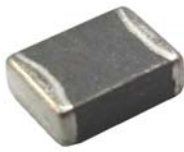


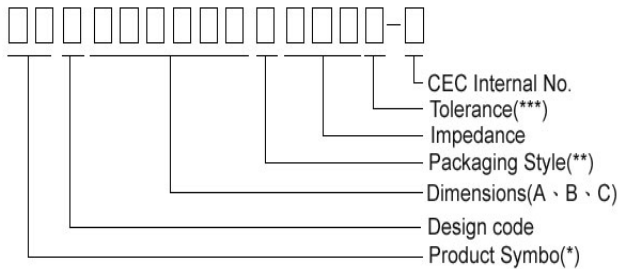
Multilayer Ferrite Chip beads



Chilisin offers hundreds of multi-layered ferrite chip beads with various sizes, frequency characteristics, and a wide range of impedance values to provide powerful solutions for EMI problems.

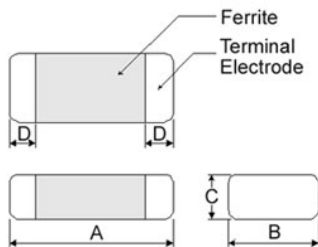
Three formulas of ferrite compose several types of EMI suppression chip beads that are classified into six categories- SB, GB, PB, UPB, NB, and HF series.

Product Identification



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

Shapes and Dimensions



Dimensions in mm

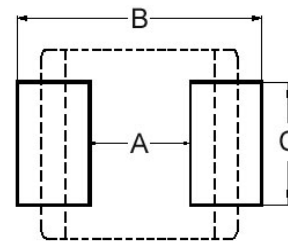
TYPE	A	B	C	D
①060303	0.6 \pm 0.03	0.30 \pm 0.03	0.3 \pm 0.03	0.15 \pm 0.05
②100505	1.0 \pm 0.10	0.50 \pm 0.10	0.5 \pm 0.10	0.25 \pm 0.10
③160808	1.6 \pm 0.15	0.80 \pm 0.15	0.8 \pm 0.15	0.3 \pm 0.2
④201209	2.0 \pm 0.20	1.25 \pm 0.20	0.9 \pm 0.20	0.5 \pm 0.3
⑤201212	2.0 \pm 0.20	1.25 \pm 0.20	1.25 \pm 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 ② : SB / PB / NB / HF ④ : SB / PB / NB / GB / UPB *
 ③ : SB / PB / NB / GB / UPB / HF ⑤ : UPB ⑥ : SB / GB
 ⑦ : SB / PB / GB ⑧ : SB / PB / GB / 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
321611	3.2x1.6x.1.1	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

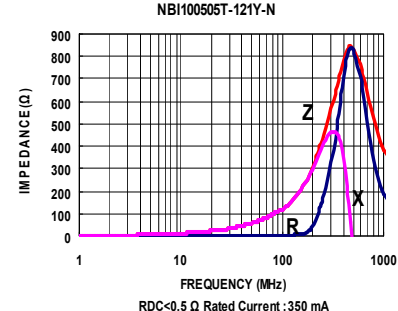
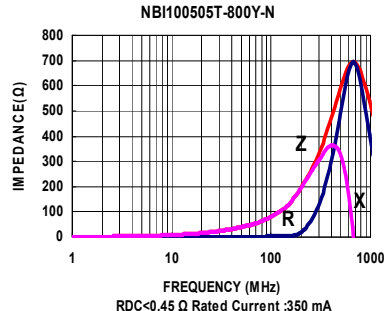
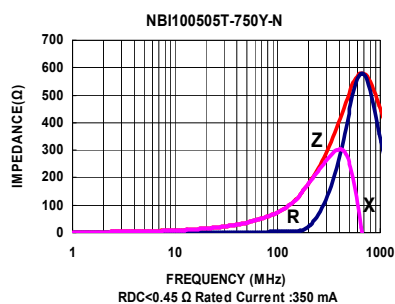
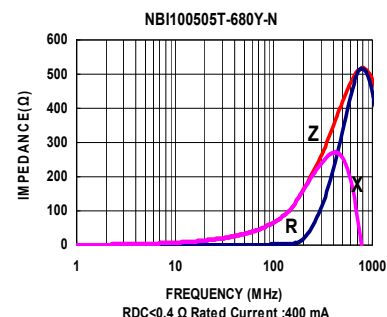
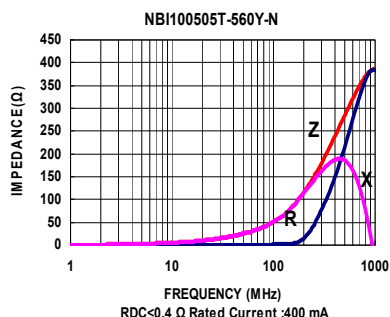
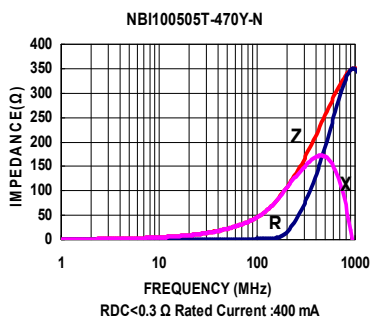
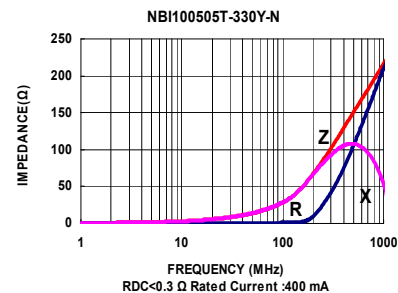
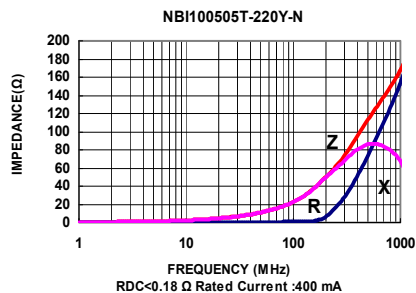
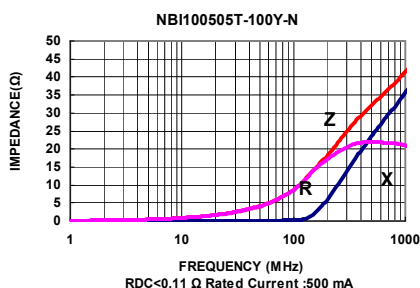
TYPE	A	B	C
①060303	0.2 ~ 0.3	0.75 ~ 1.05	0.3
②100505	0.4	1.2 ~ 1.4	0.5
③160808	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8
④201209	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
⑤201212	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
④321611	2.0	4.2 ~ 5.2	1.2
⑥321616	2.0	4.2 ~ 5.2	1.2
⑦322513	2.0	5.5 ~ 6.5	1.8
⑧451616	3.0	5.5 ~ 6.5	1.2
⑧453215	3.0	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.

Electrical Characteristics

Part Number	Impedance ($\Omega \pm 25\%$)	Test Frequency (MHz)	D.C. Resistance (Ω) Max	Rated current (mA) Max
NBI100505T-070Y-N	7	100	0.11	500
NBI100505T-100Y-N	10	100	0.11	500
NBI100505T-150Y-N	15	100	0.18	400
NBI100505T-220Y-N	22	100	0.18	400
NBI100505T-260Y-N	26	100	0.25	400
NBI100505T-300Y-N	30	100	0.25	400
NBI100505T-330Y-N	33	100	0.30	400
NBI100505T-470Y-N	47	100	0.30	400
NBI100505T-560Y-N	56	100	0.40	400
NBI100505T-680Y-N	68	100	0.40	400
NBI100505T-750Y-N	75	100	0.45	350
NBI100505T-800Y-N	80	100	0.45	350
NBI100505T-121Y-N	120	100	0.50	350
NBI100505T-241Y-N	240	100	0.70	250

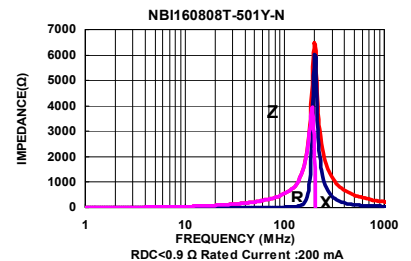
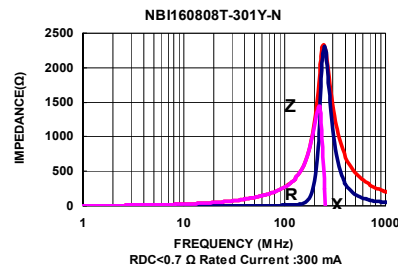
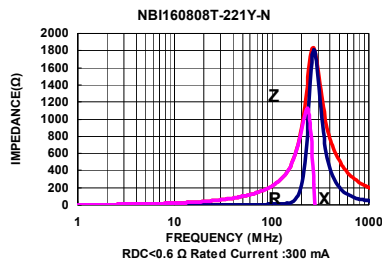
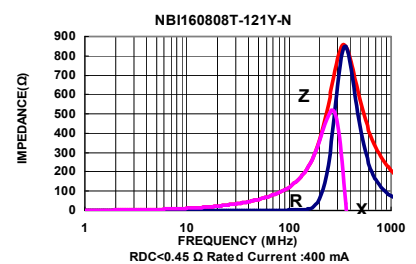
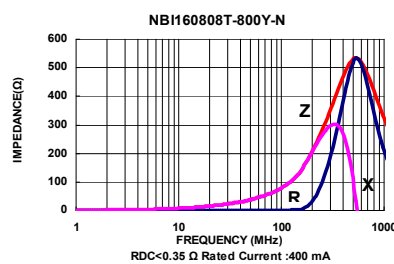
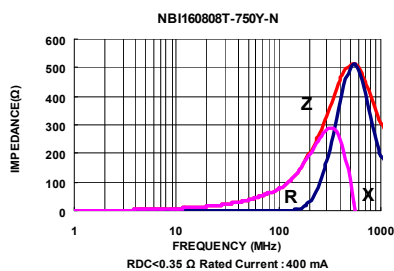
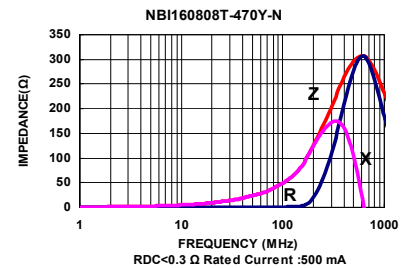
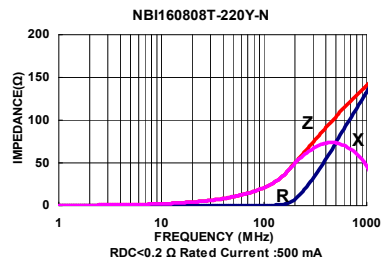
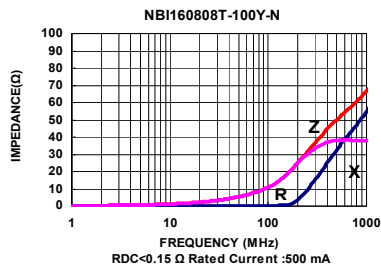
Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Impedance ($\Omega \pm 25\%$)	Test Frequency (MHz)	D.C. Resistance (Ω) Max	Rated current (mA) Max
NBI160808T-100Y-N	10	100	0.15	500
NBI160808T-150Y-N	15	100	0.20	500
NBI160808T-220Y-N	22	100	0.20	500
NBI160808T-260Y-N	26	100	0.20	500
NBI160808T-300Y-N	30	100	0.20	500
NBI160808T-470Y-N	47	100	0.30	500
NBI160808T-500Y-N	50	100	0.30	500
NBI160808T-600Y-N	60	100	0.30	400
NBI160808T-680Y-N	68	100	0.33	450
NBI160808T-750Y-N	75	100	0.35	400
NBI160808T-800Y-N	80	100	0.35	400
NBI160808T-101Y-N	100	100	0.40	400
NBI160808T-121Y-N	120	100	0.45	400
NBI160808T-181Y-N	180	100	0.60	300
NBI160808T-221Y-N	220	100	0.60	300
NBI160808T-241Y-N	240	100	0.60	300
NBI160808T-301Y-N	300	100	0.70	300
NBI160808T-501Y-N	500	100	0.90	200

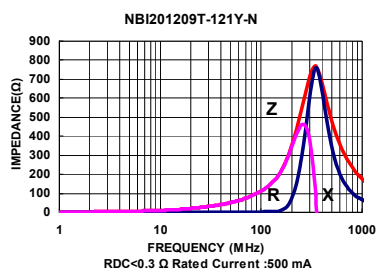
Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

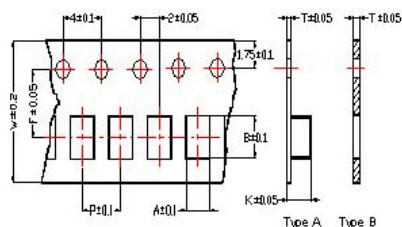
Part Number	Impedance ($\Omega \pm 25\%$)	Test Frequency (MHz)	D.C. Resistance (Ω) Max	Rated current (mA) Max
NBI201209T-800Y-N	80	100	0.30	500
NBI201209T-121Y-N	120	100	0.30	500
NBI201209T-301Y-N	300	100	0.50	400

Test Instruments : HP4291A Impedance / Material Analyzer

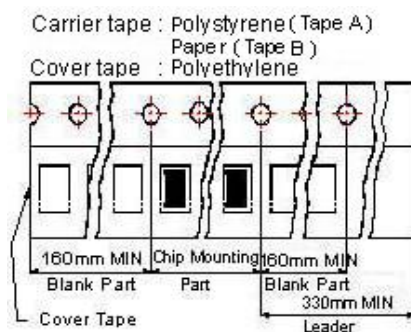


Packaging Specifications

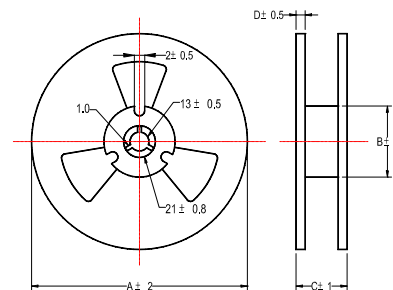
Tape Dimensions



Tape Material



Reel Dimensions



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

Dimensions in mm

TYPE	Tape Dimensions								Reel Dimensions				Quantity PCS / REEL
	A	B	T	W	P	F	K	Tape Type.	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