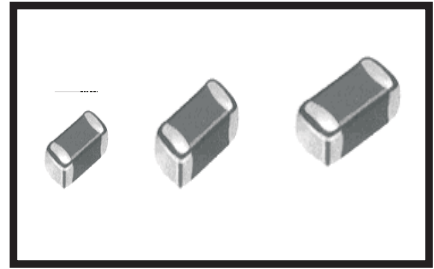


# 鐵氧體疊層片式磁珠 (普通型) FERRITE CHIP BEADS

## 鐵氧體疊層片式磁珠 (普通型) FERRITE CHIP BEADS

OPERATING TEMP.	1005	-40~85℃
	1608	-40~+85℃
	2012	-40~+85℃



### ● 特征 FEATURES

- 在同樣的尺寸下較插裝磁珠可產生較高的阻抗值
- 與傳統的磁珠不同，片式磁珠無引線，只要簡單的安裝到PCB板上就可抑制EMI和RFI
- 磁珠的形狀和尺寸都符合EIA標準，可以利用SMT設備進行自動貼裝
- 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.

### ● 應用 APPLICATIONS

- 用于數據傳輸綫、信號綫、電源部分及回路的抗干擾。
- Redialed noise suppression on digital product clock lines、signal lines and suppression noise on circuit.

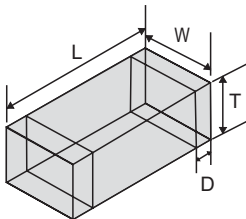
### ● 產品規格型號的表示方法 ORDERING CODE

<u>CBG</u>	<u>201209</u>	<u>U</u>	<u>121</u>	<u>T</u>
①	②	③	④	⑤

① 產品代號 Product Code		② 規格尺寸(L×W×T) (mm) Dimensions		③ 材料代號 Material Code	④ 阻抗(Ω) Impedance		⑤ 包裝方式 Packaging Style	
CBG	疊層片式通用型磁珠 Multilayer ordinary chip beads	100505	1.0×0.5×0.5	U	實例 Example		T	卷帶盤裝 Tape & Reel
		160808	1.6×0.8×0.8		110	11	B	散裝 Bulk
		201209	2.0×1.2×0.9		121	120		
		321609	3.2×1.6×0.9		221	220		
		322513	3.2×2.5×1.3		102	1000		
		451616	4.5×1.6×1.6					
		453215	4.5×3.2×1.5					

### ● 外形尺寸 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)

• 電性能參數 ELECTRICAL CHARACTERISTICS

1005 TYPE

Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	Ir (mA)Max
CBG100505U070	0~11	0.10	300
CBG100505U190	12~25	0.10	300
CBG100505U260	26 $\pm$ 25%	0.15	300
CBG100505U310	31 $\pm$ 25%	0.20	300
CBG100505U360	36 $\pm$ 25%	0.20	300
CBG100505U600	60 $\pm$ 25%	0.35	200
CBG100505U101	100 $\pm$ 25%	0.50	150
CBG100505U121	120 $\pm$ 25%	0.50	150
CBG100505U151	150 $\pm$ 25%	0.55	150
CBG100505U201	200 $\pm$ 25%	0.60	100
CBG100505U301	300 $\pm$ 25%	0.80	100
CBG100505U501	500 $\pm$ 25%	1.1	100
CBG100505U601	600 $\pm$ 25%	1.3	100
CBG100505U801	800 $\pm$ 25%	1.4	50
CBG100505U102	1000 $\pm$ 25%	1.60	25
CBG100505U122	1200 $\pm$ 25%	1.80	25

1608 TYPE

Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	Ir (mA)Max
CBG160808U070	0~11	0.10	800
CBG160808U150	9~21	0.10	800
CBG160808U310	31 $\pm$ 25%	0.10	500
CBG160808U700	70 $\pm$ 25%	0.20	300
CBG160808U800	80 $\pm$ 25%	0.20	300
CBG160808U101	100 $\pm$ 25%	0.30	200
CBG160808U121	120 $\pm$ 25%	0.30	200
CBG160808U151	150 $\pm$ 25%	0.35	200
CBG160808U181	180 $\pm$ 25%	0.45	200
CBG160808U221	220 $\pm$ 25%	0.45	200
CBG160808U301	300 $\pm$ 25%	0.50	150
CBG160808U501	500 $\pm$ 25%	0.60	150
CBG160808U601	600 $\pm$ 25%	0.60	100
CBG160808U801	800 $\pm$ 25%	0.70	100
CBG160808U102	1000 $\pm$ 25%	0.80	100
CBG160808U122	1200 $\pm$ 25%	0.85	100
CBG160808U152	1500 $\pm$ 25%	0.85	50
CBG160808U182	1800 $\pm$ 25%	1.10	50
CBG160808U202	2000 $\pm$ 25%	1.10	50

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Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	I <sub>r</sub> (mA)Max
CBG201209U050	0~15	0.08	900
CBG201209U110	7~15	0.10	900
CBG201209U260	26±25%	0.10	900
CBG201209U310	31±25%	0.10	900
CBG201209U500	50±25%	0.15	900
CBG201209U600	60±25%	0.15	900
CBG201209U800	80±25%	0.18	500
CBG201209U101	100±25%	0.18	400
CBG201209U121	120±25%	0.20	400
CBG201209U151	150±25%	0.20	400
CBG201209U181	180±25%	0.20	300
CBG201209U221	220±25%	0.20	300
CBG201209U301	300±25%	0.35	300
CBG201209U501	500±25%	0.40	300
CBG201209U601	600±25%	0.40	300
CBG201209U801	800±25%	0.45	200
CBG201209U102	1000±25%	0.45	200
CBG201209U122	1200±25%	0.60	100
CBG201209U152	1500±25%	0.70	100
CBG201209U202	2000±25%	0.90	50

3216 TYPE

Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	I <sub>r</sub> (mA)Max
CBG321609U050	0~15	0.10	1000
CBG321609U110	7~15	0.10	1000
CBG321609U260	26±25%	0.10	1000
CBG321609U310	31±25%	0.10	1000
CBG321609U600	60±25%	0.15	1000
CBG321609U800	80±25%	0.15	1000
CBG321609U121	120±25%	0.25	1000
CBG321609U151	150±25%	0.30	400
CBG321609U181	180±25%	0.30	400
CBG321609U221	220±25%	0.35	400
CBG321609U301	300±25%	0.40	400
CBG321609U501	500±25%	0.45	300
CBG321609U601	600±25%	0.45	300
CBG321609U801	800±25%	0.55	300
CBG321609U102	1000±25%	0.55	300
CBG321609U122	1200±25%	0.60	100

**3225 TYPE**

Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	Ir (mA)Max
CBG322513U190	12~25	0.10	1000
CBG322513U260	26 $\pm$ 25%	0.10	1000
CBG322513U310	31 $\pm$ 25%	0.10	1000
CBG322513U600	60 $\pm$ 25%	0.15	1000
CBG322513U800	80 $\pm$ 25%	0.20	400
CBG322513U101	100 $\pm$ 25%	0.20	400
CBG322513U121	120 $\pm$ 25%	0.20	400
CBG322513U151	150 $\pm$ 25%	0.30	400
CBG322513U181	180 $\pm$ 25%	0.40	400
CBG322513U221	220 $\pm$ 25%	0.40	400
CBG322513U301	300 $\pm$ 25%	0.40	400
CBG322515U501	500 $\pm$ 25%	0.40	300
CBG322513U601	600 $\pm$ 25%	0.40	300
CBG322513U801	800 $\pm$ 25%	0.40	300
CBG322513U102	1000 $\pm$ 25%	0.40	300

**4516 TYPE**

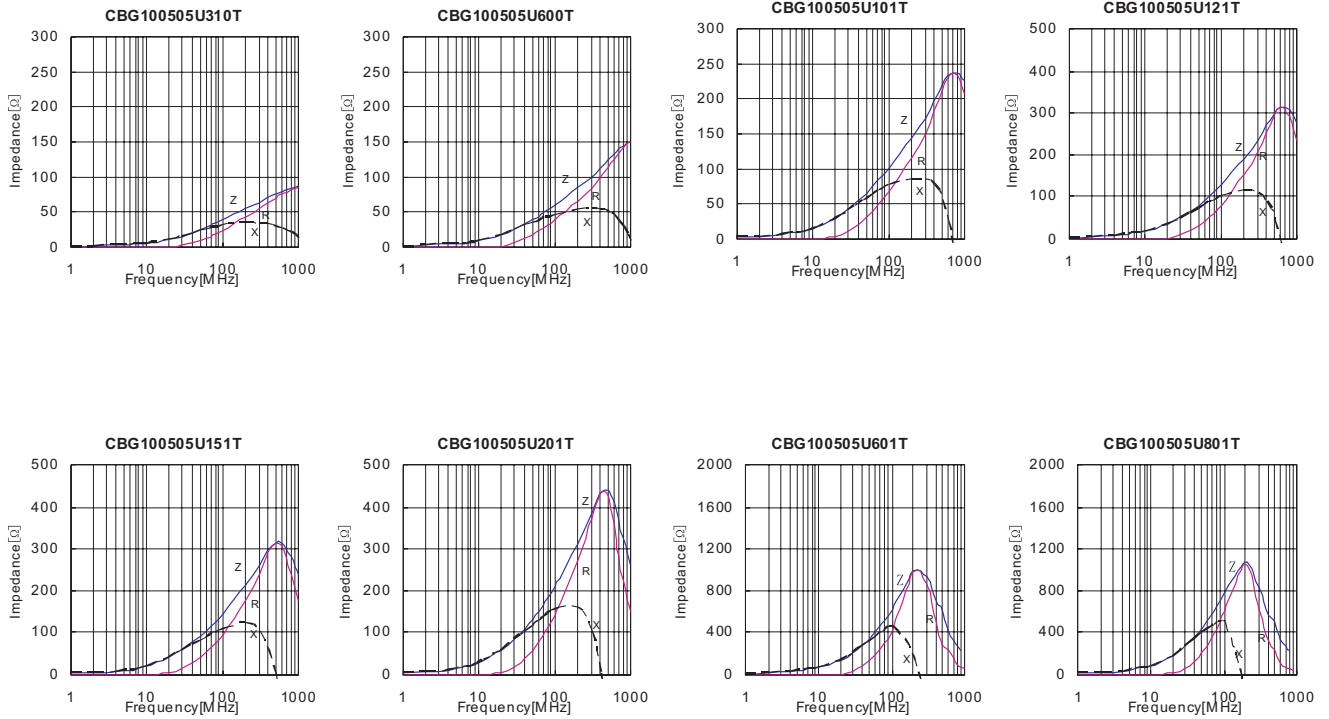
Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	Ir (mA)Max
CBG451616U190	12~25	0.10	1000
CBG451616U260	26 $\pm$ 25%	0.10	1000
CBG451616U310	31 $\pm$ 25%	0.15	1000
CBG451616U600	60 $\pm$ 25%	0.20	1000
CBG451616U700	70 $\pm$ 25%	0.25	1000
CBG451616U800	80 $\pm$ 25%	0.30	1000
CBG451616U900	90 $\pm$ 25%	0.35	1000
CBG451616U121	120 $\pm$ 25%	0.40	500
CBG451616U151	150 $\pm$ 25%	0.40	500
CBG451616U221	220 $\pm$ 25%	0.45	500
CBG451616U301	300 $\pm$ 25%	0.45	500
CBG451616U501	500 $\pm$ 25%	0.50	200
CBG451616U601	600 $\pm$ 25%	0.50	200
CBG451616U801	800 $\pm$ 25%	0.55	200

**4532 TYPE**

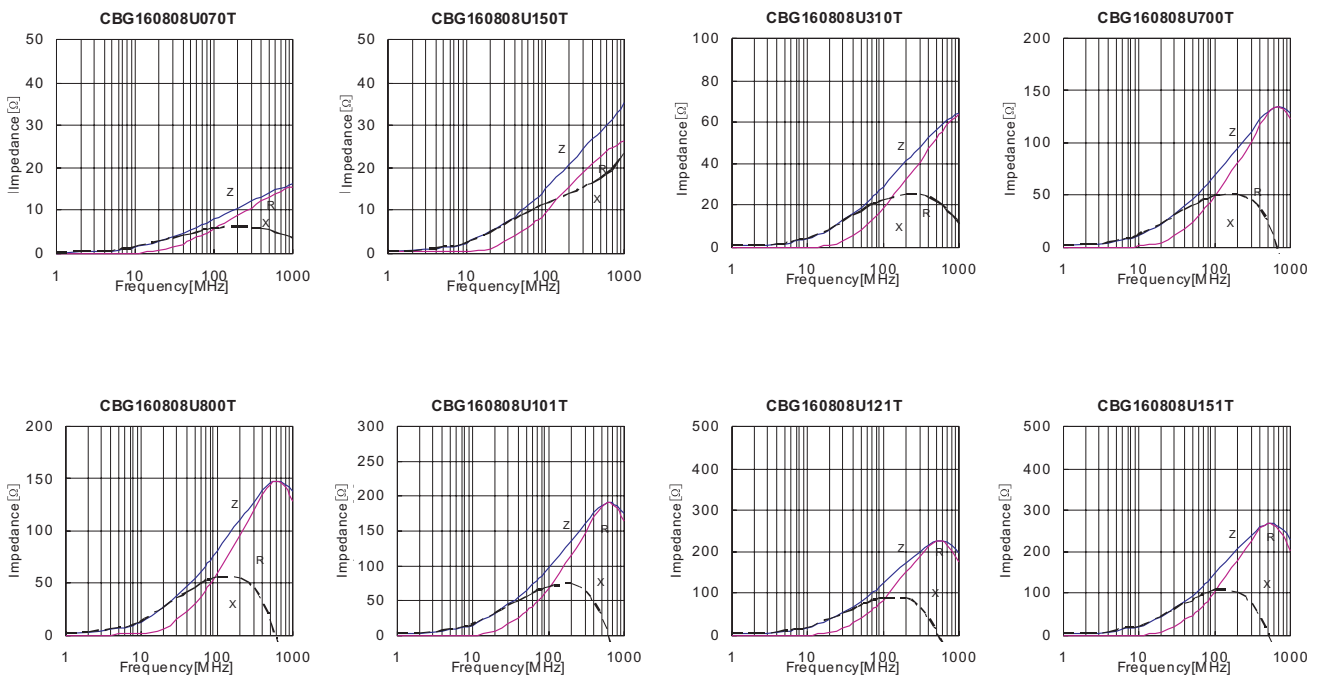
Part No.	Impedance( $\Omega$ ) At 100MHz	DCR ( $\Omega$ )Max	Ir (mA)Max
CBG453215U190	12~25	0.10	1000
CBG453215U380	38 $\pm$ 25%	0.15	1000
CBG453215U700	70 $\pm$ 25%	0.20	1000
CBG453215U800	80 $\pm$ 25%	0.20	1000
CBG453215U101	100 $\pm$ 25%	0.20	500
CBG453215U121	120 $\pm$ 25%	0.25	500
CBG453215U151	150 $\pm$ 25%	0.25	500
CBG453215U221	220 $\pm$ 25%	0.30	300
CBG453215U301	300 $\pm$ 25%	0.30	300
CBG453215U601	600 $\pm$ 25%	0.40	200
CBG453215U801	800 $\pm$ 25%	0.45	200
CBG453215U102	1000 $\pm$ 25%	0.50	200

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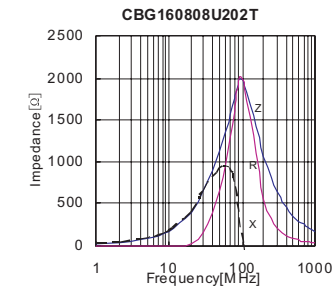
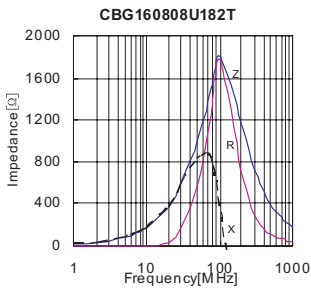
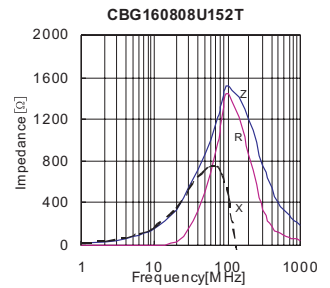
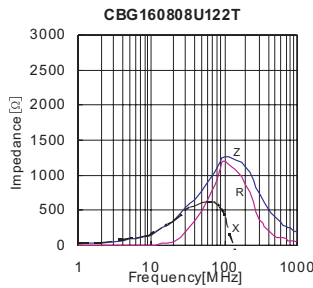
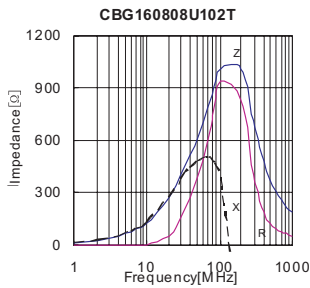
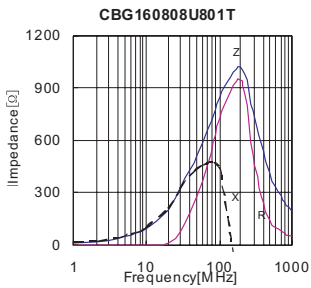
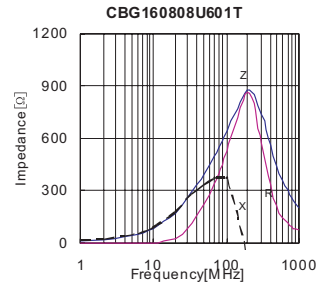
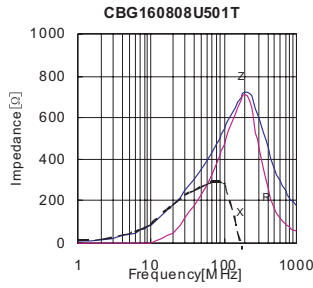
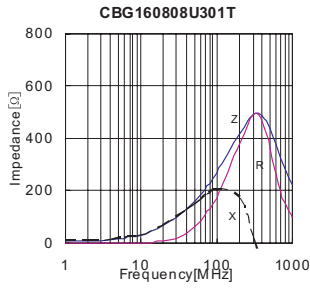
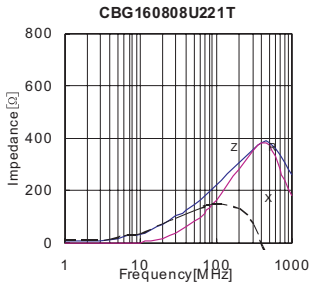
1005 SERIES



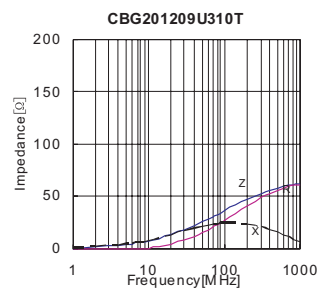
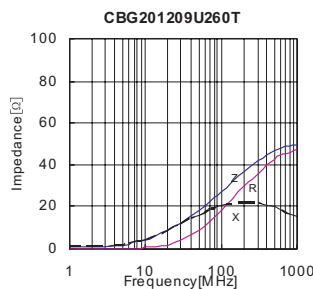
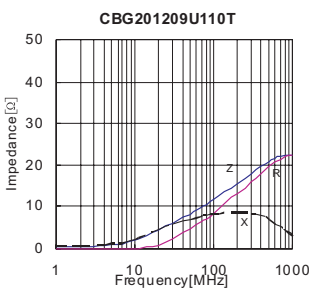
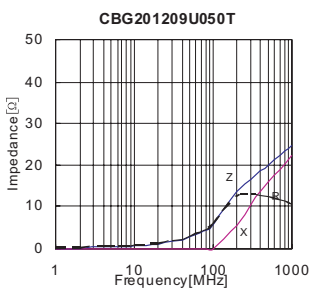
1680 SERIES



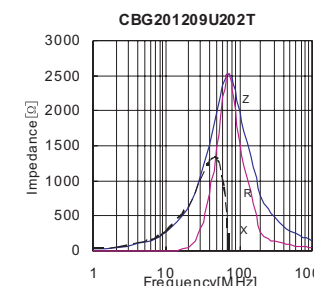
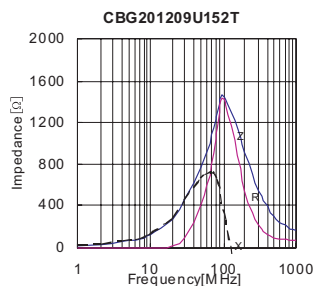
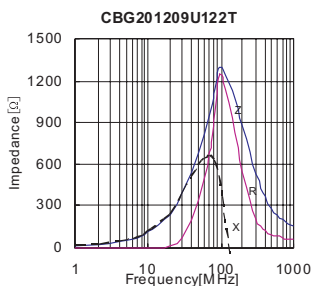
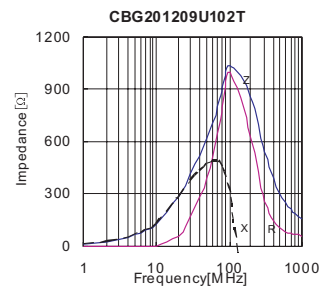
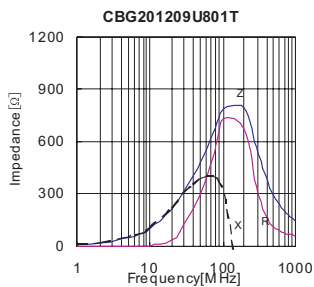
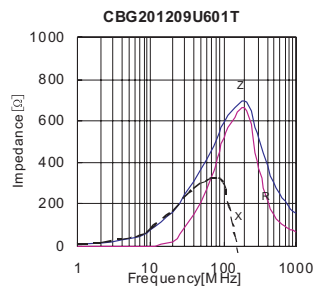
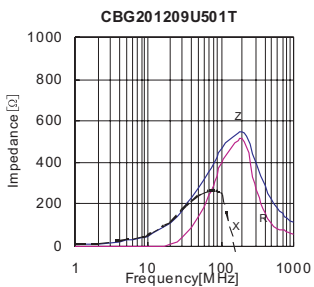
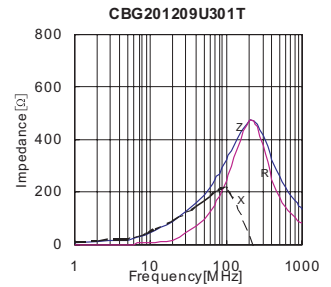
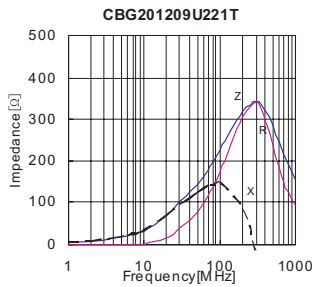
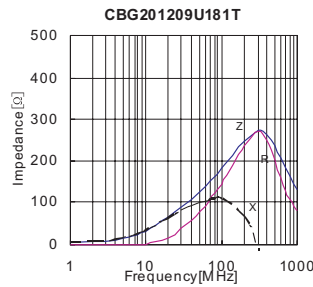
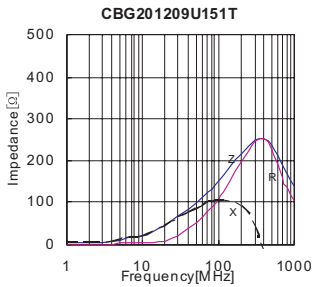
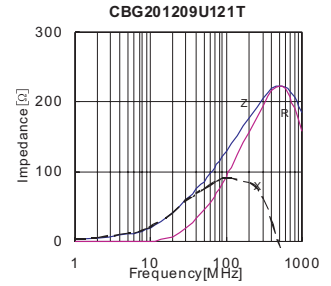
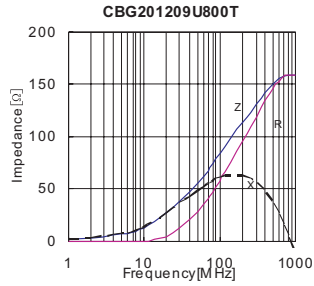
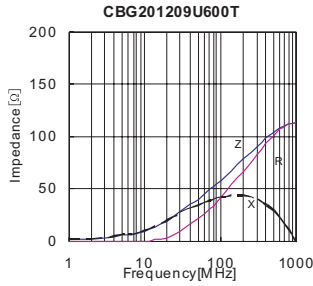
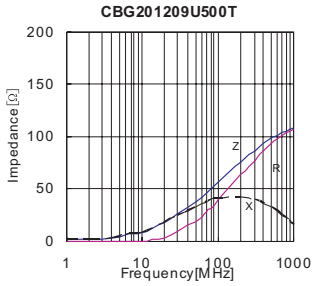
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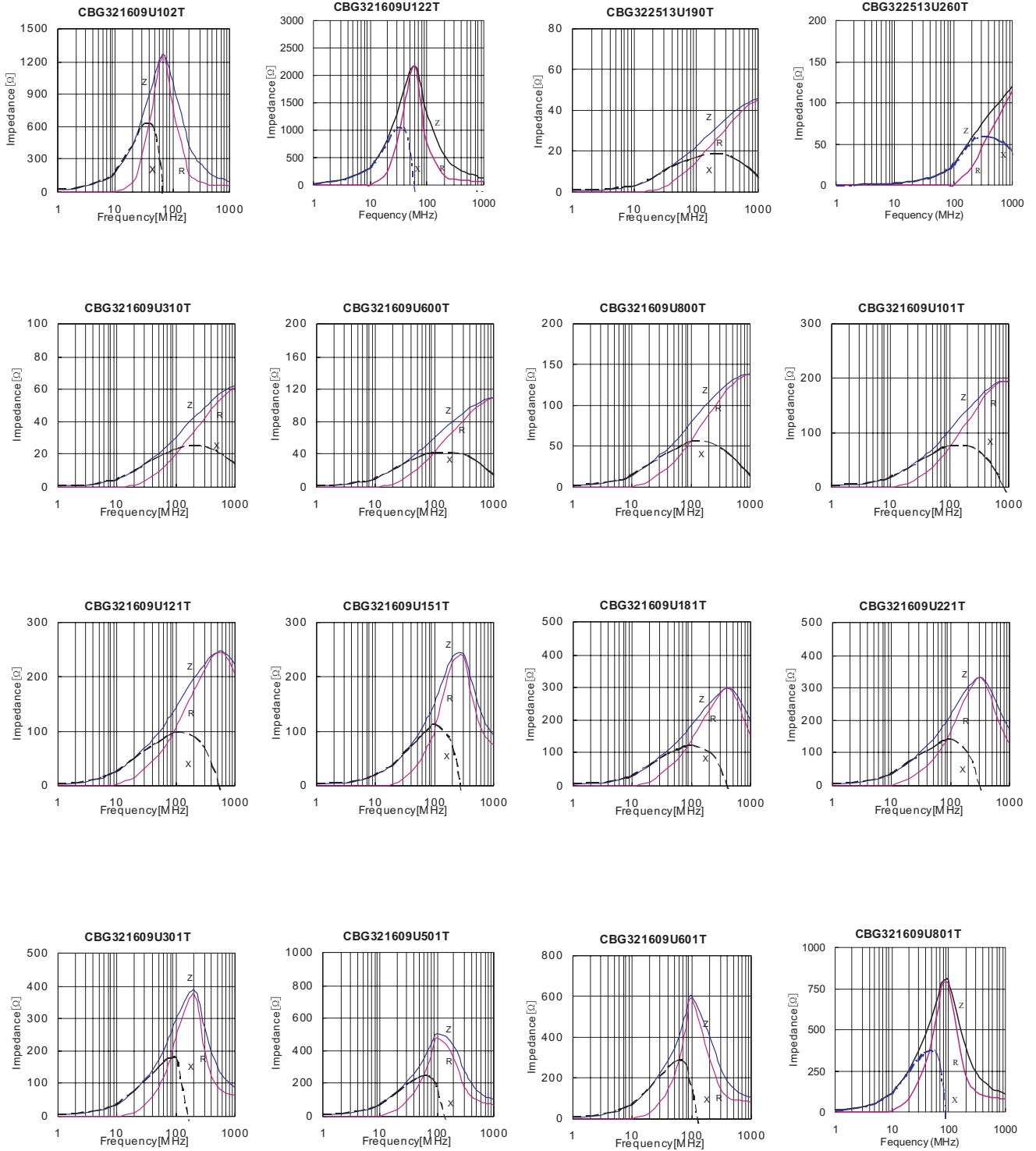


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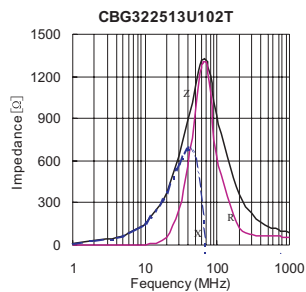
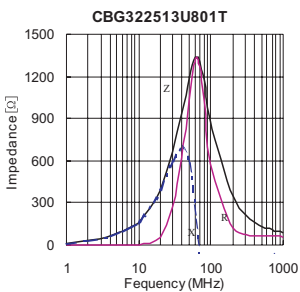
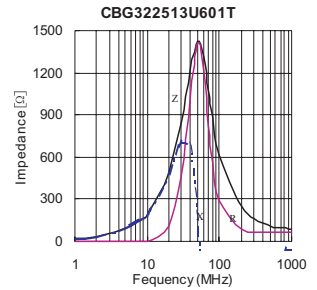
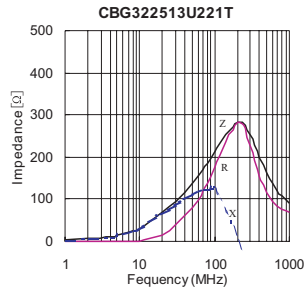
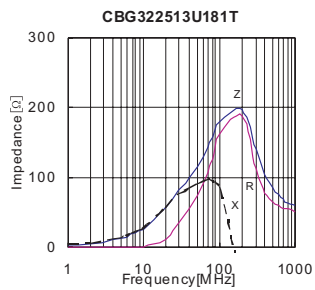
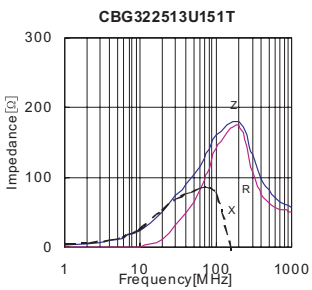
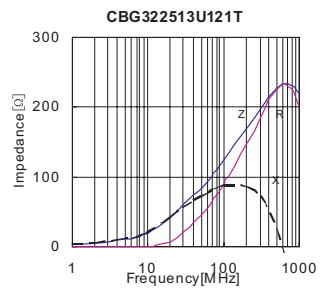
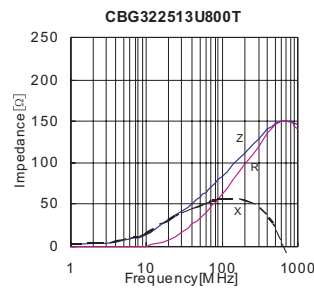
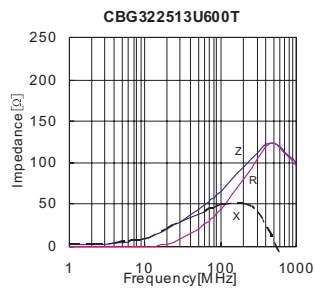
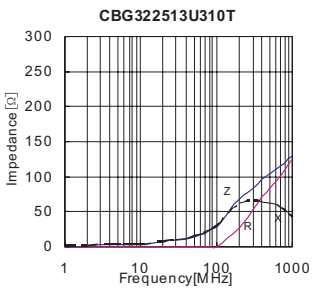
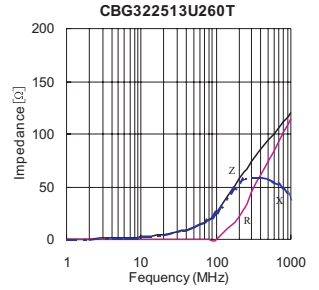
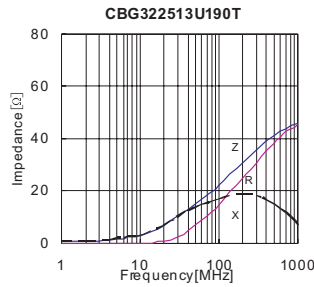
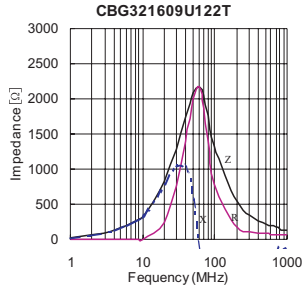
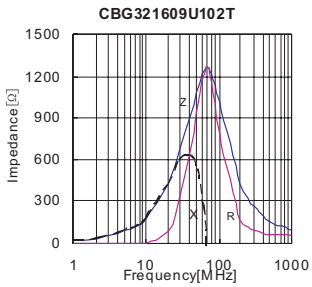
■ 鐵氧體疊層片式磁珠 (普通型)  
FERRITE CHIP BEADS

3216SERIES



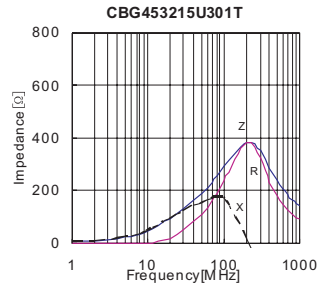
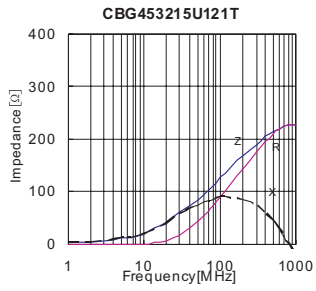
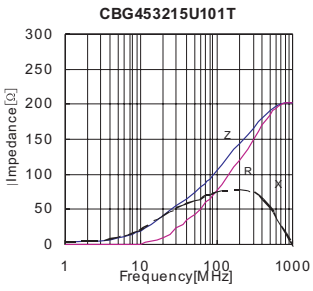
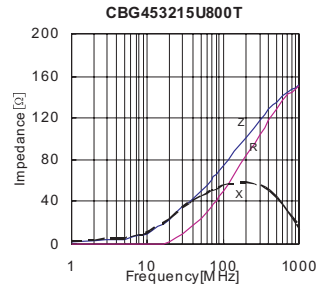
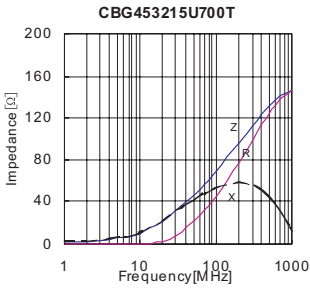
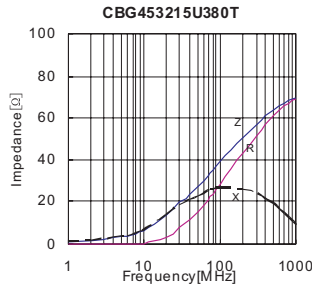
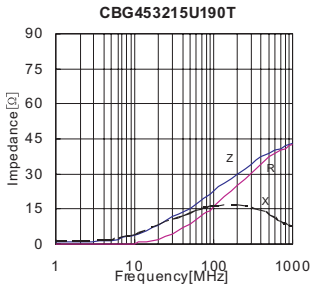


鐵氧體疊層片式磁珠 (普通型)  
FERRITE CHIP BEADS

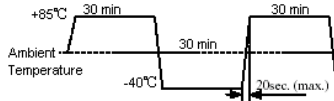


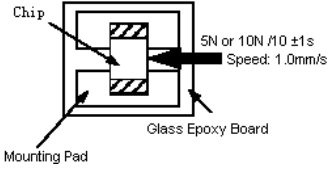
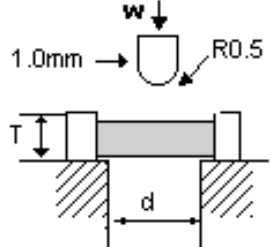
■ 鐵氧體疊層片式磁珠 (普通型)  
FERRITE CHIP BEADS

4532SERIES



■ 可靠性測試  
RELIABILITY TESTING

Type	Item	Specified value	Test methods
1	Operating temperature range	-40 to +125°C	
2	Storage temperature range	-10 to +40°C	
3	Solderability	At least 90% of terminal electrode is covered by new solder	Solder temperature: 230±5°C Duration: 4±1S Preheating temperature: 120 to 150°C Preheating time: 60S immersion into the colophony flux for 3 to 5 sec. 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°C Duration: 10±0.5S Preheating temperature: 120 to 150°C Preheating time: 60S immersion into the colophony flux for 3 to 5 sec. 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 ±30% Inductor change: within ±10% Q value change(ferrite):within ±30% Q value change(ceramic):within ±20%	Temperature: -40°C for 30±3min +85°C 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°C Duration: 500 <sup>+24</sup> <sub>-0</sub> hrs
7	Loading at high temperature	Appearance: No significant abnormality. Impedance change: within ±30% Inductor change: within ±10% Q value change(ferrite):within ±30% Q value change(ceramic):within ±20%	Temperature: 85±2°C Duration: 1000 <sup>+24</sup> <sub>-0</sub> hrs Applied current: Rated current
8	Loading under Damp Heat	Appearance: No significant abnormality. Impedance change: within ±30% Inductor change : within ±10% Q value change(ferrite):within ±30% Q value change(ceramic):within ±20%	Temperature: 55±2°C Duration: 500 <sup>+24</sup> <sub>-0</sub> 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 $\pm 30\%$ Inductor change: within $\pm 10\%$ Q value change (ferrite): within $\pm 30\%$ Q value change (ceramic): within $\pm 20\%$	Amplitude: 1.5mm Directions: 2hrs each in X Y Z direction Frequency range: 10 to 55 to 10Hz (min) Aookued firce: 5N force for 1005 and 1608 series. 10N force for 2012、3216、3225、4516、4532 series. Keep time: $10 \pm 1S$								
10	Adhesion of electrode	The termination and body should be no damage	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="454 1209 949 1288"> <tbody> <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> </tbody> </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.

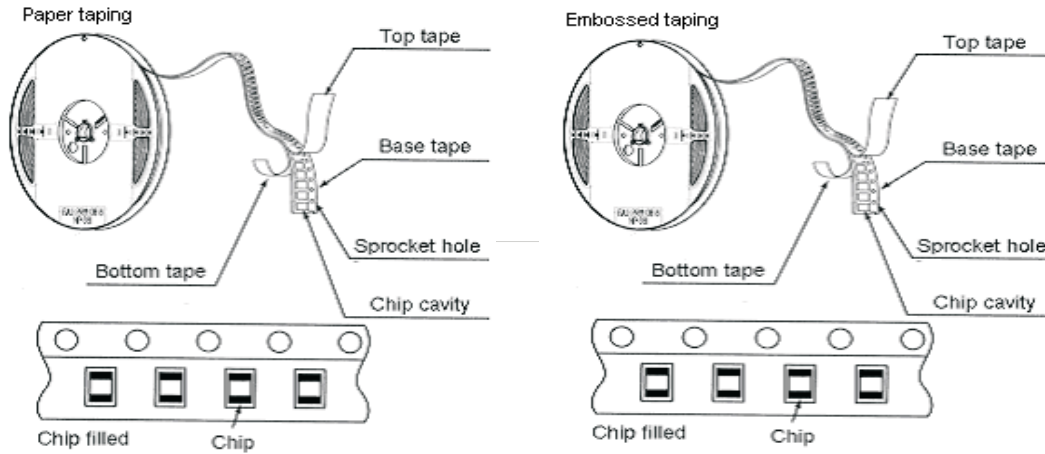
## 包裝PACKAGING

(VHF、CMI、CBG、CBW、CBH、CBY、CBA、CBM SERIES)

### STANDAE QUANTITY

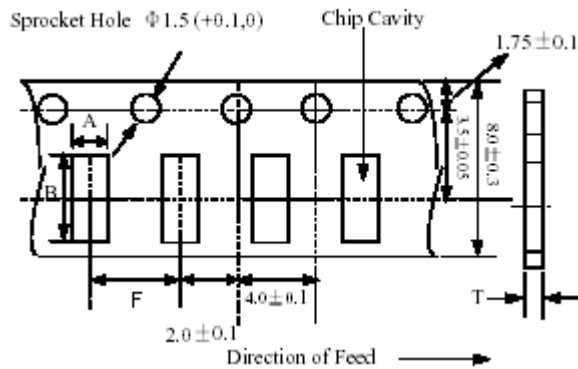
Type	1000505	160808	201209	321609	321611	322513	451616	453215	321609 (磁珠排)
Quantity(pcs)	10000	4000	4000	4000	3000	3000	5000	3000	3000

### TAPING DRAWINGS



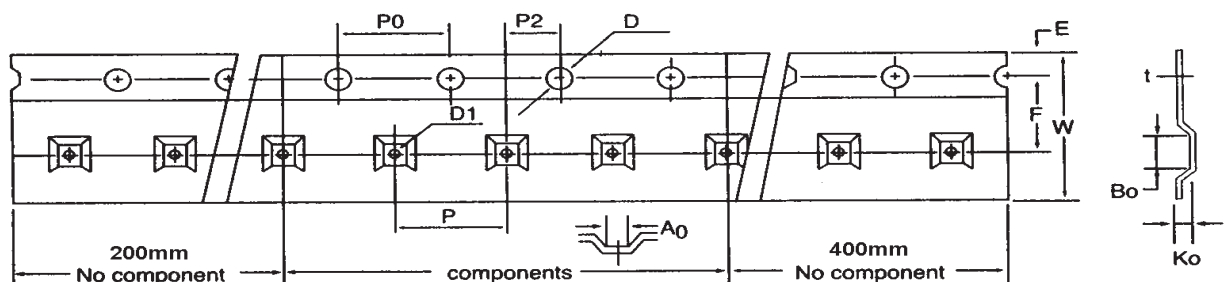
### TAPING DIMENSIONS (UNIT: mm)

#### Paper tape



Part NO.	A	B	F	T
100505	$0.65 \pm 0.1$	$1.15 \pm 0.1$	$2.0 \pm 0.05$	0.62max
160808	$1.1 \pm 0.1$	$1.9 \pm 0.1$	$4.0 \pm 0.05$	1.1max
201209	$1.5 \pm 0.1$	$2.3 \pm 0.1$	$4.0 \pm 0.05$	1.1max
321609	$1.9 \pm 0.1$	$3.5 \pm 0.1$	$4.0 \pm 0.05$	0.97max

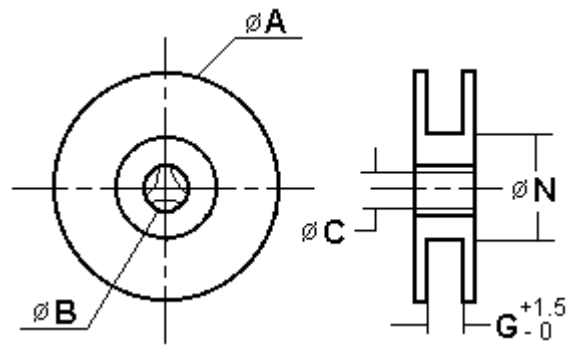
#### Embossed tape



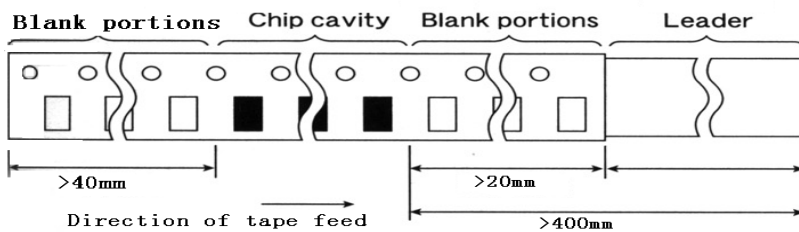
	2012	3216	3225	4516	4532	3216(磁珠排)
W	8.1+/-0.2	8.1+/-0.2	8.1+/-0.2	12.0+/-0.2	12.0+/-0.2	8.1+/-0.2
P	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	8.0+/-0.10	4.0+/-0.10
E	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10
F	3.50+/-0.10	3.50+/-0.10	3.50+/-0.10	5.50+/-0.10	5.50+/-0.10	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	1.55+/-0.05
D1	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>
P <sub>0</sub>	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10
P <sub>0</sub> 10	40.0+/-0.20	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	2.0+/-0.05
A <sub>0</sub>	1.52+/-0.10	1.90+/-0.10	2.80+/-0.10	1.93+/-0.10	3.66+/-0.10	1.90+/-0.10
B <sub>0</sub>	2.41+/-0.10	3.51+/-0.10	3.50+/-0.10	4.95+/-0.10	4.95+/-0.10	3.51+/-0.10
t	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10
K <sub>0</sub>	1.35+/-0.10	1.27+/-0.10	1.55+/-0.10	1.85+/-0.10	1.74+/-0.10	1.10+/-0.10

• REEL DIMENSIONS(UNIT:mm)

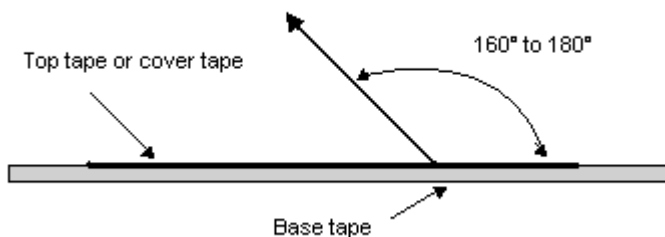
	A	B	C	N	G
CF-8	178±2.0	22±2.0	12.5±1.5	57±2.0	8
CF-12	330±2.0	22±2.0	12.5±1.5	98±2.0	12



• LEADER AND BLANK PORTION



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



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