

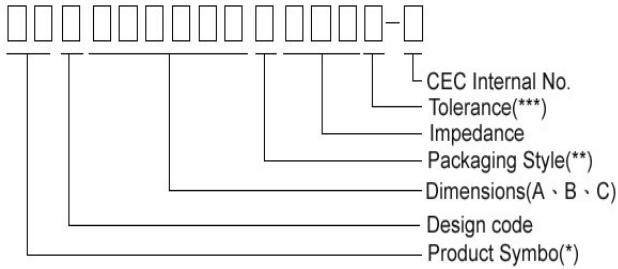
## Multilayer Ferrite Chip beads



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.

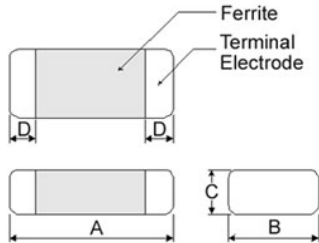
Three formulas of ferrite compose several types of EMI suppression chip beads that are classified into six categories- SB, GB, PB, UPB, NB, and HF series.

### Product Identification

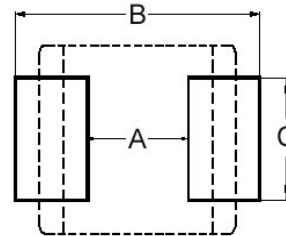


- Product Symbol: SB, GB, PB, UPB, NB, HF
- Packaging: T : Tape and Reel ; B : Bulk
- Tolerance: Y =  $\pm 25\%$ ; M =  $\pm 20\%$ ; T:  $\pm 30\%$
- Note: RoHS Compliant

### Shapes and Dimensions



### Recommended Pattern



Dimensions in mm

TYPE	A	B	C	D
①100505	1.0 $\pm$ 0.10	0.50 $\pm$ 0.10	0.5 $\pm$ 0.10	0.25 $\pm$ 0.10
②160808	1.6 $\pm$ 0.15	0.80 $\pm$ 0.15	0.8 $\pm$ 0.15	0.3 $\pm$ 0.2
③201209	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	0.9 $\pm$ 0.20	0.5 $\pm$ 0.3
④201212	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	1.25 $\pm$ 0.20	0.5 $\pm$ 0.3
③321611	3.2 $\pm$ 0.20	1.60 $\pm$ 0.20	1.1 $\pm$ 0.20	0.5 $\pm$ 0.3
⑤321616	3.2 $\pm$ 0.20	1.60 $\pm$ 0.20	1.6 $\pm$ 0.20	0.5 $\pm$ 0.3
⑥322513	3.2 $\pm$ 0.20	2.50 $\pm$ 0.20	1.3 $\pm$ 0.20	0.5 $\pm$ 0.3
⑦451616	4.5 $\pm$ 0.25	1.60 $\pm$ 0.20	1.6 $\pm$ 0.20	0.5 $\pm$ 0.3
⑦453215	4.5 $\pm$ 0.25	3.20 $\pm$ 0.20	1.5 $\pm$ 0.20	0.5 $\pm$ 0.3

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

Dimensions in mm

TYPE	A	B	C
①100505	0.4	1.2 ~ 1.4	0.5
②160808	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8
③201209	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
④201212	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
③321611	2.0	4.2 ~ 5.2	1.2
⑤321616	2.0	4.2 ~ 5.2	1.2
⑥322513	2.0	5.5 ~ 6.5	1.8
⑦451616	3.0	5.5 ~ 6.5	1.2
⑦453215	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.

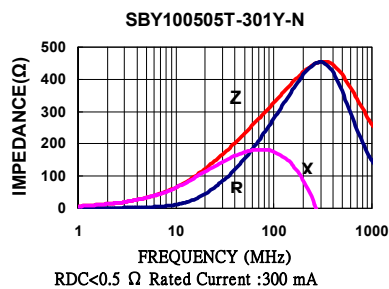
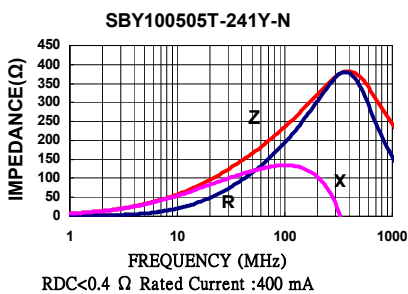
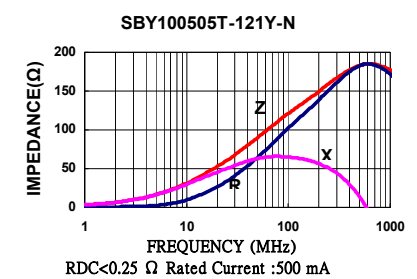
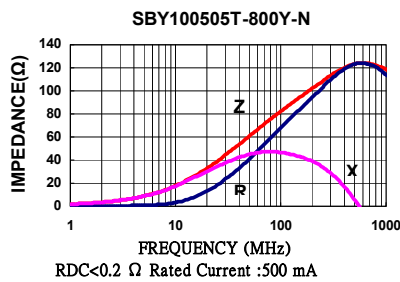
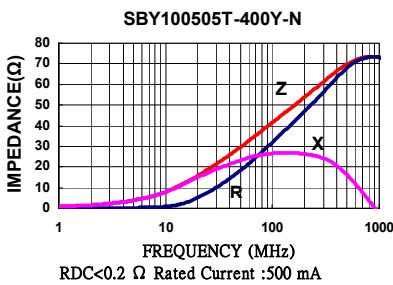
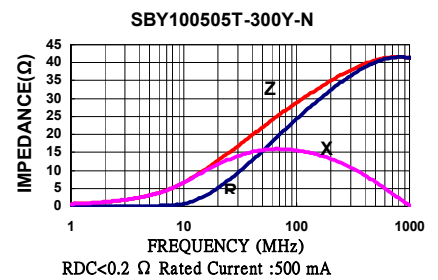
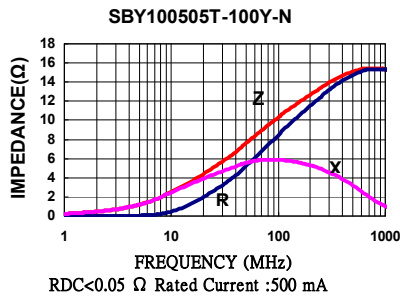
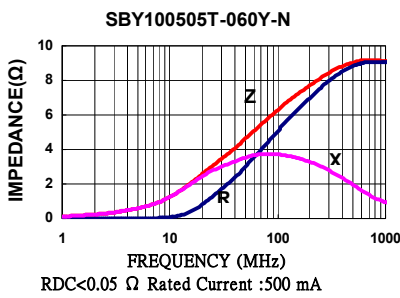
### Dimension Conversion

Code	Dimension in mm (AxBxC)	EIA
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

## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBY100505T-060Y-N	100	6	0.05	500
SBY100505T-100Y-N	100	10	0.05	500
SBY100505T-220Y-N	100	22	0.15	500
SBY100505T-400Y-N	100	40	0.20	500
SBY100505T-600Y-N	100	60	0.20	500
SBY100505T-700Y-N	100	70	0.20	500
SBY100505T-800Y-N	100	80	0.20	500
SBY100505T-900Y-N	100	90	0.25	500
SBY100505T-101Y-N	100	100	0.25	500
SBY100505T-121Y-N	100	120	0.25	500
SBY100505T-241Y-N	100	240	0.40	400
SBY100505T-301Y-N	100	300	0.50	300
SBY100505T-331Y-N	100	330	0.50	300

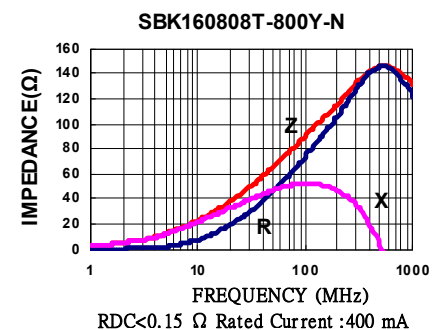
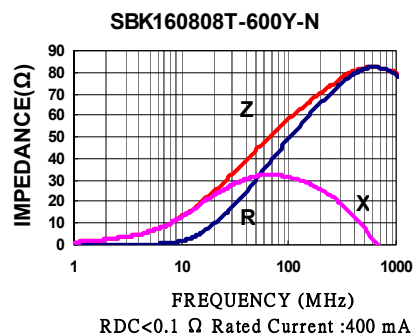
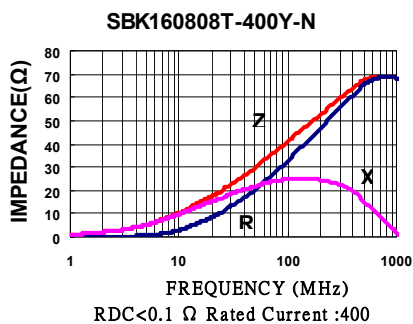
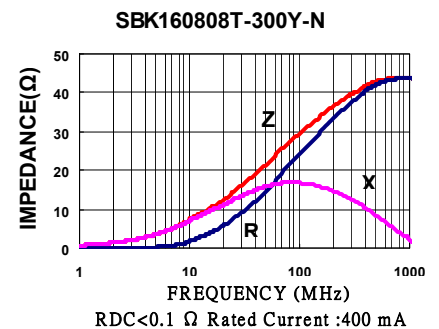
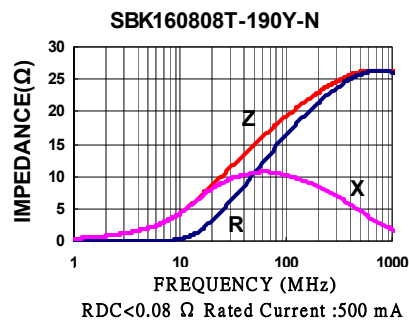
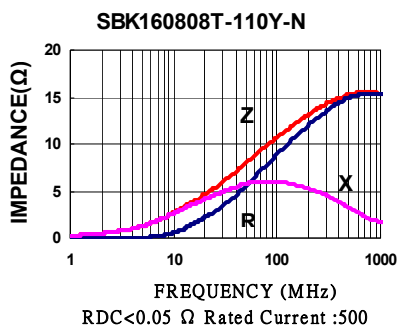
## Test Instruments : HP4291A Impedance / Material Analyzer

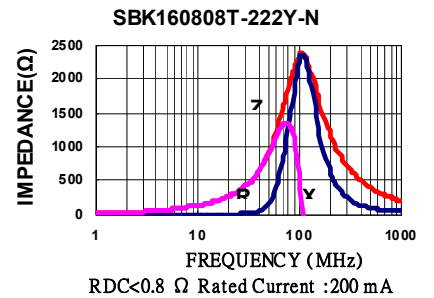
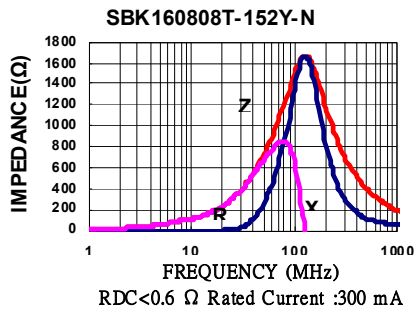
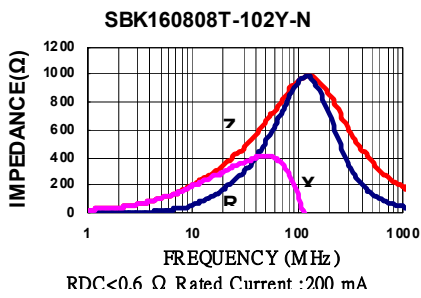
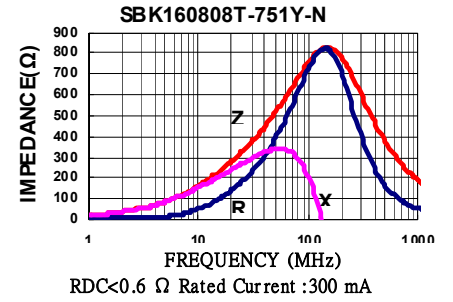
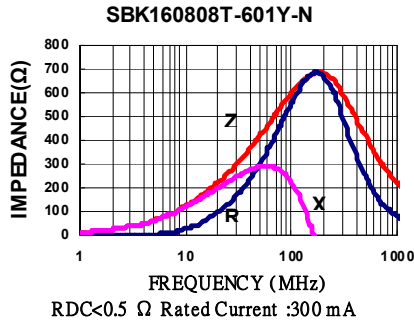
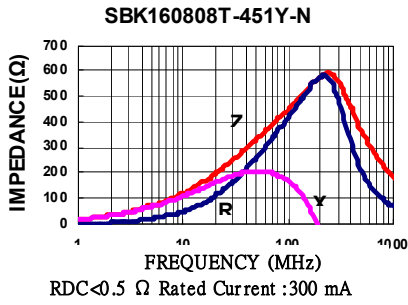
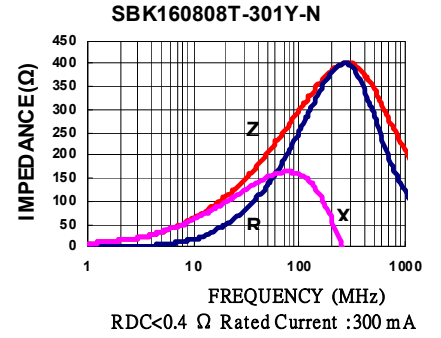
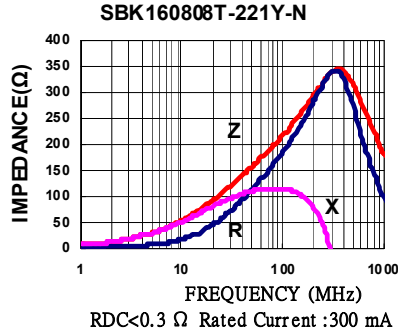
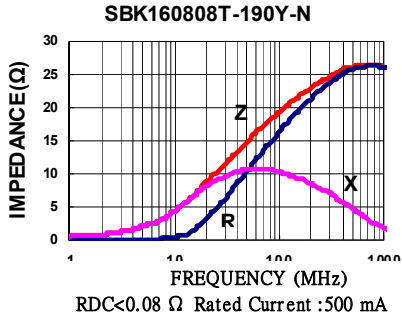


## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBK160808T-060Y-N	100	6	0.05	500
SBK160808T-070Y-N	100	7	0.05	500
SBK160808T-110Y-N	100	11	0.05	500
SBK160808T-190Y-N	100	19	0.08	500
SBK160808T-300Y-N	100	30	0.10	400
SBK160808T-400Y-N	100	40	0.10	400
SBK160808T-600Y-N	100	60	0.10	400
SBK160808T-800Y-N	100	80	0.15	400
SBK160808T-121Y-N	100	120	0.25	400
SBK160808T-221Y-N	100	220	0.30	300
SBK160808T-301Y-N	100	300	0.40	300
SBK160808T-451Y-N	100	450	0.50	300
SBK160808T-601Y-N	100	600	0.50	300
SBK160808T-751Y-N	100	750	0.60	300
SBK160808T-102Y-N	100	1000	0.60	300
SBK160808T-152Y-N	100	1500	0.60	300
SBK160808T-222Y-N	100	2200	0.80	200
SBK160808T-272Y-N	100	2700	0.80	200

## Test Instruments : HP4291A Impedance / Material Analyzer

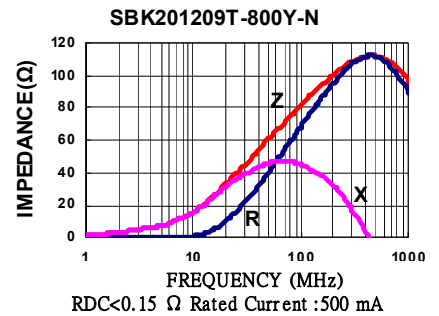
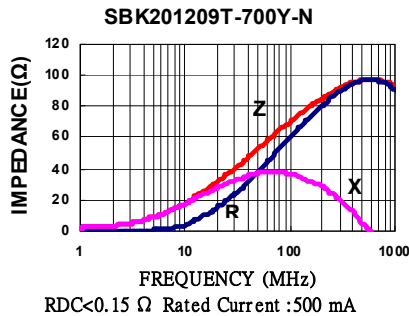
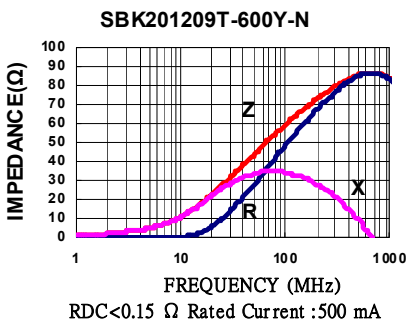
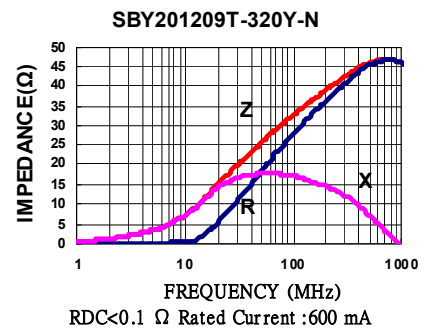
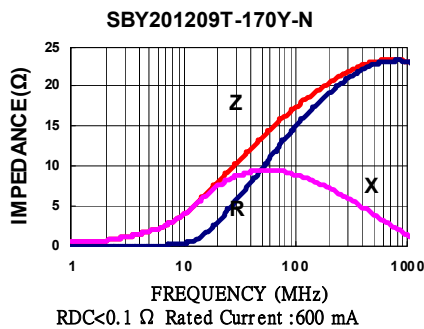
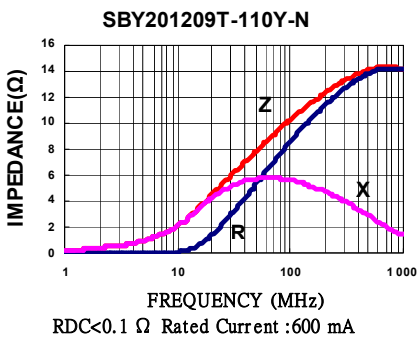




## Electrical Characteristics

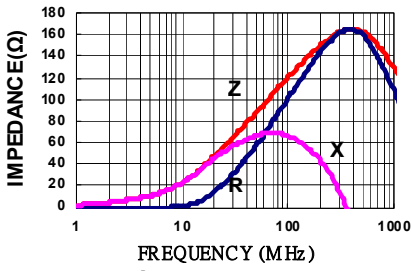
Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBY201209T-070Y-N	100	7	0.10	600
SBY201209T-090Y-N	100	9	0.10	600
SBY201209T-110Y-N	100	11	0.10	600
SBY201209T-170Y-N	100	17	0.10	600
SBY201209T-320Y-N	100	32	0.10	600
SBY201209T-400Y-N	100	40	0.10	500
SBY201209T-560Y-N	100	56	0.15	500
SBK201209T-600Y-N	100	60	0.15	500
SBK201209T-700Y-N	100	70	0.15	500
SBK201209T-800Y-N	100	80	0.15	500
SBK201209T-121Y-N	100	120	0.25	300
SBK201209T-151Y-N	100	150	0.25	300
SBK201209T-221Y-N	100	220	0.30	300
SBK201209T-301Y-N	100	300	0.30	300
SBK201209T-401Y-N	100	400	0.30	300
SBK201209T-501Y-N	100	500	0.40	300
SBK201209T-601Y-N	100	600	0.40	300
SBK201209T-751Y-N	100	750	0.50	200
SBK201209T-102Y-N	100	1000	0.50	200
SBK201209T-152Y-N	100	1500	0.60	200
SBK201209T-202Y-N	100	2000	0.70	200
SBK201209T-222Y-N	100	2200	0.70	200
SBK201209T-252Y-N	100	2500	0.70	200
SBK201209T-272Y-N	100	2700	0.70	200

## Test Instruments : HP4291A Impedance / Material Analyzer



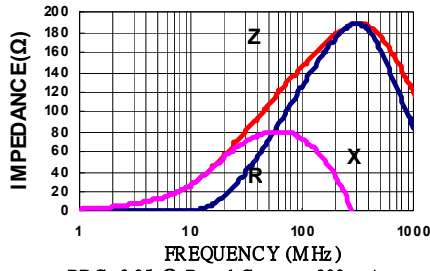
# SMD Multilayer Ferrite Chip Beads - SBY,SBK Series

**SBK201209T-121Y-N**



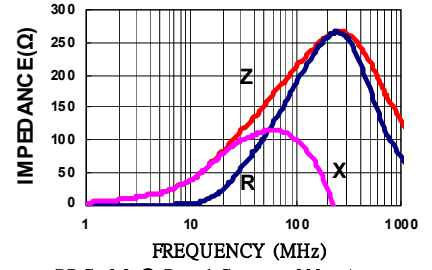
RDC<0.25 Ω Rated Current :300 mA

**SBK201209T-151Y-N**



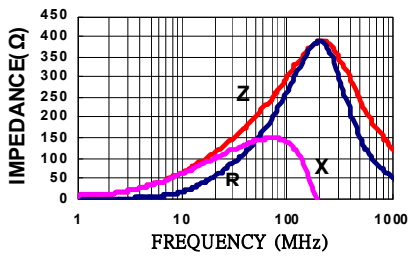
RDC<0.25 Ω Rated Current :300 mA

**SBK201209T-221Y-N**



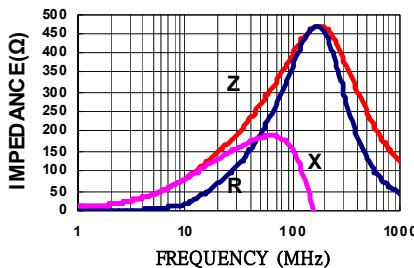
RDC<0.3 Ω Rated Current :300 mA

**SBK201209T-301Y-N**



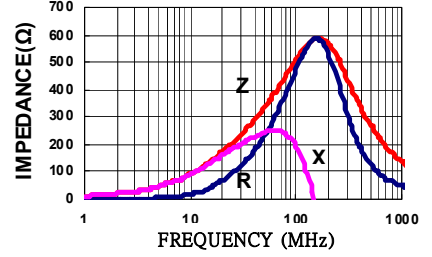
RDC<0.3 Ω Rated Current :300 mA

**SBK201209T-401Y-N**



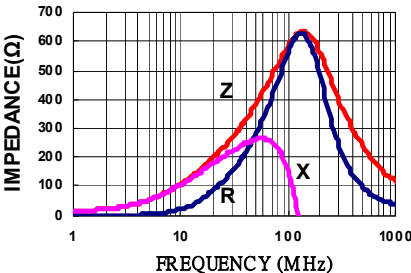
RDC<0.3 Ω Rated Current :300 mA

**SBK201209T-501Y-N**



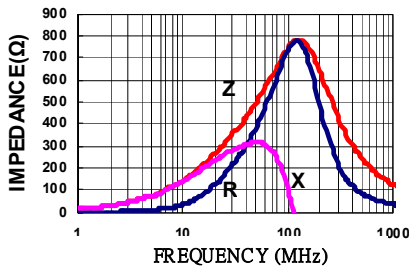
RDC<0.4 Ω Rated Current :300 mA

**SBK201209T-601Y-N**



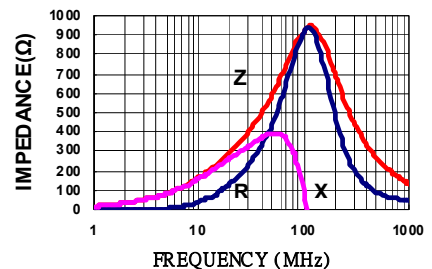
RDC<0.4 Ω Rated Current :300 mA

**SBK201209T-751Y-N**



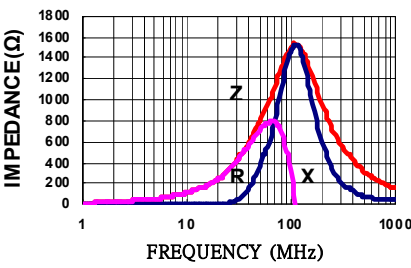
RDC<0.5 Ω Rated Current :200 mA

**SBK201209T-102Y-N**



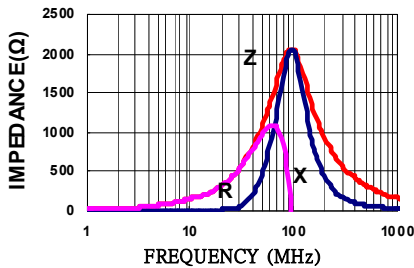
RDC<0.5 Ω Rated Current :200 mA

**SBK201209T-152Y-N**



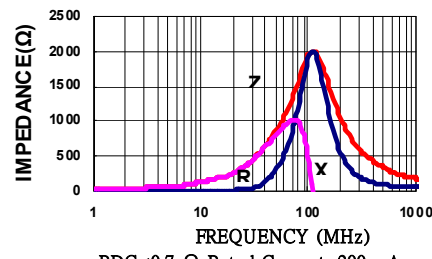
RDC<0.6 Ω Rated Current :200 mA

**SBK201209T-202Y-N**



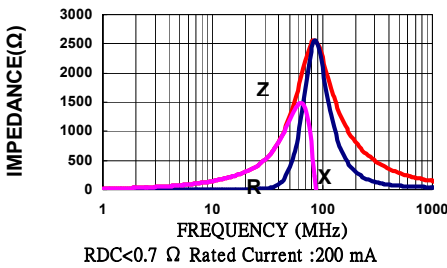
RDC<0.7 Ω Rated Current :200 mA

**SBK201209T-222Y-N**



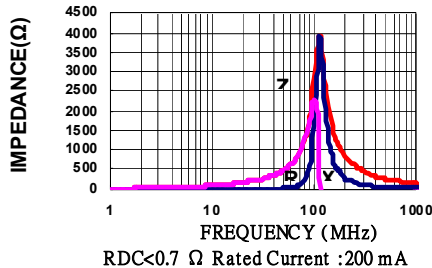
RDC<0.7 Ω Rated Current :200 mA

**SBK201209T-252Y-N**



RDC<0.7 Ω Rated Current :200 mA

**SBK201209T-272Y-N**

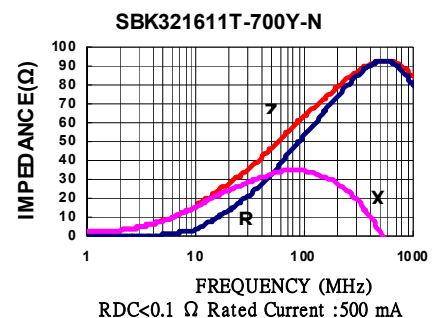
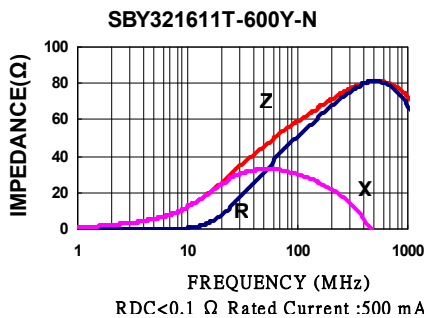
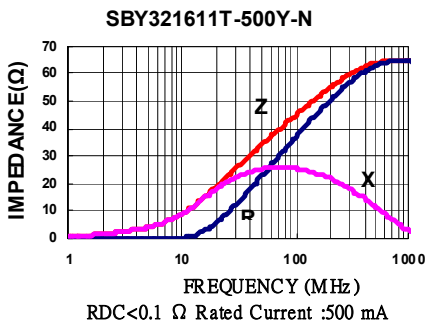
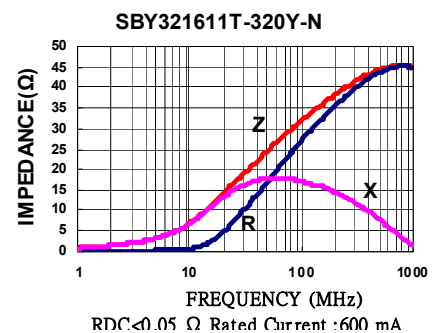
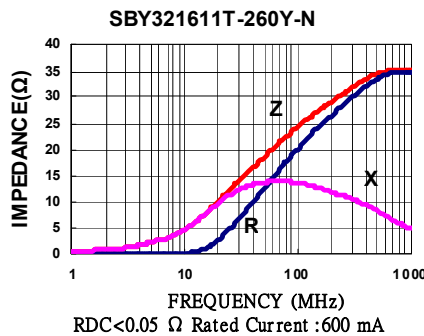
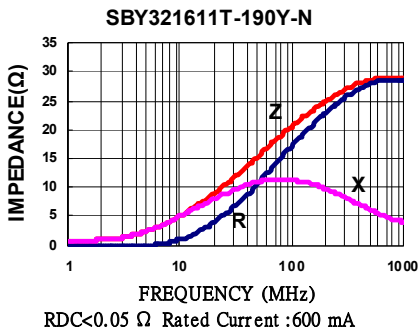


RDC<0.7 Ω Rated Current :200 mA

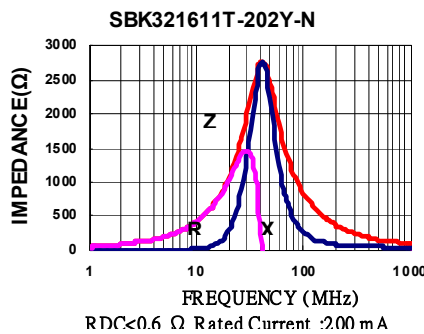
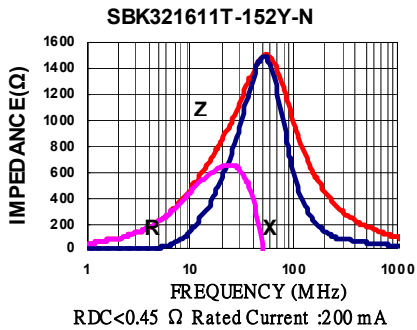
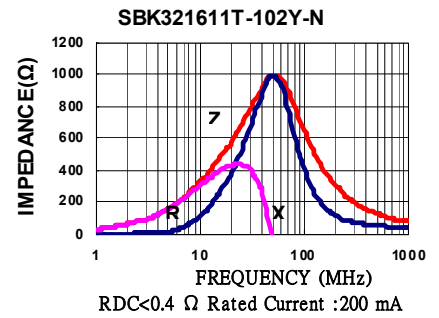
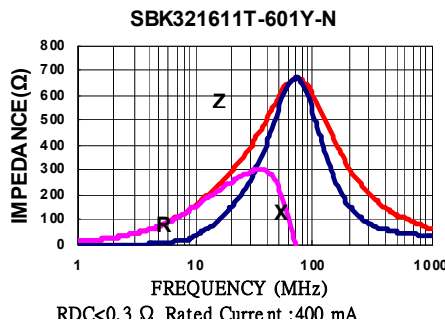
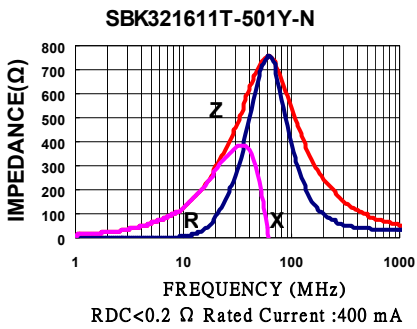
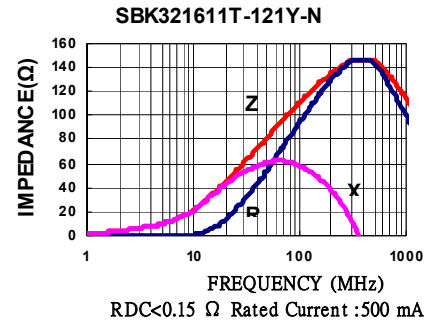
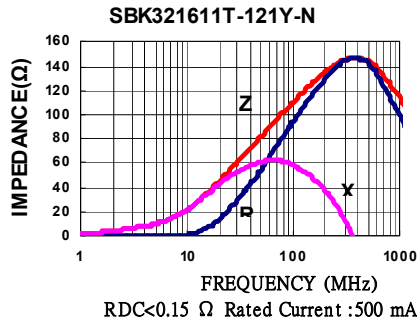
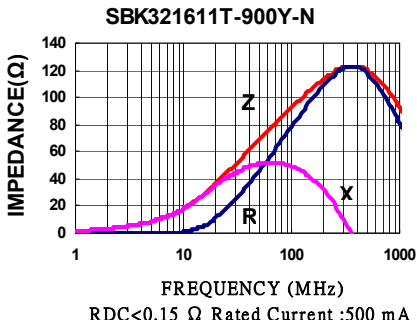
## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBY321611T-080Y-N	100	8	0.05	600
SBY321611T-110Y-N	100	11	0.05	600
SBY321611T-190Y-N	100	19	0.05	600
SBY321611T-260Y-N	100	26	0.05	600
SBY321611T-320Y-N	100	32	0.05	600
SBY321611T-500Y-N	100	50	0.10	500
SBY321611T-600Y-N	100	60	0.10	500
SBK321611T-700Y-N	100	70	0.10	500
SBK321611T-900Y-N	100	90	0.15	500
SBK321611T-121Y-N	100	120	0.15	500
SBK321611T-151Y-N	100	150	0.15	500
SBK321611T-201Y-N	100	200	0.20	400
SBK321611T-401Y-N	100	400	0.20	400
SBK321611T-501Y-N	100	500	0.20	400
SBK321611T-601Y-N	100	600	0.30	400
SBK321611T-102Y-N	50	1000	0.40	200
SBK321611T-122Y-N	50	1200	0.40	200
SBK321611T-152Y-N	50	1500	0.45	200
SBK321611T-202Y-N	30	2000	0.60	200
SBK321611T-272Y-N	30	2700	0.60	200

## Test Instruments : HP4291A Impedance / Material Analyzer



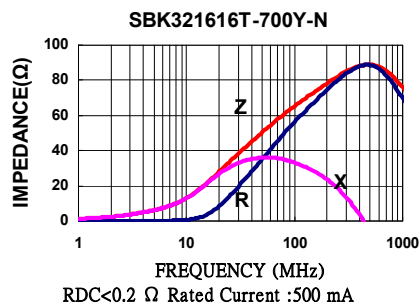
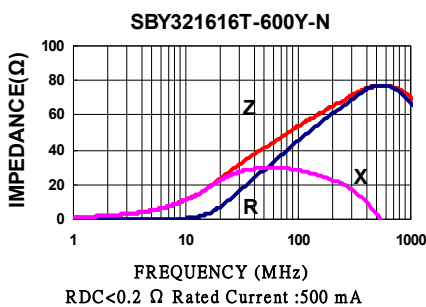
Test Instruments : HP4291A Impedance / Material Analyzer



## Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance (Ω ±25%)	DC Resistance (Ω) Max	Rated current (mA) Max
SBY321616T-250Y-N	100	25	0.10	500
SBY321616T-600Y-N	100	60	0.20	500
SBK321616T-700Y-N	100	70	0.20	500

Test Instruments : HP4291A Impedance / Material Analyzer

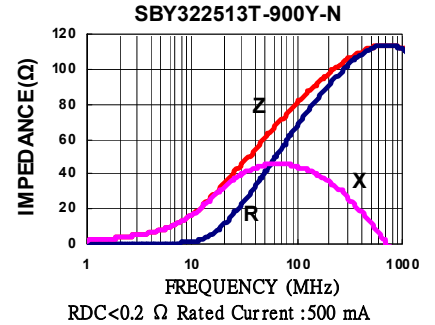
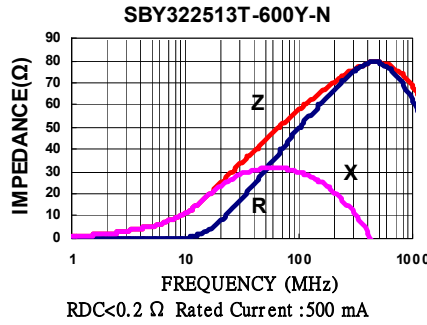
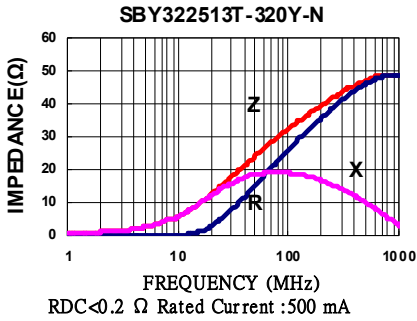




**Electrical Characteristics**

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBY322513T-320Y-N	100	32	0.20	500
SBY322513T-600Y-N	100	60	0.20	500
SBY322513T-900Y-N	100	90	0.20	500
SBY322513T-121Y-N	100	120	0.20	500

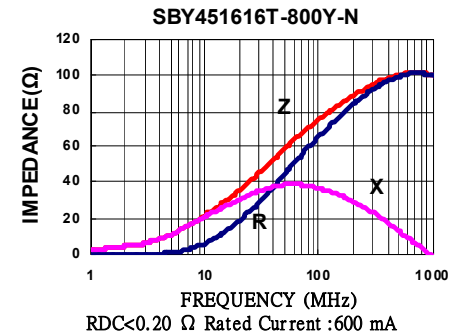
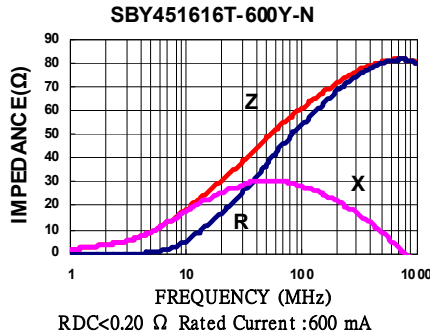
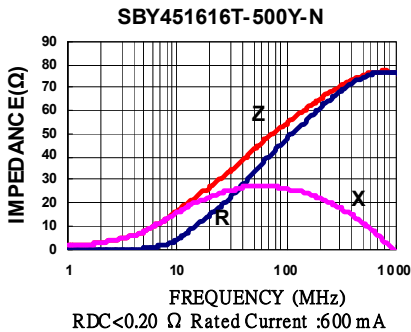
Test Instruments : HP4291A Impedance / Material Analyzer



**Electrical Characteristics**

Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBY451616T-330Y-N	100	33	0.20	600
SBY451616T-500Y-N	100	50	0.20	600
SBY451616T-600Y-N	100	60	0.20	600
SBY451616T-800Y-N	100	80	0.20	600
SBY451616T-101Y-N	100	100	0.30	500
SBK451616T-151Y-N	100	150	0.30	500
SBK451616T-171Y-N	100	170	0.30	500

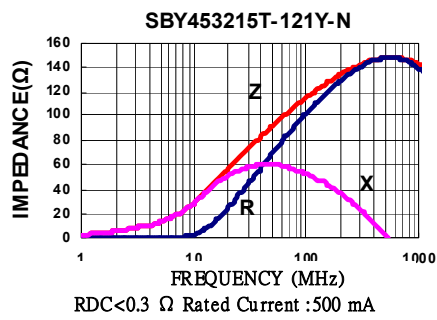
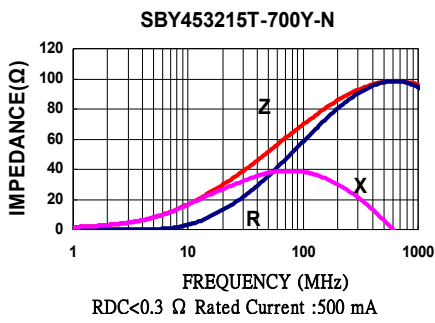
Test Instruments : HP4291A Impedance / Material Analyzer



## Electrical Characteristics

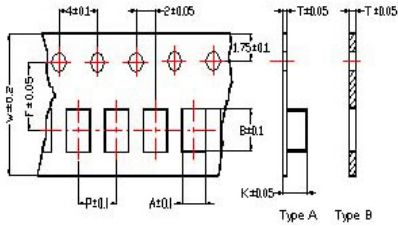
Part Number	Test Frequency (MHz)	Impedance ( $\Omega \pm 25\%$ )	DC Resistance ( $\Omega$ ) Max	Rated current (mA) Max
SBY453215T-700Y-N	100	70	0.30	500
SBY453215T-121Y-N	100	120	0.30	500
SBY453215T-125Y-N	100	125	0.30	500
SBY453215T-131Y-N	100	130	0.30	500
SBY453215T-151Y-N	100	150	0.30	500

**Test Instruments :** HP4291A Impedance / Material Analyzer

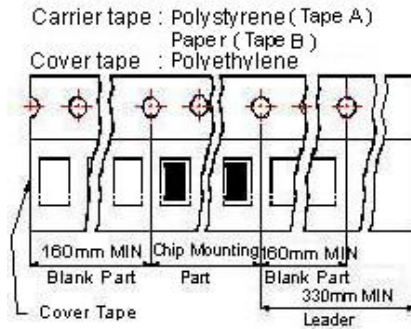


## Packaging Specifications

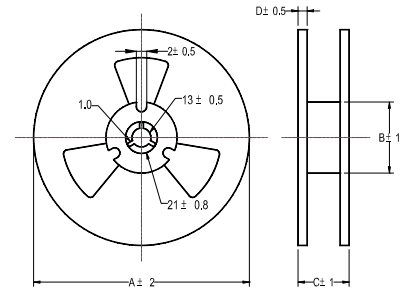
**Tape Dimensions**



**Tape Material**



**Reel Dimensions**



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

## Dimensions in mm

TYPE	Tape Dimensions								Reel Dimensions				Quantity
	A	B	T	W	P	F	K	Tape Type.	A	B	C	D	PCS / REEL
①100505	0.65	1.15	0.6	8.0	2.0	3.5	-	B	178	60	12	2	10000
②160808	1.05	1.85	0.95	8.0	4.0	3.5	-	B	178	60	12	2	4000
③201209	1.50	2.30	0.97	8.0	4.0	3.5	-	B	178	60	12	2	4000
④201212	1.35	2.25	0.22	8.0	4.0	3.5	1.35	A	178	60	12	2	3000
③321611	1.88	3.50	0.22	8.0	4.0	3.5	1.27	A	178	60	12	2	3000
⑤321616	1.88	3.53	0.22	8.0	4.0	3.5	1.80	A	178	60	12	2	2000
⑥322513	2.77	3.42	0.22	8.0	4.0	3.5	1.55	A	178	60	12	2	2500
⑦451616	1.93	4.95	0.24	12	4.0	5.5	1.93	A	178	60	14	2	2000
⑦453215	3.66	4.95	0.24	12	8.0	5.5	1.85	A	178	60	14	2	1000