



**THE DATASHEET OF  
GZ1005D501TF**



# Multilayer Chip Ferrite Bead – GZ Series

Operating Temp. : -55°C~+125°C



## FEATURES

- Internal silver printed layers and magnetic shielded structures to minimize crosstalk
- Can be used in a wide range of frequency (from dozens of MHz to hundreds of MHz) to suppress EMI
- Three types material and wide range of impedance values for various applications

## APPLICATIONS

- Noise suppression for low speed signal of electric equipments such as computers and peripheral devices, DVD cameras, LCD TVs, communication equipments, OA equipments, etc.

## PRODUCT IDENTIFICATION

**GZ**

①

| Type |                                   |
|------|-----------------------------------|
| GZ   | Chip Ferrite Bead for General Use |

**1608**

②

**D**

③

| External Dimensions (L×W) (mm) |          |
|--------------------------------|----------|
| 0603 [0201]                    | 0.6×0.3  |
| 1005 [0402]                    | 1.0×0.5  |
| 1608 [0603]                    | 1.6×0.8  |
| 2012 [0805]                    | 2.0×1.25 |
| 3216 [1206]                    | 3.2×1.6  |

**121**

④

| Nominal Impedance |               |
|-------------------|---------------|
| Example           | Nominal Value |
| 300               | 30Ω           |
| 121               | 120Ω          |
| 102               | 1000Ω         |

④

| Packing |             |
|---------|-------------|
| T       | Tape & Reel |

⑤

**T**

⑤

| Material Code |  |
|---------------|--|
| D, E, U       |  |

③

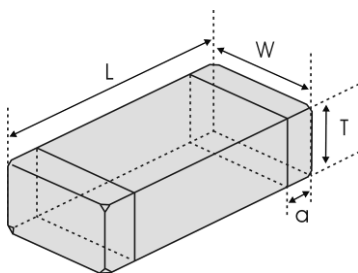
**F**

⑥

| Hazardous Substance Free Products |  |
|-----------------------------------|--|
| F                                 |  |

⑥

## SHAPE AND DIMENSIONS



Unit: mm [inch]

| Type             | L   | W                       | T                       | a                        |
|------------------|---|-------------------------|-------------------------|--------------------------|
| GZ0603<br>[0201] | 0.6±0.05<br>[.024±.002]                   | 0.3±0.05<br>[.012±.002] | 0.3±0.05<br>[.012±.002] | 0.15±0.05<br>[.006±.002] |
| GZ1005<br>[0402] | 1.0±0.15<br>[.039±.006]                   | 0.5±0.15<br>[.020±.006] | 0.5±0.15<br>[.020±.006] | 0.25±0.1<br>[.010±.004]  |
| GZ1608<br>[0603] | 1.6±0.15<br>[.063±.006]                   | 0.8±0.15<br>[.031±.006] | 0.8±0.15<br>[.031±.006] | 0.3±0.2<br>[.012±.008]   |
| GZ2012<br>[0805] | 2.0 (+0.3, -0.1)<br>[.079 (+.012, -.004)] | 1.25±0.2<br>[.049±.008] | 0.85±0.2<br>[.033±.008] | 0.5±0.3<br>[.020±.012]   |
| GZ3216<br>[1206] | 3.2±0.2<br>[.126±.008]                    | 1.6±0.2<br>[.063±.008]  | 0.85±0.2<br>[.033±.008] | 0.5±0.3<br>[.020±.012]   |

## SPECIFICATIONS

### GZ0603 TYPE

| Part Number  | Impedance | Z Test Frequency | Max. DC Resistance | Max. Rated Current | Thickness               |
|--------------|-----------|------------------|--------------------|--------------------|-------------------------|
| Units        | $\Omega$  | MHz              | $\Omega$           | mA                 | mm [inch]               |
| Symbol       | Z         | Freq.            | DCR                | I <sub>r</sub>     | T                       |
| GZ0603D600TF | 60±25%    | 100              | 0.40               | 200                | 0.3±0.05<br>[.012±.002] |
| GZ0603D800TF | 80±25%    | 100              | 0.60               | 200                |                         |
| GZ0603D121TF | 120±25%   | 100              | 0.80               | 200                |                         |
| GZ0603D241TF | 240±25%   | 100              | 1.00               | 200                |                         |
| GZ0603D601TF | 600±25%   | 100              | 1.70               | 200                |                         |

### GZ1005 TYPE

| Part Number  | Impedance | Z Test Frequency | Max. DC Resistance | Max. Rated Current | Thickness               |
|--------------|-----------|------------------|--------------------|--------------------|-------------------------|
| Units 单位     | $\Omega$  | MHz              | $\Omega$           | mA                 | mm [inch]               |
| Symbol 符号    | Z         | Freq.            | DCR                | I <sub>r</sub>     | T                       |
| GZ1005D100TF | 0~15      | 100              | 0.05               | 500                | 0.5±0.15<br>[.020±.006] |
| GZ1005D310TF | 31±25%    | 100              | 0.20               | 300                |                         |
| GZ1005D600TF | 60±25%    | 100              | 0.30               | 200                |                         |
| GZ1005D800TF | 80±25%    | 100              | 0.35               | 200                |                         |
| GZ1005D121TF | 120±25%   | 100              | 0.40               | 200                |                         |
| GZ1005D221TF | 220±25%   | 100              | 0.45               | 150                |                         |
| GZ1005D301TF | 300±25%   | 100              | 0.50               | 100                |                         |
| GZ1005D421TF | 420±25%   | 100              | 0.60               | 100                |                         |
| GZ1005D501TF | 500±25%   | 100              | 0.80               | 100                |                         |
| GZ1005D601TF | 600±25%   | 100              | 0.90               | 100                |                         |
| GZ1005D751TF | 750±25%   | 100              | 1.00               | 100                |                         |
| GZ1005D102TF | 1000±25%  | 100              | 1.20               | 100                |                         |
| GZ1005D152TF | 1500±25%  | 100              | 1.60               | 100                |                         |
| GZ1005E800TF | 80±25%    | 100              | 0.35               | 200                |                         |
| GZ1005E121TF | 120±25%   | 100              | 0.40               | 200                |                         |
| GZ1005E241TF | 240±25%   | 100              | 0.50               | 200                |                         |
| GZ1005E601TF | 600±25%   | 100              | 0.90               | 100                |                         |
| GZ1005U100TF | 0~15      | 100              | 0.05               | 500                |                         |
| GZ1005U300TF | 30±25%    | 100              | 0.20               | 300                |                         |
| GZ1005U700TF | 70±25%    | 100              | 0.30               | 200                |                         |
| GZ1005U121TF | 120±25%   | 100              | 0.40               | 200                |                         |
| GZ1005U221TF | 220±25%   | 100              | 0.50               | 100                |                         |
| GZ1005U301TF | 300±25%   | 100              | 0.60               | 100                |                         |
| GZ1005U421TF | 420±25%   | 100              | 0.80               | 100                |                         |
| GZ1005U601TF | 600±25%   | 100              | 0.90               | 100                |                         |
| GZ1005U102TF | 1000±25%  | 100              | 1.20               | 100                |                         |

### GZ1608 TYPE

| Part Number  | Impedance | Z Test Frequency | Max. DC Resistance | Max. Rated Current | Thickness               |
|--------------|-----------|------------------|--------------------|--------------------|-------------------------|
| Units        | $\Omega$  | MHz              | $\Omega$           | mA                 | mm [inch]               |
| Symbol       | Z         | Freq.            | DCR                | I <sub>r</sub>     | T                       |
| GZ1608D110TF | 0~15      | 100              | 0.05               | 2000               | 0.8±0.15<br>[.031±.006] |
| GZ1608D300TF | 30±25%    | 100              | 0.05               | 2000               |                         |
| GZ1608D600TF | 60±25%    | 100              | 0.10               | 500                |                         |
| GZ1608D800TF | 80±25%    | 100              | 0.15               | 400                |                         |
| GZ1608D101TF | 100±25%   | 100              | 0.20               | 300                |                         |
| GZ1608D121TF | 120±25%   | 100              | 0.20               | 300                |                         |



Specifications subject to change without notice. Please check our website for latest information. Revised 2016/12/15

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## SPECIFICATIONS

### GZ1608 TYPE

| Part Number  | Impedance | Z Test Frequency | Max.DC Resistance | Max.Rated Current | Thickness               |
|--------------|-----------|------------------|-------------------|-------------------|-------------------------|
| Units        | $\Omega$  | MHz              | $\Omega$          | mA                | mm [inch]               |
| Symbol       | Z         | Freq.            | DCR               | I <sub>r</sub>    | T                       |
| GZ1608D221TF | 220±25%   | 100              | 0.30              | 300               | 0.8±0.15<br>[.031±.006] |
| GZ1608D301TF | 300±25%   | 100              | 0.35              | 200               |                         |
| GZ1608D471TF | 470±25%   | 100              | 0.45              | 200               |                         |
| GZ1608D601TF | 600±25%   | 100              | 0.45              | 200               |                         |
| GZ1608D751TF | 750±25%   | 100              | 0.50              | 200               |                         |
| GZ1608D102TF | 1000±25%  | 100              | 0.60              | 200               |                         |
| GZ1608D152TF | 1500±25%  | 100              | 0.70              | 150               |                         |
| GZ1608D182TF | 1800±25%  | 100              | 0.90              | 100               |                         |
| GZ1608D202TF | 2000±25%  | 100              | 1.20              | 100               |                         |
| GZ1608D222TF | 2200±25%  | 100              | 1.20              | 100               |                         |
| GZ1608E121TF | 120±25%   | 100              | 0.20              | 300               |                         |
| GZ1608E181TF | 180±25%   | 100              | 0.30              | 300               |                         |
| GZ1608E601TF | 600±25%   | 100              | 0.45              | 200               |                         |
| GZ1608E102TF | 1000±25%  | 100              | 0.60              | 200               |                         |
| GZ1608U100TF | 0~15      | 100              | 0.05              | 2000              |                         |
| GZ1608U300TF | 30±25%    | 100              | 0.05              | 2000              |                         |
| GZ1608U600TF | 60±25%    | 100              | 0.10              | 500               |                         |
| GZ1608U121TF | 120±25%   | 100              | 0.20              | 300               |                         |
| GZ1608U221TF | 220±25%   | 100              | 0.30              | 300               |                         |
| GZ1608U301TF | 300±25%   | 100              | 0.35              | 200               |                         |
| GZ1608U471TF | 470±25%   | 100              | 0.40              | 200               |                         |
| GZ1608U601TF | 600±25%   | 100              | 0.50              | 200               |                         |
| GZ1608U102TF | 1000±25%  | 100              | 0.60              | 200               |                         |

### GZ2012 TYPE

| Part Number  | Impedance | Z Test Frequency | Max.DC Resistance | Max.Rated Current | Thickness               |
|--------------|-----------|------------------|-------------------|-------------------|-------------------------|
| Units        | $\Omega$  | MHz              | $\Omega$          | mA                | mm [inch]               |
| Symbol       | Z         | Freq.            | DCR               | I <sub>r</sub>    | T                       |
| GZ2012D070TF | 0~15      | 100              | 0.04              | 2000              | 0.85±0.2<br>[.033±.008] |
| GZ2012D190TF | 19±25%    | 100              | 0.04              | 2000              |                         |
| GZ2012D300TF | 30±25%    | 100              | 0.05              | 1500              |                         |
| GZ2012D800TF | 80±25%    | 100              | 0.10              | 1000              |                         |
| GZ2012D121TF | 120±25%   | 100              | 0.15              | 800               |                         |
| GZ2012D181TF | 180±25%   | 100              | 0.18              | 700               |                         |
| GZ2012D221TF | 220±25%   | 100              | 0.20              | 600               |                         |
| GZ2012D301TF | 300±25%   | 100              | 0.20              | 500               |                         |
| GZ2012D421TF | 420±25%   | 100              | 0.30              | 500               |                         |
| GZ2012D501TF | 500±25%   | 100              | 0.30              | 500               |                         |
| GZ2012D601TF | 600±25%   | 100              | 0.30              | 500               |                         |
| GZ2012D751TF | 750±25%   | 100              | 0.35              | 500               |                         |
| GZ2012D102TF | 1000±25%  | 100              | 0.35              | 500               |                         |
| GZ2012D152TF | 1500±25%  | 100              | 0.40              | 500               |                         |
| GZ2012D202TF | 2000±25%  | 100              | 0.50              | 500               |                         |
| GZ2012E800TF | 80±25%    | 100              | 0.10              | 1000              |                         |
| GZ2012E181TF | 180±25%   | 100              | 0.20              | 600               |                         |
| GZ2012E301TF | 300±25%   | 100              | 0.20              | 500               |                         |
| GZ2012E501TF | 500±25%   | 100              | 0.30              | 500               |                         |
| GZ2012E601TF | 600±25%   | 100              | 0.30              | 500               |                         |

## SPECIFICATIONS

### GZ2012 TYPE

| Part Number  | Impedance | Z Test Frequency | Max.DC Resistance | Max.Rated Current | Thickness               |
|--------------|-----------|------------------|-------------------|-------------------|-------------------------|
| Units        | $\Omega$  | MHz              | $\Omega$          | mA                | mm [inch]               |
| Symbol       | Z         | Freq.            | DCR               | I <sub>r</sub>    | T                       |
| GZ2012E102TF | 1000±25%  | 100              | 0.35              | 500               | 0.85±0.2<br>[.033±.008] |
| GZ2012U100TF | 0~15      | 100              | 0.04              | 2200              |                         |
| GZ2012U170TF | 17±25%    | 100              | 0.04              | 2000              |                         |
| GZ2012U300TF | 30±25%    | 100              | 0.05              | 1500              |                         |
| GZ2012U700TF | 70±25%    | 100              | 0.10              | 1000              |                         |
| GZ2012U121TF | 120±25%   | 100              | 0.15              | 800               |                         |
| GZ2012U221TF | 220±25%   | 100              | 0.20              | 600               |                         |
| GZ2012U301TF | 300±25%   | 100              | 0.20              | 500               |                         |
| GZ2012U421TF | 420±25%   | 100              | 0.25              | 500               |                         |
| GZ2012U601TF | 600±25%   | 100              | 0.30              | 500               |                         |
| GZ2012U102TF | 1000±25%  | 100              | 0.40              | 500               |                         |

### GZ3216 TYPE

| Part Number  | Impedance | Z Test Frequency | Max.DC Resistance | Max.Rated Current | Thickness               |
|--------------|-----------|------------------|-------------------|-------------------|-------------------------|
| Units        | $\Omega$  | MHz              | $\Omega$          | mA                | mm [inch]               |
| Symbol       | Z         | Freq.            | DCR               | I <sub>r</sub>    | T                       |
| GZ3216D000TF | 0~15      | 100              | 0.03              | 2200              | 0.85±0.2<br>[.033±.008] |
| GZ3216D310TF | 31±25%    | 100              | 0.05              | 2000              |                         |
| GZ3216D600TF | 60±25%    | 100              | 0.10              | 1000              |                         |
| GZ3216D800TF | 80±25%    | 100              | 0.10              | 1000              |                         |
| GZ3216D121TF | 120±25%   | 100              | 0.10              | 1000              |                         |
| GZ3216D221TF | 220±25%   | 100              | 0.20              | 600               |                         |
| GZ3216D301TF | 300±25%   | 100              | 0.20              | 600               |                         |
| GZ3216D501TF | 500±25%   | 100              | 0.30              | 600               |                         |
| GZ3216D601TF | 600±25%   | 100              | 0.30              | 600               |                         |
| GZ3216D102TF | 1000±25%  | 100              | 0.60              | 500               |                         |
| GZ3216D122TF | 1200±25%  | 100              | 0.60              | 300               |                         |
| GZ3216U601TF | 600±25%   | 100              | 0.30              | 600               |                         |

※: Products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

## TYPICAL ELECTRICAL CHARACTERISTICS

### D, E, U Material Comparison



### Rated Current

When operating temperatures exceeding +85°C, derating of current is necessary for chip ferrite beads for which rated current is 1000mA over. Please apply the derating curve shown in chart according to the operating temperature.





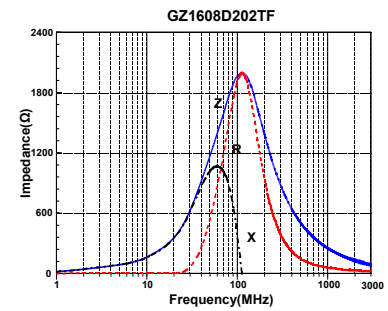
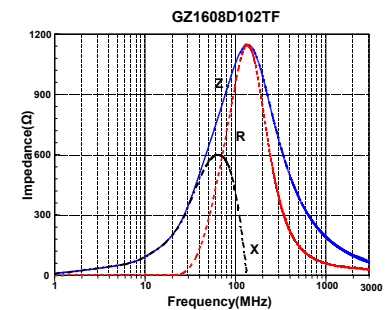
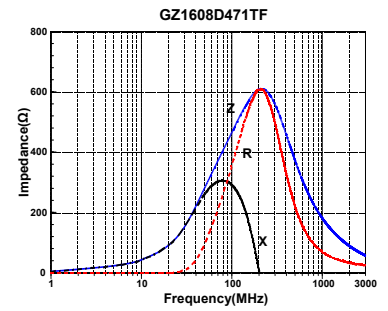
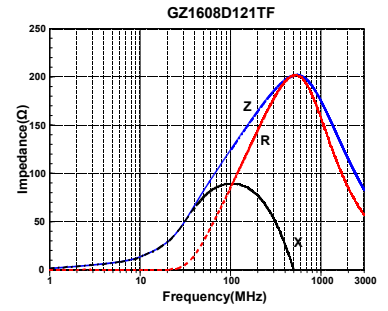
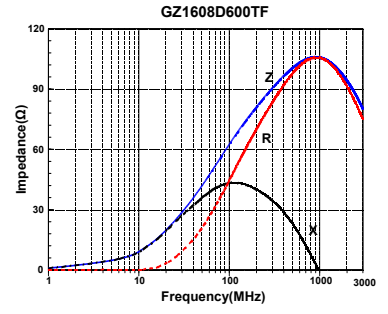
# DETAIL ELECTRICAL CHARACTERISTICS

## GZ1005 TYPE



# DETAIL ELECTRICAL CHARACTERISTICS

## GZ1608 TYPE

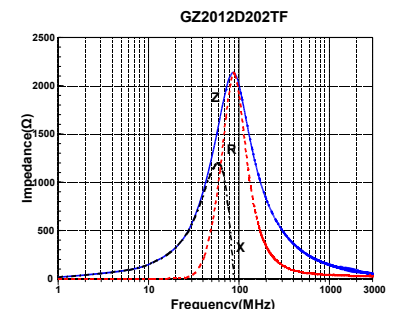
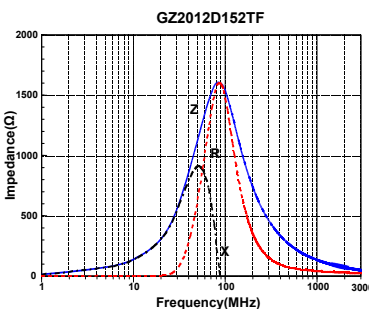
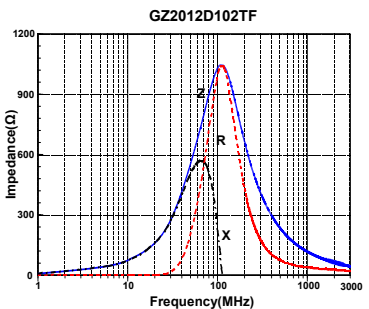
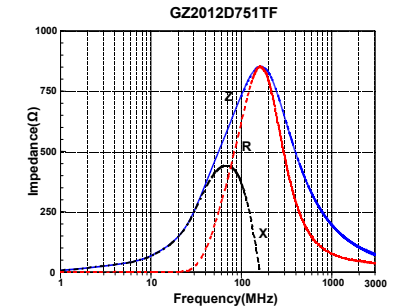
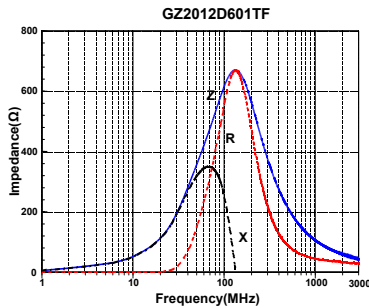
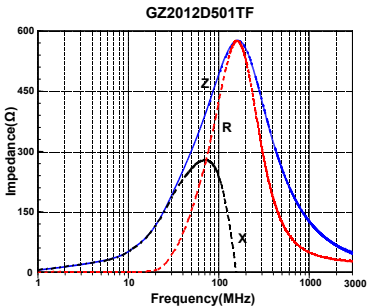
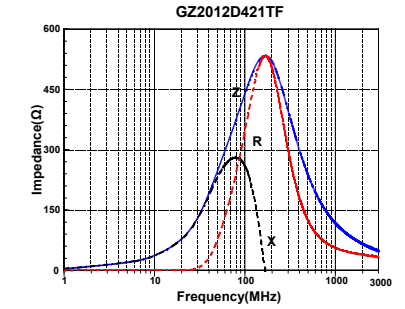
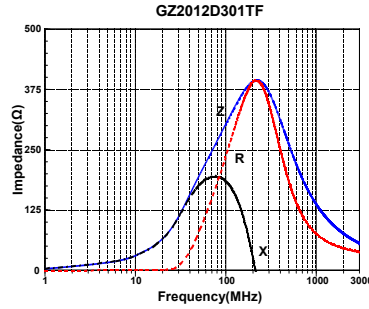
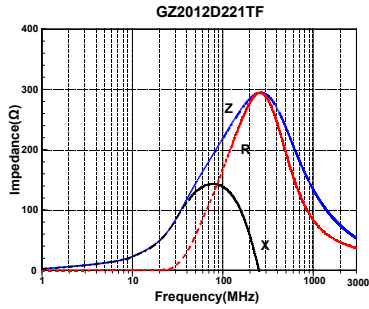
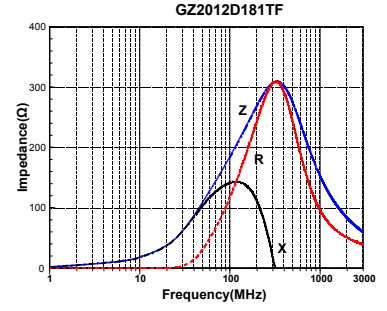
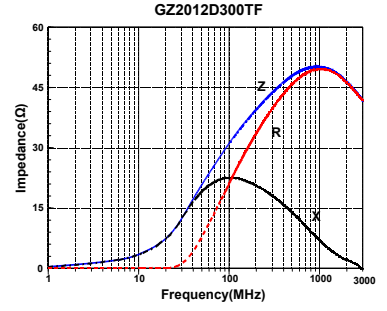


# DETAIL ELECTRICAL CHARACTERISTICS

## GZ1608 TYPE



GZ2012 TYPE



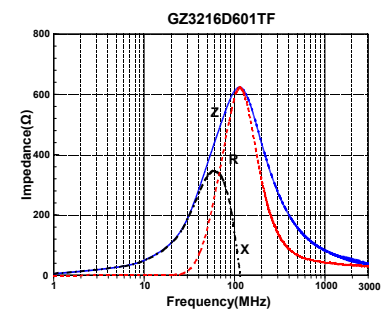
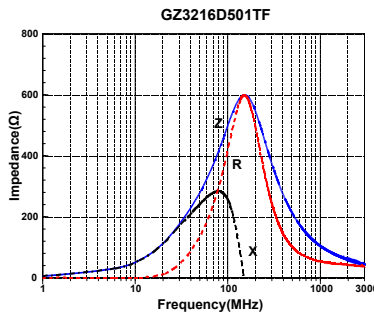
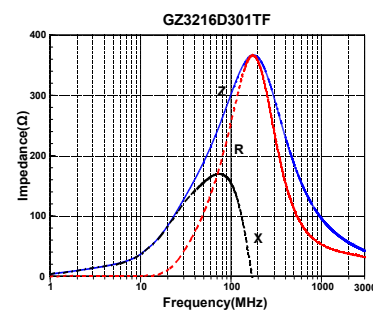
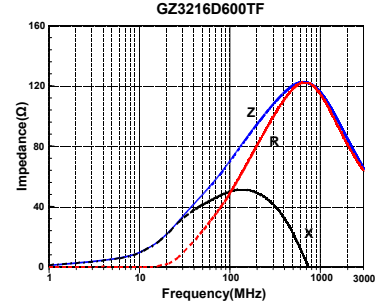
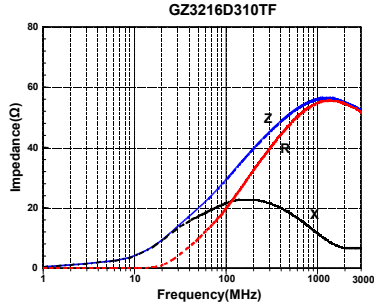
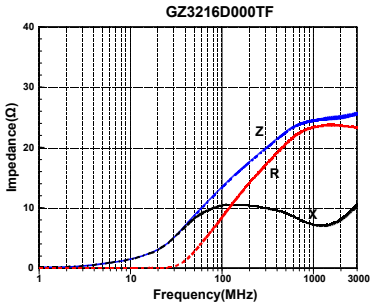
GZ2012 TYPE



GZ2012 TYPE





GZ3216 TYPE



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