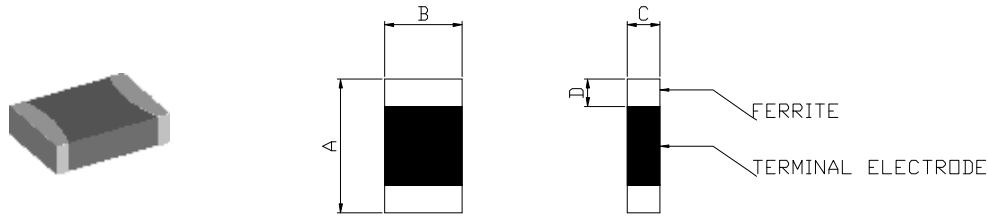


## MECHANICALS



### I FEATURE

1. The small size chips generating high impedance.
2. Either flow or reflow soldering methods can be used due to electroplating of the terminal electrodes.
3. High reliability due to an entirely monolithic structure
4. Low DC resistance structure of electrode prevents wasteful electric power consumption

### I APPLICATIONS

1. computers and peripheral equipment;
2. VCRs, Television, pagers
3. Cellular phones;
4. digital communication equipment;
5. Various electronics equipments;
6. Circuit where a stable ground is unavailable.

### I 特性

1. 尺寸小同時具有高阻值
2. 由于外電極是電鍍而成，適用 flow 和 reflow 兩種焊錫方式
3. 單石結構具有高信賴性
4. 電極之低直流阻抗可避免無謂的電力損耗

### I 用途

1. 電腦及周邊設備
2. 錄放影機，電視機，呼叫器
3. 手提電話
4. 數位通訊設備
5. 個種電子設備
6. 缺乏穩定基板之電路

### I TYPE AND DIMENSIONS

| TYPE                | A                        | B                        | C                        | D                        |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| MB453215<br>(1812)  | 4.5±0.2<br>(0.177±0.008) | 3.2±0.2<br>(0.126±0.008) | 1.5±0.2<br>(0.059±0.008) | 0.5±0.3<br>(0.020±0.012) |
| MB451616<br>(1806)  | 4.5±0.2<br>(0.177±0.008) | 1.6±0.2<br>(0.063±0.008) | 1.6±0.2<br>(0.063±0.008) | 0.5±0.3<br>(0.020±0.012) |
| MB322513<br>(1210)  | 3.2±0.2<br>(0.126±0.008) | 2.5±0.2<br>(0.098±0.008) | 1.3±0.2<br>(0.051±0.008) | 0.5±0.3<br>(0.020±0.012) |
| MB 321616<br>(1206) | 3.2±0.2<br>(0.126±0.008) | 1.6±0.2<br>(0.063±0.008) | 1.6±0.2<br>(0.063±0.008) | 0.5±0.3<br>(0.020±0.012) |
| MB 321611<br>(1206) | 3.2±0.2<br>(0.126±0.008) | 1.6±0.2<br>(0.063±0.008) | 1.1±0.2<br>(0.043±0.008) | 0.5±0.3<br>(0.020±0.012) |
| MB 201209<br>(0805) | 2.0±0.2<br>(0.079±0.008) | 1.2±0.2<br>(0.047±0.008) | 0.9±0.2<br>(0.035±0.008) | 0.5±0.3<br>(0.020±0.012) |
| MB160808<br>(0603)  | 1.6±0.2<br>(0.063±0.008) | 0.8±0.2<br>(0.031±0.008) | 0.8±0.2<br>(0.031±0.008) | 0.5±0.3<br>(0.020±0.012) |

## I PATR NUMBERING SYSTEM(品名規定)

|                      |                  |   |               |                  |                                |
|----------------------|------------------|---|---------------|------------------|--------------------------------|
| <u>MB</u>            | <u>45 32 15</u>  | - | <u>B</u>      | <u>310</u>       | <u>□</u>                       |
| 1                    | 2                |   | 3             | 4                | 5                              |
| multilayer chip Bead | Dimensions A.B.C |   | Material Code | Normal Impedence | Packaging style                |
| 多層貼片磁珠               | 尺寸               |   | 材料代碼          | 標準阻抗             | 包裝類型<br>B=Bulk,<br>T=Tape&Reel |

## I MATERIAL CHARACTERISTIC

| ITEM                              | UNIT                       |        | STANDARD VALUE |        |        |
|-----------------------------------|----------------------------|--------|----------------|--------|--------|
| Material Code                     | -                          | B      | U              | Z      | G      |
| Initial Permeability ( $\mu$ iac) | -                          | 45     | 200            | 500    | 110    |
| Maximum Permeability(mm)          | -                          | 125    | 450            | 900    | 250    |
| Saturation Flux Density at 10 Oe  | Gauss                      | 2000   | 1400           | 1500   | 1700   |
| Curie Temperature                 | °C                         | >200   | >130           | >100   | >130   |
| Volume Resistivity                | $\Omega$ -m                | $10^5$ | $10^5$         | $10^5$ | $10^5$ |
| Temperature Coefficient           | $10^{-6}/^{\circ}\text{C}$ | 10     | 13             | 5      | 12     |
| Density                           | $\text{g}/\text{cm}^3$     | 4.8    | 4.8            | 4.8    | 4.8    |

B Material: Standard type .for signal line application in which the blocking reging in near 100MHz .Impedence values selected for effectiveness at 10 to 300MHz.

U Material: For applications calling for low insertion low frequencies and sharply increasing impedance at high frequency. Designed for high impedance at high frequency for high speed signal line applications

Z Material: high frequency range type intended for the 100MHz regionand above. For signal line applications in which the sigal frequency is far from the cut off frequency. Impedence values selected for effectiveness at 40 to 400MHz

G Material: Designed as a noise countermeasure for the 200MHZ to 1GHZ range where the rise of the Z component is in the high frequency area.

B 材料：標準型，適用於頻率在 100MHz 附近之信號線，選擇作用頻率在 10~300MHz 間的阻值

U 材料：適用於需要在低頻時插入較低，在高頻時阻值急升之產品。此產品適用於在高頻亦高阻值之高速信號線之相關產品

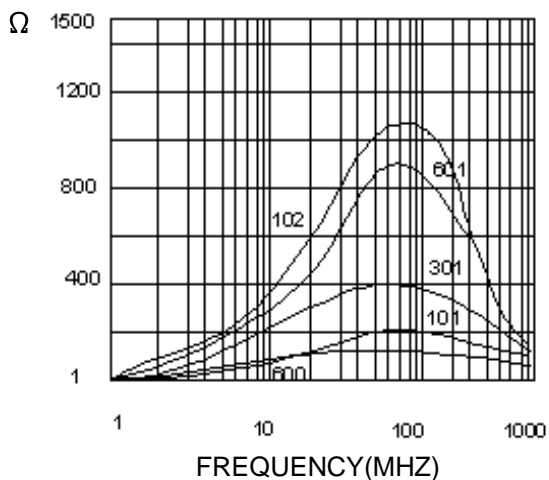
Z 材料：適用大于或等于 100MHz 之高頻範圍產品。適合信號頻率距離截止頻率較遠之信號線之相關產品，選擇作用品頻率介于 40 至 400MHz 之阻值

G 材料：适用于 200MHZ 至 1GHZ 高频段噪音阻抗器之阻抗元件。

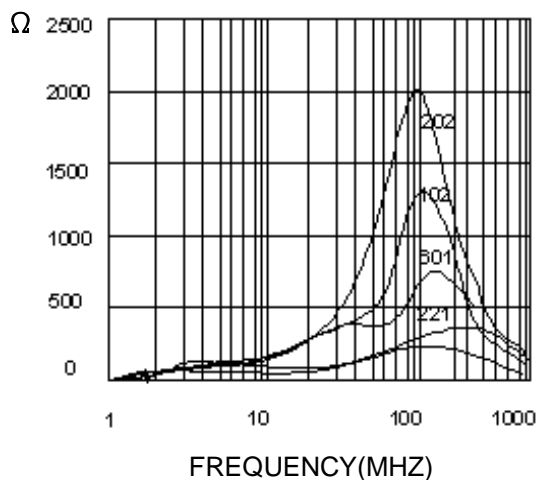


## I TYPICAL IMPEDANCE CHARACTERISTICS

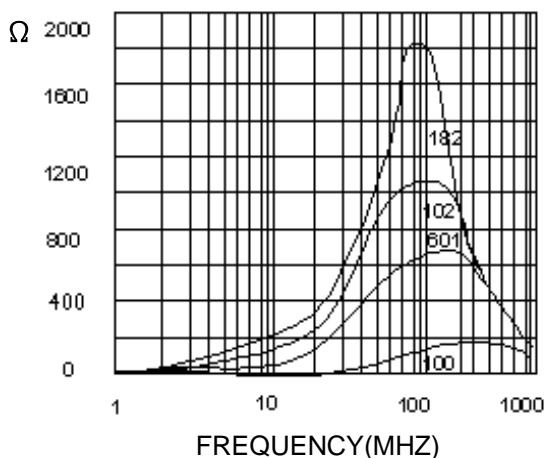
### B MATERIAL(B 材)



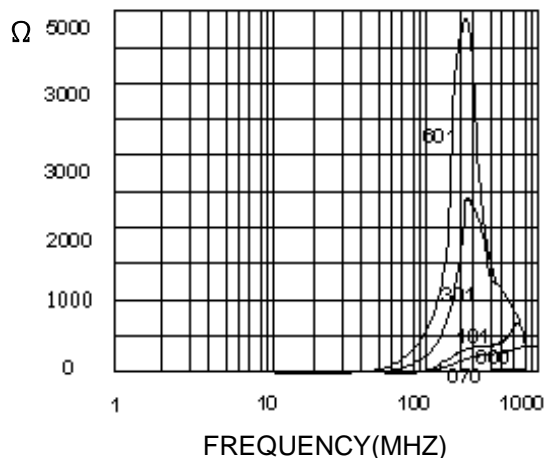
### U MATERIAL(U 材)



### Z MATERIAL(Z 材)



### G MATERIAL(G 材)



## I ELECTRICAL SPECIFICATION

| PART NO.      | IMPEDANCE (Ω)<br>AT 100MHZ | DCRESISTANCE<br>(Ω)MAX | RATED CURRENT<br>(mA)MAX. |
|---------------|----------------------------|------------------------|---------------------------|
| MB453215U131□ | 125±25%                    | 0.4                    | 300                       |
| MB453215Z131□ | 130±25%                    | 0.4                    | 300                       |
| MB453215U121□ | 120±25%                    | 0.4                    | 300                       |
| MB453215B700□ | 70±25%                     | 0.4                    | 300                       |
| MB451616U600□ | 60±25%                     | 0.3                    | 300                       |

## I ELECTRICAL SPECIFICATION

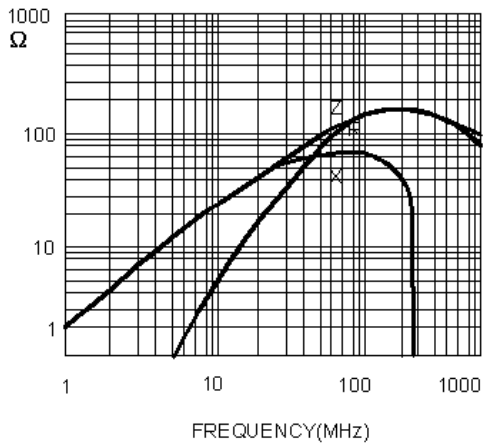
| PART NO.      | IMPEDANCE (Ω)<br>AT 100MHZ | DCRESISTANCE<br>(Ω)MAX | RATED CURRENT<br>(mA)MAX. |
|---------------|----------------------------|------------------------|---------------------------|
| MB451616Z520□ | 52±25%                     | 0.3                    | 300                       |
| MB451616B310□ | 31±25%                     | 0.3                    | 300                       |
| MB322513U600□ | 60±25%                     | 0.3                    | 400                       |
| MB322513Z520□ | 52±25%                     | 0.3                    | 400                       |
| MB322513B310□ | 31±25%                     | 0.3                    | 400                       |
| MB321616U500□ | 50±25%                     | 0.5                    | 200                       |
| MB321616Z700□ | 70±25%                     | 0.5                    | 200                       |
| MB321616U202□ | 2000±25%(AT30MHZ)          | 2.1                    | 100                       |
| MB321616U122□ | 1200±25%(AT50MHZ)          | 1.6                    | 100                       |
| MB321616U601□ | 600±25%                    | 1.3                    | 200                       |
| MB321616U310□ | 31±25%                     | 0.2                    | 500                       |
| MB321616Z601□ | 600±25%                    | 1.3                    | 200                       |
| MB321616Z260□ | 26±25%                     | 0.2                    | 500                       |
| MB321616B401□ | 400±25%                    | 0.6                    | 300                       |
| MB321616B221□ | 220±25%                    | 0.5                    | 300                       |
| MB321616B151□ | 150±25%                    | 0.4                    | 400                       |
| MB321616B121□ | 120±25%                    | 0.4                    | 400                       |
| MB321616B190□ | 19±25%                     | 0.2                    | 500                       |
| MB201209U102□ | 1000±25%                   | 1.5                    | 100                       |
| MB201209U601□ | 600±25%                    | 1.3                    | 100                       |
| MB201209U800□ | 80±25%                     | 0.4                    | 400                       |
| MB201209U170□ | 17±25%                     | 0.2                    | 500                       |
| MB201209U110□ | 11±25%                     | 0.1                    | 600                       |
| MB201209Z301□ | 300±25%                    | 0.9                    | 200                       |
| MB201209Z151□ | 150±25%                    | 0.5                    | 300                       |
| MB201209Z121□ | 120±25%                    | 0.5                    | 300                       |
| MB201209Z700□ | 70±25%                     | 0.4                    | 400                       |
| MB201209Z100□ | 10±25%                     | 0.1                    | 600                       |
| MB201209B070□ | 7±25%                      | 0.1                    | 600                       |
| MB201209U301□ | 300±25%                    | 1.2                    | 150                       |
| MB201209U221□ | 220±25%                    | 1.0                    | 150                       |
|               |                            |                        |                           |
|               |                            |                        |                           |

□:MEANS PACKAGING STYLE

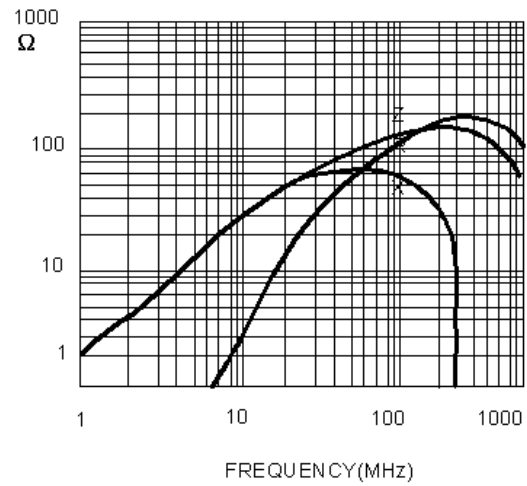


## I TYPICAL ELECTRICAL CHARACTERISTICS 典型電氣特性

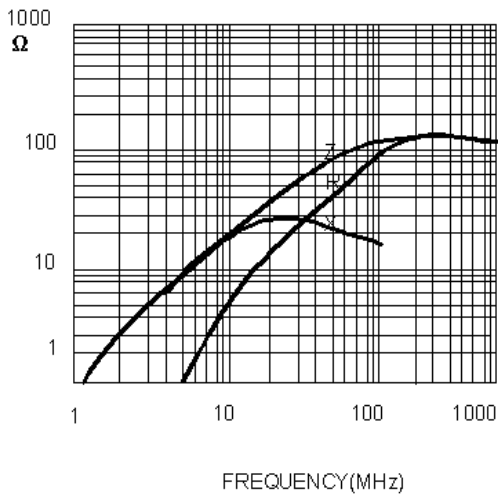
MB453215U131



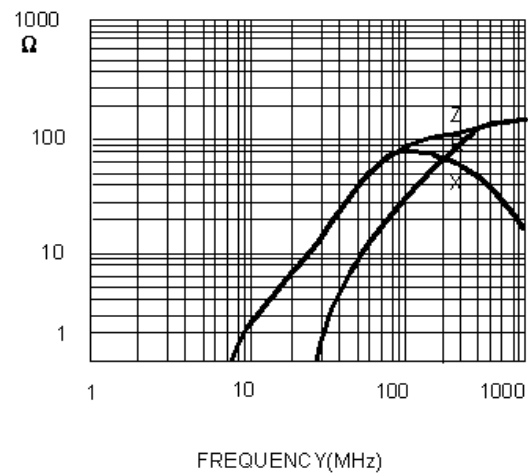
MB453215Z131



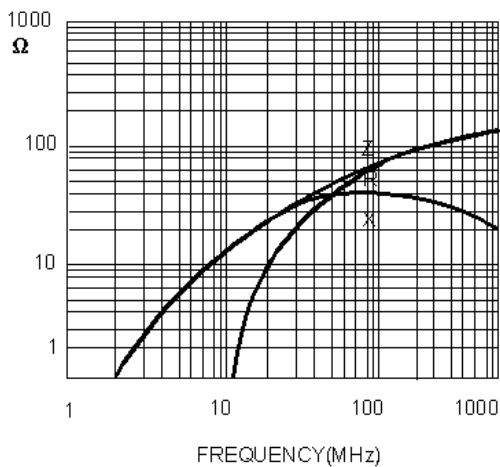
MB453215U121



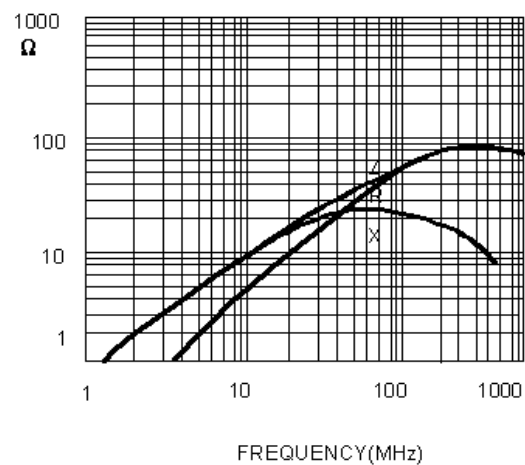
MB453215B700



MB451616U600

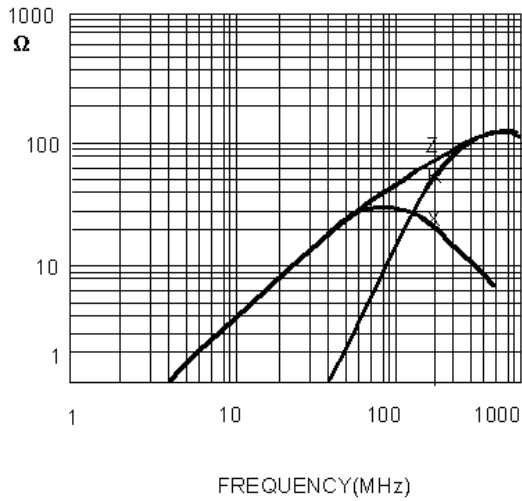


MB451616Z520

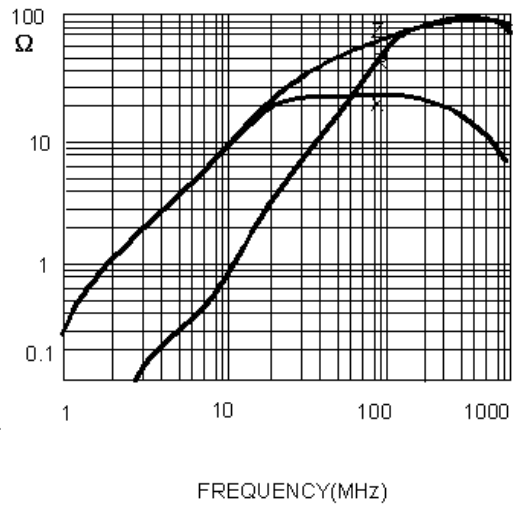


## I TYPICAL ELECTRICAL CHARACTERISTICS 典型電氣特性

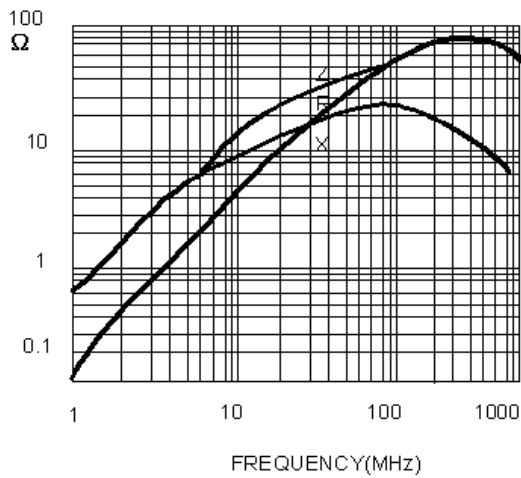
MB451616B310



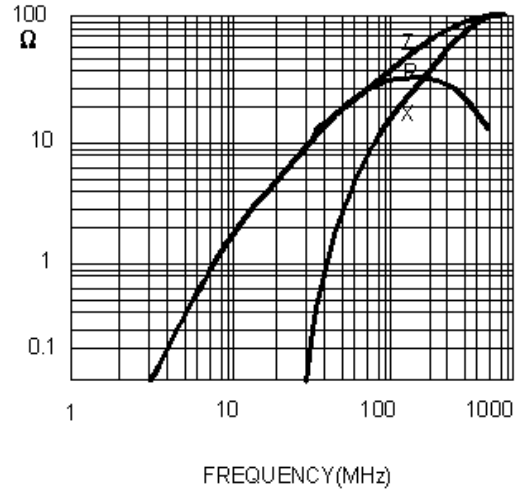
MLS322513U600



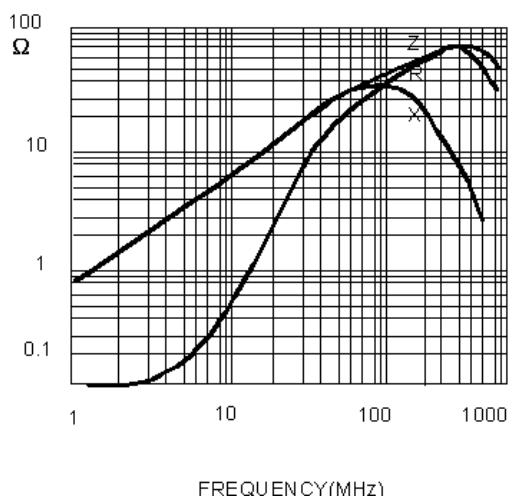
MB322513Z520



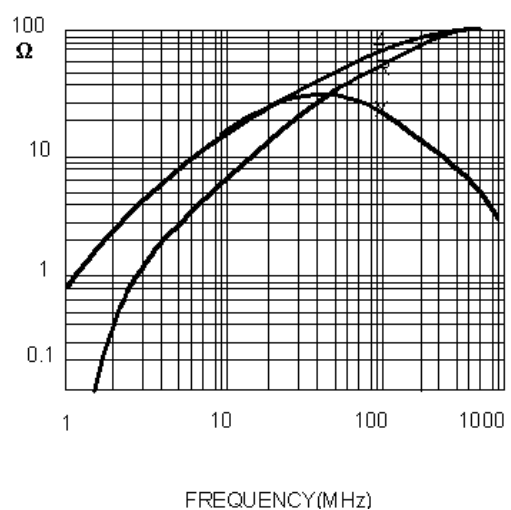
MB322513B310



MB321616U500

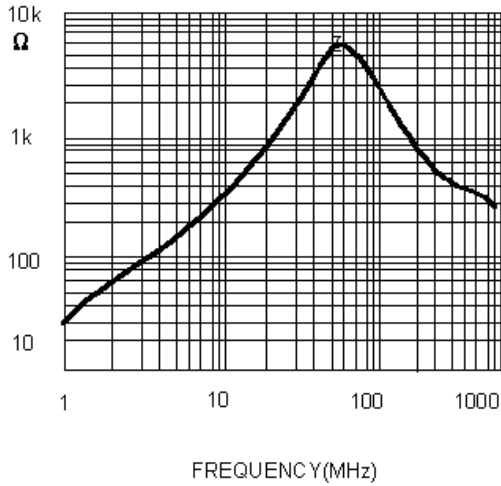


MB321616Z700

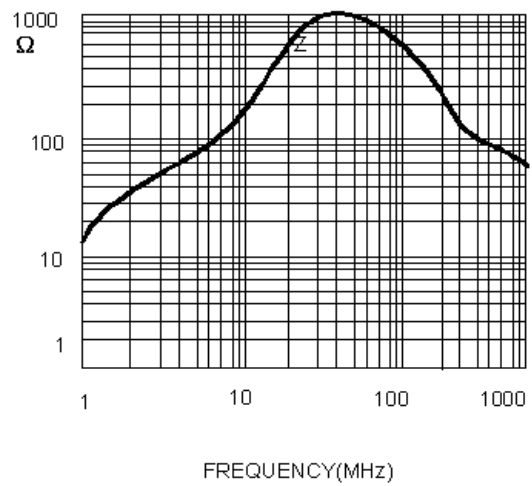


## I TYPICAL ELECTRICAL CHARACTERISTICS 典型電氣特性

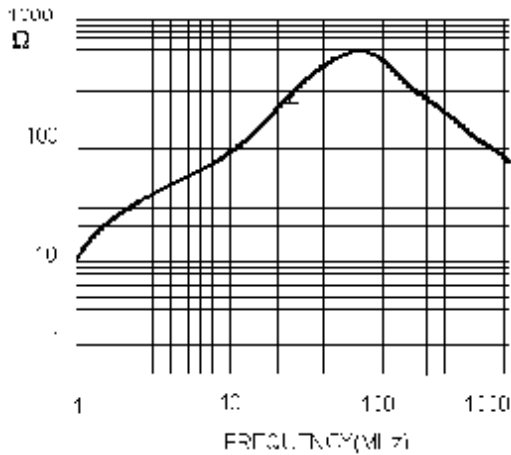
MB321611U202



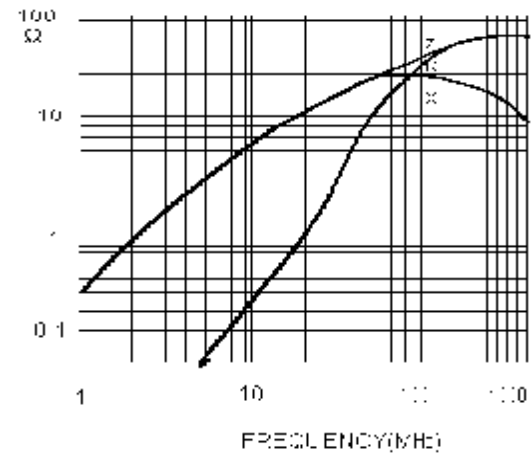
MB321611U122



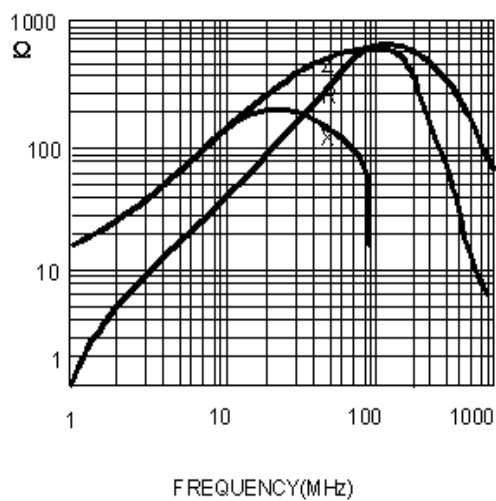
MB321611U601



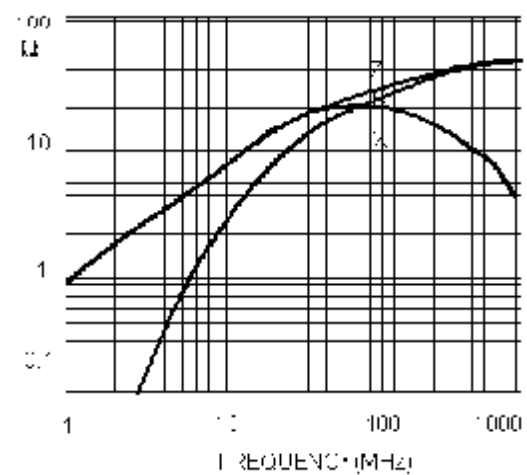
MB321611U310



MB321611Z601

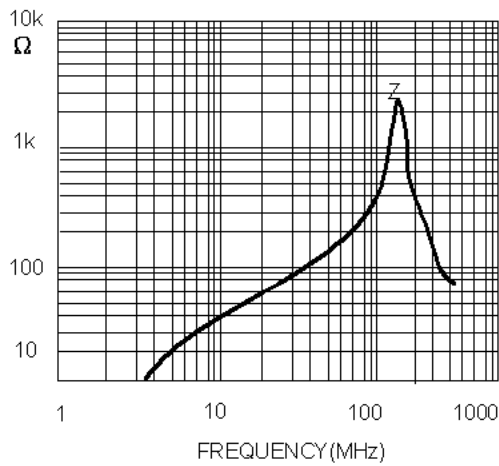


MB321611Z260

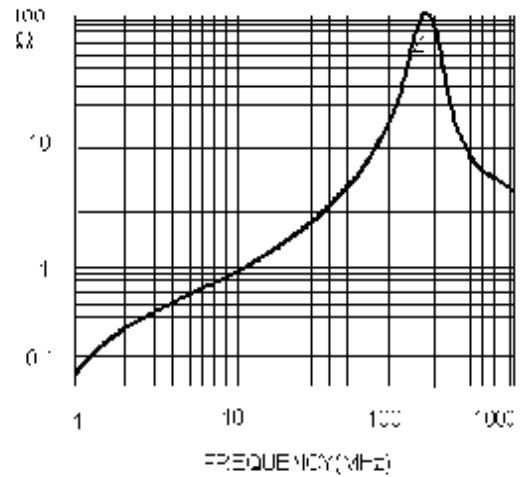


## I TYPICAL ELECTRICAL CHARACTERISTICS 典型電氣特性

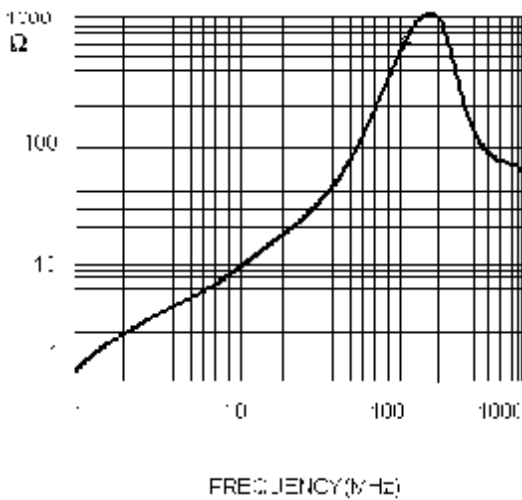
MB321611B401



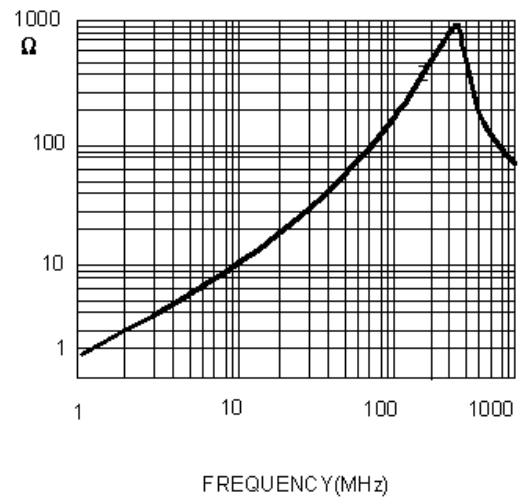
MB321611B221



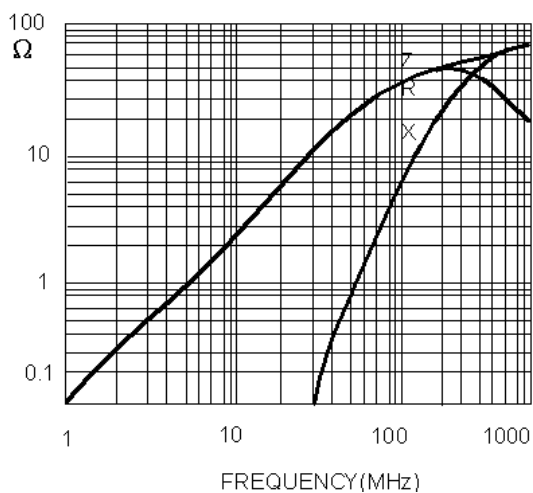
MB321611B151



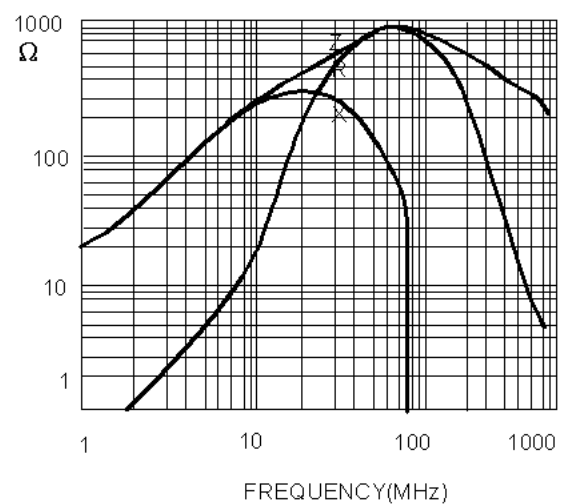
MB321611B121



MB201209B190



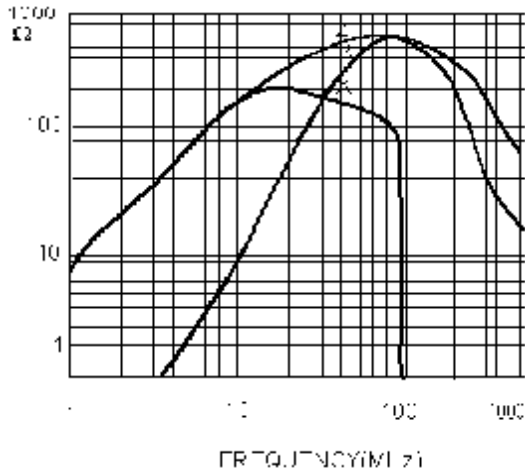
MB201209U102



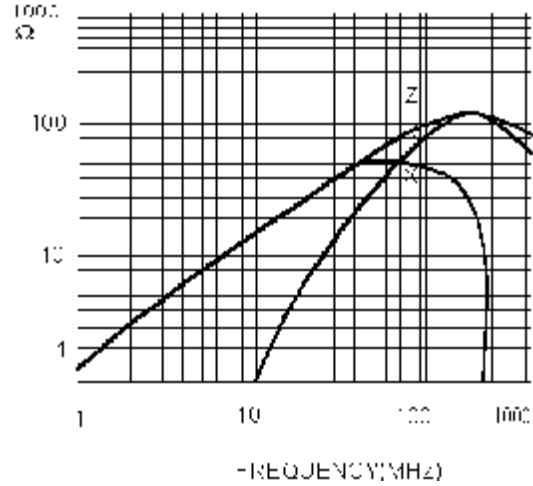


## I TYPICAL ELECTRICAL CHARACTERISTICS 典型電氣特性

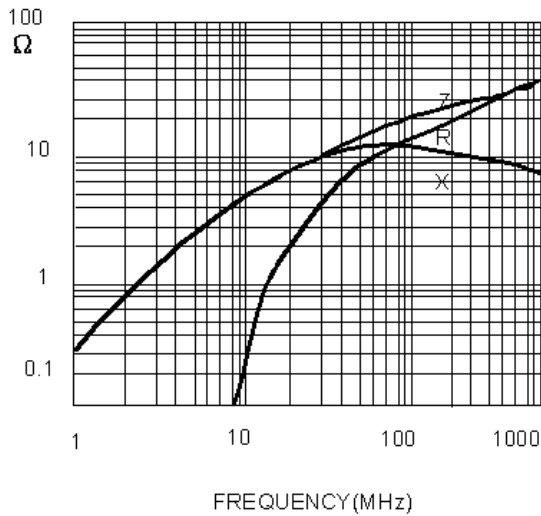
MB201209U601



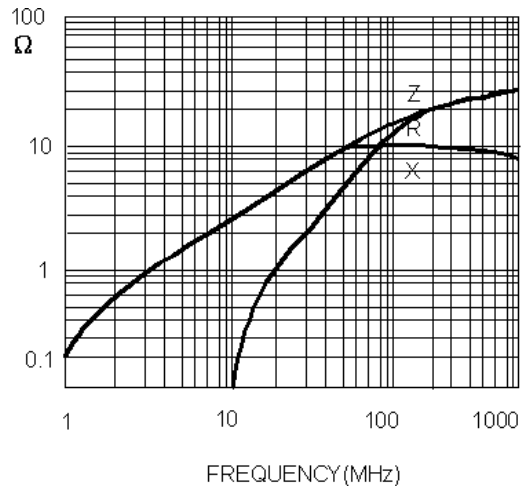
MB201209U800



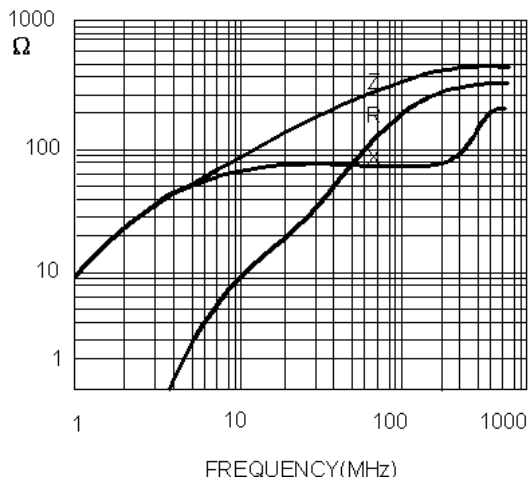
MB201209U170



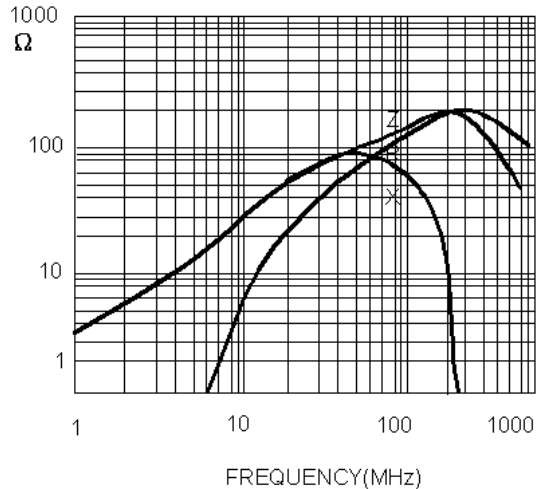
MB201209U110



MB201209Z301

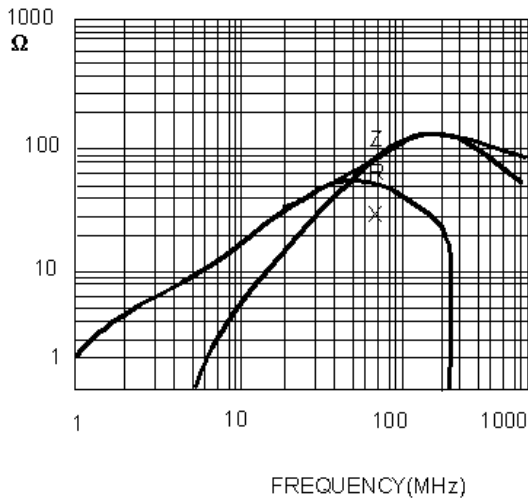


MB201209Z151

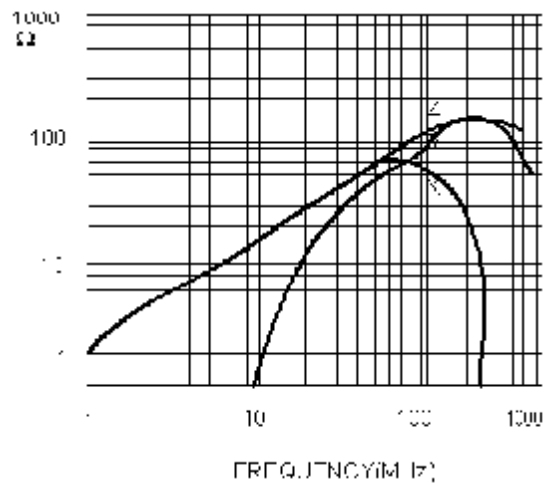


## I TYPICAL ELECTRICAL CHARACTERISTICS 典型電氣特性

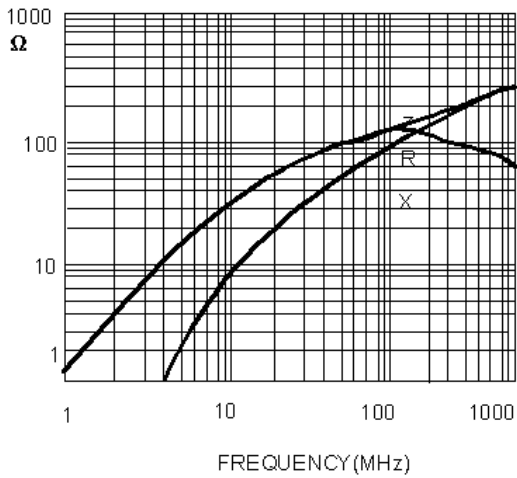
MB201209Z121



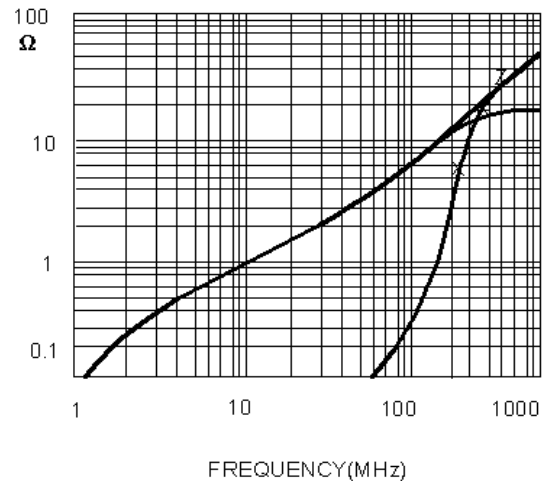
MB201209Z700



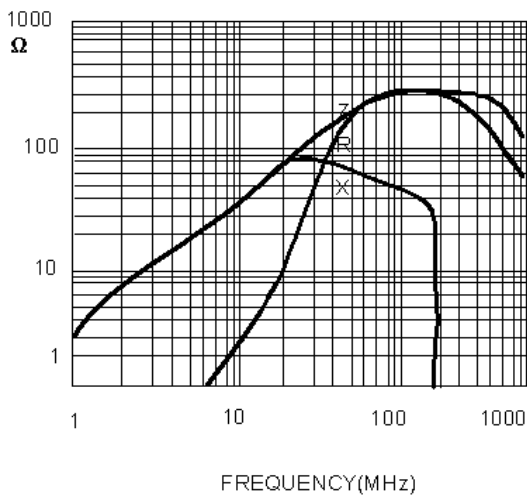
MB201209Z100



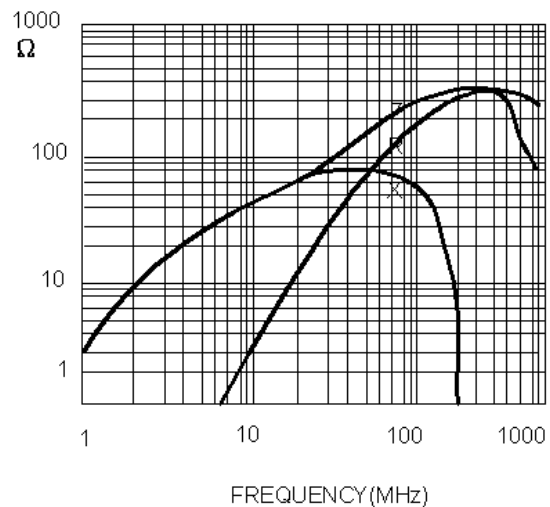
MB201209B070



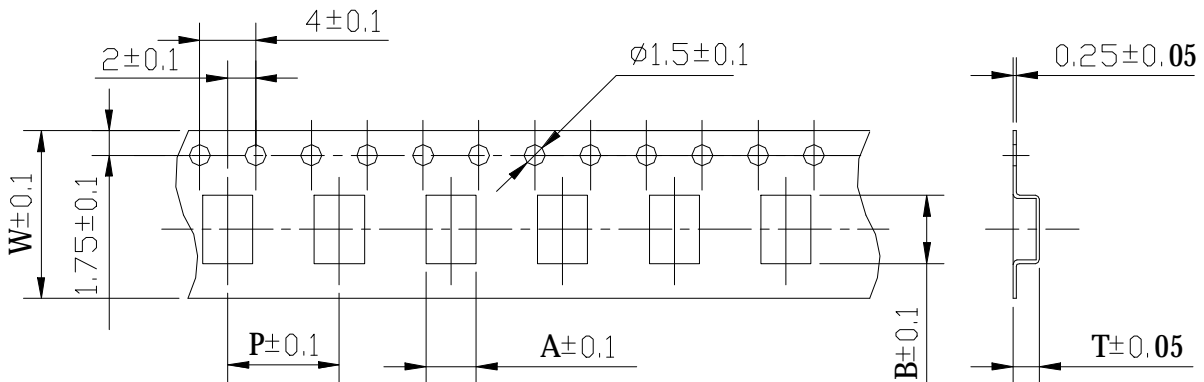
MB160808U301



MB160808U221



## ● PACKING

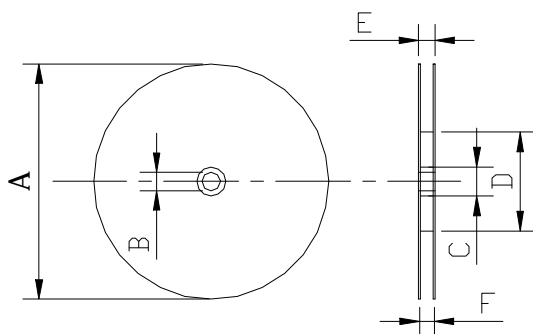


### 1. TAPE DIMENSIONS AND PACKING QUANTITY

| TYPE     | A   | B   | W  | P | T   | CHIPS/REEL |
|----------|-----|-----|----|---|-----|------------|
| MB453215 | 3.6 | 4.9 | 12 | 8 | 1.9 | 1000       |
| MB451616 | 1.9 | 4.9 | 12 | 4 | 2.0 | 2000       |
| MB322513 | 2.9 | 3.6 | 8  | 4 | 1.7 | 2000       |
| MB321616 | 1.9 | 3.5 | 8  | 4 | 2.0 | 2000       |
| MB321611 | 1.9 | 3.5 | 8  | 4 | 1.5 | 3000       |
| MB201209 | 1.5 | 2.3 | 8  | 4 | 1.3 | 4000       |
| MB160808 | 1.1 | 1.9 | 8  | 4 | 1.1 | 4000       |

Material: Paper, Plastic

### 2. REEL DIMENSION



| DIMENSION | W=8 mm   | W=12mm   |
|-----------|----------|----------|
| A         | 178±2    | 178±2    |
| B         | 13.0±0.8 | 13.0±0.8 |
| C         | 21.0±0.8 | 21.0±0.8 |
| D         | 75       | 75       |
| E         | 12.5     | 16.5     |
| F         | 10.0     | 14.0     |