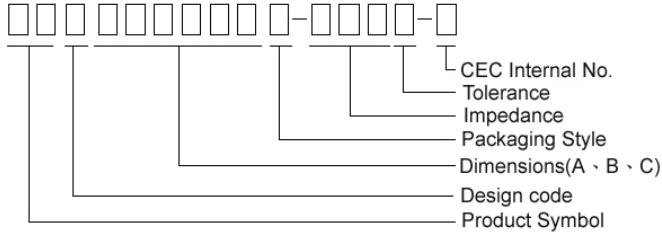


Multilayer Ferrite Chip Beads



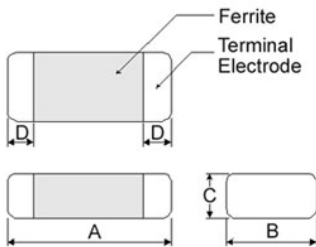
Chilisin offers a wide range of multi-layered ferrite chip beads with various sizes, frequency characteristics, and impedance values for EMI solutions. These ferrite formulas are used to compose seven types of EMI suppression chip beads: SB, GB, PB, UPB, NB, HF, and VPB series.

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

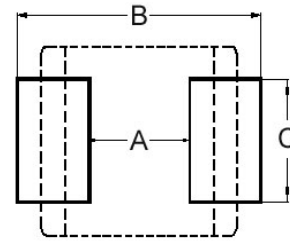


Dimensions in mm

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.

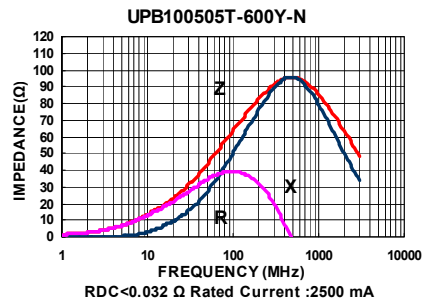
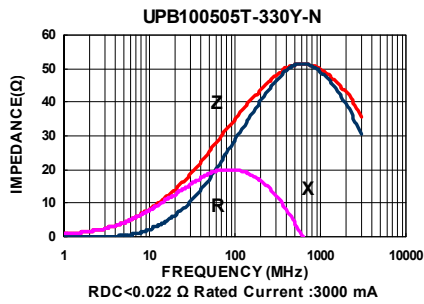
Dimension Conversion

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 (Ω) Max	Rated current (mA) Max
UPB100505T-330Y-N	100	33	0.022	3000
UPB100505T-600Y-N	100	60	0.032	2500
UPB100505T-800Y-N	100	80	0.038	2300
UPB100505T-121Y-N	100	120	0.055	2000
UPB100505T-181Y-N	100	180	0.090	1500
UPB100505T-221Y-N	100	220	0.100	1400
UPB100505T-331Y-N	100	330	0.150	1200

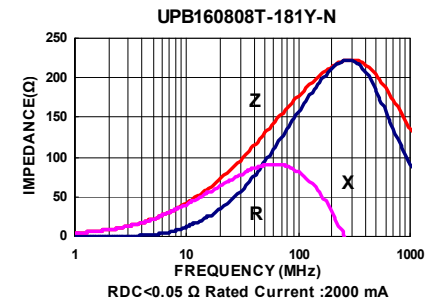
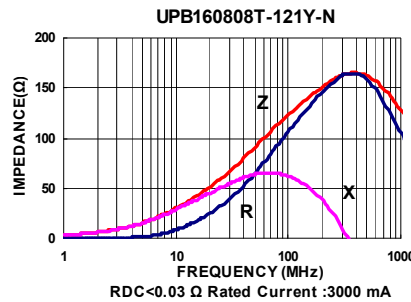
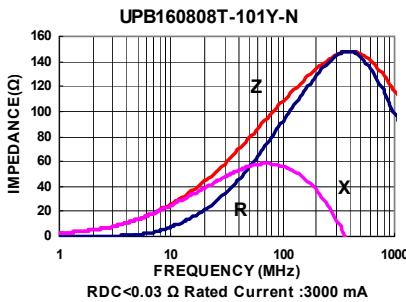
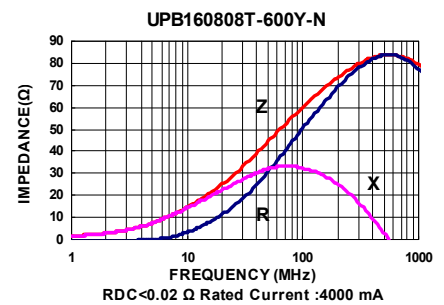
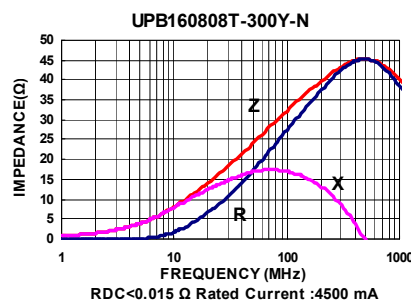
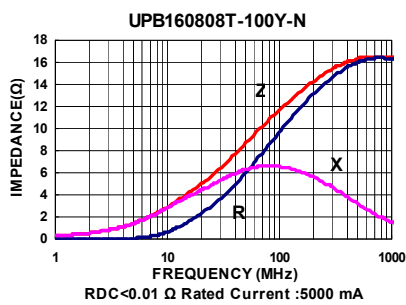
Test Instruments : Agilent E4991A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
UPB160808T-100Y-N	100	10 $\pm 30\%$	0.010	5000
UPB160808T-300Y-N	100	30	0.015	4500
UPB160808T-600Y-N	100	60	0.020	4000
UPB160808T-700Y-N	100	70	0.020	4000
UPB160808T-101Y-N	100	100	0.030	3000
UPB160808T-121Y-N	100	120	0.030	3000
UPB160808T-181Y-N	100	180	0.050	2000
UPB160808T-221Y-N	100	220	0.040	2500

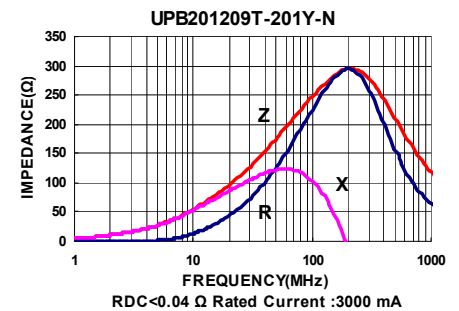
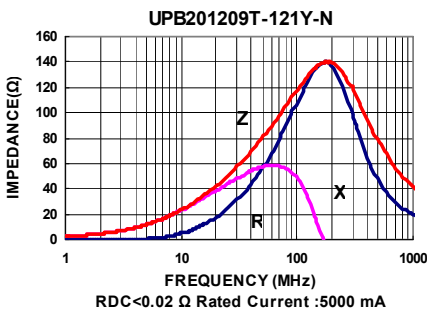
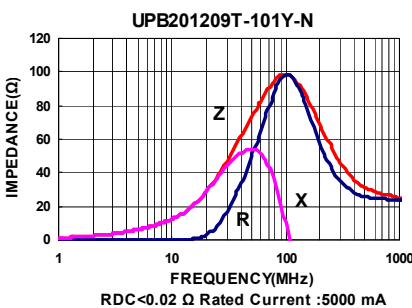
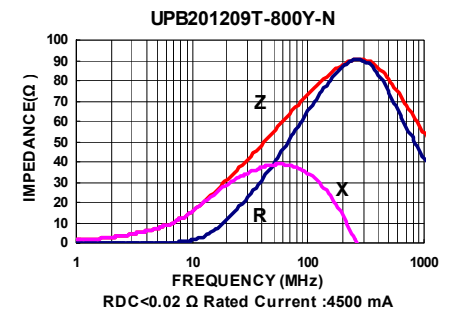
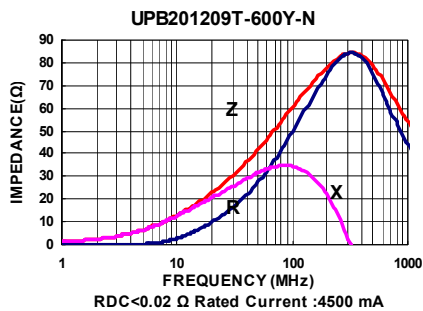
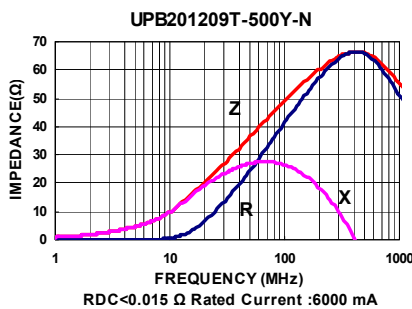
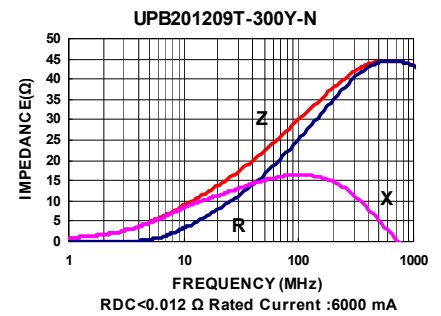
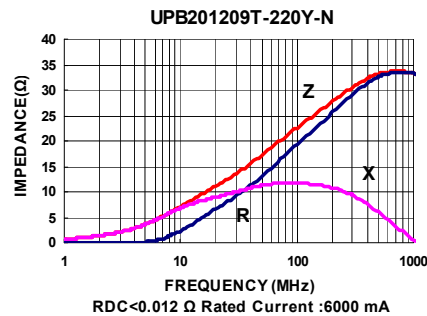
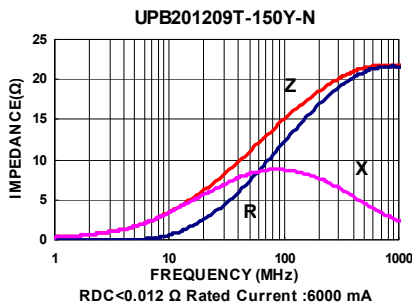
Test Instruments : Agilent E4991A Impedance / Material Analyzer



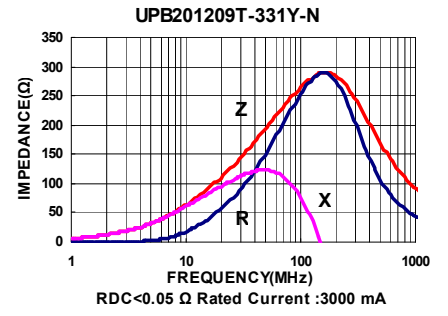
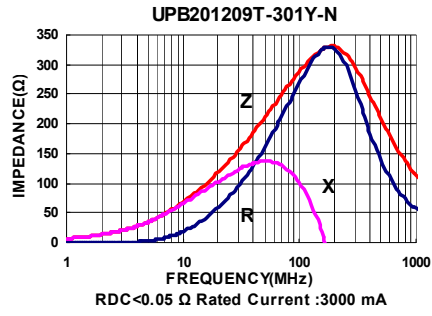
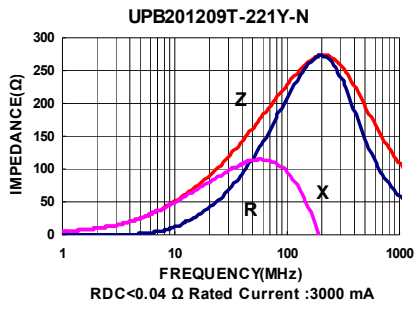
Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
UPB201209T-150Y-N	100	15	0.012	6000
UPB201209T-220Y-N	100	22	0.012	6000
UPB201209T-300Y-N	100	30	0.012	6000
UPB201209T-500Y-N	100	50	0.015	6000
UPB201209T-600Y-N	100	60	0.02	4500
UPB201209T-800Y-N	100	80	0.02	4500
UPB201209T-101Y-N	100	100	0.02	5000
UPB201209T-121Y-N	100	120	0.02	5000
UPB201209T-201Y-N	100	200	0.04	3000
UPB201209T-221Y-N	100	220	0.04	3000
UPB201209T-301Y-N	100	300	0.05	3000
UPB201209T-331Y-N	100	330	0.05	3000

Test Instruments : Agilent E4991A Impedance / Material Analyzer



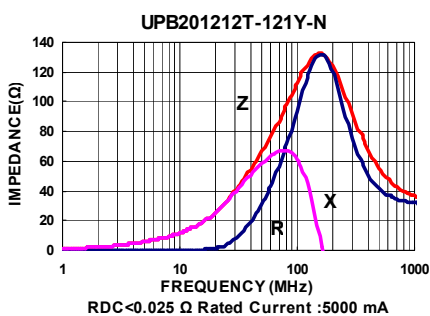
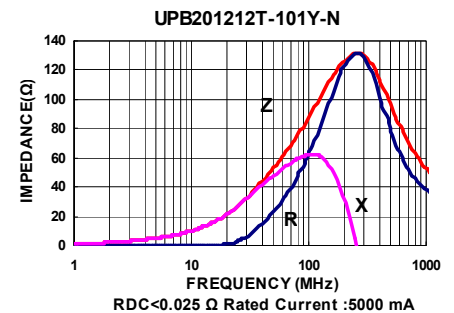
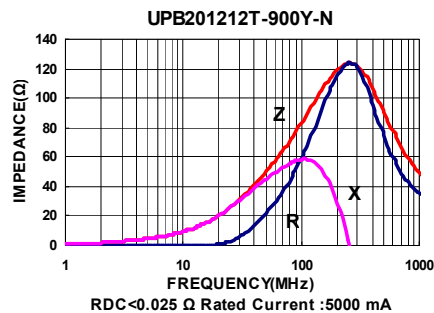
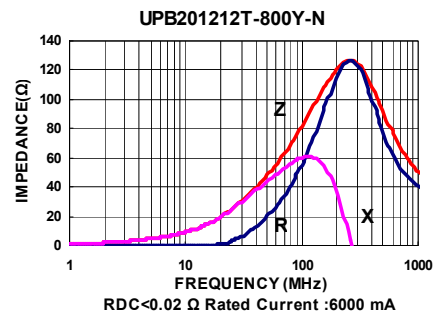
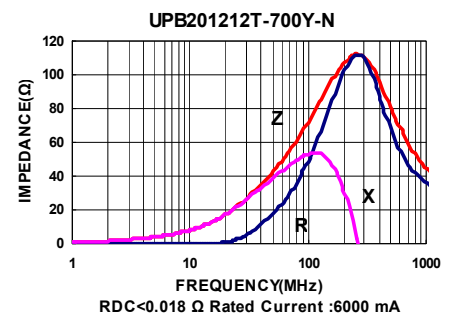
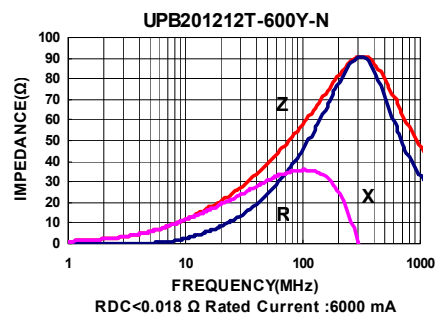
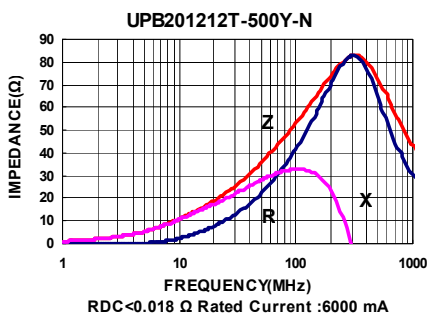
Test Instruments : Agilent E4991A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
UPB201212T-500Y-N	100	50	0.018	6000
UPB201212T-600Y-N	100	60	0.018	6000
UPB201212T-700Y-N	100	70	0.018	6000
UPB201212T-800Y-N	100	80	0.020	6000
UPB201212T-900Y-N	100	90	0.025	5000
UPB201212T-101Y-N	100	100	0.025	5000
UPB201212T-121Y-N	100	120	0.025	5000

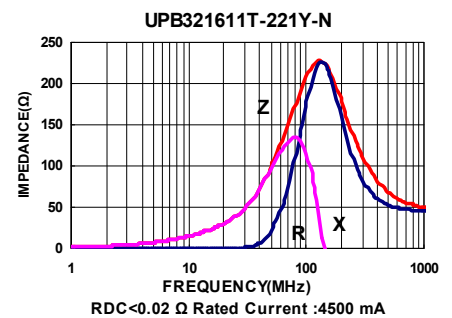
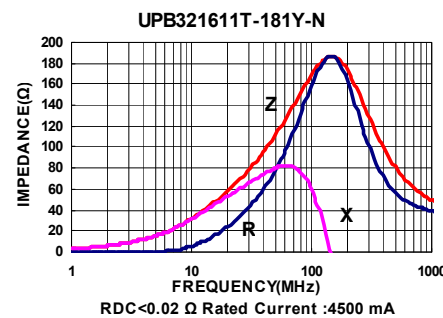
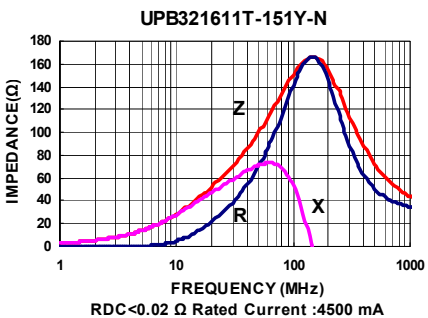
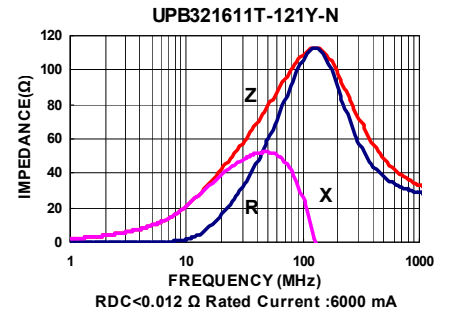
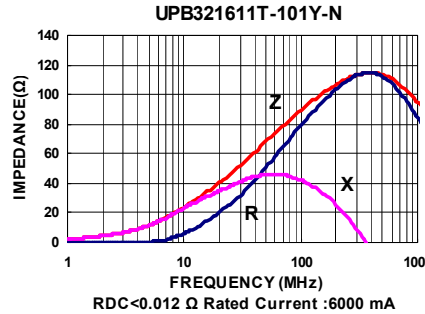
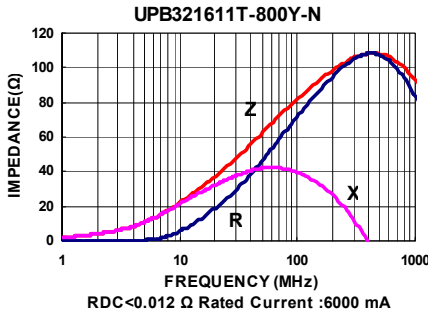
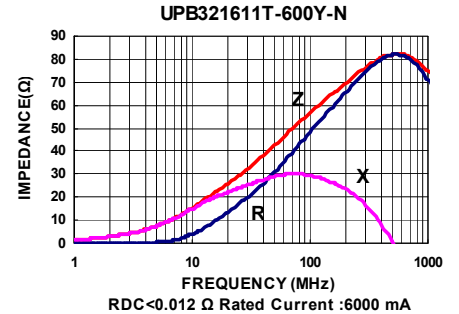
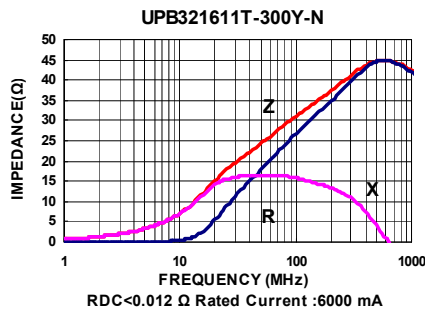
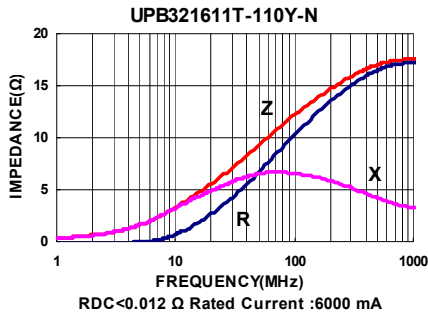
Test Instruments : Agilent E4991A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
UPB321611T-110Y-N	100	11 \pm 30%	0.012	6000
UPB321611T-300Y-N	100	30	0.012	6000
UPB321611T-600Y-N	100	60	0.012	6000
UPB321611T-800Y-N	100	80	0.012	6000
UPB321611T-101Y-N	100	100	0.012	6000
UPB321611T-121Y-N	100	120	0.012	6000
UPB321611T-151Y-N	100	150	0.020	4500
UPB321611T-181Y-N	100	180	0.020	4500
UPB321611T-221Y-N	100	220	0.020	4500

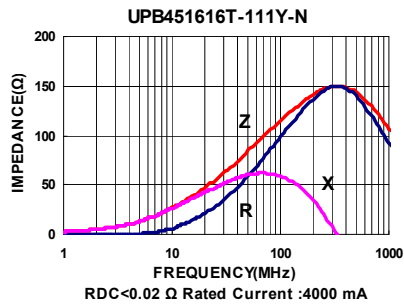
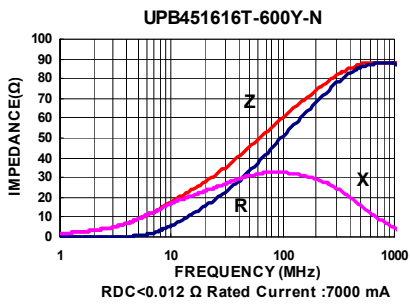
Test Instruments : Agilent E4991A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
UPB451616T-600Y-N	100	60	0.012	7000
UPB451616T-111Y-N	100	110	0.020	4000

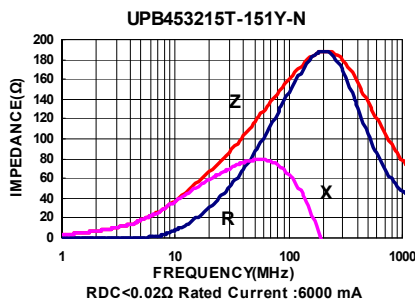
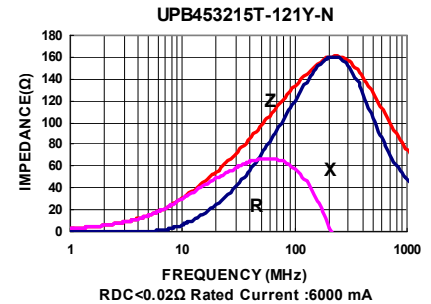
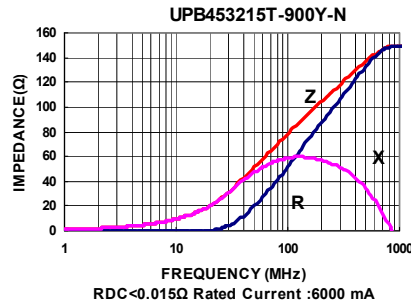
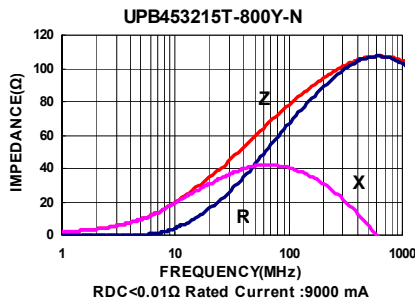
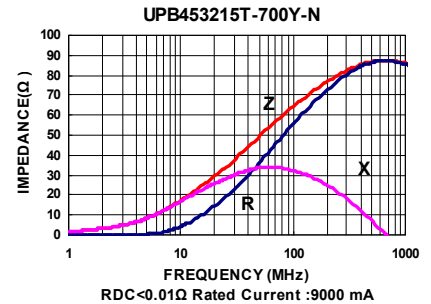
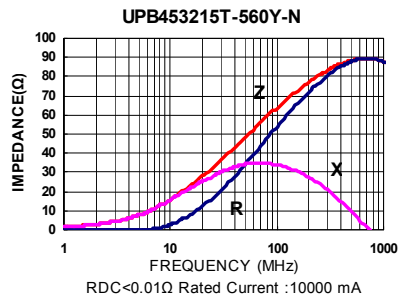
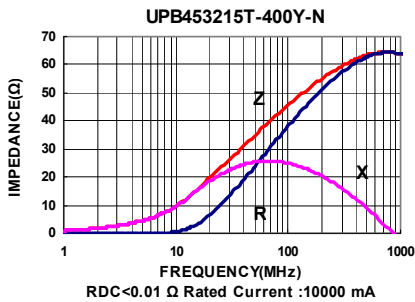
Test Instruments : Agilent E4991A Impedance / Material Analyzer



Electrical Characteristics

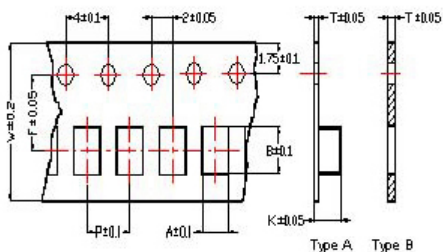
Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	DC Resistance (Ω) Max	Rated current (mA) Max
UPB453215T-400Y-N	100	40	0.010	10000
UPB453215T-560Y-N	100	56	0.010	10000
UPB453215T-700Y-N	100	70	0.010	9000
UPB453215T-800Y-N	100	80	0.010	9000
UPB453215T-900Y-N	100	90	0.015	6000
UPB453215T-121Y-N	100	120	0.020	6000
UPB453215T-151Y-N	100	150	0.020	6000

Test Instruments : Agilent E4991A Impedance / Material Analyzer



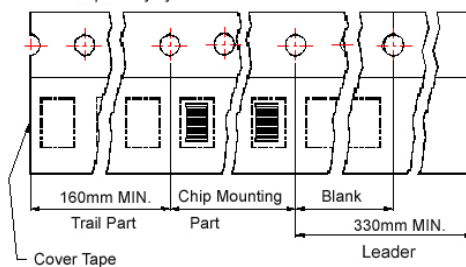
Packaging Specifications

Tape Dimensions

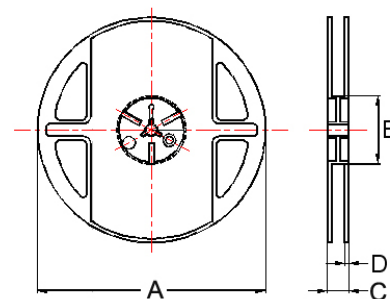


Tape Material

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



Reel Dimensions



- 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
⑨453215	3.66	4.95	0.24	12	8.0	5.5	1.85	A	178	60	14	2	1000