

### High current type beads

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



### FEATURES

- A unique terminal electrode structure ensures permissible current 6.0A(max).
- High impedance and EMI suppression effective over a wide frequency range.
- Suitable reflow and wave soldering.

### APPLICATIONS

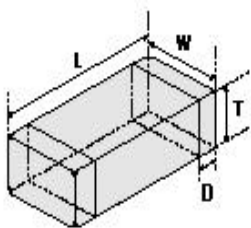
- Digital videos、communication equipment 、OA equipment and others.

### ORDERING CODE

CBW	201209	U	121	T
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Product Code		Dimensions (L × W × T) (mm)		Material Code	Impedance ( )		Packaging Style	
CBW	MULTILAYER CHIP POWER BEADS	100505	1.0 × 0.5 × 0.5	U	Example		T	Tape & Reel
		160808	1.6 × 0.8 × 0.8		110	11	B	Bulk
		201209	2.0 × 1.2 × 0.9		300	30		
		321609	3.2 × 1.6 × 0.9		102	1000		
		322513	3.2 × 2.5 × 1.3					
		451616	4.5 × 1.6 × 1.6					
		453215	4.5 × 3.2 × 1.5					

### SHAPE AND DIMENSIONS



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	Ir (A)Max
CBW100505U070	5~11	0.03	1.00
CBW100505U190	19 ± 25%	0.05	0.80
CBW100505U260	26 ± 25%	0.06	0.75
CBW100505U310	31 ± 25%	0.08	0.70
CBW100505U600	60 ± 25%	0.15	0.65
CBW100505U101	100 ± 25%	0.20	0.65
CBW100505U121	120 ± 25%	0.25	0.45
CBW100505U151	150 ± 25%	0.25	0.45
CBW100505U201	200 ± 25%	0.40	0.35
CBW100505U301	300 ± 25%	0.50	0.30
CBW100505U501	500 ± 25%	0.65	0.25
CBW100505U601	600 ± 25%	0.70	0.20
CBW100505U801	800 ± 25%	0.90	0.20

## 1608 TYPE

Part No.	Impedance( ) At 100MHz	DCR ( )Max	Ir (A)Max
CBW160808U110	5~11	0.05	1.5
CBW160808U190	19 ± 25%	0.06	1.5
CBW160808U260	26 ± 25%	0.08	1.2
CBW160808U310	31 ± 25%	0.10	1.0
CBW160808U800	80 ± 25%	0.12	1.0
CBW160808U101	100 ± 25%	0.15	1.0
CBW160808U121	120 ± 25%	0.20	0.8
CBW160808U151	150 ± 25%	0.20	0.8
CBW160808U181	180 ± 25%	0.25	0.8
CBW160808U221	220 ± 25%	0.30	0.6
CBW160808U301	300 ± 25%	0.30	0.6
CBW160808U501	500 ± 25%	0.30	0.6
CBW160808U601	600 ± 25%	0.40	0.5
CBW160808U801	800 ± 25%	0.45	0.5
CBW160808U102	1000 ± 25%	0.60	0.5
CBW160808U122	1200 ± 25%	0.70	0.5
CBW160808U152	1500 ± 25%	0.80	0.4
CBW160808U182	1800 ± 25%	0.80	0.4
CBW160808U202	2000 ± 25%	1.00	0.4

## 2012 TYPE

Part No.	Impedance( ) At 100MHz	DCR ( )Max	Ir (A)Max
CBW201209U050	0~7	0.03	3
CBW201209U110	7~19	0.03	3
CBW201209U260	26 ± 25%	0.03	3
CBW201209U310	31 ± 25%	0.05	3
CBW201209U500	50 ± 25%	0.05	3
CBW201209U600	60 ± 25%	0.05	3
CBW201209U800	80 ± 25%	0.05	3
CBW201209U121	120 ± 25%	0.10	3
CBW201209U151	150 ± 25%	0.10	2
CBW201209U181	180 ± 25%	0.15	2
CBW201209U201	200 ± 25%	0.15	2
CBW201209U301	300 ± 25%	0.20	2
CBW201209U501	500 ± 25%	0.20	1.5
CBW201209U601	600 ± 25%	0.25	1.5
CBW201209U801	800 ± 25%	0.30	1.0
CBW201209U102	1000 ± 25%	0.40	0.8
CBW201209U122	1200 ± 25%	0.45	0.5
CBW201209U202	2000 ± 25%	0.50	0.3

## 3216 TYPE

Part No.	Impedance( ) At 100MHz	DCR ( )Max	Ir (A)Max
CBW321609U050	0~6	0.04	4
CBW321609U090	7~10	0.04	4
CBW321609U110	11 ± 25%	0.05	4
CBW321609U190	19 ± 25%	0.05	4

Part No.	Impedance( ) At 100MHz	DCR ( )Max	Ir (A)Max
CBW321609U260	26 ± 25%	0.05	4
CBW321609U310	31 ± 25%	0.08	3
CBW321609U600	60 ± 25%	0.10	3
CBW321609U800	80 ± 25%	0.10	3
CBW321609U101	100 ± 25%	0.10	3
CBW321609U151	150 ± 25%	0.15	3
CBW321609U181	180 ± 25%	0.15	3
CBW321609U221	200 ± 25%	0.20	3
CBW321609U301	300 ± 25%	0.20	2.5
CBW321609U501	500 ± 25%	0.20	2
CBW321609U601	600 ± 25%	0.25	2
CBW321609U801	800 ± 25%	0.25	2
CBW321609U102	1000 ± 25%	0.30	2
CBW321609U122	1200 ± 25%	0.35	1

3225 TYPE

Part No.	Impedance( ) At 100MHz	DCR ( )Max	Ir (A)Max
CBW322513U190	31 ± 25%	0.05	4.5
CBW322513U260	31 ± 25%	0.05	4
CBW322513U310	31 ± 25%	0.05	4
CBW322513U600	60 ± 25%	0.06	4
CBW322513U800	80 ± 25%	0.08	3
CBW322513U121	120 ± 25%	0.10	3
CBW322513U151	150 ± 25%	0.10	3
CBW322513U181	180 ± 25%	0.10	3
CBW322513U221	220 ± 25%	0.15	3
CBW322513U301	300 ± 25%	0.15	3
CBW322513U501	500 ± 25%	0.15	2
CBW322513U601	600 ± 25%	0.20	2
CBW322513U801	800 ± 25%	0.25	1
CBW322513U102	1000 ± 25%	0.30	1

4516 TYPE

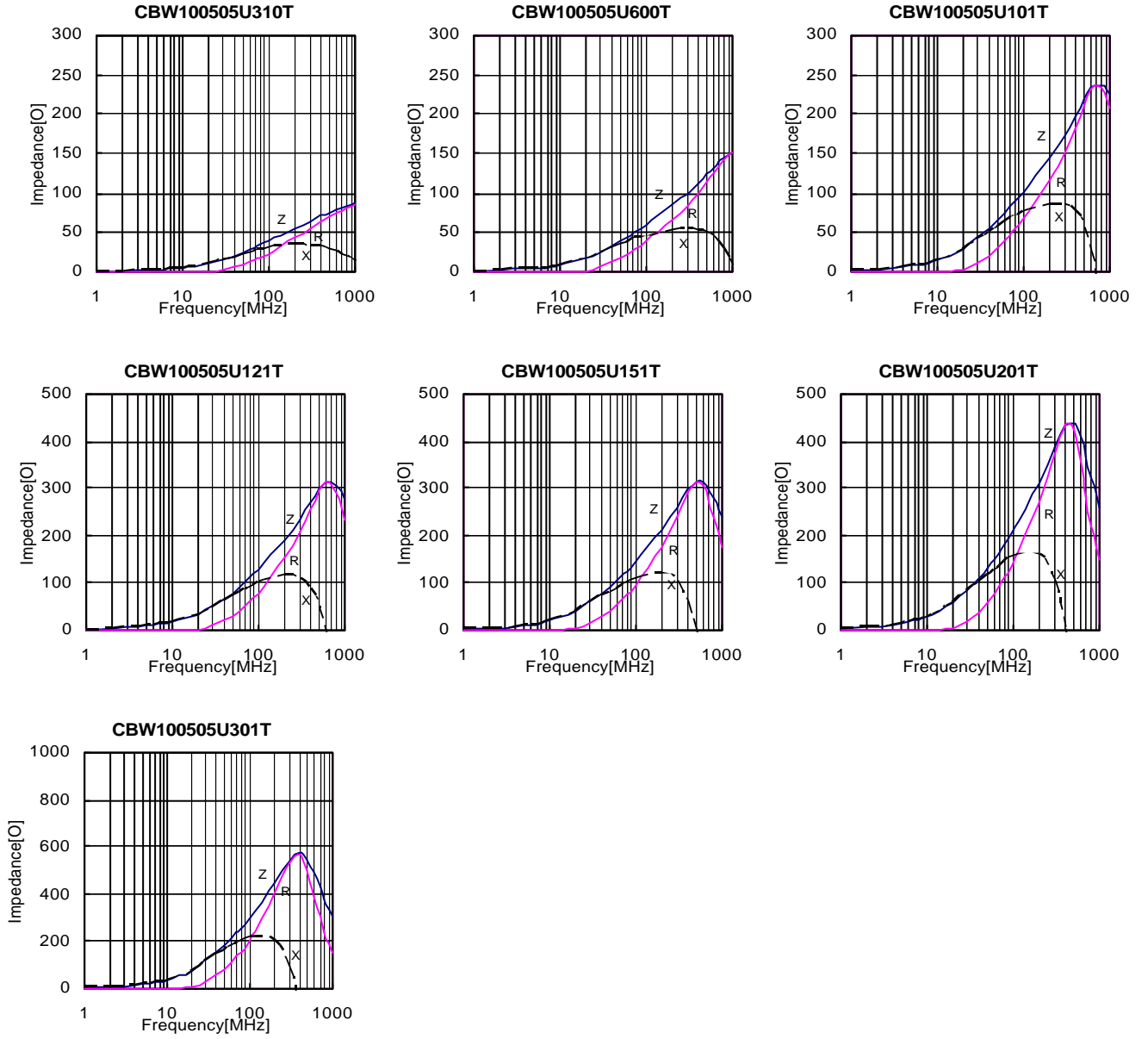
Part No.	Impedance( ) At 100MHz	DCR ( )Max	Ir (A)Max
CBW451616U260	26 ± 25%	0.05	3
CBW451616U310	31 ± 25%	0.05	3
CBW451616U750	75 ± 25%	0.06	3
CBW451616U900	90 ± 25%	0.08	3
CBW451616U121	120 ± 25%	0.10	3
CBW451616U151	150 ± 25%	0.10	2
CBW451616U221	220 ± 25%	0.15	2
CBW451616U301	300 ± 25%	0.20	2
CBW451616U501	500 ± 25%	0.25	1
CBW451616U601	600 ± 25%	0.30	1
CBW451616U851	850 ± 25%	0.30	1

4532 TYPE

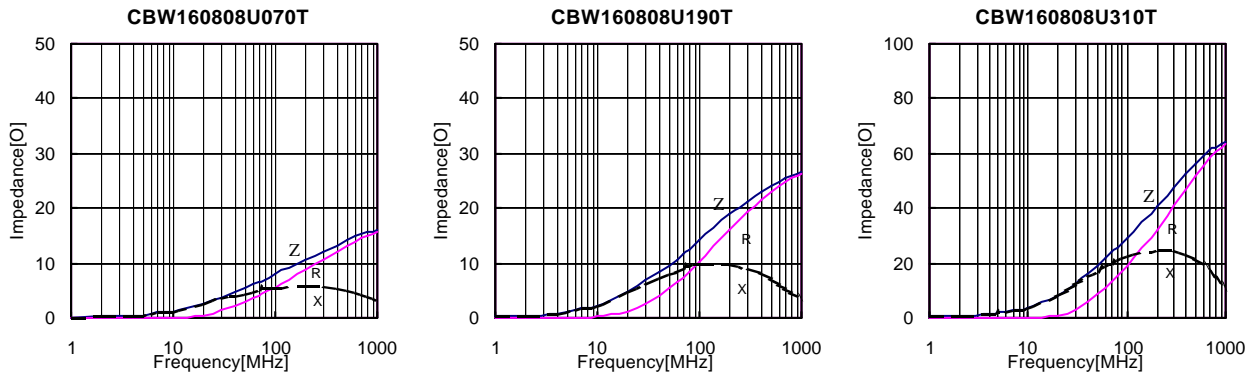
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CBW453215U190	19 ± 25%	0.05	5
CBW453215U260	26 ± 25%	0.05	5
CBW453215U380	38 ± 25%	0.06	4
CBW453215U700	70 ± 25%	0.06	4
CBW453215U800	80 ± 25%	0.08	4
CBW453215U101	100 ± 25%	0.08	4
CBW453215U121	120 ± 25%	0.08	3
CBW453215U151	150 ± 25%	0.10	3
CBW453215U221	220 ± 25%	0.12	2
CBW453215U301	300 ± 25%	0.15	2
CBW453215U501	500 ± 25%	0.20	1
CBW453215U601	600 ± 25%	0.25	1
CBW453215U801	800 ± 25%	0.30	1
CBW453215U102	1000 ± 25%	0.35	0.8

CHARACTERISTICS CURVES

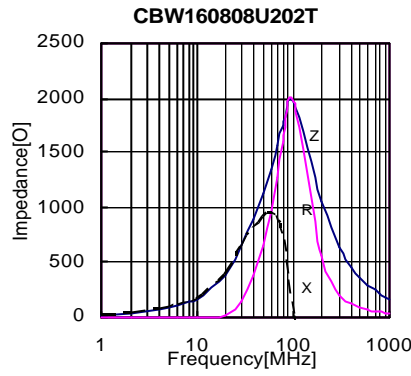
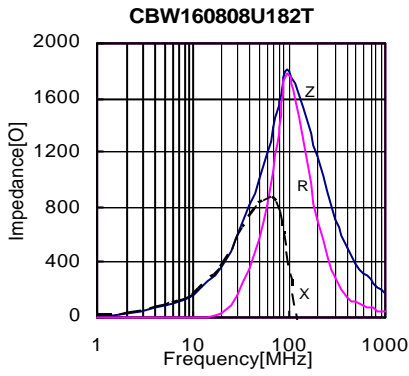
1005 series



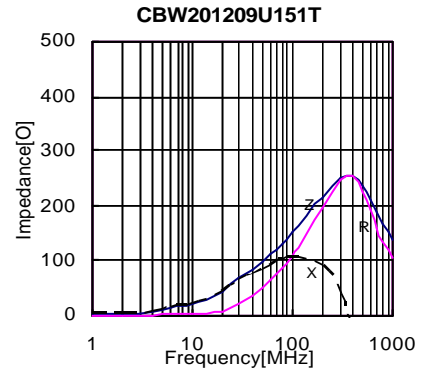
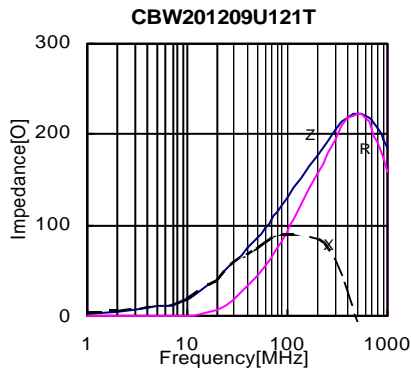
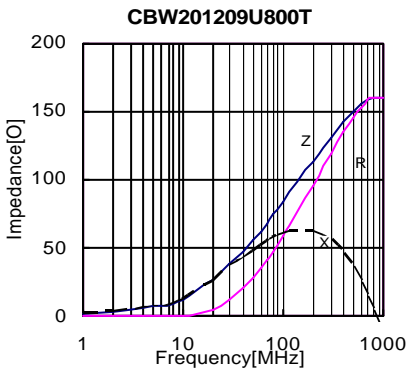
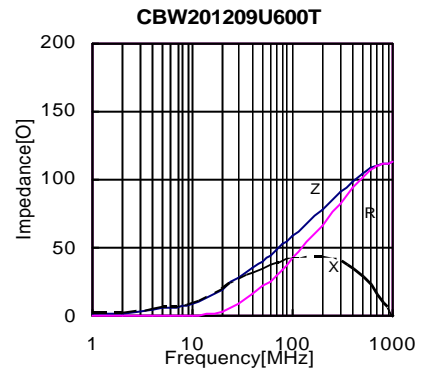
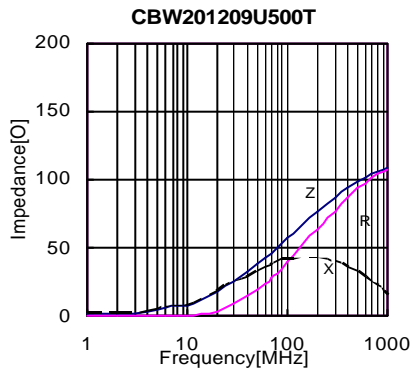
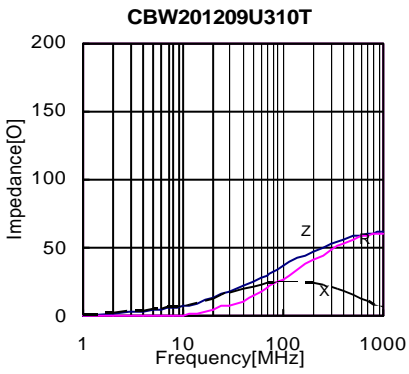
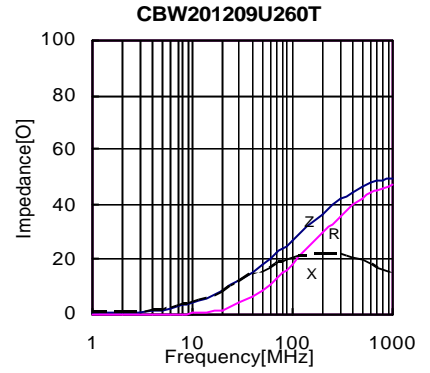
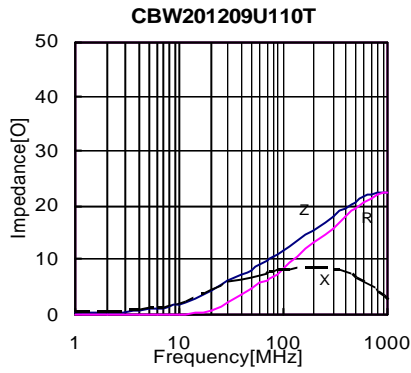
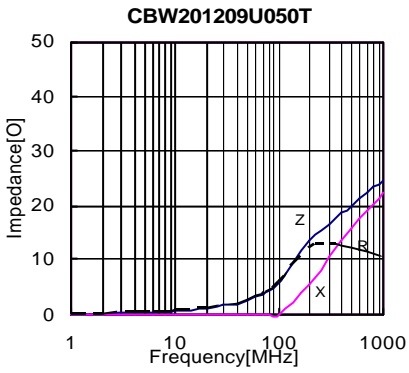
1608 series

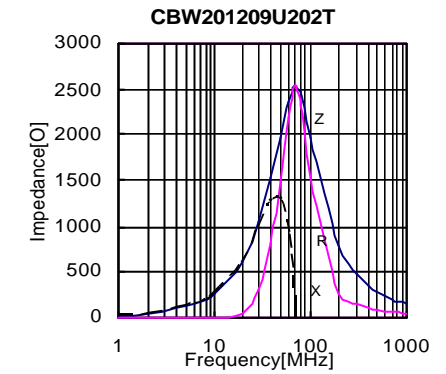
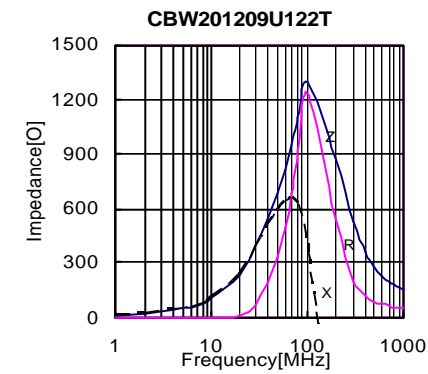
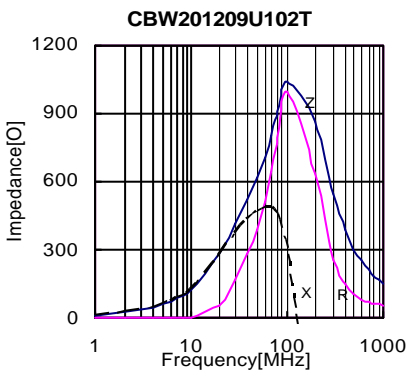
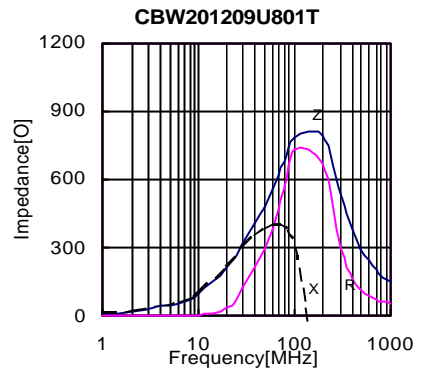
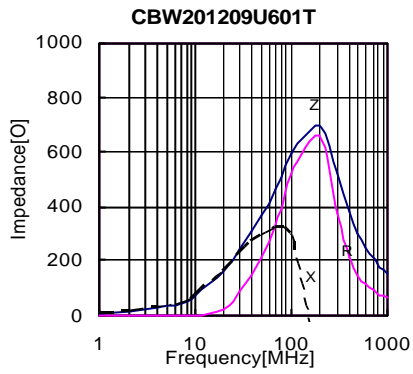
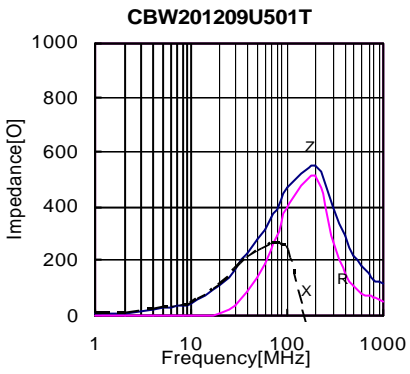
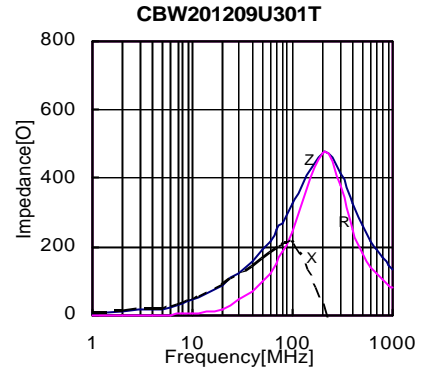
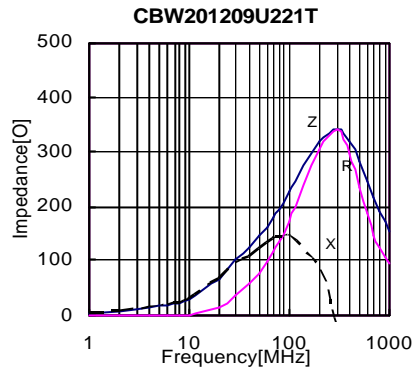
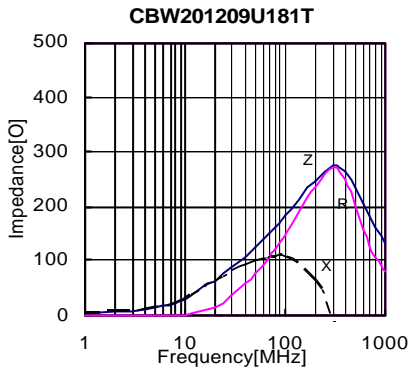




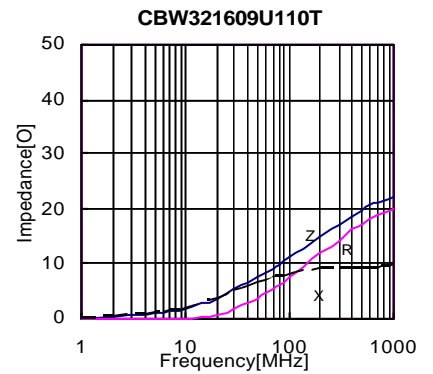
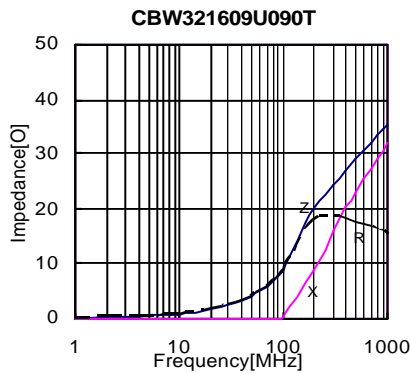
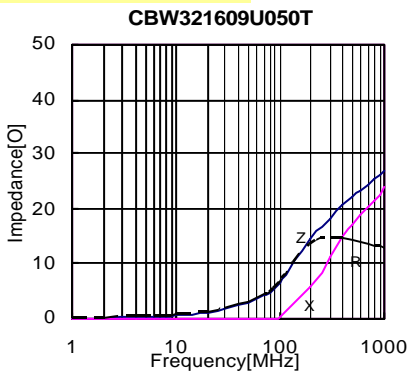


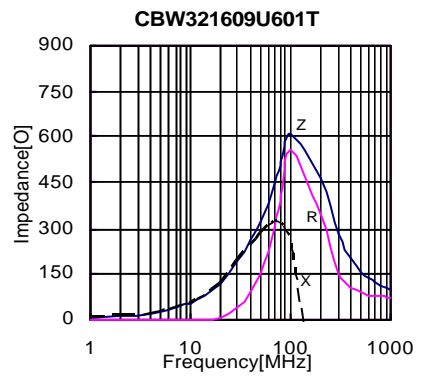
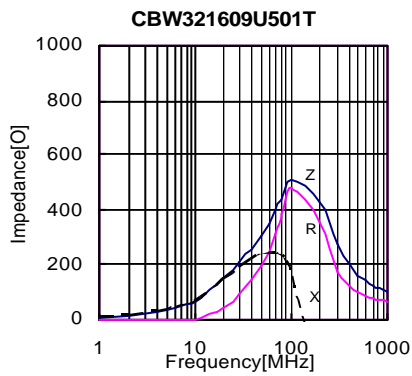
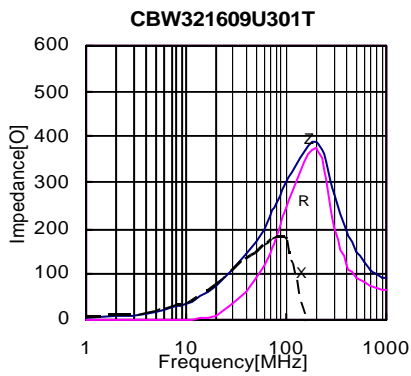
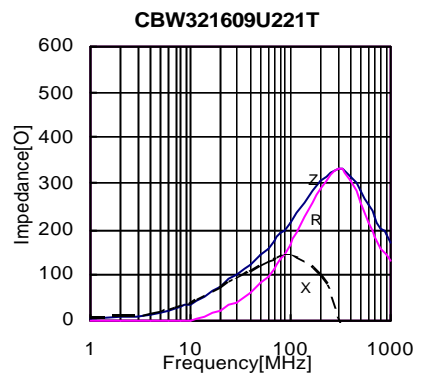
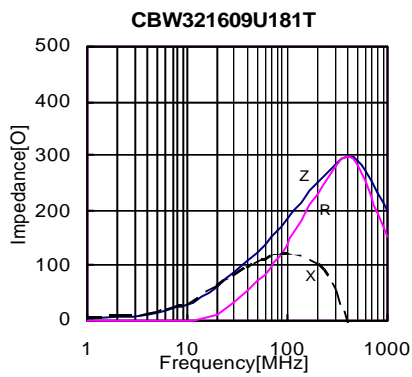
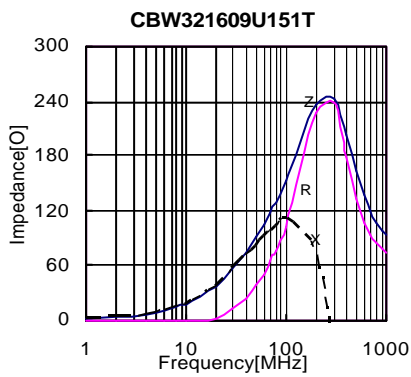
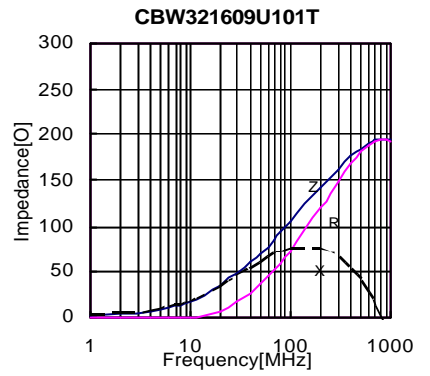
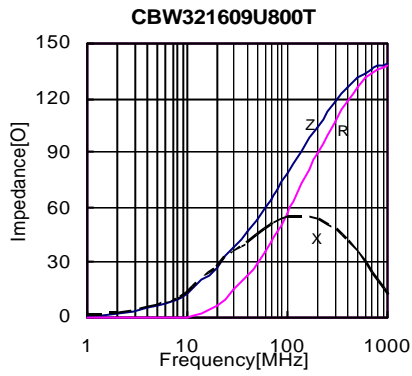
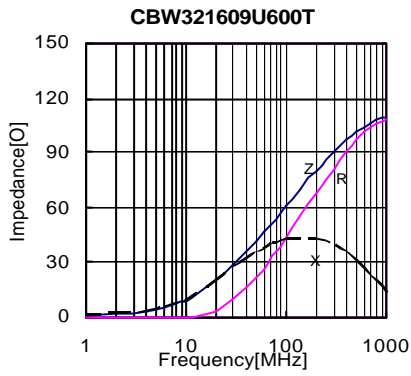
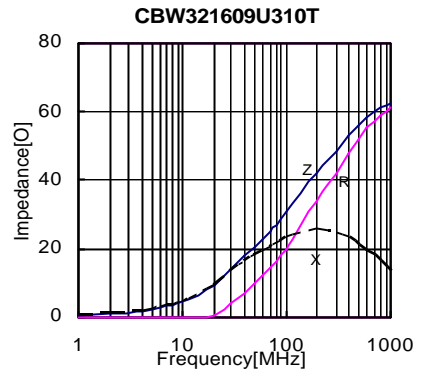
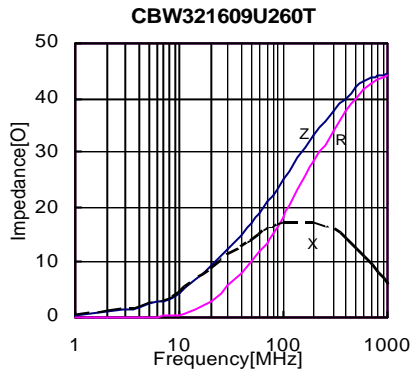
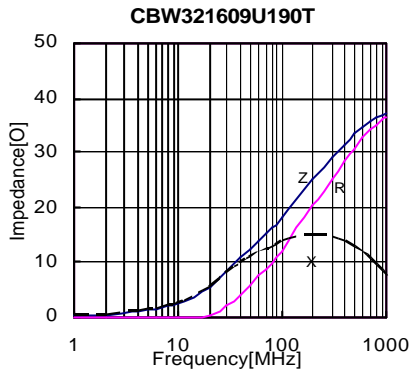
2012 series



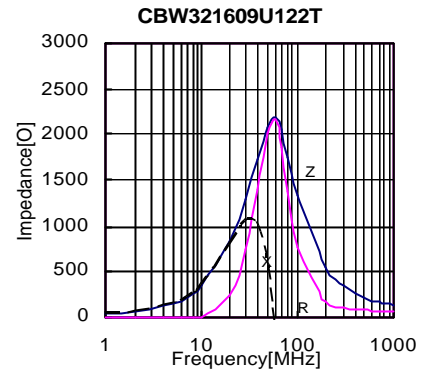
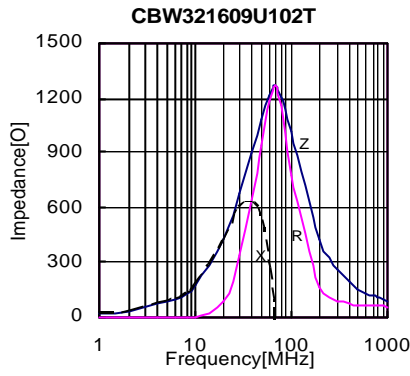
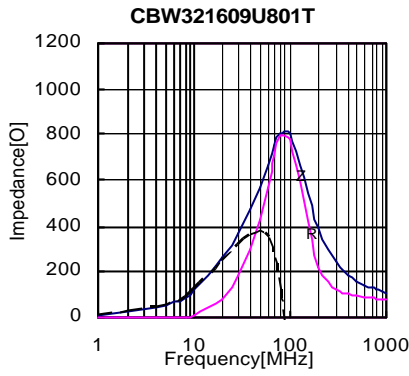


3216 series

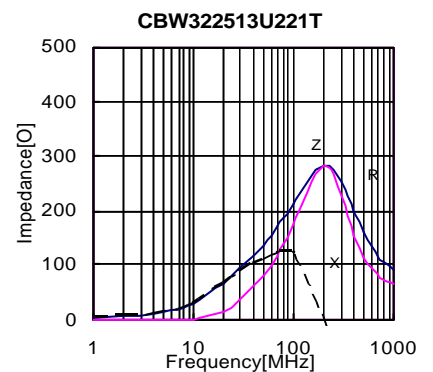
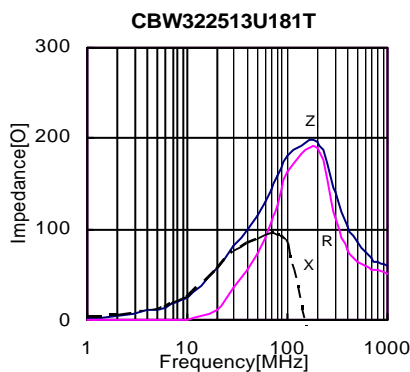
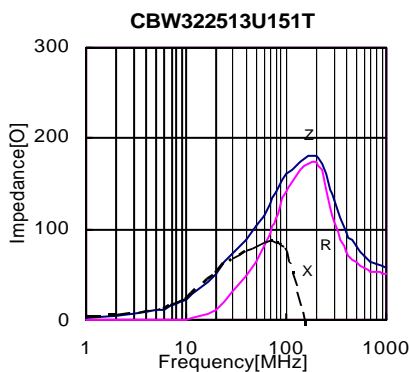
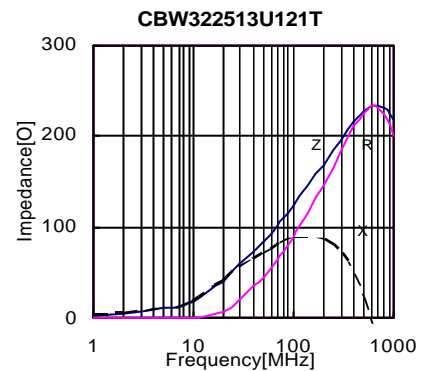
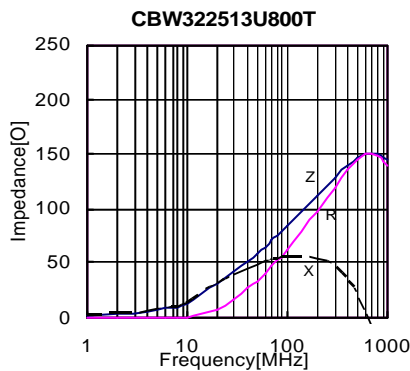
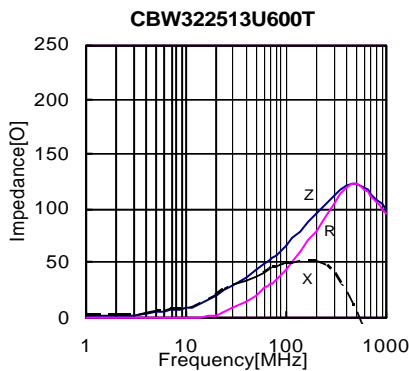
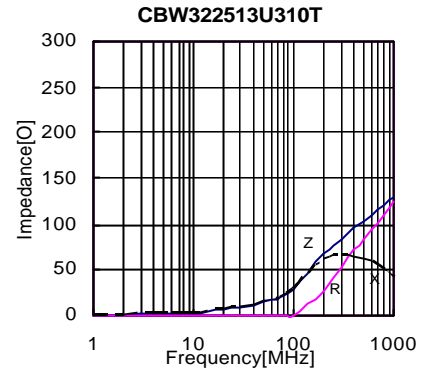
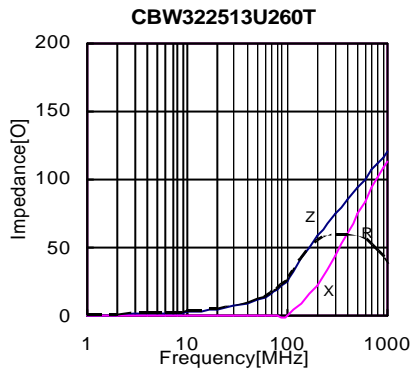
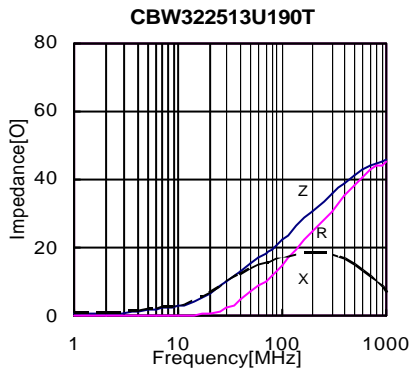


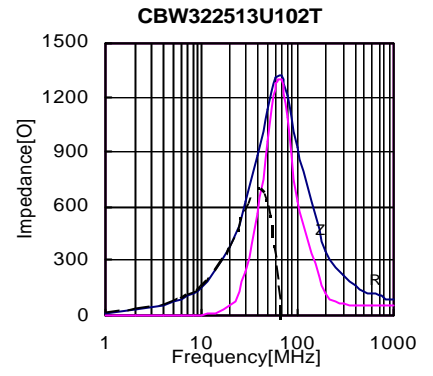
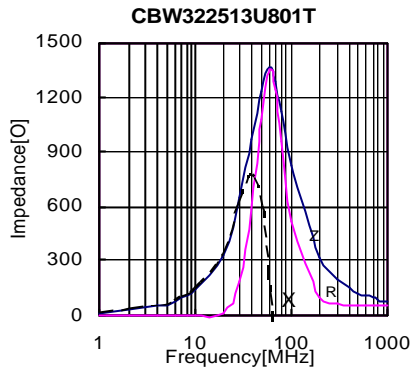
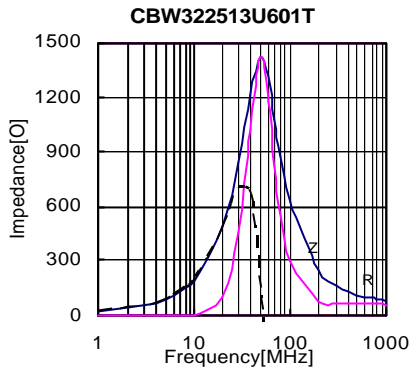




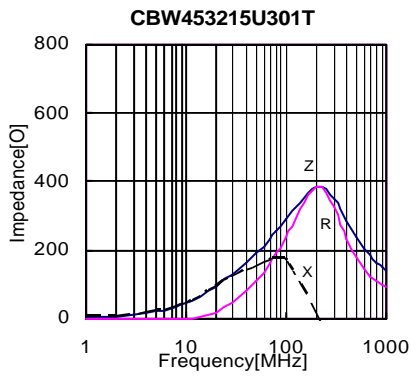
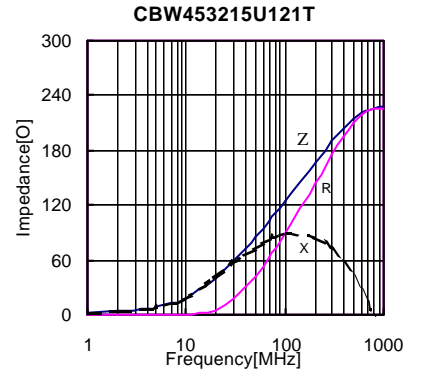
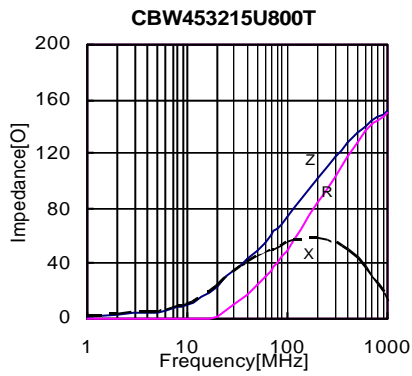
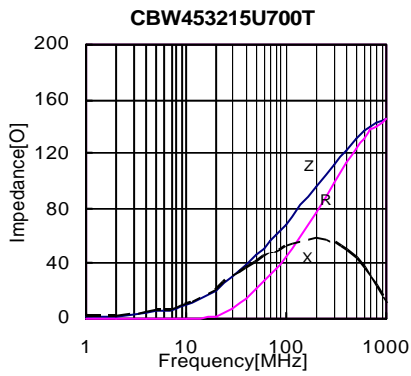
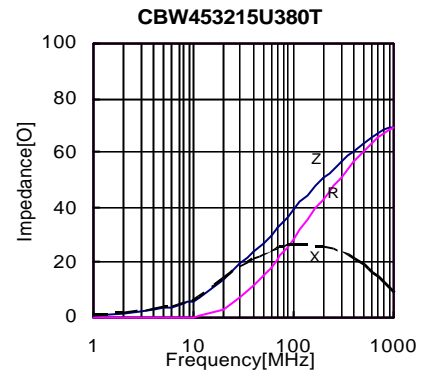
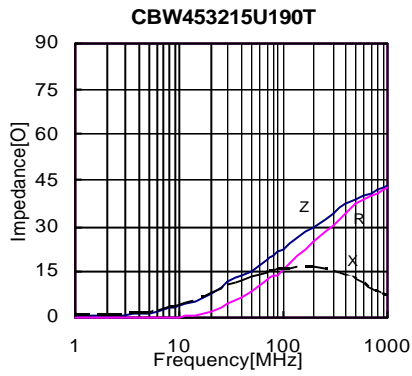
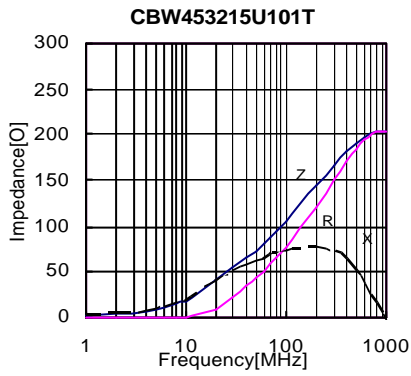


3225 series

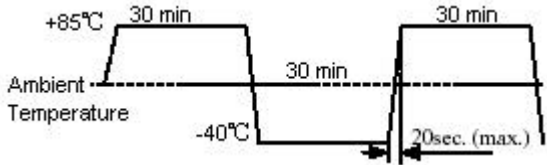


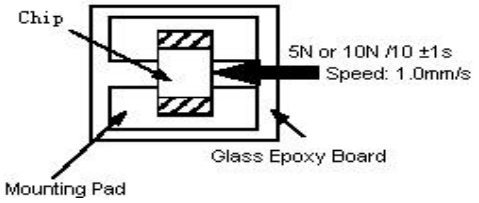
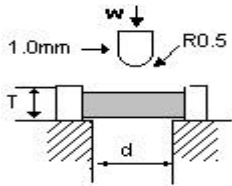


4532 series



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 1003 798 1081"> <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								

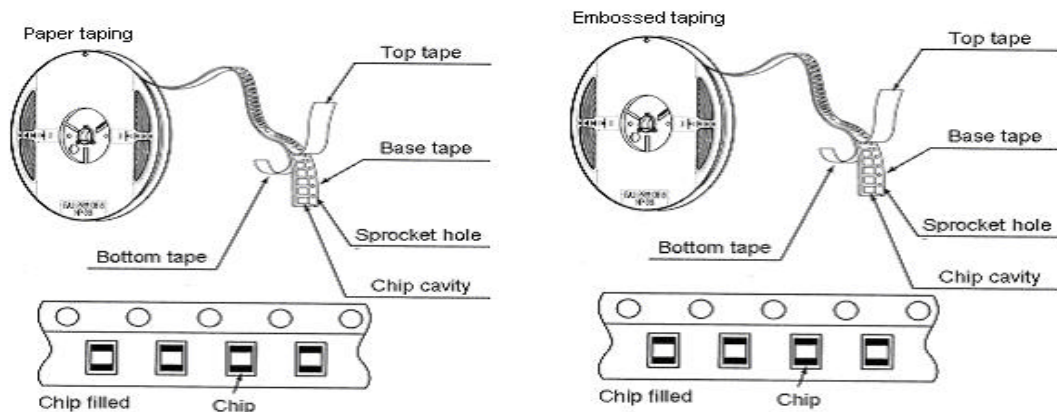
Note: When there are questions concerning, measurement shall be made after  $24 \pm 2$ hrs of recovery under the standard condition.

**PACKAGING**

**STANDAE QUANTITY**

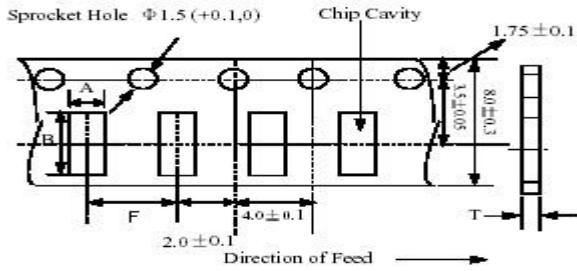
TYPE	100505	160808	201209	321609	321611	322513	451616	453215
Quantity(pcs)	10000	4000	4000	4000	3000	3000	5000	3000

**TAPING DRAWINGS**



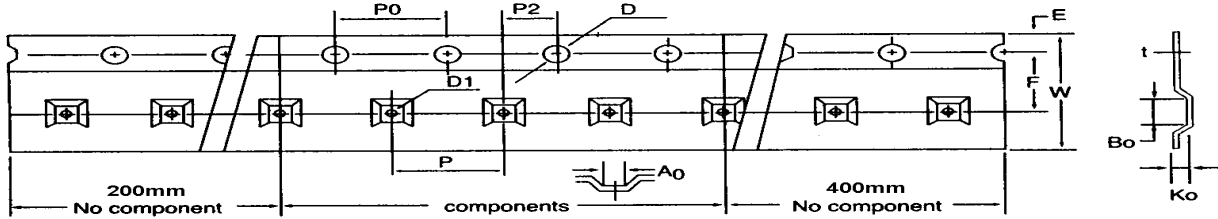
TAPING DIMENSIONS (UNIT: mm)

Paper tape



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

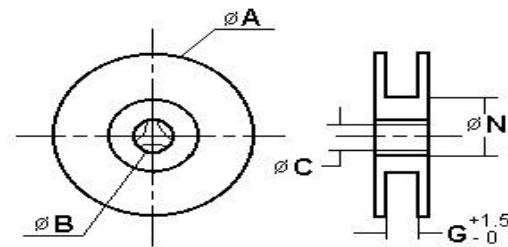
Embossed tape



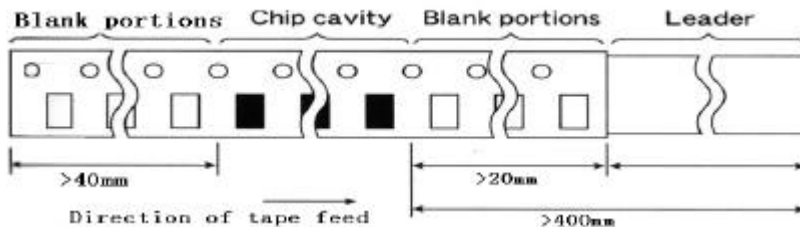
	4532	4516	3225	3216	2012
W	$12.0 \pm 0.2$	$12.0 \pm 0.2$	$8.1 \pm 0.2$	$8.1 \pm 0.2$	$8.1 \pm 0.2$
P	$8.0 \pm 0.10$	$4.0 \pm 0.10$	$4.0 \pm 0.10$	$4.0 \pm 0.10$	$4.0 \pm 0.10$
E	$1.75 \pm 0.10$	$1.75 \pm 0.10$	$1.75 \pm 0.10$	$1.75 \pm 0.10$	$1.75 \pm 0.10$
F	$5.50 \pm 0.10$	$5.50 \pm 0.10$	$3.50 \pm 0.10$	$3.50 \pm 0.10$	$3.50 \pm 0.10$
D	$1.55 \pm 0.05$	$1.55 \pm 0.05$	$1.55 \pm 0.05$	$1.55 \pm 0.05$	$1.55 \pm 0.05$
D1	$1.50^{+0.25}_0$	$1.50^{+0.25}_0$	$1.50^{+0.25}_0$	$1.50^{+0.25}_0$	$1.50^{+0.25}_0$
$P_0$	$4.0 \pm 0.10$	$4.0 \pm 0.10$	$4.0 \pm 0.10$	$4.0 \pm 0.10$	$4.0 \pm 0.10$
$P_{010}$	$40.0 \pm 0.20$	$40.0 \pm 0.20$	$40.0 \pm 0.20$	$40.0 \pm 0.20$	$40.0 \pm 0.20$
$P_2$	$2.0 \pm 0.05$	$2.0 \pm 0.05$	$2.0 \pm 0.05$	$2.0 \pm 0.05$	$2.0 \pm 0.05$
$A_0$	$3.66 \pm 0.10$	$1.93 \pm 0.10$	$2.80 \pm 0.10$	$1.90 \pm 0.10$	$1.52 \pm 0.10$
$B_0$	$4.95 \pm 0.10$	$4.95 \pm 0.10$	$3.50 \pm 0.10$	$3.51 \pm 0.10$	$2.41 \pm 0.10$
t	$0.23 \pm 0.10$	$0.23 \pm 0.10$	$0.23 \pm 0.10$	$0.23 \pm 0.10$	$0.23 \pm 0.10$

REEL DIMENSIONS (UNIT : mm)

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



LEADER AND BLANK PORTION



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

