------------------|-------------------------|-----------------------------------|---------------------------|
| BBUP00453215560Y00 | 56 | 100 | 0.010 | 9000 |
| BBUP00453215800Y00 | 80 | 100 | 0.010 | 9000 |
| BBUP00453215121Y00 | 120 | 100 | 0.020 | 6000 |
| BBUP00453215151Y00 | 150 | 100 | 0.020 | 6000 |

Test Instruments : Agilent E4991A Impedance / Material Analyzer



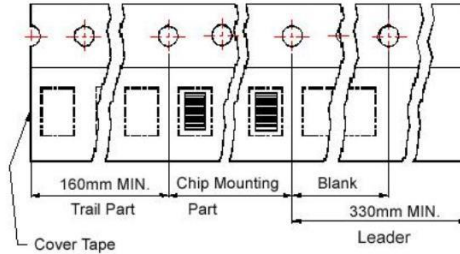
Packaging Specifications

Tape Dimensions

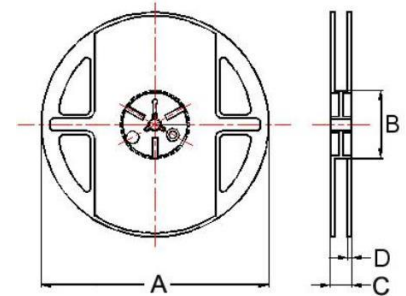


Tape Material

Carrier Tape: Polycarbonate (Tape A)
Carrier Tape: Paper (Tape B)
Cover Tape: Polystyrene



Reel Dimensions



- : BBSY/BBSJ/BBNQ/BBPY : BBUP
- : BBSY/BBSJ/BBNQ/BBPY/BBUP/BBFY/BBFJ
- : BBBK/BBSJ/BBGK/BBPY/BBNQ/BBUP/BBHV
- : BBBK/BBGK/BBPY/BBUP
- : BBSY/BBBK/BBPY/BBUP
- : BBPY/BBUP

Dimensions in mm

| TYPE | Tape Dimensions | | | | | | | | Reel Dimensions | | | | Quantity PCS / REEL |
|--------|-----------------|------|------|-----|-----|-----|------|------|-----------------|----|----|---|------------------------|
| | A | B | T | W | P | F | K | Tape | A | B | C | D | |
| 060303 | 0.37 | 0.67 | 0.42 | 8.0 | 2.0 | 3.5 | - | B | 178 | 60 | 10 | 2 | 15000 |
| 100505 | 0.62 | 1.12 | 0.60 | 8.0 | 2.0 | 3.5 | - | B | 178 | 60 | 12 | 2 | 10000 |
| 160805 | 1.05 | 1.85 | 0.60 | 8.0 | 2.0 | 3.5 | - | B | 178 | 60 | 12 | 2 | 10000 |
| 160808 | 1.05 | 1.85 | 0.95 | 8.0 | 4.0 | 3.5 | - | B | 178 | 60 | 12 | 2 | 4000 |
| 201209 | 1.50 | 2.30 | 0.97 | 8.0 | 4.0 | 3.5 | - | B | 178 | 60 | 12 | 2 | 4000 |
| 321611 | 1.88 | 3.50 | 0.22 | 8.0 | 4.0 | 3.5 | 1.27 | A | 178 | 60 | 12 | 2 | 3000 |
| 453215 | 3.66 | 4.95 | 0.24 | 12 | 8.0 | 5.5 | 1.85 | A | 178 | 60 | 14 | 2 | 1000 |