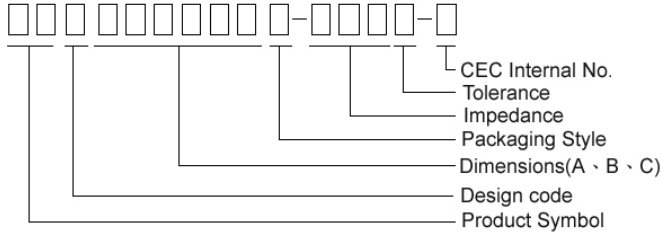


## Multilayer Ferrite Chip Beads



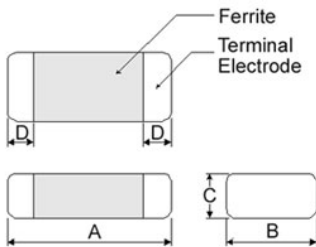
Chilisin offers a wide range of multi-layered ferrite chip beads with various sizes, frequency characteristics, and impedance values for EMI solutions. These ferrite formulas are used to compose seven types of EMI suppression chip beads: SB, GB, PB, UPB, NB, HF, and VPB series.

### Product Identification



- Product symbol: SB, GB, PB, UPB, NB, HF, VPB
- Packaging: T : Tape and Reel ; B : Bulk
- Tolerance: Y =  $\pm 25\%$ ; M =  $\pm 20\%$ ; T:  $\pm 30\%$
- Note: RoHS Compliant

### Shape and Dimensions

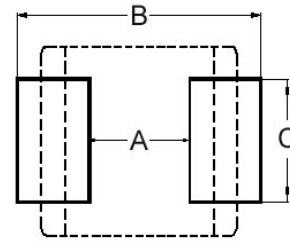


Dimensions in mm

TYPE	A	B	C	D
①060303	0.6 $\pm$ 0.03	0.30 $\pm$ 0.03	0.3 $\pm$ 0.03	0.15 $\pm$ 0.05
②100505	1.0 $\pm$ 0.10	0.50 $\pm$ 0.10	0.5 $\pm$ 0.10	0.25 $\pm$ 0.10
③160808	1.6 $\pm$ 0.15	0.80 $\pm$ 0.15	0.8 $\pm$ 0.15	0.3 $\pm$ 0.2
④201209	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	0.9 $\pm$ 0.20	0.5 $\pm$ 0.3
⑤201212	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	1.25 $\pm$ 0.20	0.5 $\pm$ 0.3
④321611	3.2 $\pm$ 0.20	1.60 $\pm$ 0.20	1.1 $\pm$ 0.20	0.5 $\pm$ 0.3
⑥321616	3.2 $\pm$ 0.20	1.60 $\pm$ 0.20	1.6 $\pm$ 0.20	0.5 $\pm$ 0.3
⑦322513	3.2 $\pm$ 0.20	2.50 $\pm$ 0.20	1.3 $\pm$ 0.20	0.5 $\pm$ 0.3
⑧451616	4.5 $\pm$ 0.25	1.60 $\pm$ 0.20	1.6 $\pm$ 0.20	0.5 $\pm$ 0.3
⑧453215	4.5 $\pm$ 0.25	3.20 $\pm$ 0.20	1.5 $\pm$ 0.20	0.5 $\pm$ 0.3

- ① : SB / PB / NB    ② : SB / PB / NB / HF    ⑦ : SB / PB  
 ③ : SB / PB / NB / GB / UPB / HF / VPB    ⑤ : UPB    ⑥ : SB  
 ④ : SB / PB / NB / GB / UPB    ⑧ : PB / UPB

### 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
③160808	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8
④201209	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
⑤201212	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
④321611	2.0	4.2 ~ 5.2	1.2
⑥321616	2.0	4.2 ~ 5.2	1.2
⑦322513	2.0	5.5 ~ 6.5	1.8
⑧451616	3.0	5.5 ~ 6.5	1.2
⑧453215	3.0	5.5 ~ 6.5	2.4

- \* Don't apply narrower pattern than listed above to PB and UPB. Narrow pattern might cause excessive heat or open circuit.

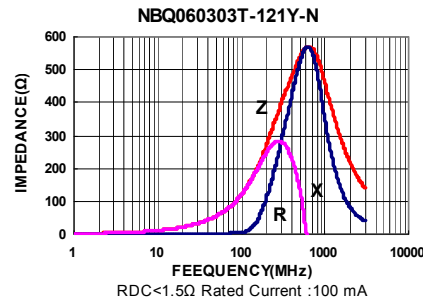
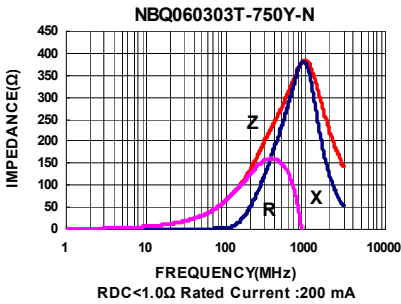
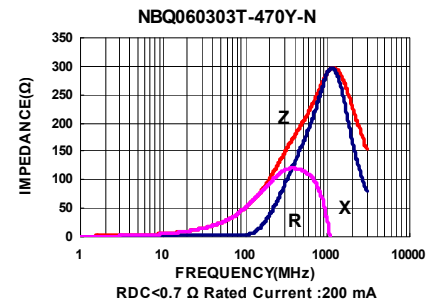
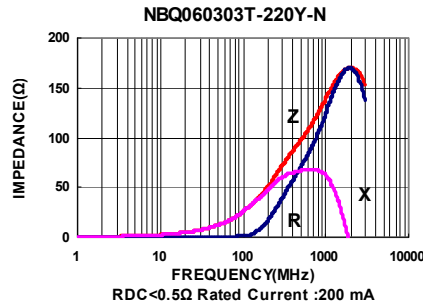
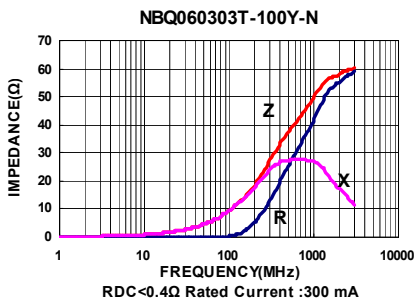
### Dimension Conversion

Code	Dimension in mm (AxBxC)	EIA
060303	0.6X0.3X0.3	0201
100505	1.0X0.5X0.5	0402
160808	1.6x0.8x0.8	0603
201209	2.0x1.2x0.9	0805
201212	2.0x1.2x1.25	0805
321611	3.2x1.6x1.1	1206
321616	3.2x1.6x1.6	1206
322513	3.2x2.5x1.3	1210
451616	4.5x1.6x1.6	1806
453215	4.5x3.2x1.5	1812

## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
NBQ060303T-100Y-N	100	10 $\pm$ 30%	0.4	300
NBQ060303T-220Y-N	100	22	0.5	200
NBQ060303T-470Y-N	100	47	0.7	200
NBQ060303T-750Y-N	100	75	1.0	200
NBQ060303T-121Y-N	100	120	1.5	100

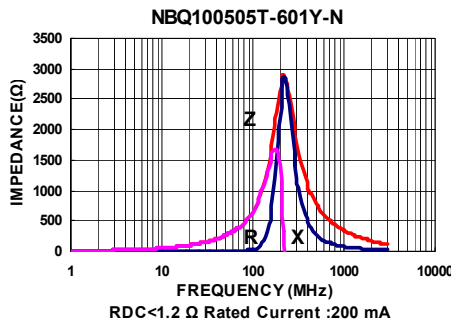
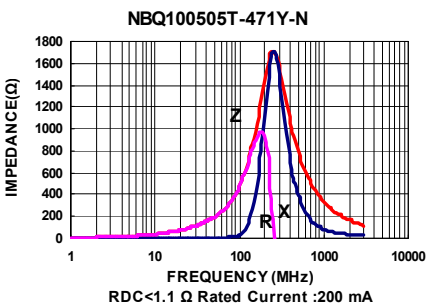
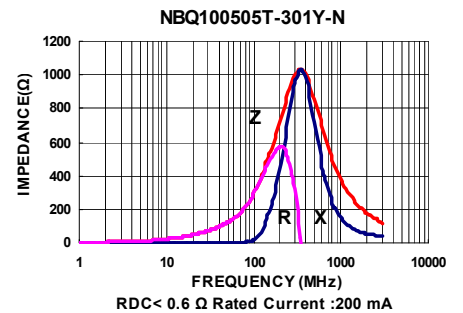
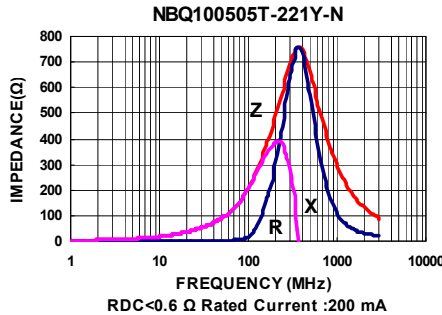
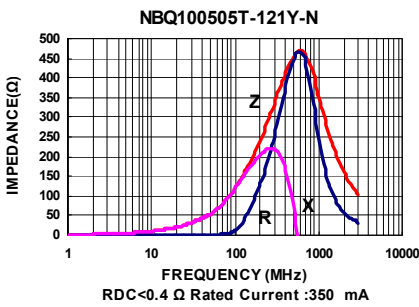
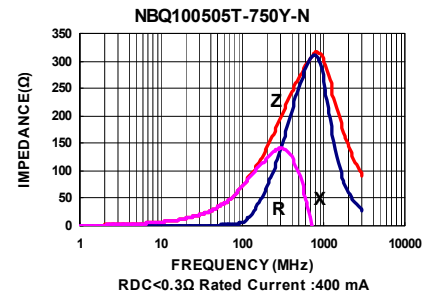
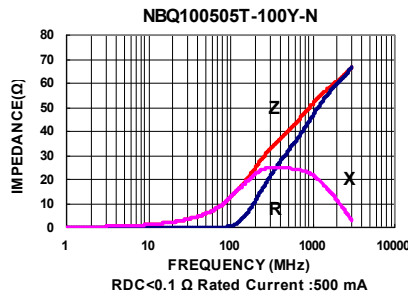
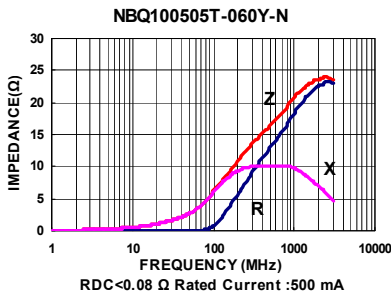
## Test Instruments : Agilent E4991A Impedance / Material Analyzer



## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
NBQ100505T-060Y-N	100	6 $\pm$ 30%	0.08	500
NBQ100505T-100Y-N	100	10 $\pm$ 30%	0.10	500
NBQ100505T-750Y-N	100	75	0.30	400
NBQ100505T-121Y-N	100	120	0.40	350
NBQ100505T-221Y-N	100	220	0.60	200
NBQ100505T-301Y-N	100	300	0.80	200
NBQ100505T-471Y-N	100	470	1.10	200
NBQ100505T-601Y-N	100	600	1.20	200

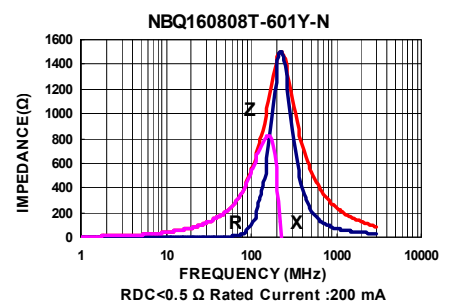
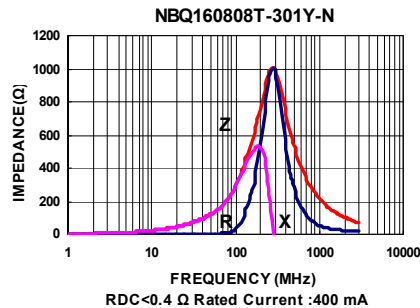
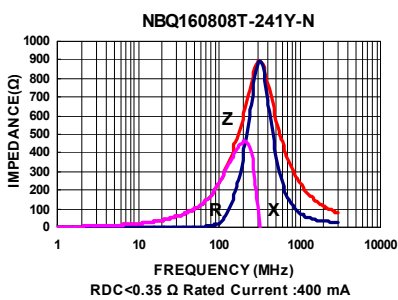
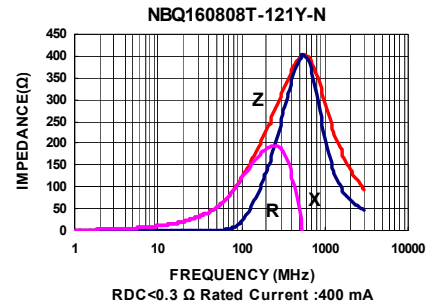
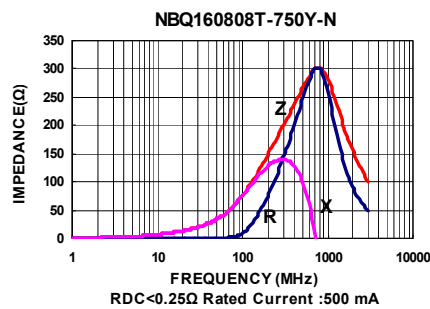
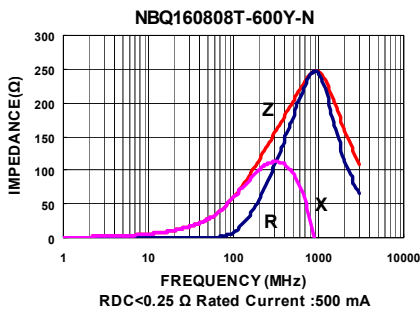
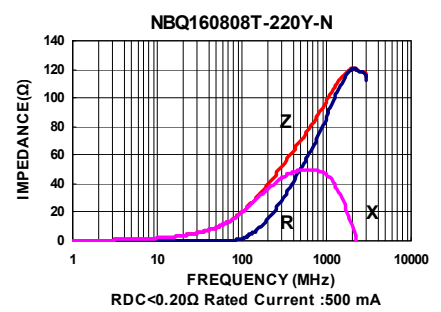
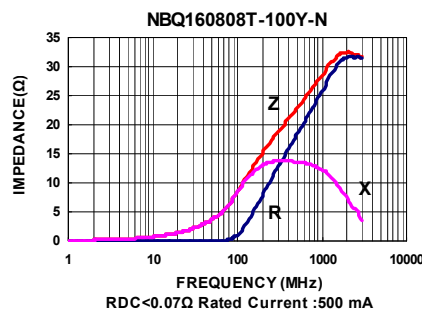
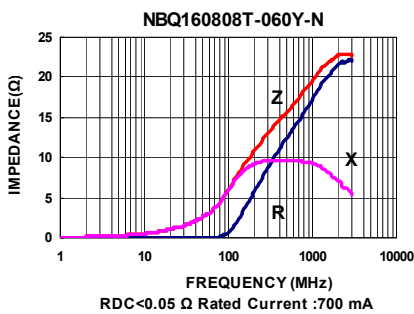
## Test Instruments : Agilent E4991A Impedance / Material Analyzer



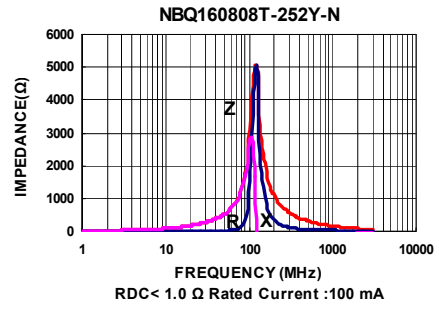
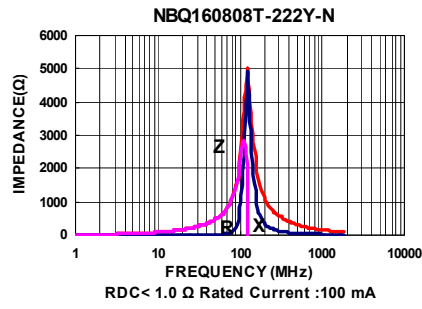
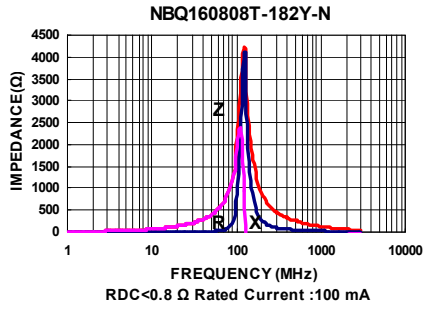
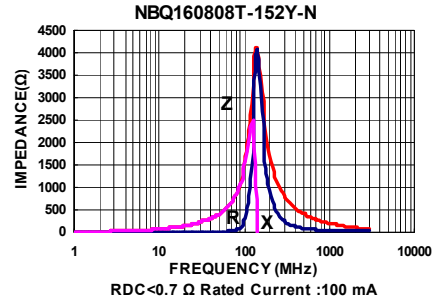
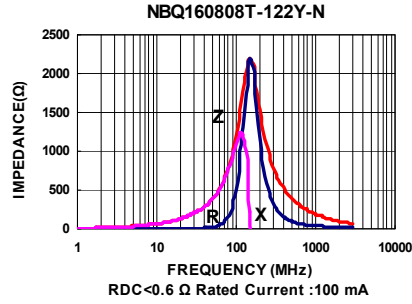
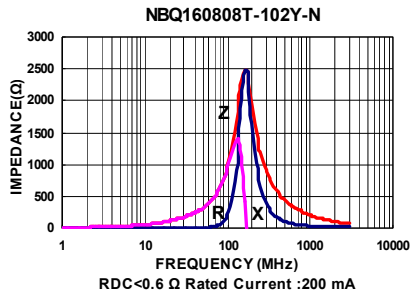
## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
NBQ160808T-060Y-N	100	6 $\pm$ 30%	0.05	700
NBQ160808T-100Y-N	100	10 $\pm$ 30%	0.07	500
NBQ160808T-220Y-N	100	22	0.20	500
NBQ160808T-600Y-N	100	60	0.25	500
NBQ160808T-750Y-N	100	75	0.25	500
NBQ160808T-121Y-N	100	120	0.30	400
NBQ160808T-241Y-N	100	240	0.35	400
NBQ160808T-301Y-N	100	300	0.40	400
NBQ160808T-601Y-N	100	600	0.50	200
NBQ160808T-102Y-N	100	1000	0.60	200
NBQ160808T-122Y-N	100	1200	0.60	100
NBQ160808T-152Y-N	100	1500	0.70	100
NBQ160808T-182Y-N	100	1800	0.80	100
NBQ160808T-222Y-N	100	2200	1.0	100
NBQ160808T-252Y-N	100	2500	1.0	100

## Test Instruments : Agilent E4991A Impedance / Material Analyzer



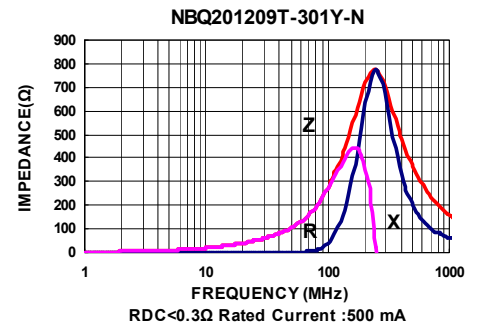
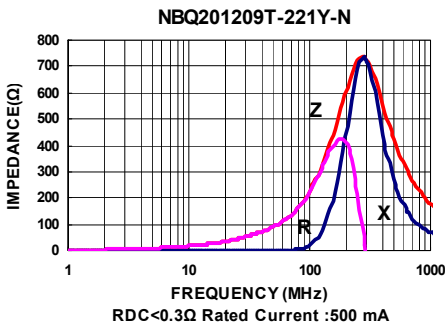
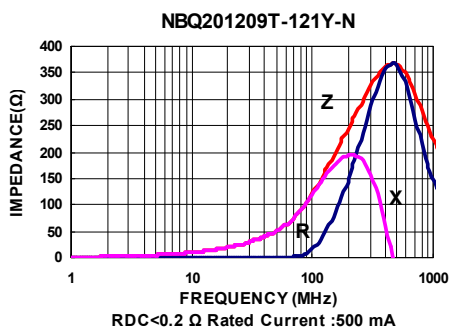
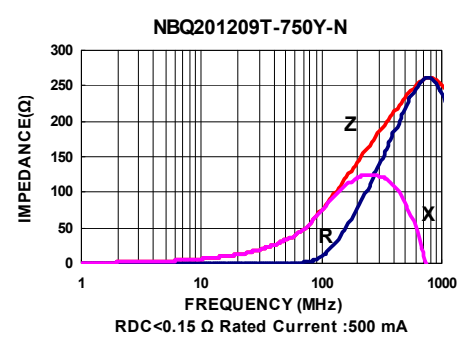
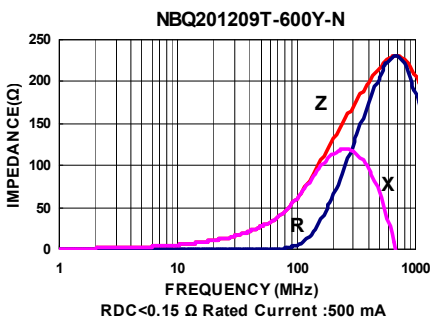
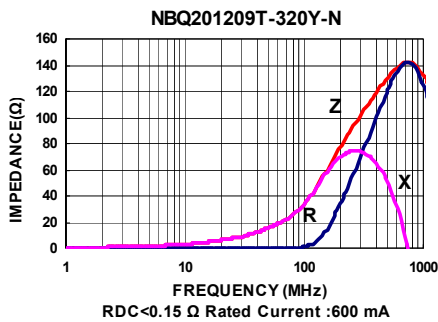
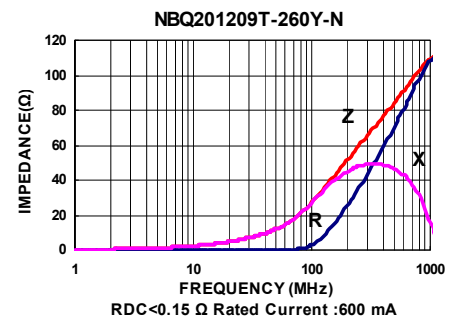
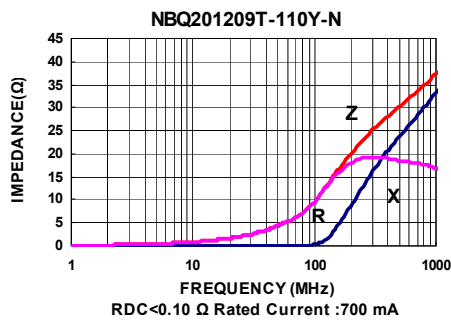
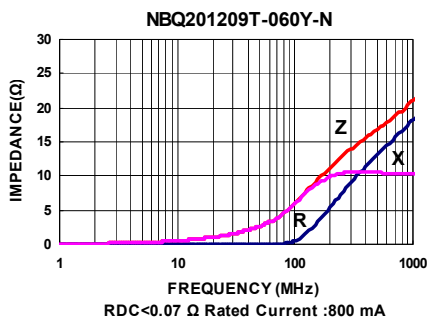
## Test Instruments : Agilent E4991A Impedance / Material Analyzer



## Electrical Characteristics

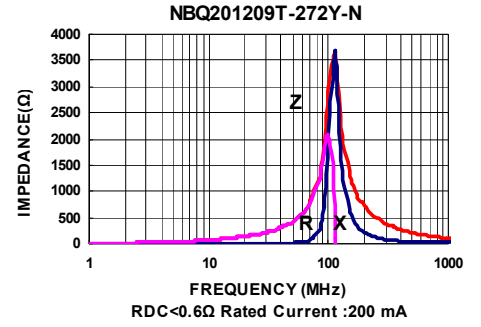
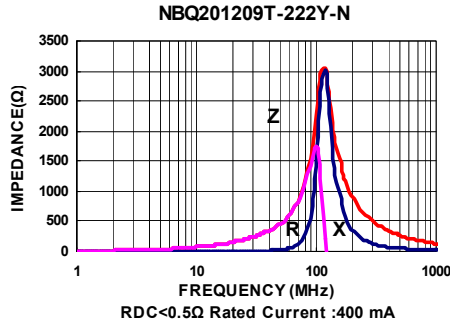
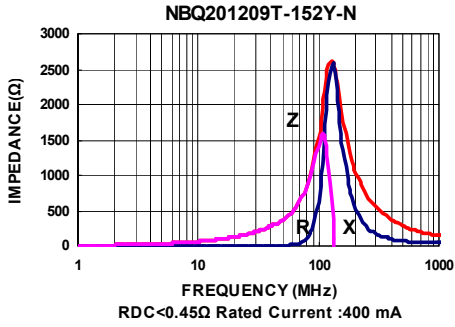
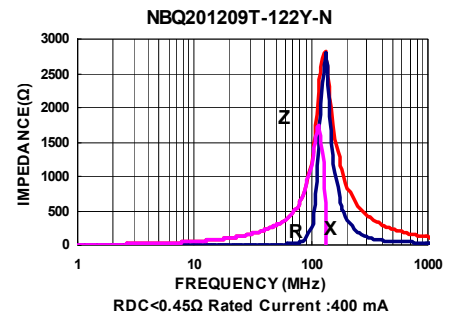
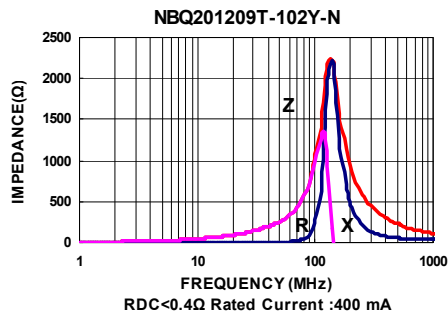
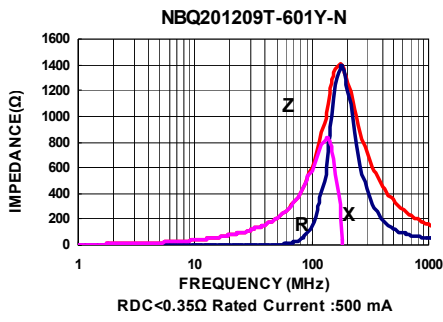
Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
NBQ201209T-060Y-N	100	6 $\pm 30\%$	0.07	800
NBQ201209T-110Y-N	100	11 $\pm 30\%$	0.10	700
NBQ201209T-260Y-N	100	26	0.15	600
NBQ201209T-320Y-N	100	32	0.15	600
NBQ201209T-600Y-N	100	60	0.15	500
NBQ201209T-750Y-N	100	75	0.15	500
NBQ201209T-121Y-N	100	120	0.20	500
NBQ201209T-221Y-N	100	220	0.30	500
NBQ201209T-301Y-N	100	300	0.30	500
NBQ201209T-601Y-N	100	600	0.35	500
NBQ201209T-102Y-N	100	1000	0.40	400
NBQ201209T-122Y-N	100	1200	0.45	400
NBQ201209T-152Y-N	100	1500	0.45	400
NBQ201209T-222Y-N	100	2200	0.50	400
NBQ201209T-272Y-N	100	2700	0.60	200

## Test Instruments : Agilent E4991A Impedance / Material Analyzer



# SMD Multilayer Ferrite Chip Beads - NBO Series

est Instruments : Agilent E4991A Impedance / Material Analyzer



## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
NBQ321611T-150Y-N	100	15	0.15	600
NBQ321611T-300Y-N	100	30	0.15	600
NBQ321611T-600Y-N	100	60	0.15	500
NBQ321611T-900Y-N	100	90	0.15	500
NBQ321611T-121Y-N	100	120	0.20	500
NBQ321611T-201Y-N	100	200	0.25	400
NBQ321611T-221Y-N	100	220	0.30	400
NBQ321611T-301Y-N	100	300	0.30	400
NBQ321611T-601Y-N	100	600	0.35	400
NBQ321611T-122Y-N	100	1200	0.40	300
NBQ321611T-152Y-N	100	1500	0.45	300

## Test Instruments : Agilent E4991A Impedance / Material Analyzer

