

Common type beads

OPERATING TEMP.	1005	:55 ~ 125
	1608	:-40 ~ +85
	2012	



FEATURES

- Under the same size , the multilayer chip beads produce higher impedance than plug-in beads.
- These CBG series have substantial EMI.RFI suppression by simply mounting them onto PCB
- Suitable EIA standard in shape and dimension of chip beads; Can be mounted automatically by SMT equipments.

APPLICATIONS

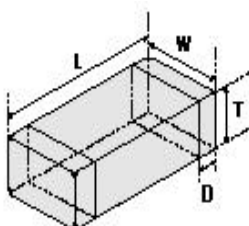
- Redial noise suppression on digital product clock lines、 signal lines and suppression noise on circuit.

ORDERING CODE

CBG	201209	U	121	T
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Product Code		Dimensions (L × W × T) (mm)		Material Code	Impedance ()		Packaging Style	
CBG	Multilayer ordinary chip beads	100505	1.0 × 0.5 × 0.5	U	Example		T	Tape&Reel
		160808	1.6 × 0.8 × 0.8				B	Bulk
		201209	2.0 × 1.2 × 0.9		110	11		
		321609	3.2 × 1.6 × 0.9		121	120		
		322513	3.2 × 2.5 × 1.3		221	220		
		451616	4.5 × 1.6 × 1.6		102	1000		
		453215	4.5 × 3.2 × 1.5					

SHAPE AND DIMENSIONS



unit : mm(inch)

Part No.	L	W	T	D
100505 (0402)	1.0 ± 0.15 (0.040 ± 0.006)	0.5 ± 0.15 (0.020 ± 0.006)	0.5 ± 0.15 (0.020 ± 0.006)	0.25 ± 0.10 (0.010 ± 0.004)
160808 (0603)	1.6 ± 0.2 (0.063 ± 0.008)	0.8 ± 0.2 (0.031 ± 0.008)	0.8 ± 0.2 (0.031 ± 0.008)	0.3 ± 0.2 (0.01 ± 0.008)
201209 (0805)	2.0 ± 0.2 (0.079 ± 0.008)	1.2 ± 0.2 (0.047 ± 0.008)	0.9 ± 0.2 (0.035 ± 0.008)	0.5 ± 0.3 (0.020 ± 0.012)
321609 (1206)	3.2 ± 0.2 (0.126 ± 0.008)	1.6 ± 0.2 (0.063 ± 0.008)	0.9 ± 0.2 (0.035 ± 0.008)	0.5 ± 0.3 (0.020 ± 0.012)
322513 (1210)	3.2 ± 0.2 (0.126 ± 0.008)	2.5 ± 0.2 (0.098 ± 0.008)	1.3 ± 0.2 (0.051 ± 0.008)	0.5 ± 0.3 (0.020 ± 0.012)
451616 (1806)	4.5 ± 0.2 (0.186 ± 0.008)	1.6 ± 0.2 (0.063 ± 0.008)	1.6 ± 0.2 (0.063 ± 0.008)	0.5 ± 0.3 (0.020 ± 0.012)
453215 (1812)	4.5 ± 0.2 (0.180 ± 0.008)	3.2 ± 0.2 (0.126 ± 0.008)	1.5 ± 0.2 (0.060 ± 0.008)	0.5 ± 0.3 (0.020 ± 0.012)

ELECTRICAL CHARACTERISTICS

1005 TYPE

Part No.	Impedance() At 100MHz	DCR ()Max	I _r (mA)Max
CBG100505U070	0~7	0.045	300
CBG100505U190	9~19	0.05	300
CBG100505U260	26 ± 25%	0.15	300
CBG100505U310	31 ± 25%	0.20	300
CBG100505U360	36 ± 25%	0.20	300
CBG100505U600	60 ± 25%	0.35	200
CBG100505U101	100 ± 25%	0.40	200
CBG100505U121	120 ± 25%	0.50	150
CBG100505U151	150 ± 25%	0.55	150
CBG100505U201	200 ± 25%	0.60	150
CBG100505U301	300 ± 25%	0.80	100
CBG100505U501	500 ± 25%	1.1	100
CBG100505U601	600 ± 25%	1.3	100
CBG100505U801	800 ± 25%	1.4	50

1608 TYPE

Part No.	Impedance() At 100MHz	DCR ()Max	I _r (mA)Max
CBG160808U070	5~11	0.05	1000
CBG160808U150	15 ± 25%	0.05	1000
CBG160808U310	31 ± 25%	0.06	500
CBG160808U700	70 ± 25%	0.12	300
CBG160808U800	80 ± 25%	0.15	300
CBG160808U101	100 ± 25%	0.30	200
CBG160808U121	120 ± 25%	0.30	200
CBG160808U151	150 ± 25%	0.35	200
CBG160808U181	180 ± 25%	0.50	200
CBG160808U221	220 ± 25%	0.50	200
CBG160808U301	300 ± 25%	0.50	150
CBG160808U501	500 ± 25%	0.60	150
CBG160808U601	600 ± 25%	0.60	100
CBG160808U801	800 ± 25%	0.70	100
CBG160808U102	1000 ± 25%	0.80	100
CBG160808U122	1200 ± 25%	0.90	100
CBG160808U152	1500 ± 25%	0.90	50
CBG160808U182	1800 ± 25%	1.00	50
CBG160808U202	2000 ± 25%	1.20	50

2012 TYPE

Part No.	Impedance() At 100MHz	DCR () Max	I _r (mA) Max
CBG201209U050	0~9	0.05	600
CBG201209U110	10~19	0.07	600
CBG201209U260	26 ± 25%	0.10	400
CBG201209U310	31 ± 25%	0.10	400
CBG201209U500	50 ± 25%	0.15	400
CBG201209U600	60 ± 25%	0.15	400
CBG201209U800	80 ± 25%	0.20	400
CBG201209U101	100 ± 25%	0.20	400
CBG201209U121	120 ± 25%	0.25	300
CBG201209U151	150 ± 25%	0.25	300
CBG201209U181	180 ± 25%	0.25	300
CBG201209U221	220 ± 25%	0.25	300
CBG201209U301	300 ± 25%	0.35	300
CBG201209U501	500 ± 25%	0.40	200
CBG201209U601	600 ± 25%	0.40	200
CBG201209U801	800 ± 25%	0.45	150
CBG201209U102	1000 ± 25%	0.45	100
CBG201209U122	1200 ± 25%	0.60	100
CBG201209U152	1500 ± 25%	0.70	100
CBG201209U202	2000 ± 25%	0.90	50

3216 TYPE

Part No.	Impedance() At 100MHz	DCR () Max	I _r (mA) Max
CBG321609U050	0~9	0.05	1000
CBG321609U110	11~19	0.05	800

Part No.	Impedance() At 100MHz	DCR () Max	I _r (mA) Max
CBG321609U260	26 ± 25%	0.10	500
CBG321609U310	31 ± 25%	0.10	500
CBG321609U500	50 ± 25%	0.15	400
CBG321609U800	80 ± 25%	0.15	300
CBG321609U121	120 ± 25%	0.25	300
CBG321609U151	150 ± 25%	0.30	300
CBG321609U181	180 ± 25%	0.30	300
CBG321609U221	220 ± 25%	0.40	300
CBG321609U301	300 ± 25%	0.45	300
CBG321609U501	500 ± 25%	0.50	200
CBG321609U601	600 ± 25%	0.50	200
CBG321609U801	800 ± 25%	0.60	200
CBG321609U102	1000 ± 25%	0.60	200
CBG321609U122	1200 ± 25%	0.70	150

3225 TYPE

Part No.	Impedance() At 100MHz	DCR () Max	I _r (mA) Max
CBG322513U190	7~20	0.10	500
CBG322513U260	26 ± 25%	0.10	500
CBG322513U310	31 ± 25%	0.15	500
CBG322513U600	60 ± 25%	0.20	300
CBG322513U800	80 ± 25%	0.30	300
CBG322513U101	100 ± 25%	0.30	300
CBG322513U121	120 ± 25%	0.30	300
CBG322513U151	150 ± 25%	0.40	300
CBG322513U181	180 ± 25%	0.40	300
CBG322513U221	220 ± 25%	0.45	300
CBG322513U301	300 ± 25%	0.45	300
CBG322515U501	500 ± 25%	0.50	200
CBG322513U601	600 ± 25%	0.50	200
CBG322513U801	800 ± 25%	0.60	200
CBG322513U102	1000 ± 25%	0.60	200

4516 TYPE

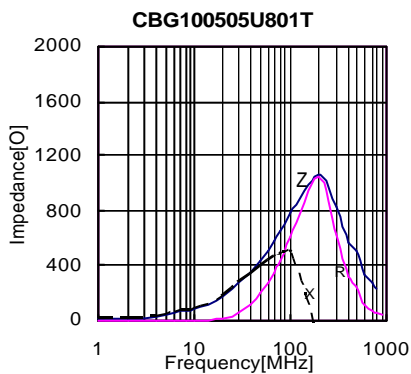
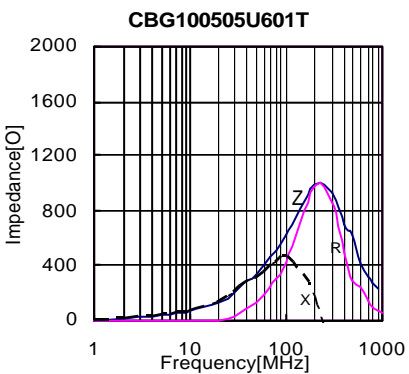
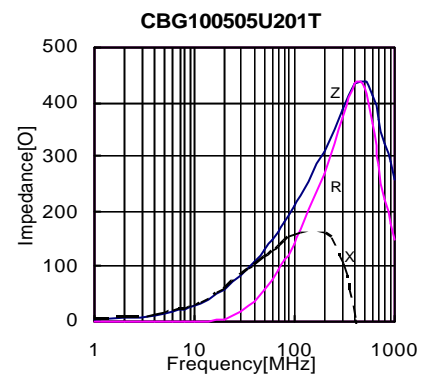
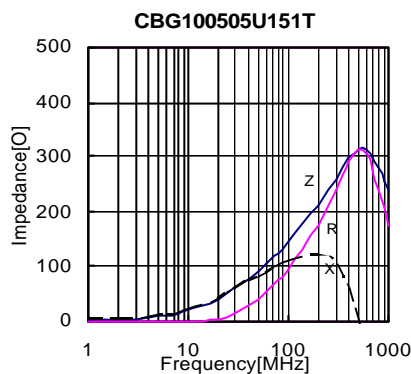
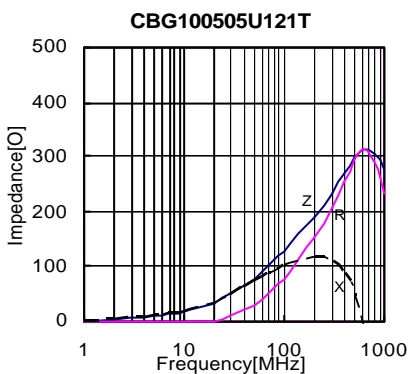
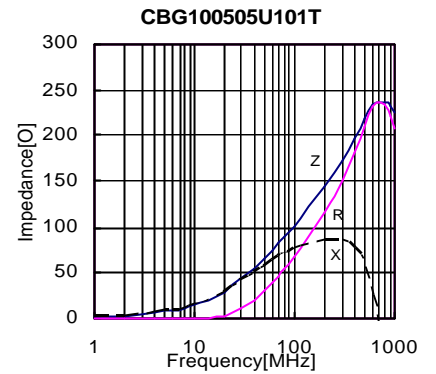
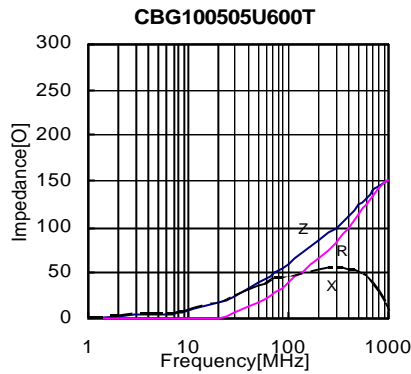
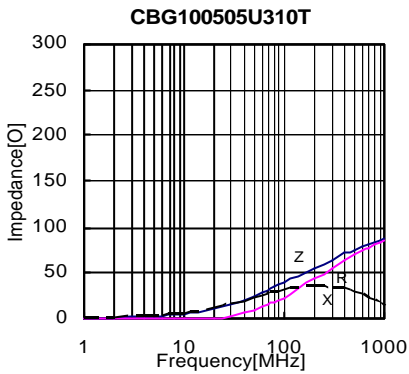
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CBG451616U190	19 ± 25%	0.10	600
CBG451616U260	26 ± 25%	0.10	600
CBG451616U310	31 ± 25%	0.15	600
CBG451616U600	60 ± 25%	0.20	600
CBG451616U700	70 ± 25%	0.25	600
CBG451616U800	80 ± 25%	0.30	500
CBG451616U900	90 ± 25%	0.35	500
CBG451616U121	120 ± 25%	0.40	500
CBG451616U151	150 ± 25%	0.40	500
CBG451616U221	220 ± 25%	0.45	500
CBG451616U301	300 ± 25%	0.45	500
CBG451616U501	500 ± 25%	0.50	200
CBG451616U601	600 ± 25%	0.50	200
CBG451616U801	800 ± 25%	0.55	200

4532 TYPE

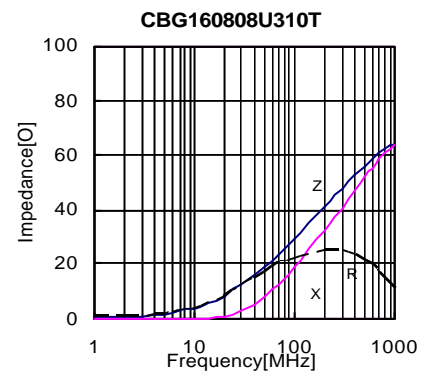
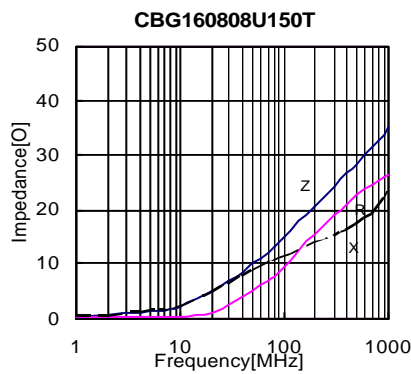
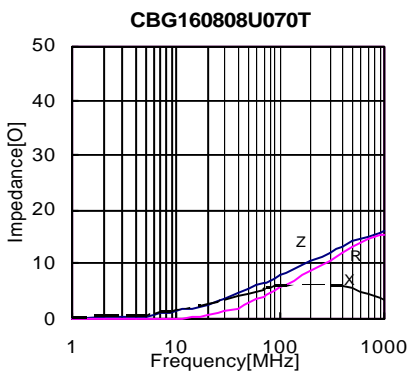
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CBG453215U190	19 ± 25%	0.10	500
CBG453215U380	38 ± 25%	0.15	500
CBG453215U700	70 ± 25%	0.20	400
CBG453215U800	80 ± 25%	0.20	400
CBG453215U101	100 ± 25%	0.20	400
CBG453215U121	120 ± 25%	0.25	400
CBG453215U151	150 ± 25%	0.25	300
CBG453215U221	220 ± 25%	0.30	300
CBG453215U301	300 ± 25%	0.30	300
CBG453215U601	600 ± 25%	0.40	200
CBG453215U801	800 ± 25%	0.45	200
CBG453215U102	1000 ± 25%	0.50	200

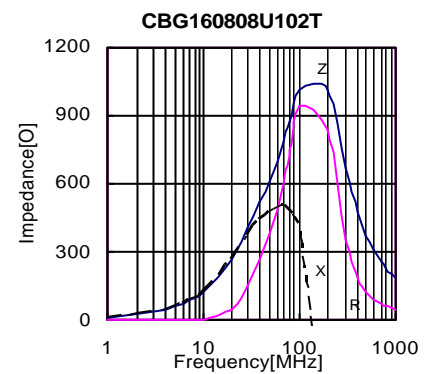
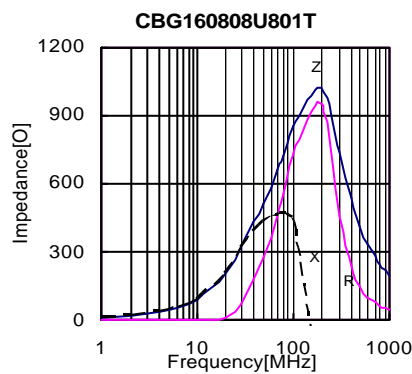
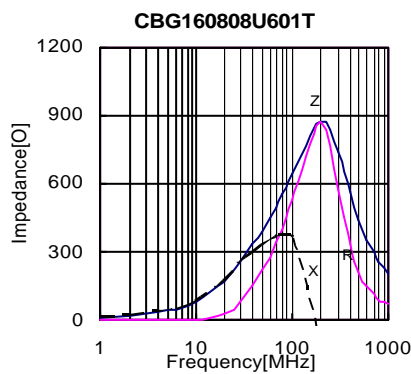
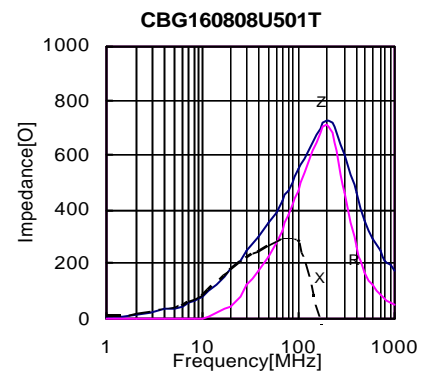
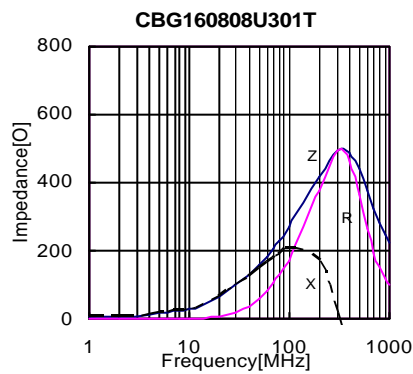
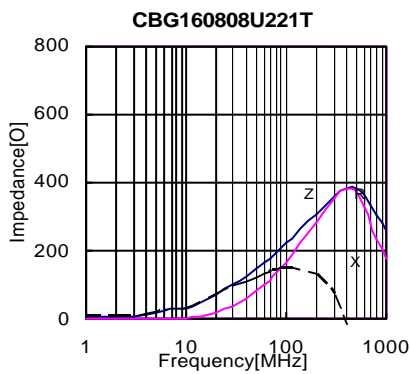
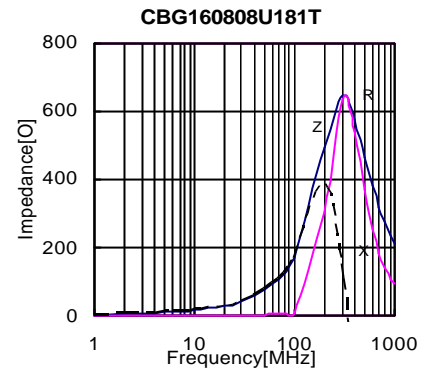
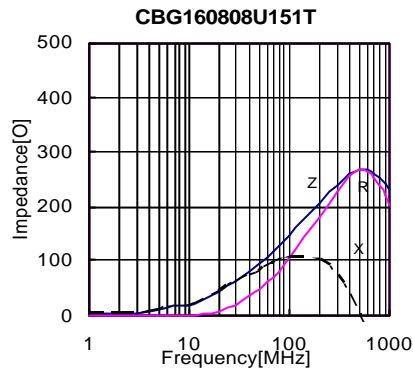
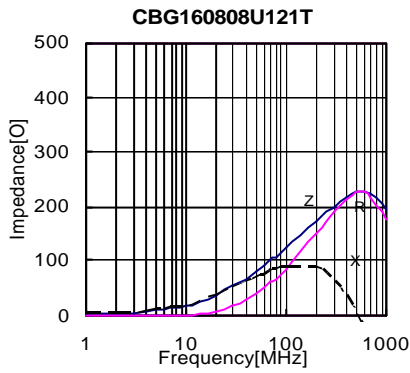
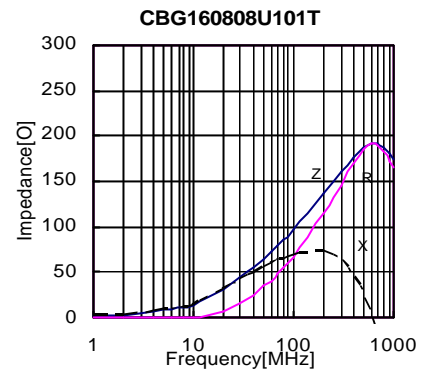
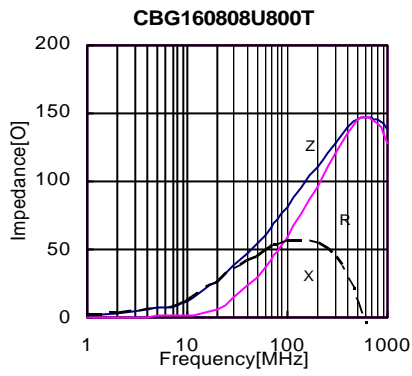
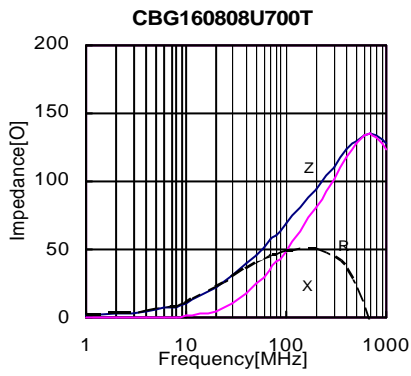
TYPICAL ELECTRICAL CHARACTERISTICS

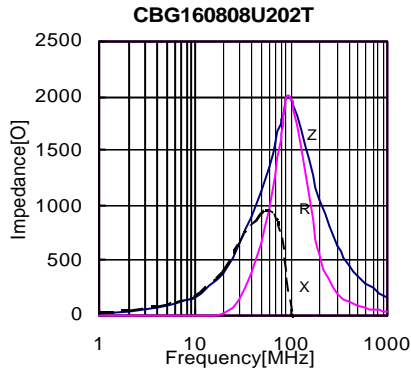
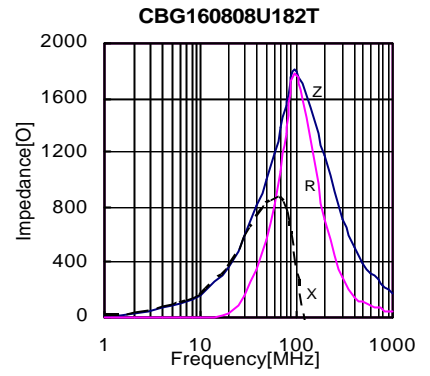
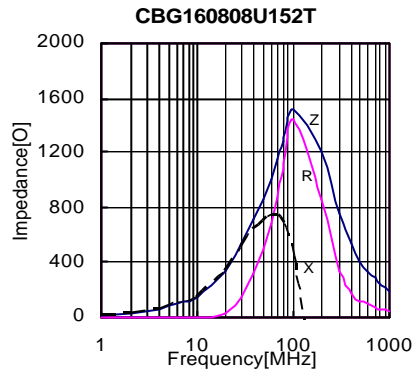
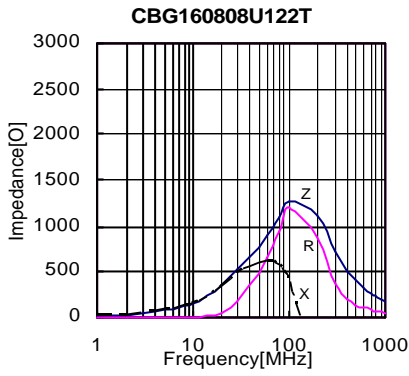
1005 series



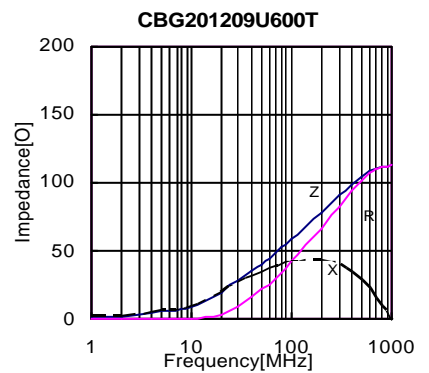
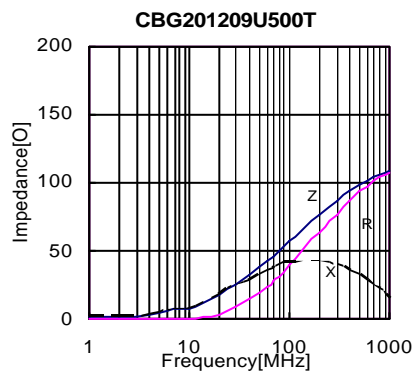
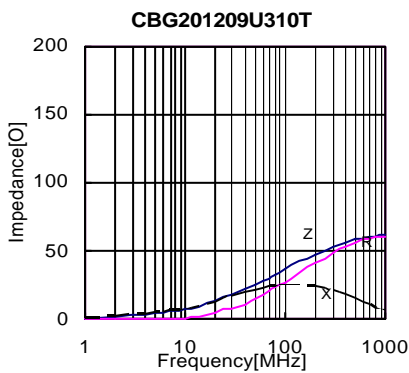
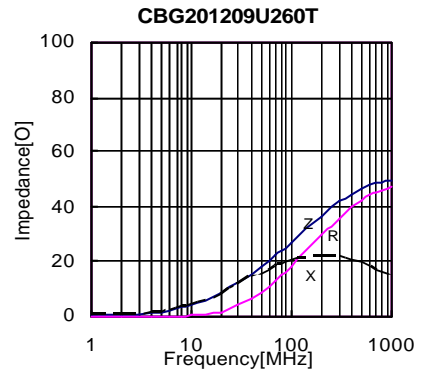
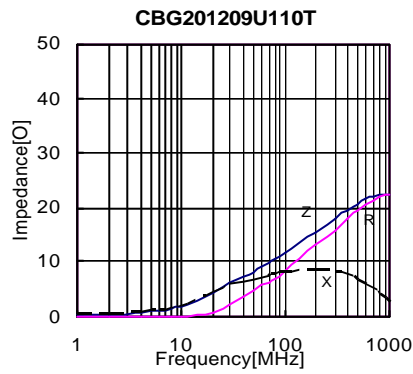
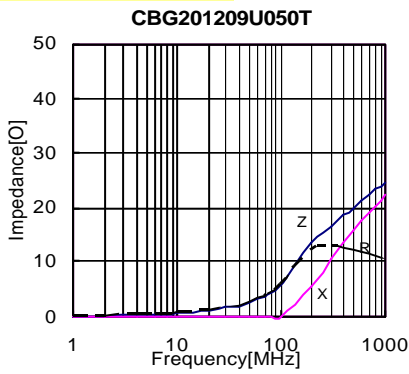
1608 series

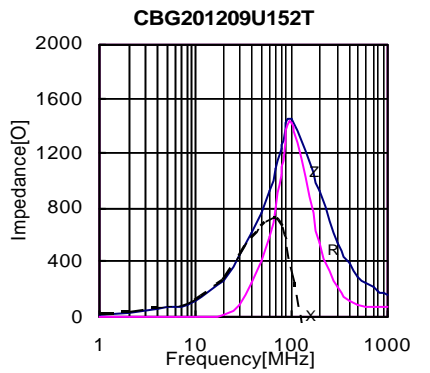
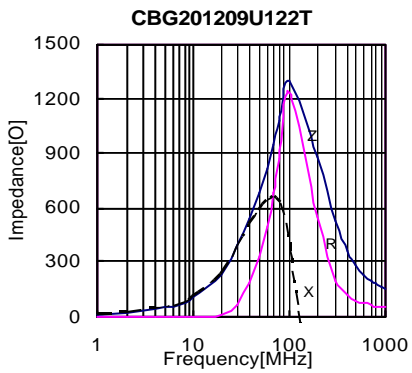
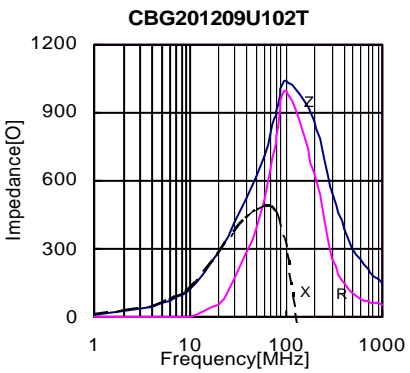
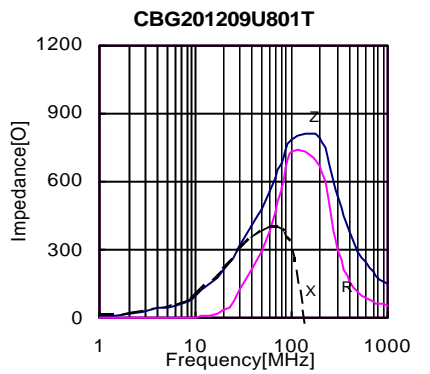
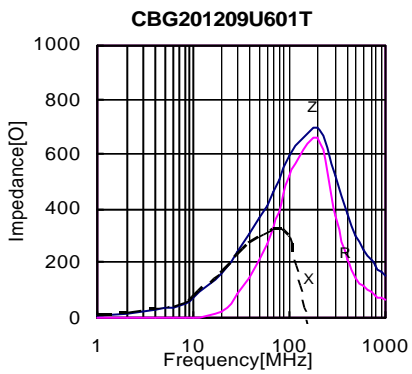
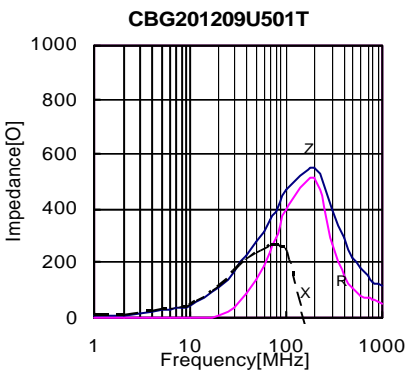
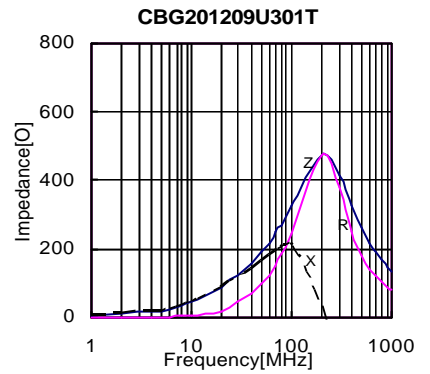
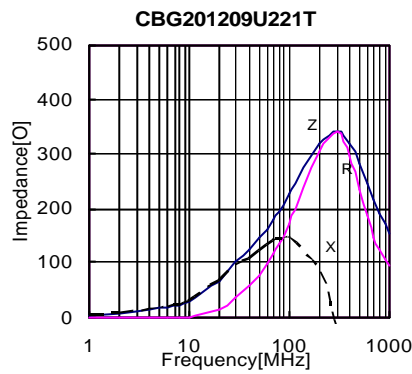
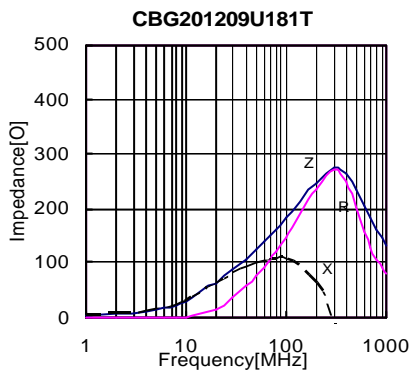
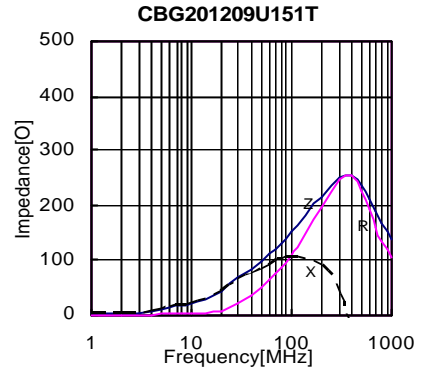
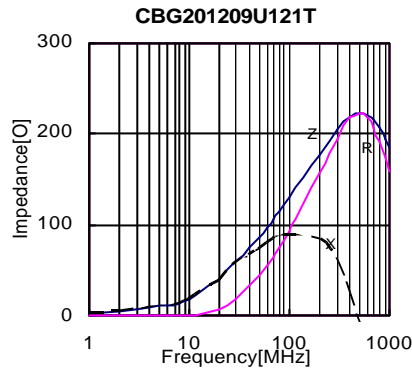
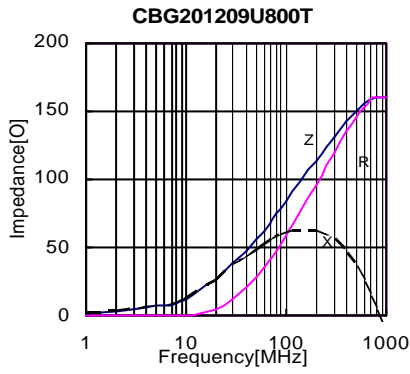




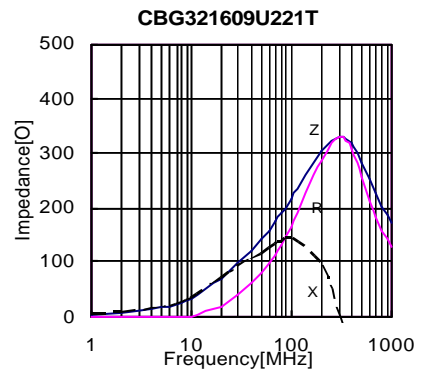
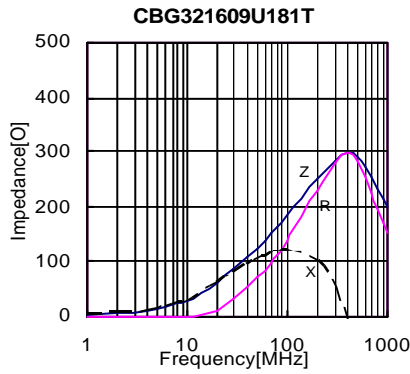
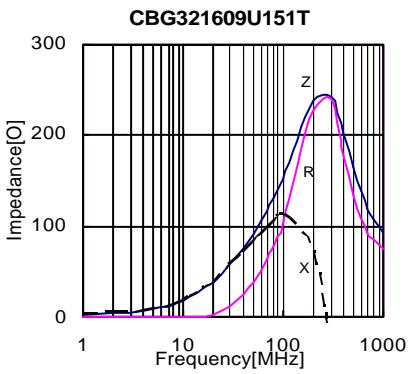
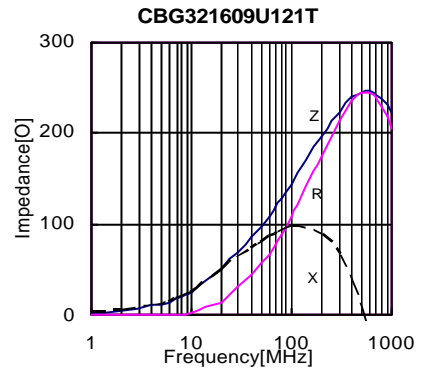
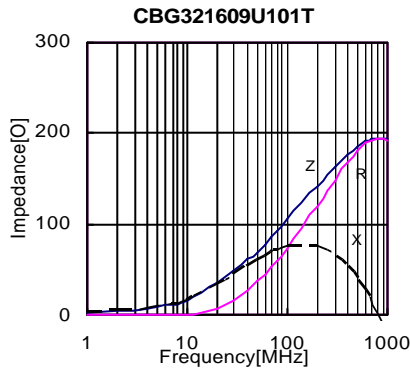
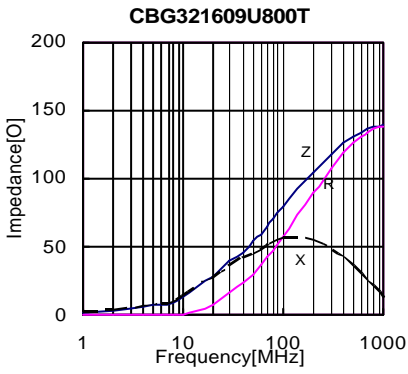
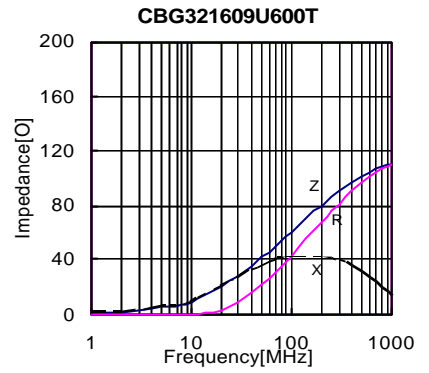
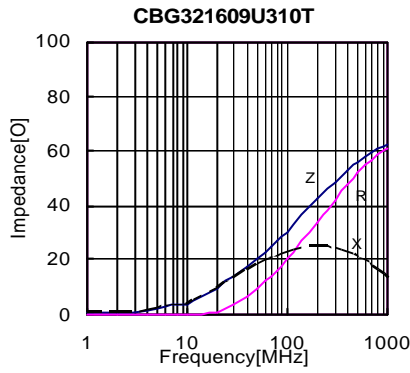
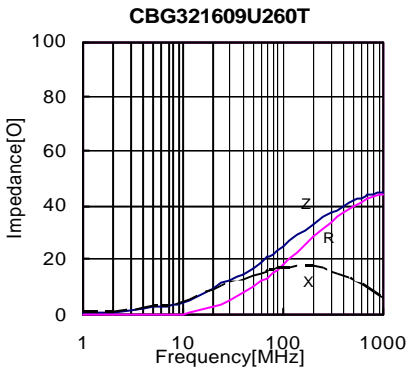
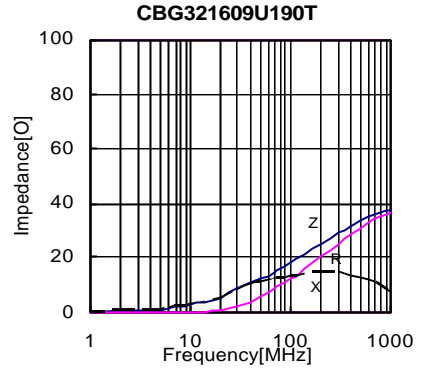
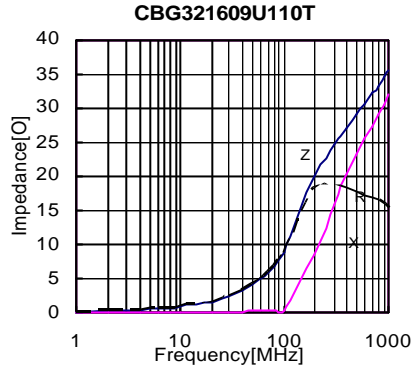
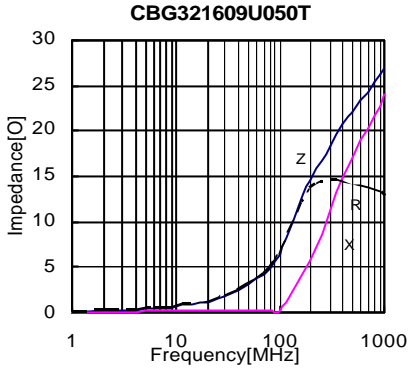


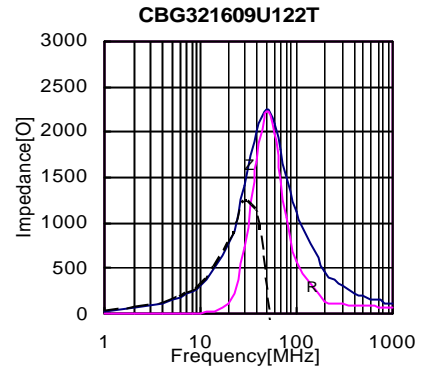
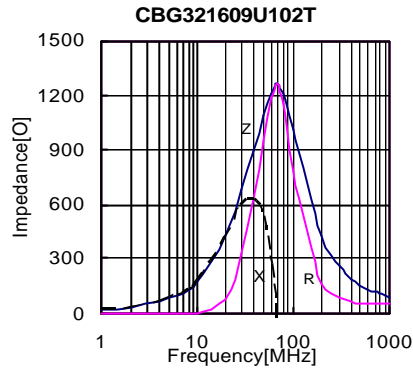
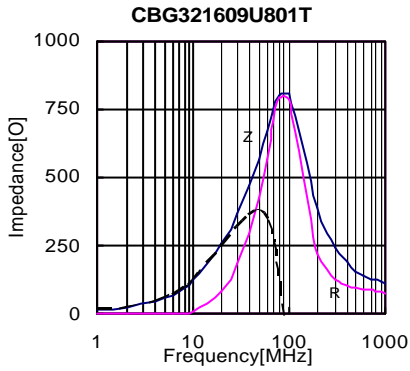
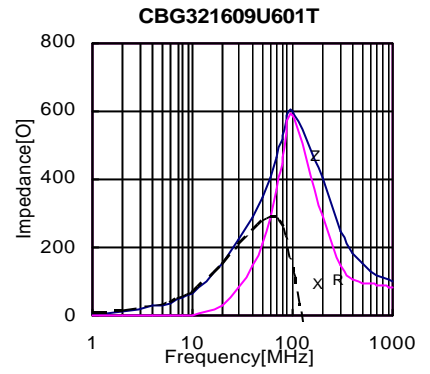
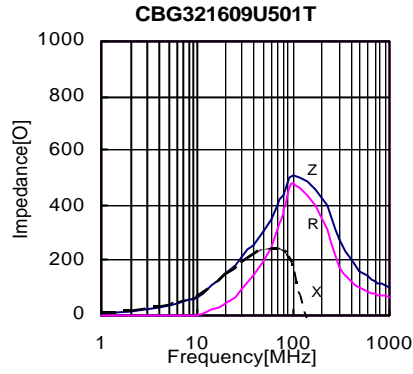
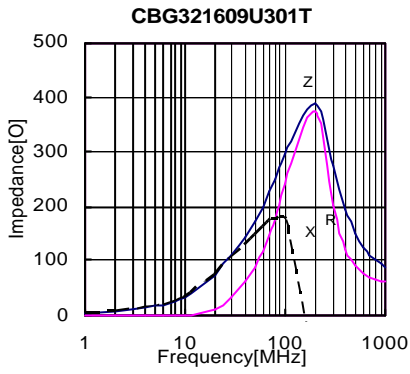
2012 series



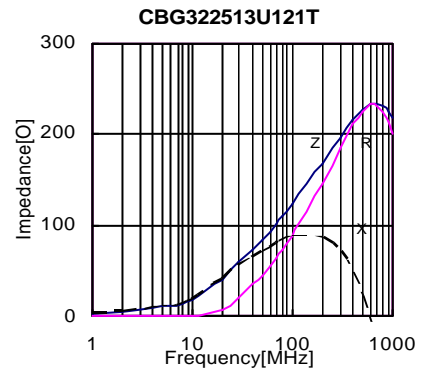
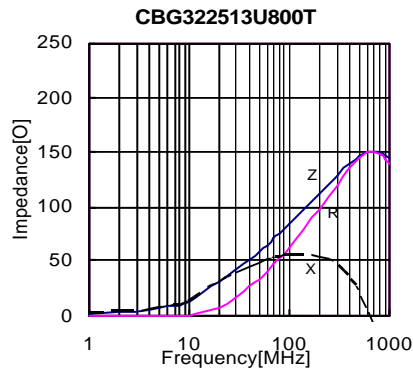
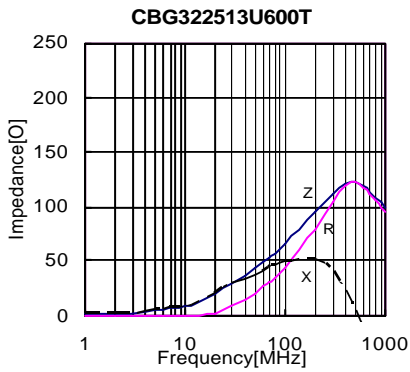
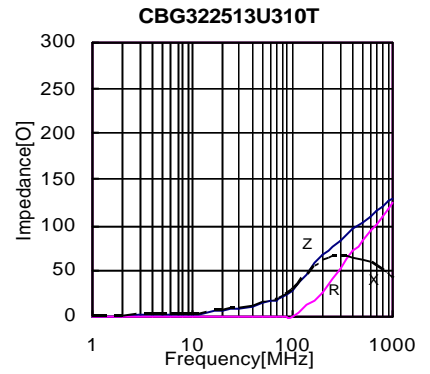
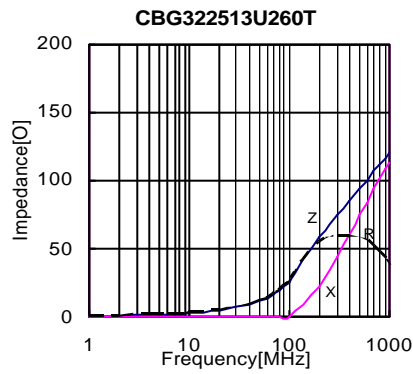
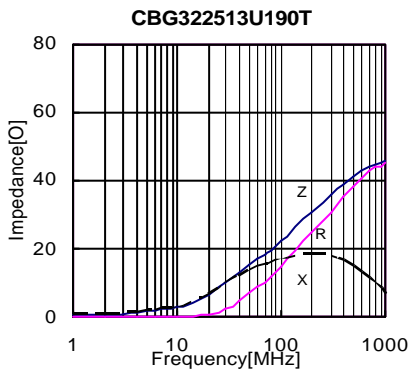


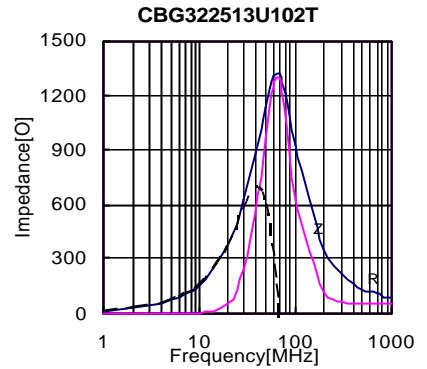
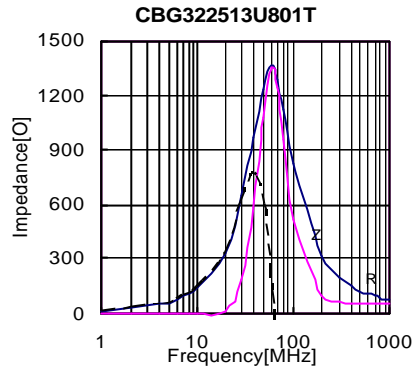
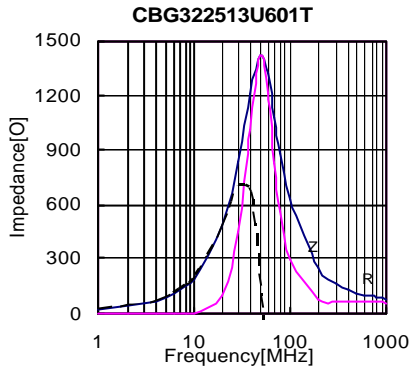
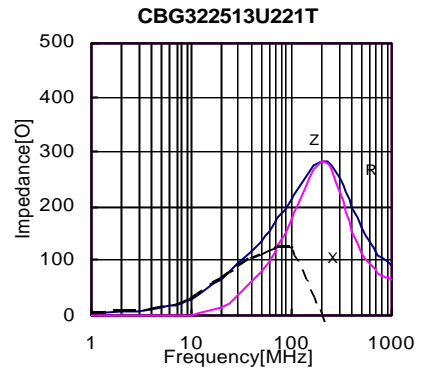
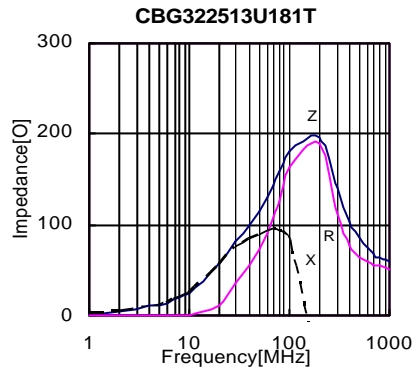
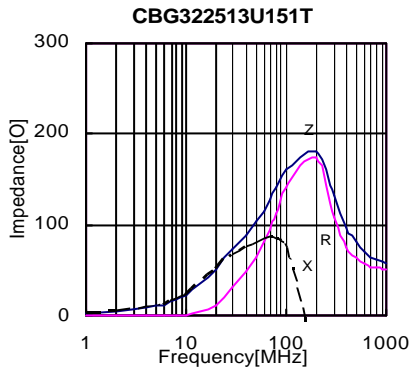
3216 series



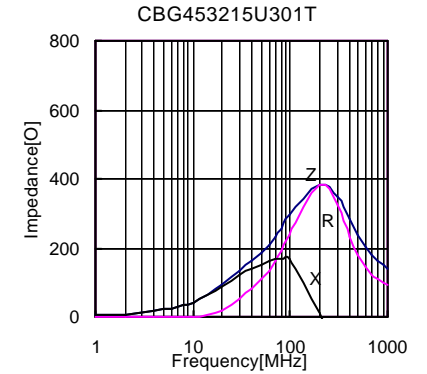
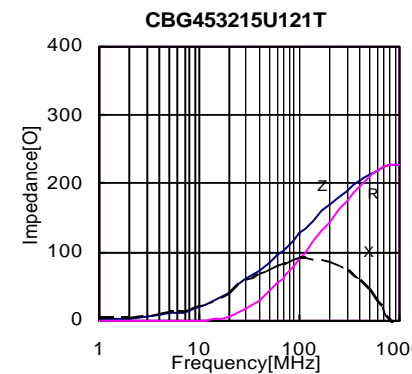
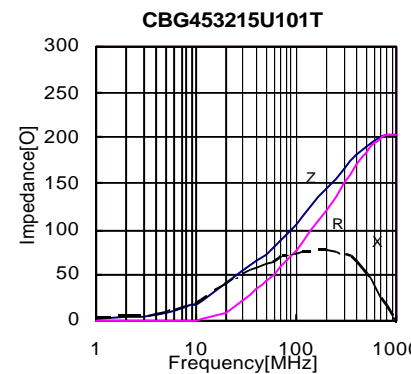
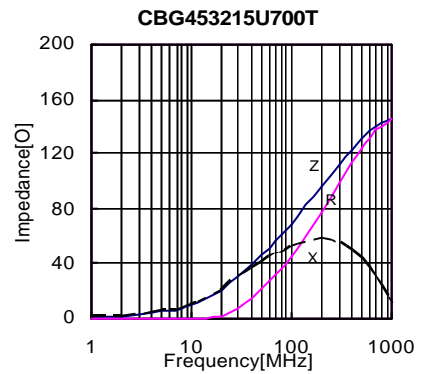
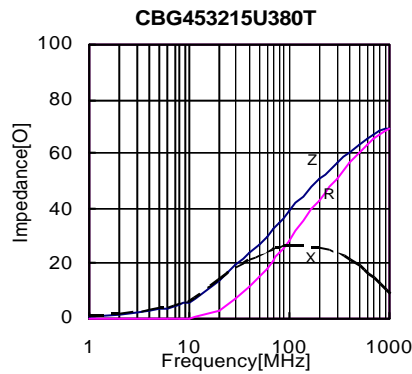
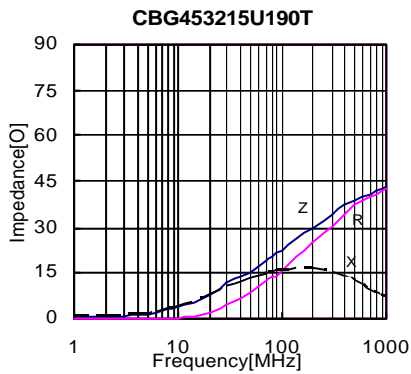


3225 series

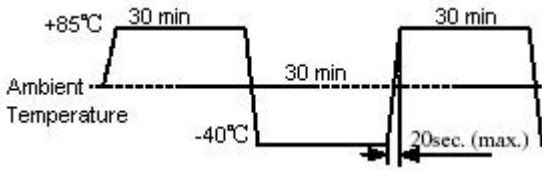


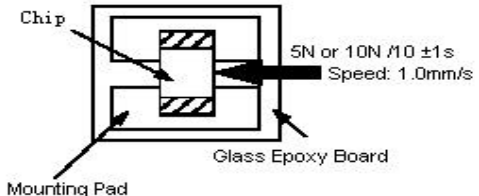
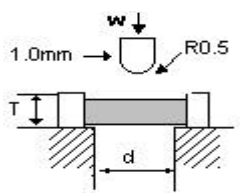


4532 series



RELIABILITY TESTING (VHF、CMI、CBG、CBW、CBH、CBY、CBA series)

Type	Item	Specified value	Test methods
1	Operating temperature range	-40 to +125	
2	Storage temperature range	-40 to +125	
3	Solderability	At least 90% of terminal electrode is covered by new solder	Solder temperature: 230 ± 5 Duration: 4 ± 1S Preheating temperature: 120 to 150 Preheating time: 60S Flux: immersion into methanol solution with colophony for 3 to 5 sec. Immersion speed: 25mm/sec
4	Resistance to soldering	Appearance: No significant abnormality. At least 75% of terminal electrode is covered by new solder Impedance change: within ± 20% Inductor change: within ± 10%	Solder temperature: 260 ± 5 Duration: 10 ± 0.5S Preheating temperature: 120 to 150 Preheating time: 60S Flux: immersion into methanol solution with colophony for 3 to 5 sec. Immersion speed: 25mm/sec
5	Thermal shock	Appearance: No significant abnormality. Impedance change: within ± 20% Inductor change: within ± 10%	Temperature: -40 for 30 ± 3min +85 for 30 ± 3min Transforming interval :max 20 sec Number of cycles: 32 
6	Loading at low temperature	Appearance: No significant abnormality. Impedance change: within ± 20% Inductor change: within ± 10%	Temperature: -55 ± 2 Duration: 500 hrs
7	Loading at high temperature	Appearance: No significant abnormality. Impedance change: within ± 20% Inductor change: within ± 10%	Temperature: 85 ± 2 Duration: 1000 $\begin{smallmatrix} +24 \\ -0 \end{smallmatrix}$ hrs Applied current: Rated current
8	Loading under Damp Heat	Appearance: No significant abnormality. Impedance change: within ± 20% Inductor change : within ± 10%	Temperature: 55 ± 2 Duration: 500 $\begin{smallmatrix} +24 \\ -0 \end{smallmatrix}$ hrs Humidity: 90 to 95%RH Applied current: Rated current

Type	Item	Specified value	Test methods								
9	Vibration	Appearance: No significant abnormality. Impedance change: within $\pm 20\%$. Inductor change : within $\pm 10\%$	Amplitude: 1.5mm Directions: 2hrs each in X Y Z direction Frequency range: 10 to 55 to 10Hz (min)								
10	Adhesion of electrode	Impedance change: within $\pm 20\%$ Inductor change : within $\pm 10\%$ Appearance: No significant abnormality.	Applied force: 5N force for 1005 and 1608 series. 10N force for 2012、3216、3225、4516、4532series. Keep time : $10 \pm 1S$ 								
11	Resistance to pressure of substrate	The body shall not be damaged by forces applied on the right. <table border="1" data-bbox="399 996 805 1086"> <tr> <td>d</td> <td>1.3</td> <td>1.3</td> <td>2.0</td> </tr> <tr> <td>w</td> <td>2.0</td> <td>3.0</td> <td>4.0</td> </tr> </table>	d	1.3	1.3	2.0	w	2.0	3.0	4.0	
d	1.3	1.3	2.0								
w	2.0	3.0	4.0								

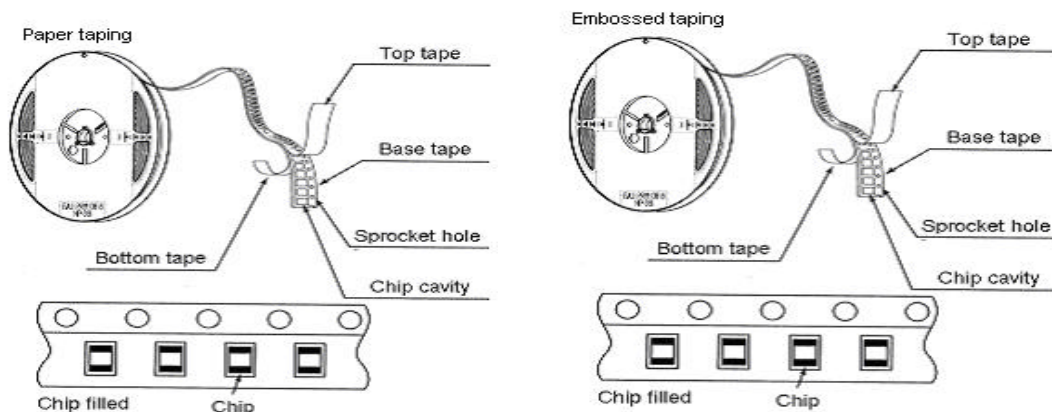
Note: When there are questions concerning, measurement shall be made after 24 ± 2 hrs of recovery under the standard condition.

包装 PACKAGING

STANDAE QUANTITY

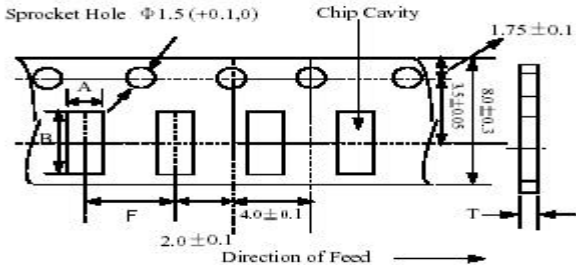
TYPE	100505	160808	201209	321609	321611	322513	451616	453215
Quantity(pcs)	10000	4000	4000	4000	3000	3000	5000	3000

TAPING DRAWINGS



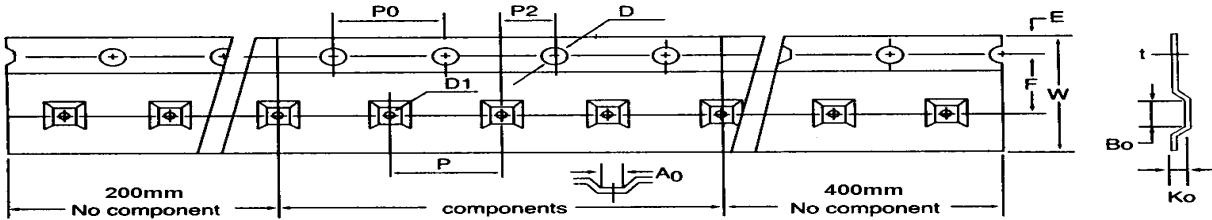
TAPING DIMENSIONS (UNIT: mm)

Paper tape



Part NO.	A	B	F	T
100505	0.65 ± 0.1	1.15 ± 0.1	2.0 ± 0.05	0.8max
160808	1.0 ± 0.2	1.8 ± 0.2	4.0 ± 0.2	1.1max
201209	1.5 ± 0.2	2.3 ± 0.2	4.0 ± 0.2	1.1max

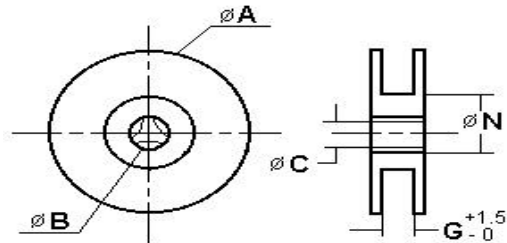
Embossed tape



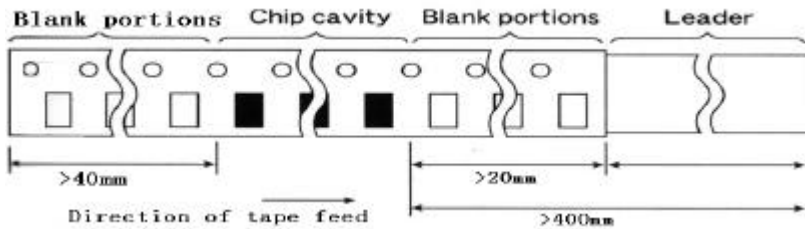
	4532	4516	3225	3216	2012
W	12.0+/-0.2	12.0+/-0.2	8.1+/-0.2	8.1+/-0.2	8.1+/-0.2
P	8.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10
E	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10
F	5.50+/-0.10	5.50+/-0.10	3.50+/-0.10	3.50+/-0.10	3.50+/-0.10
D	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05
D1	1.50 ^{+0.25} ₀	1.50 ^{+0.25} ₀	1.50 ^{+0.25} ₀	1.50 ^{+0.25} ₀	1.50 ^{+0.25} ₀
P ₀	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10
P ₀ 10	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20
P2	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05
A ₀	3.66+/-0.10	1.93+/-0.10	2.80+/-0.10	1.90+/-0.10	1.52+/-0.10
B ₀	4.95+/-0.10	4.95+/-0.10	3.50+/-0.10	3.51+/-0.10	2.41+/-0.10
t	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10

REEL DIMENSIONS (UNIT : mm)

	A	B	C	N	G
CF-8	178 ± 2.0	22.0 ± 2.0	12.5 ± 1.5	67 ± 2.0	8
CF-12	330 ± 2.0	22.0 ± 2.0	12.5 ± 1.5	110 ± 2.0	12



LEADER AND BLANK PORTION



PEELING OFF FORCE : 0.05 to 0.7N in the direction show below.

