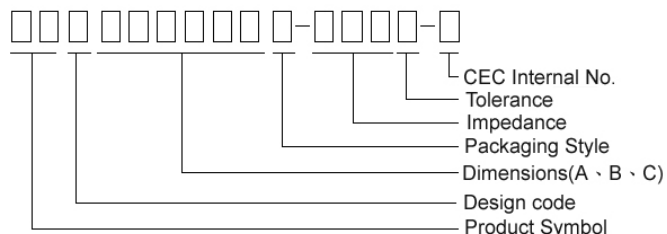


Multilayer Ferrite Chip Beads



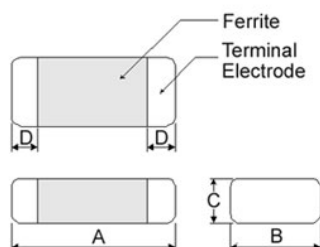
Chilisin offers a wide range of multi-layered ferrite chip beads with various sizes, frequency characteristics, and impedance values for EMI solutions. These ferrite formulas are used to compose seven types of EMI suppression chip beads: SB, GB, PB, UPB, NB, HF, and VPB series.

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

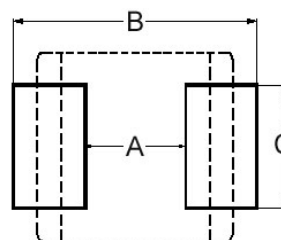
TYPE	A	B	C	D
①060303	0.6 $\pm$ 0.03	0.30 $\pm$ 0.03	0.3 $\pm$ 0.03	0.15 $\pm$ 0.05
②100505	1.0 $\pm$ 0.10	0.50 $\pm$ 0.10	0.5 $\pm$ 0.10	0.25 $\pm$ 0.10
③160808	1.6 $\pm$ 0.15	0.80 $\pm$ 0.15	0.8 $\pm$ 0.15	0.3 $\pm$ 0.2
④201209	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	0.9 $\pm$ 0.20	0.5 $\pm$ 0.3
⑤201212	2.0 $\pm$ 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

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

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

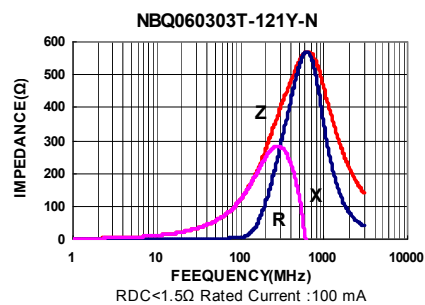
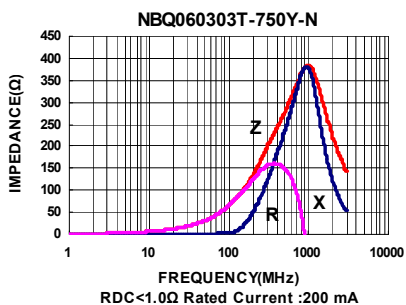
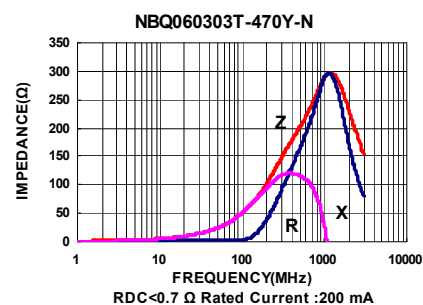
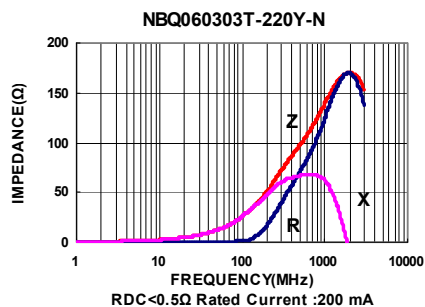
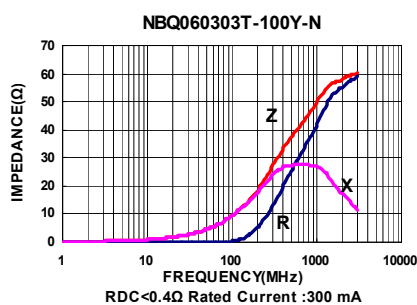
- * Don't apply narrower pattern than listed above to PB and UPB. Narrow pattern might cause excessive heat or open circuit.

SMD Multilayer Ferrite Chip Beads – NBQ Series

Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) 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

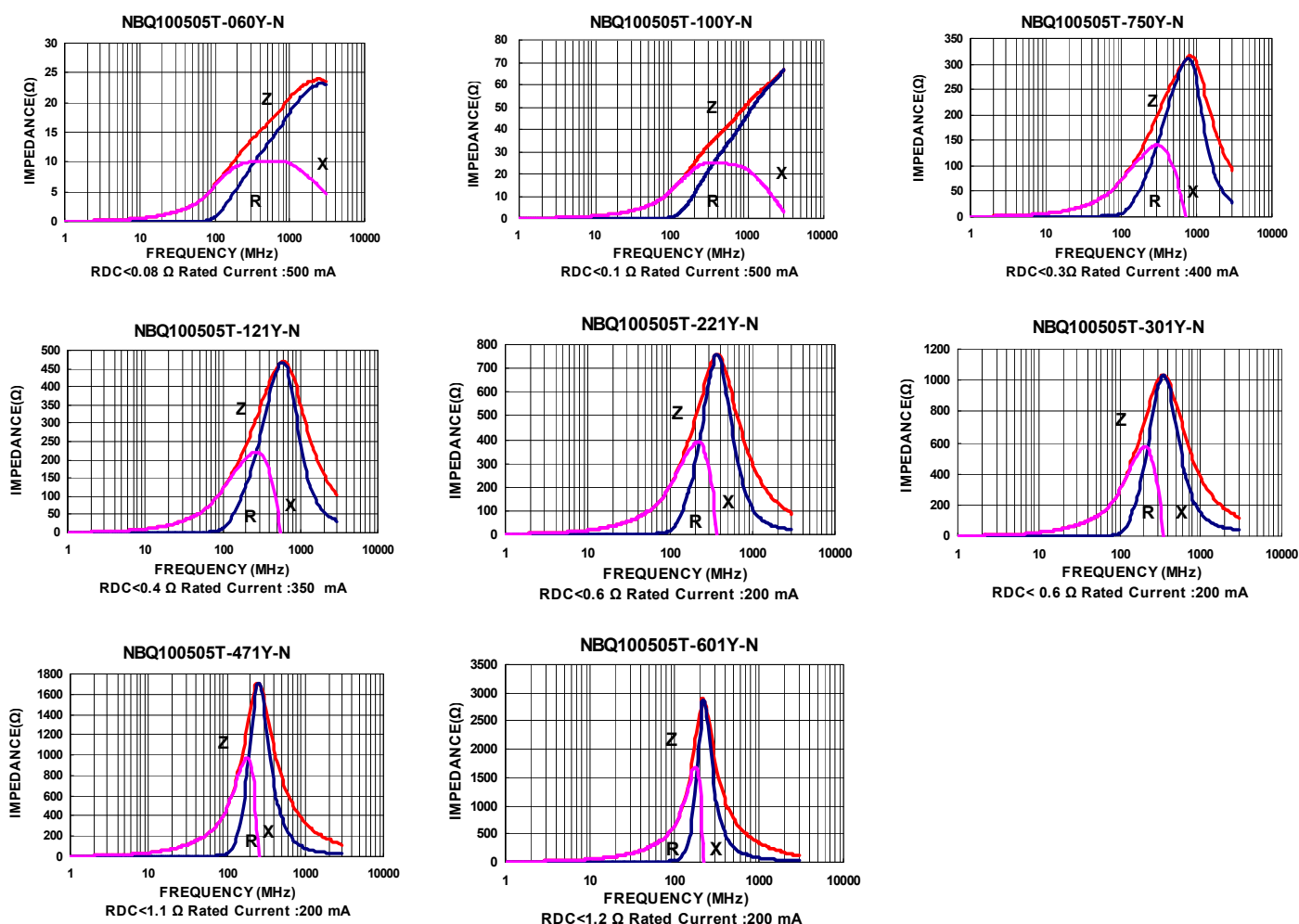


SMD Multilayer Ferrite Chip Beads – NBQ Series

Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) 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

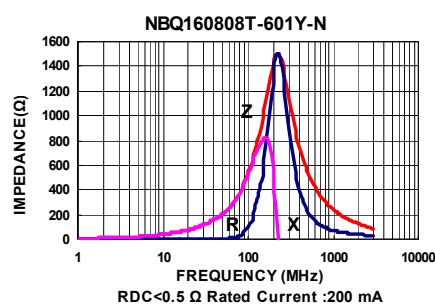
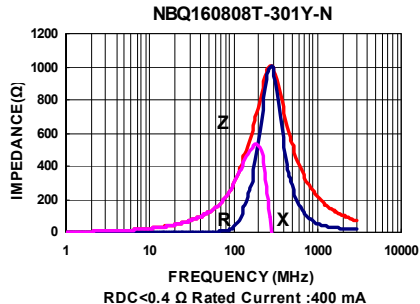
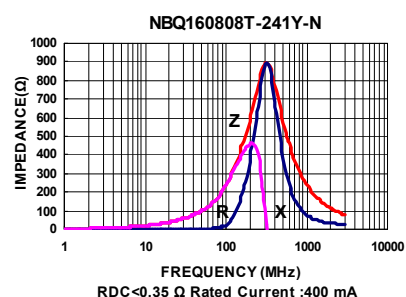
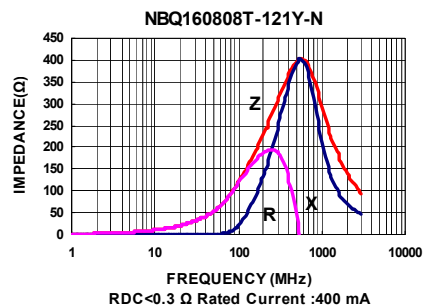
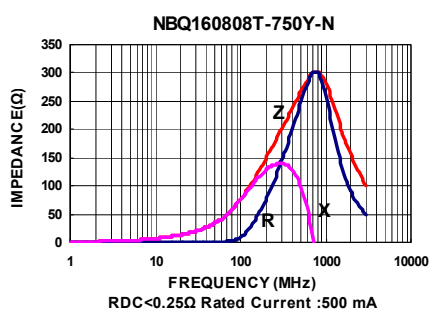
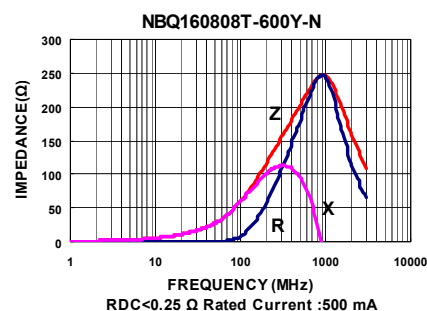
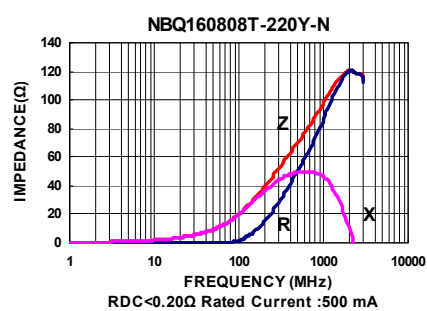
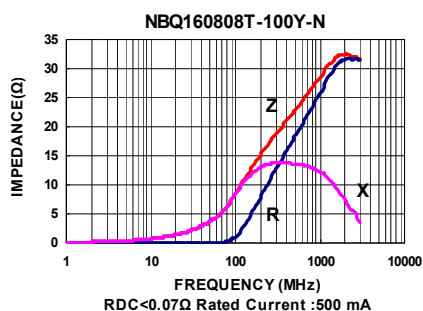
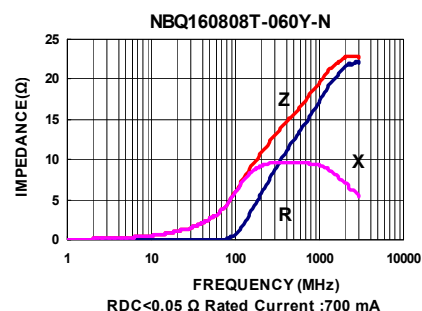


SMD Multilayer Ferrite Chip Beads – NBQ Series

Electrical Characteristics

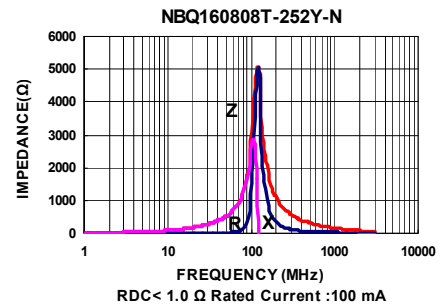
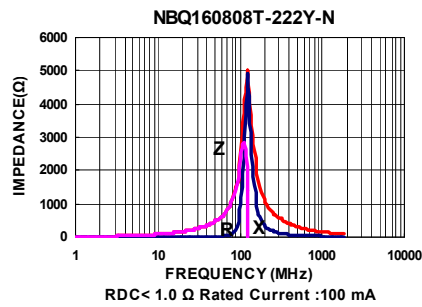
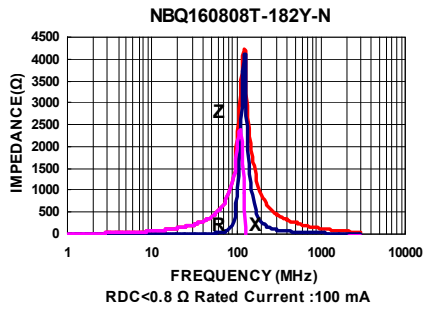
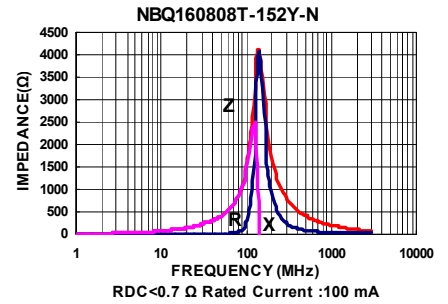
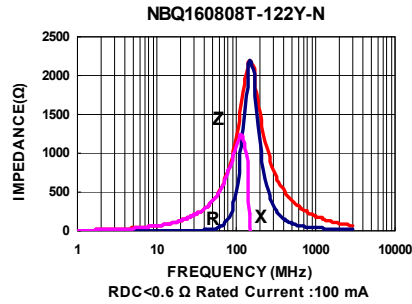
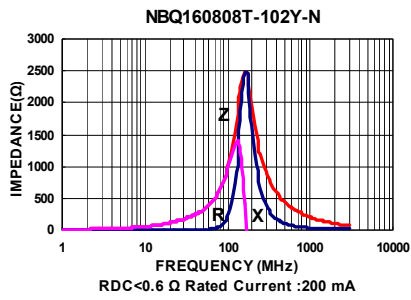
Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
NBQ160808T-060Y-N	100	6 $\pm 30\%$	0.05	700
NBQ160808T-100Y-N	100	10 $\pm 30\%$	0.07	500
NBQ160808T-220Y-N	100	22	0.20	500
NBQ160808T-600Y-N	100	60	0.25	500
NBQ160808T-750Y-N	100	75	0.25	500
NBQ160808T-121Y-N	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



SMD Multilayer Ferrite Chip Beads – NBQ Series

Test Instruments : Agilent E4991A Impedance / Material Analyzer

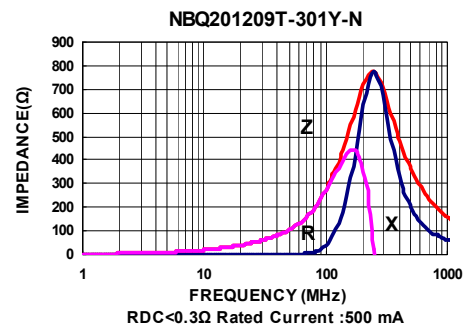
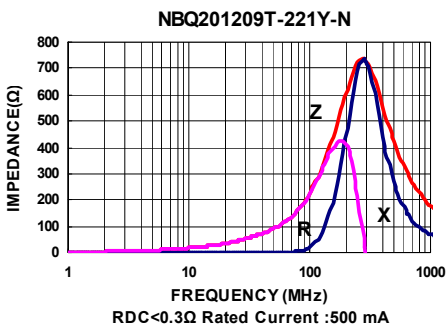
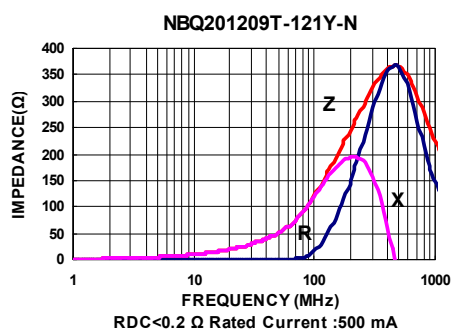
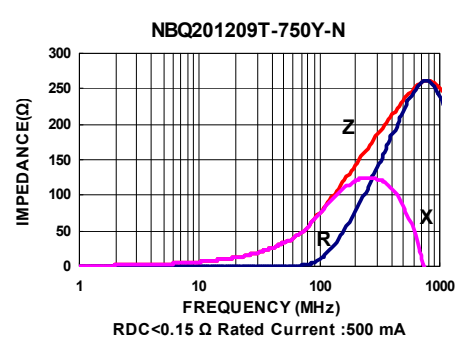
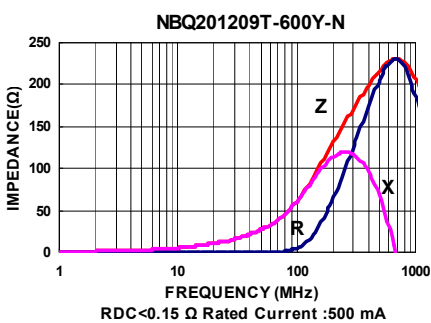
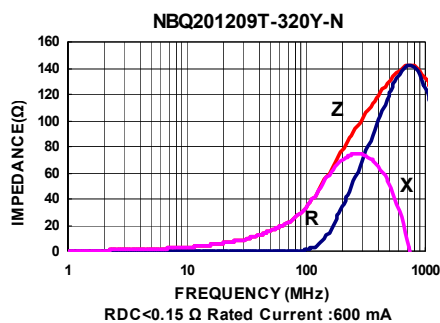
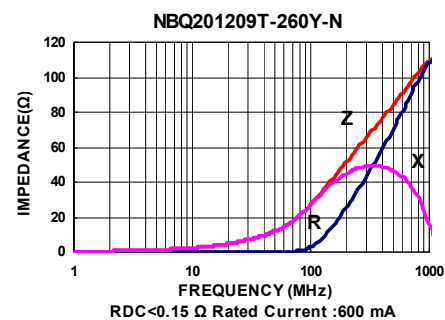
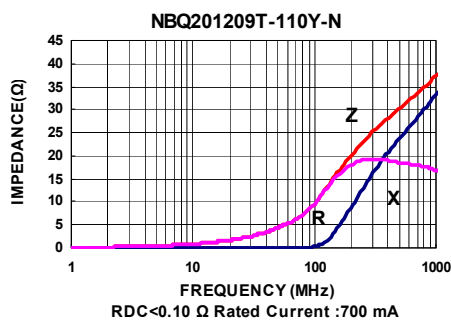
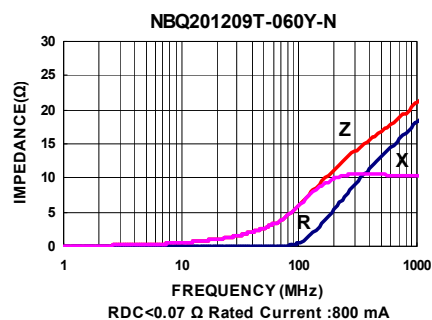


SMD Multilayer Ferrite Chip Beads – NBQ Series

Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) 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

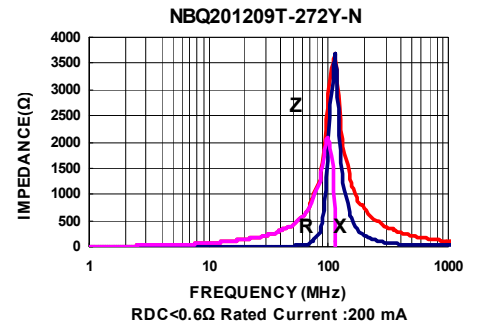
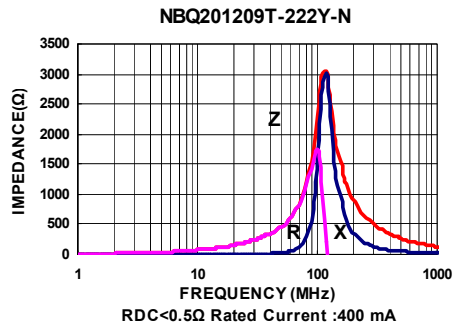
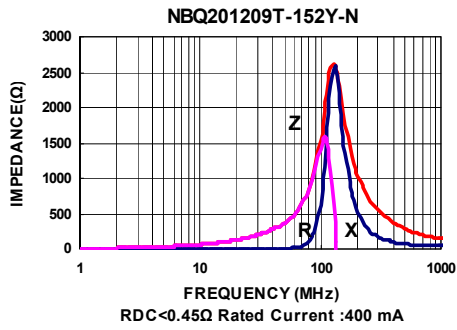
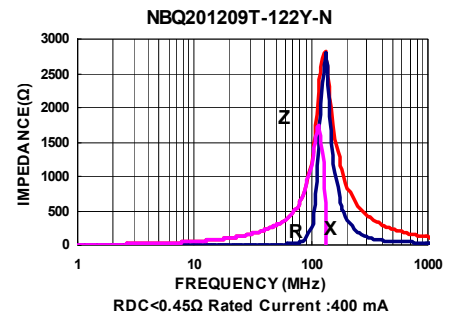
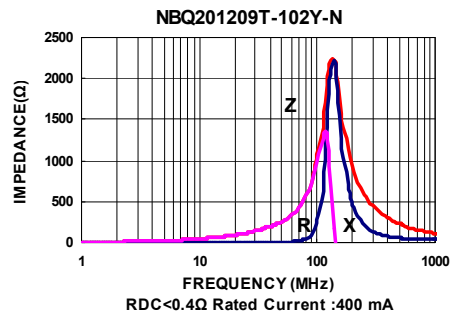
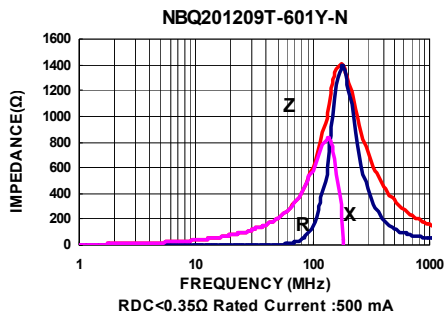
Test Instruments : Agilent E4991A Impedance / Material Analyzer



CHILISIN ELECTRONICS CORP.

SMD Multilayer Ferrite Chip Beads – NBQ Series

Test Instruments : Agilent E4991A Impedance / Material Analyzer

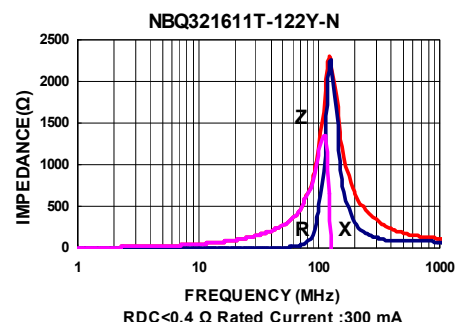
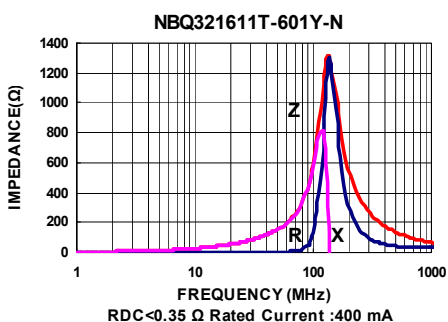
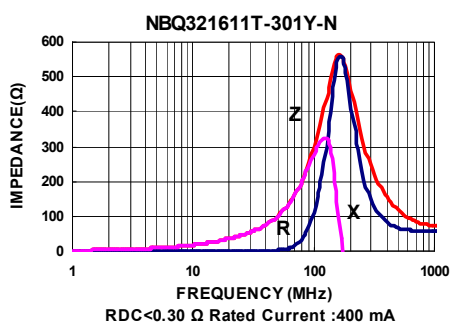
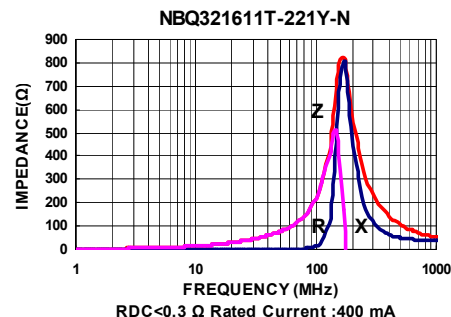
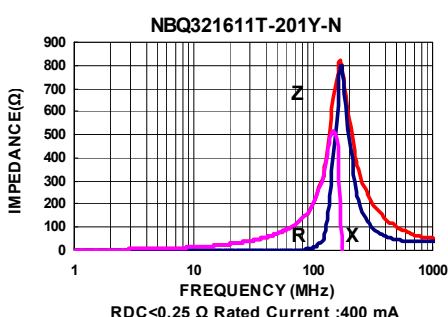
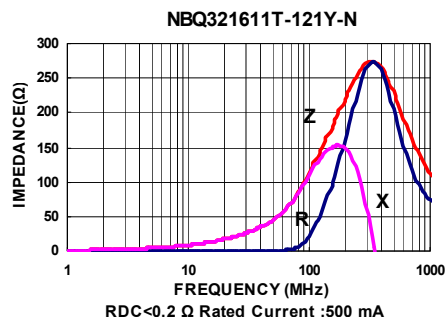
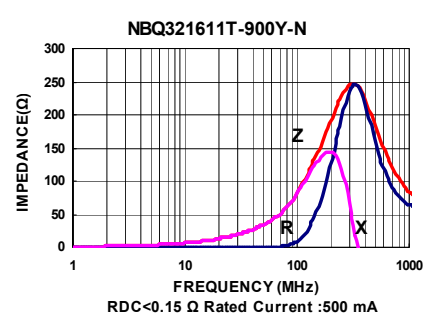
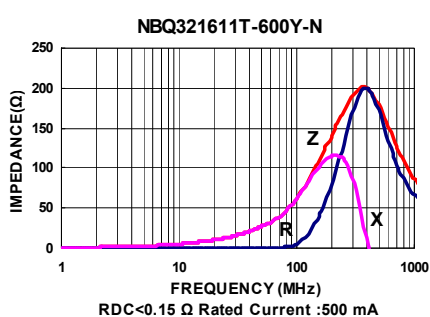
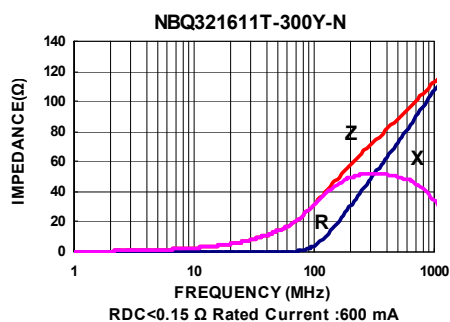


SMD Multilayer Ferrite Chip Beads – NBQ Series

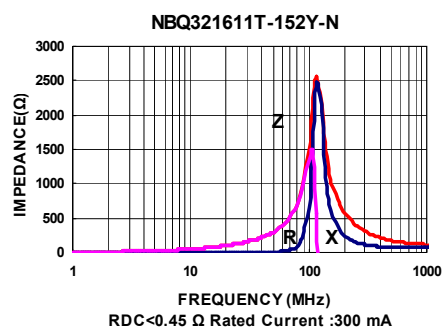
Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) 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

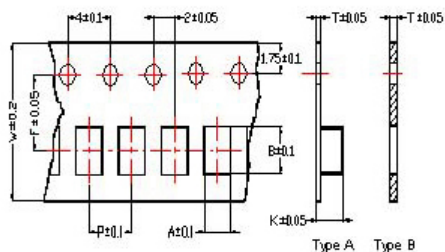


SMD Multilayer Ferrite Chip Beads – NBQ Series



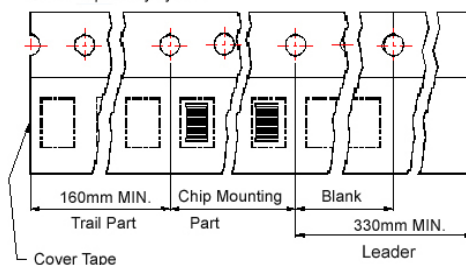
Packaging Specifications

Tape Dimensions

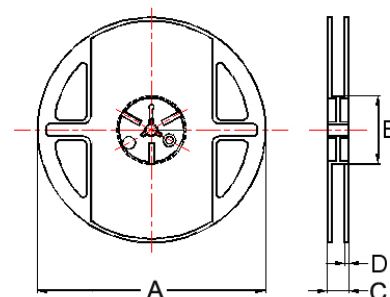


Tape Material

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



Reel Dimensions



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

Dimensions in mm

TYPE	Tape Dimensions								Reel Dimensions				Quantity PCS / REEL
	A	B	T	W	P	F	K	Tape	A	B	C	D	
①060303	0.38	0.67	0.45	8.0	2.0	3.5	-	B	178	60	10	2	15000
②100505	0.65	1.15	0.60	8.0	2.0	3.5	-	B	178	60	12	2	10000
③160808	1.05	1.85	0.95	8.0	4.0	3.5	-	B	178	60	12	2	4000
④201209	1.50	2.30	0.97	8.0	4.0	3.5	-	B	178	60	12	2	4000
⑤201212	1.35	2.25	0.22	8.0	4.0	3.5	1.35	A	178	60	12	2	3000
④321611	1.88	3.50	0.22	8.0	4.0	3.5	1.27	A	178	60	12	2	3000
⑥321616	1.88	3.53	0.22	8.0	4.0	3.5	1.80	A	178	60	12	2	2000
⑦322513	2.77	3.42	0.22	8.0	4.0	3.5	1.55	A	178	60	12	2	2500
⑧451616	1.93	4.95	0.24	12	4.0	5.5	1.93	A	178	60	14	2	2000
⑧453215	3.66	4.95	0.24	12	8.0	5.5	1.85	A	178	60	14	2	1000