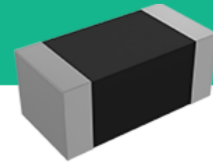


# Multilayer Chip Ferrite Bead – GZ Series



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, smart wearable device, LCD TVs, communication equipments, OA equipments, etc.

## PRODUCT IDENTIFICATION

1	2	3	4	5	6	7
GZ	3216	D	121	T	F	(A99)

1 Type	
GZ	Chip Ferrite Bead for General Use

2 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

3 Material Code	
D, E, U	

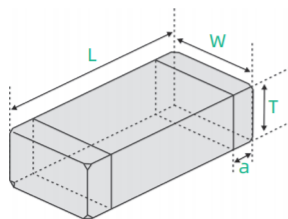
4 Nominal Impedance	
Example	Nominal Value
300	30Ω
121	120Ω
102	1000Ω

5 Packing	
T	Tape & Reel

6 Hazardous Substance Free Products	
F	

7 Internal Code	
A99	

## SHAPE AND DIMENSIONS



Unit: mm [inch]

Type	L	W	T	a
GZ0603 [0201]	0.6±0.05 [.024±.002]	0.3±0.05 [.012±.002]	0.3±0.05 [.012±.002]	0.15±0.05 [.006±.002]
GZ1005 [0402]	1.0±0.15 [.039±.006]	0.5±0.15 [.020±.006]	0.5±0.15 [.020±.006]	0.25±0.1 [.010±.004]
GZ1608 [0603]	1.6±0.15 [.063±.006]	0.8±0.15 [.031±.006]	0.8±0.15 [.031±.006]	0.3±0.2 [.012±.008]
GZ2012 [0805]	2.0 (+0.3, -0.1) [.079 (+.012, -.004)]	1.25±0.2 [.049±.008]	0.85±0.2 [.033±.008]	0.5±0.3 [.020±.012]
GZ3216 [1206]	3.2±0.2 [.126±.008]	1.6±0.2 [.063±.008]	1.1±0.2 [0.043±0.008]	0.5±0.3 [.020±.012]

Multilayer Chip Ferrite Bead  
 Wire Wound Ferrite Bead  
 Multilayer Chip Common Mode Filter  
 Wire Wound Chip Common Mode Choke Coil for Signal Line

## 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 [.012±.002]
GZ0603D750TF	75±25%	100	0.40	200	
GZ0603D800TF	80±25%	100	0.60	200	
GZ0603D121TF	120±25%	100	0.80	200	
GZ0603D241TF	240±25%	100	1.00	200	
GZ0603D471TF	470±25%	100	1.40	200	
GZ0603D601TF	600±25%	100	1.70	200	
GZ0603D102TF	1000±25%	100	2.50	100	
GZ0603U100TF	5~15	100	0.10	500	
GZ0603U700TF	70±25%	100	0.40	200	
GZ0603U800TF	80±25%	100	0.40	200	
GZ0603U121TF	120±25%	100	0.50	200	
GZ0603U241TF	240±25%	100	0.80	200	
GZ0603U601TF	600±25%	100	1.50	100	
GZ0603U102TF	1000±25%	100	2.50	100	

## GZ1005 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
GZ1005D100TF	0~15	100	0.05	500	0.5±0.15 [.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	
GZ1005D182TF	1800±25%	100	2.00	50	
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	

## 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
GZ1608D110TF	0~15	100	0.05	2000	0.8±0.15 [.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	
GZ1608D221TF	220±25%	100	0.30	300	
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	
GZ1608D252TF	2500±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 [.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	

## 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
GZ2012D202TF	2000±25%	100	0.50	500	0.85±0.2 [.033±.008]
GZ2012D252TF	2500±25%	100	0.70	200	
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	
GZ2012E102TF	1000±25%	100	0.35	500	
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	

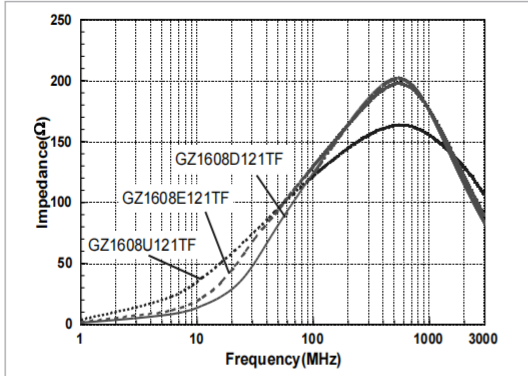
## GZ3216 TYPE

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 [.033±.008]
GZ3216D310TF	31±25%	100	0.05	2000	
GZ3216D600TF	60±25%	100	0.10	1000	
GZ3216D301TF	300±25%	100	0.20	600	
GZ3216D100TFA99	0~15	100	0.05	2000	1.10±0.2 [0.043±0.008]
GZ3216D190TFA99	19±25%	100	0.05	2000	
GZ3216D800TFA99	80±25%	100	0.10	1000	
GZ3216D101TFA99	100±25%	100	0.10	1000	
GZ3216D121TFA99	120±25%	100	0.10	1000	
GZ3216D151TFA99	150±25%	100	0.15	800	
GZ3216D221TFA99	220±25%	100	0.20	600	
GZ3216D501TFA99	500±25%	100	0.30	600	
GZ3216D601TFA99	600±25%	100	0.30	600	
GZ3216D102TFA99	1000±25%	100	0.60	500	
GZ3216D122TFA99	1200±25%	100	0.60	300	
GZ3216U601TFA99	600±25%	100	0.30	600	

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

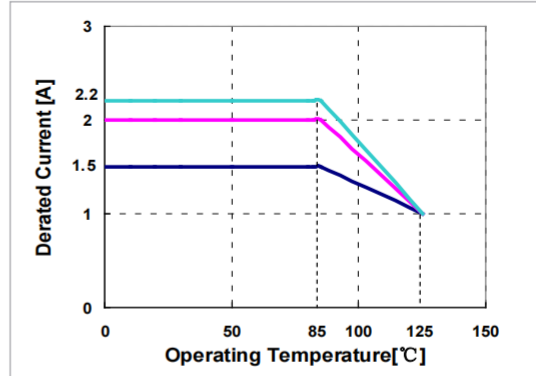
**TYPICAL ELECTRICAL CHARACTERISTICS**

D, E, U Material Comparison



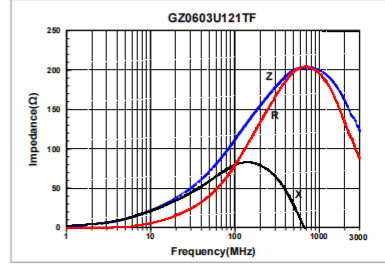
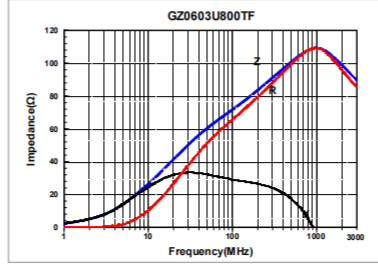
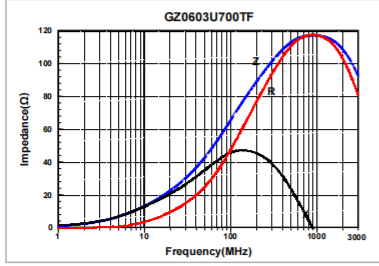
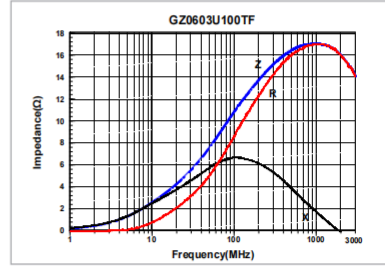
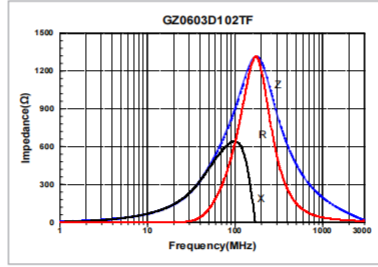
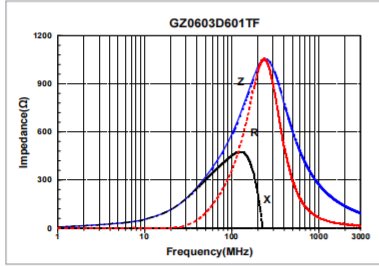
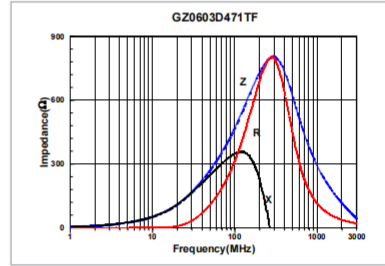
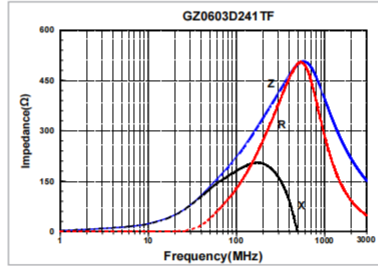
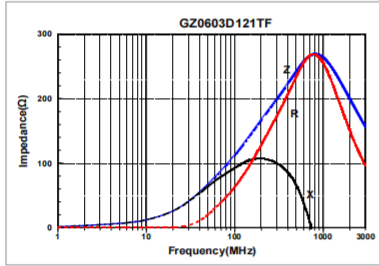
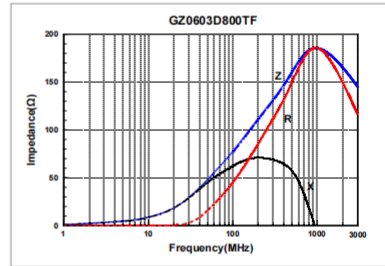
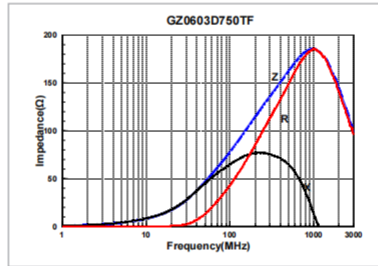
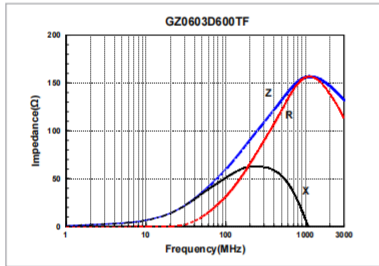
**Rated Current**

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.



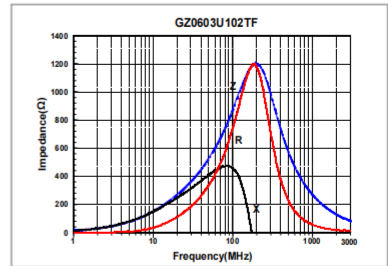
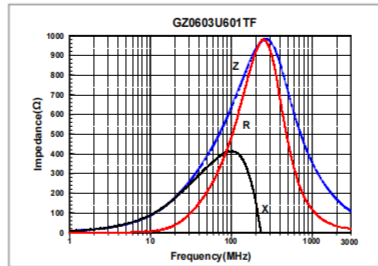
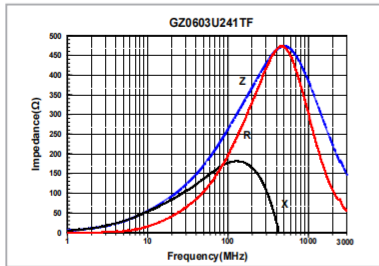
**DETAIL ELECTRICAL CHARACTERISTICS**

GZ0603 TYPE

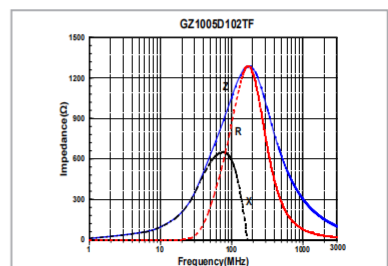
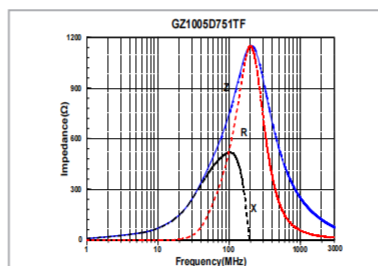
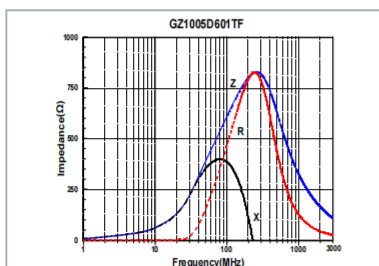
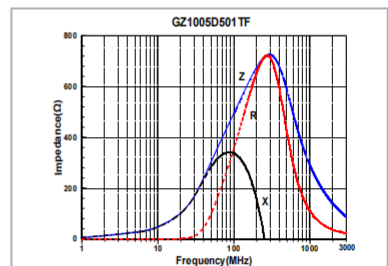
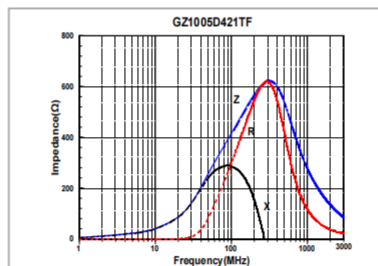
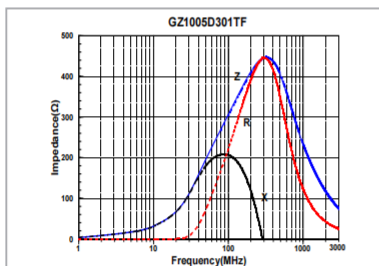
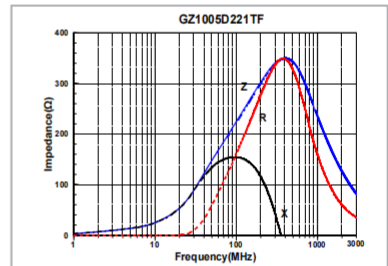
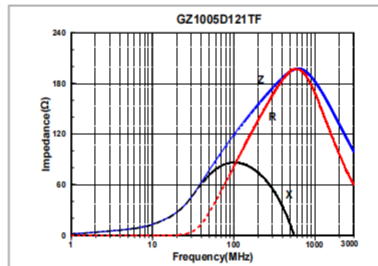
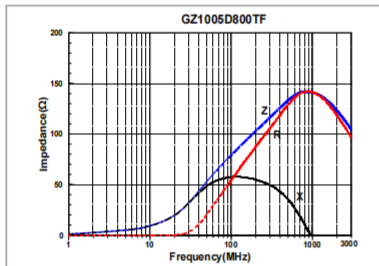
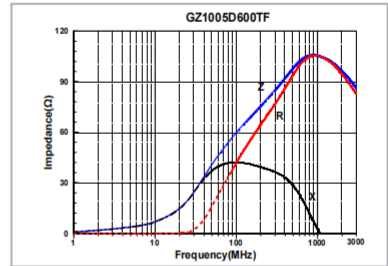
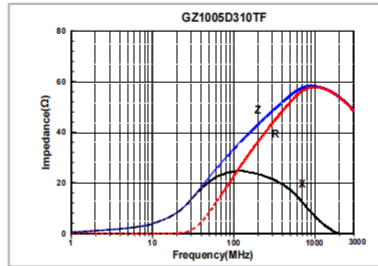
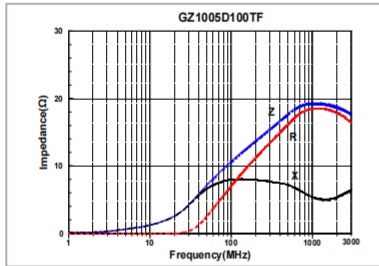


**DETAIL ELECTRICAL CHARACTERISTICS**

**GZ0603 TYPE**

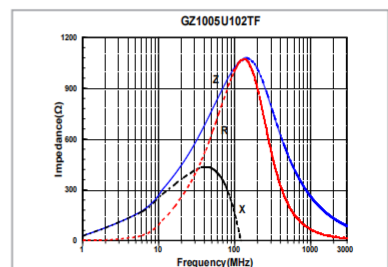
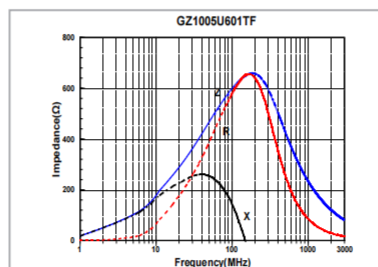
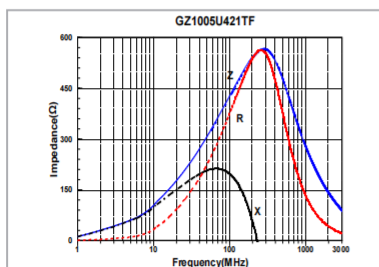
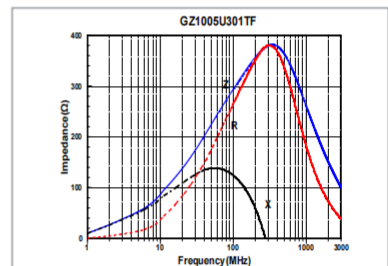
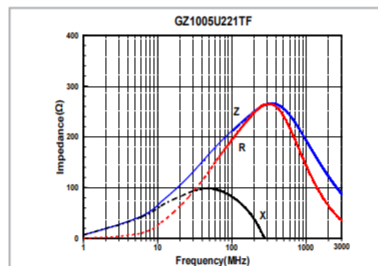
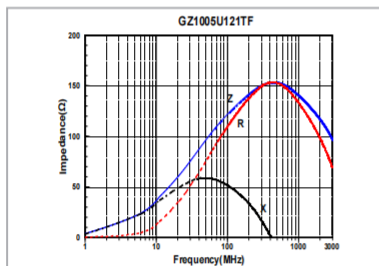
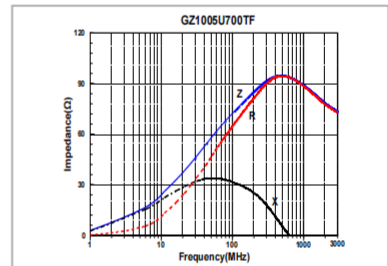
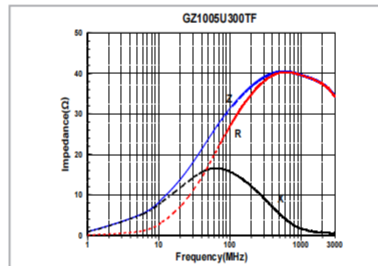
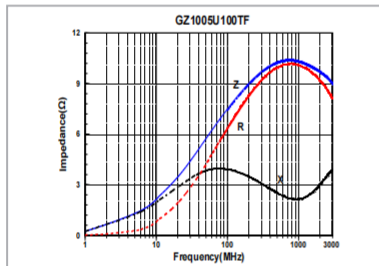
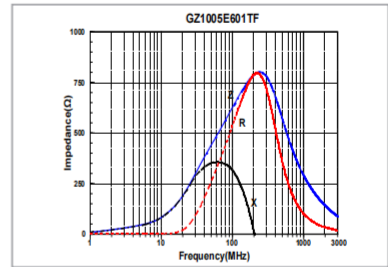
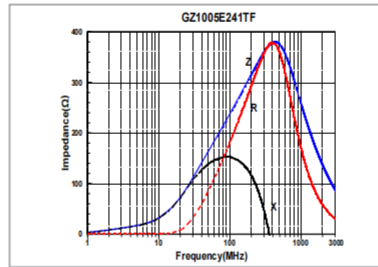
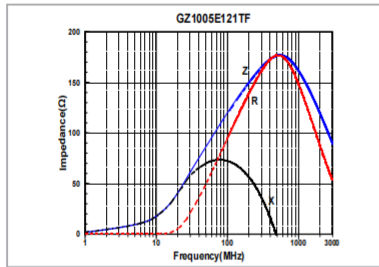
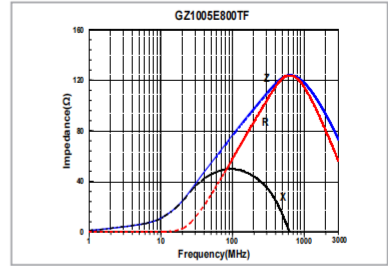
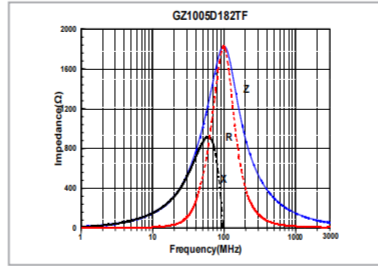
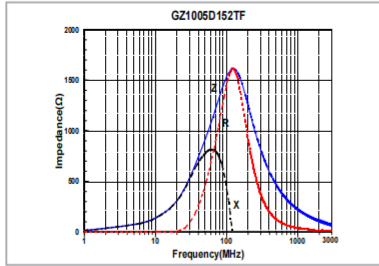


**GZ1005 TYPE**



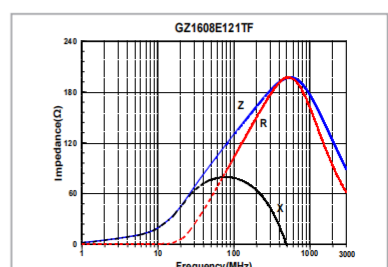
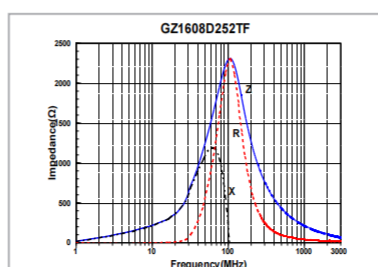
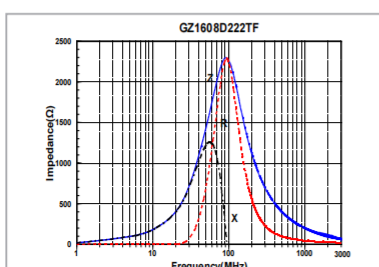
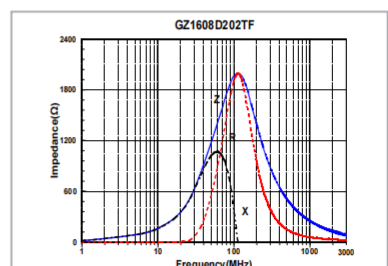
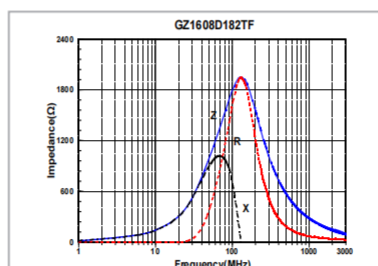
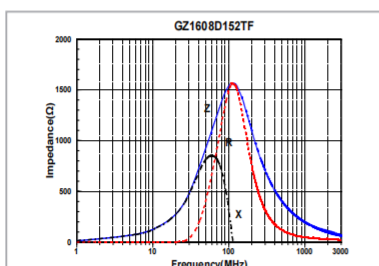
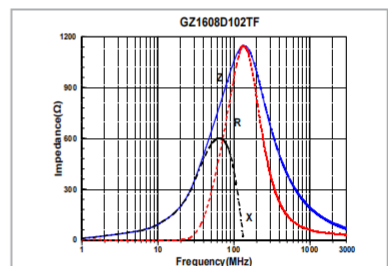
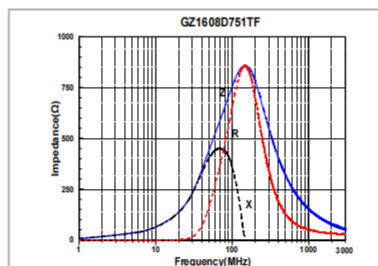
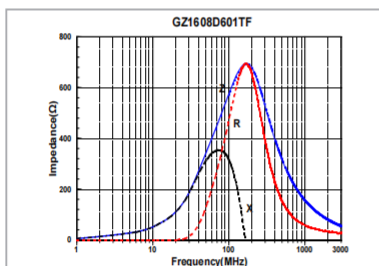
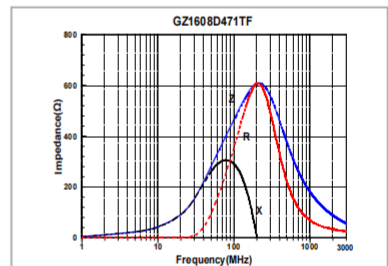
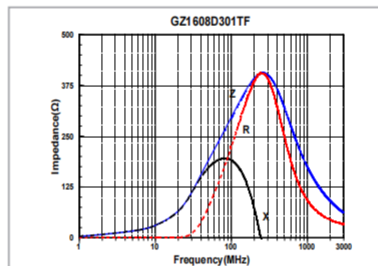
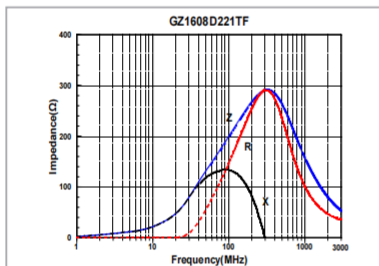
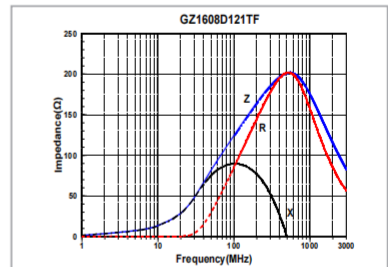
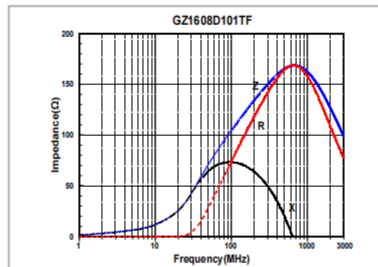
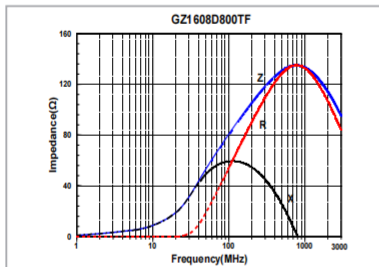
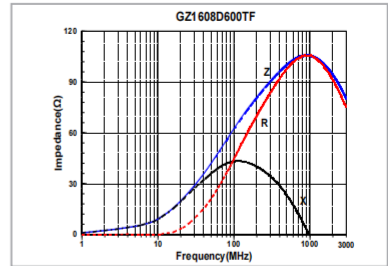
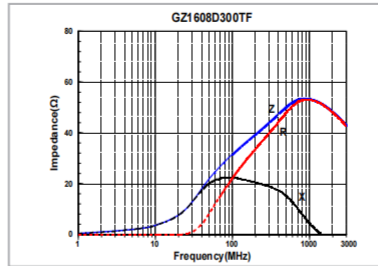
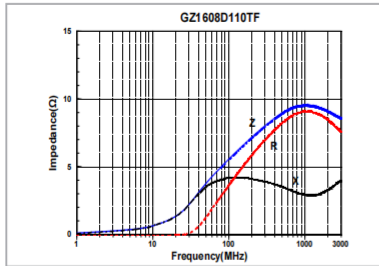
**DETAIL ELECTRICAL CHARACTERISTICS**

**GZ1005 TYPE**



**DETAIL ELECTRICAL CHARACTERISTICS**

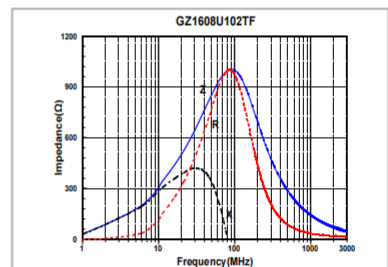
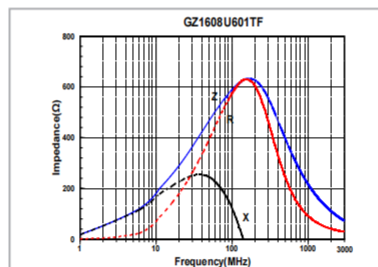
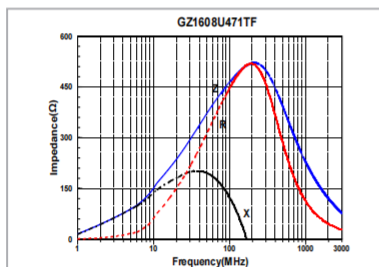
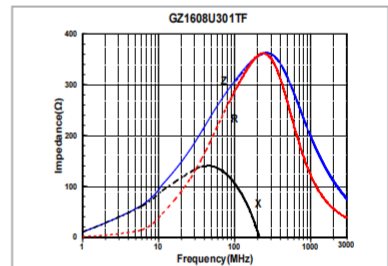
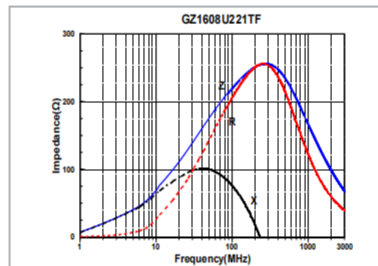
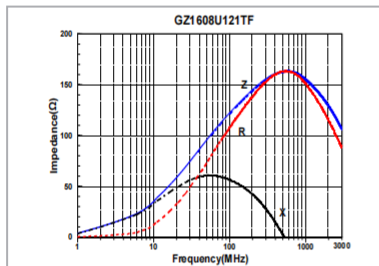
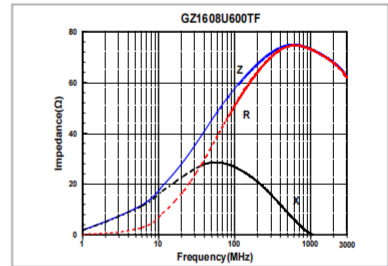
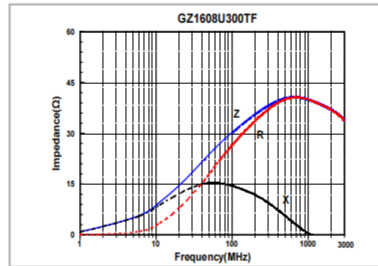
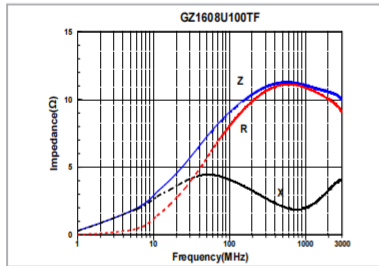
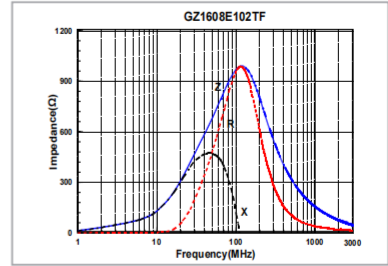
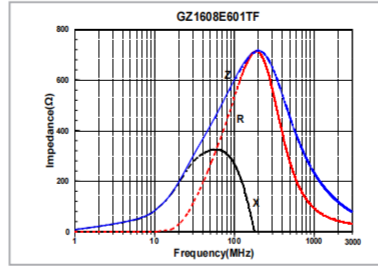
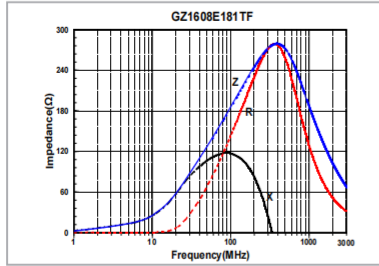
**GZ1608 TYPE**



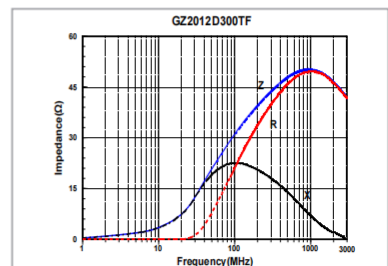
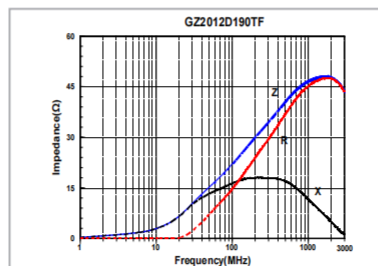
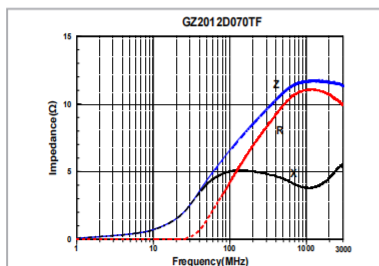


**DETAIL ELECTRICAL CHARACTERISTICS**

**GZ1608 TYPE**

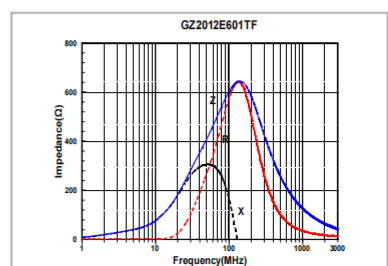
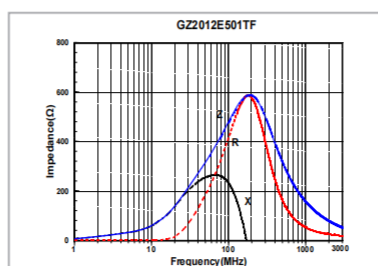
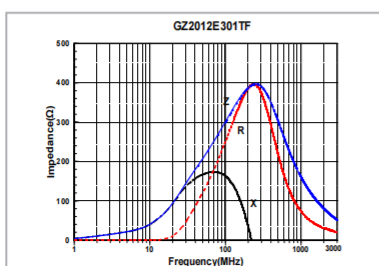
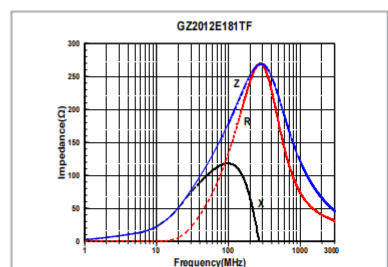
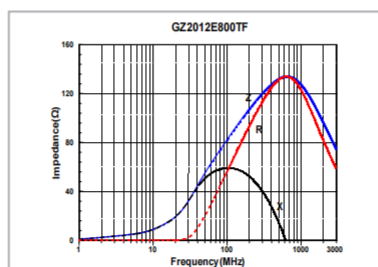
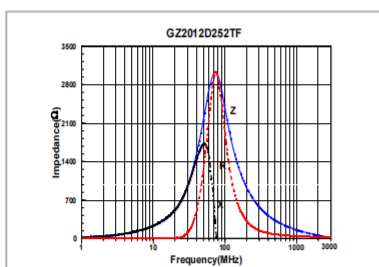
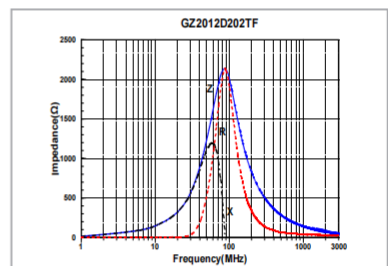
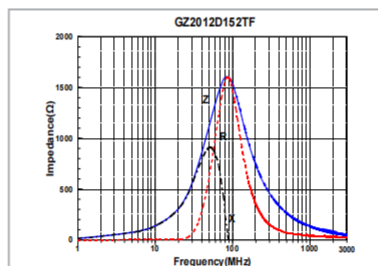
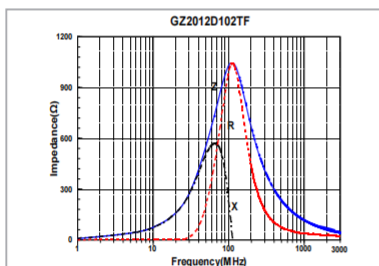
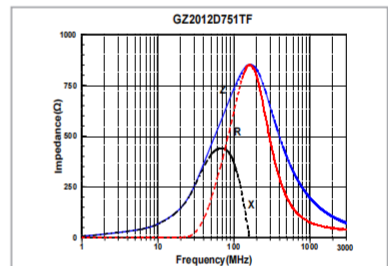
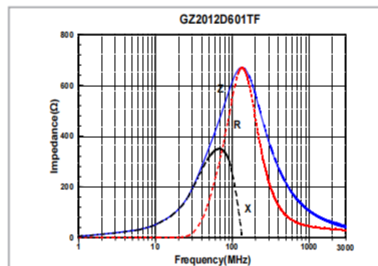
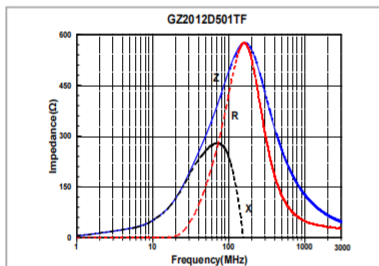
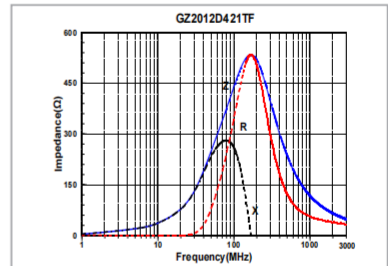
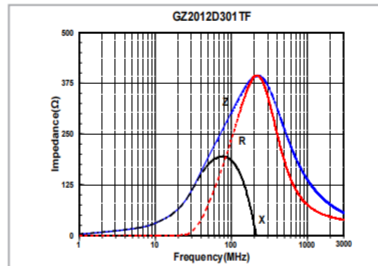
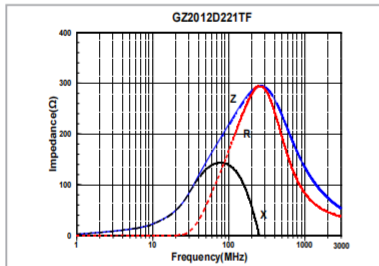
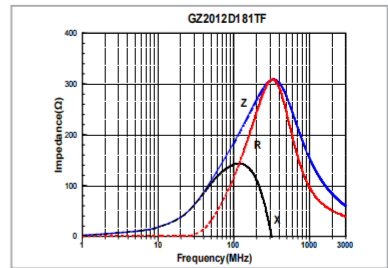
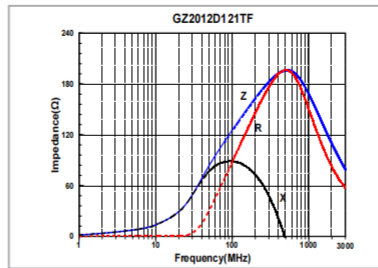
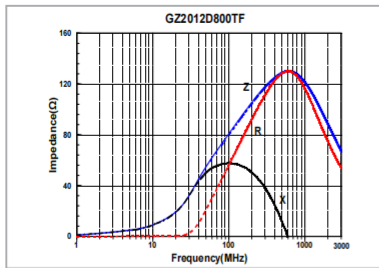


**GZ2012 TYPE**



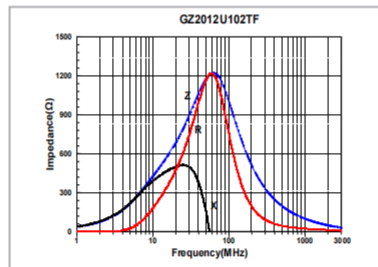
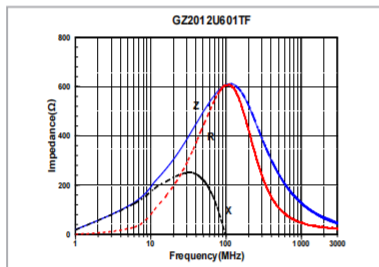
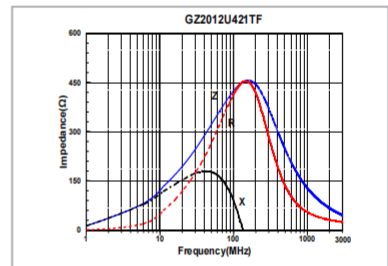
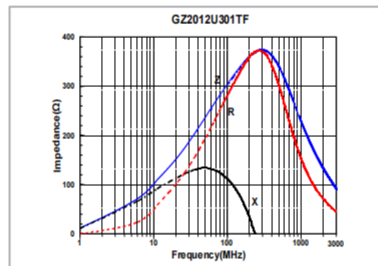
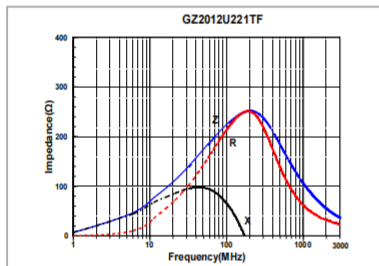
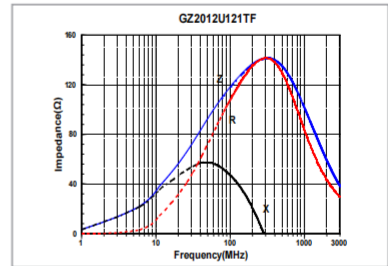
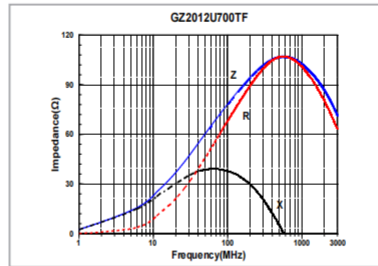
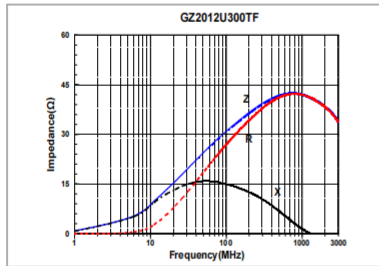
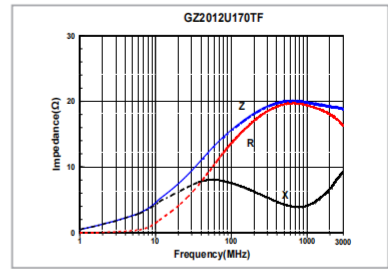
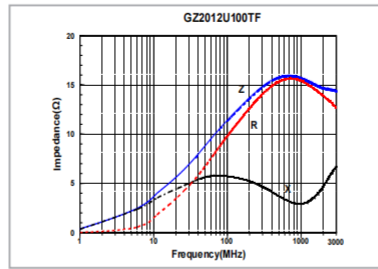
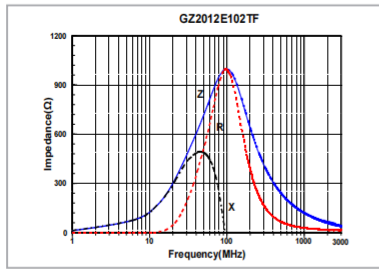
**DETAIL ELECTRICAL CHARACTERISTICS**

**GZ2012 TYPE**

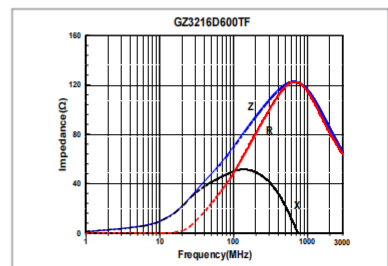
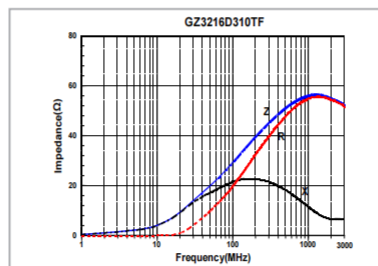
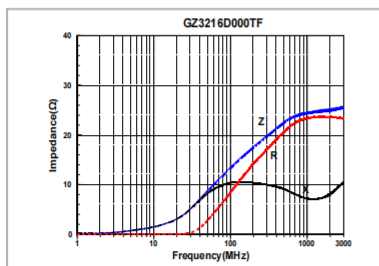


**DETAIL ELECTRICAL CHARACTERISTICS**

**GZ2012 TYPE**

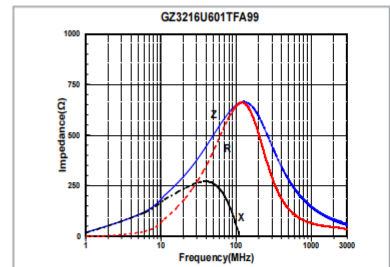
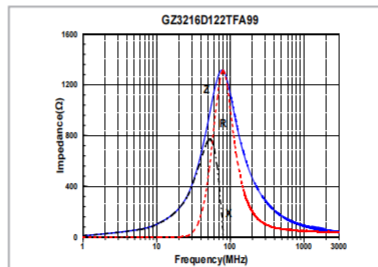
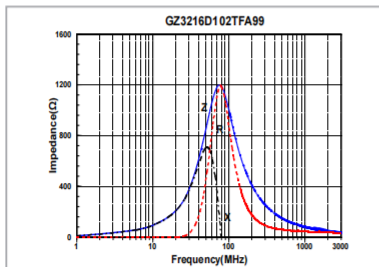
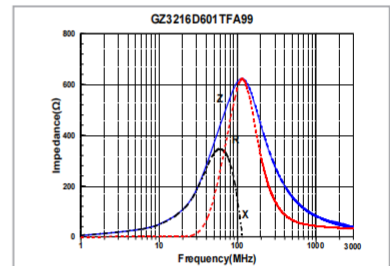
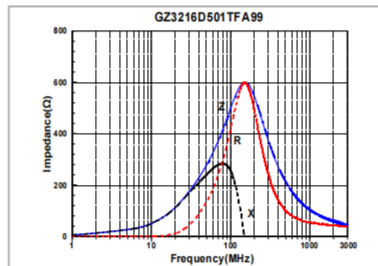
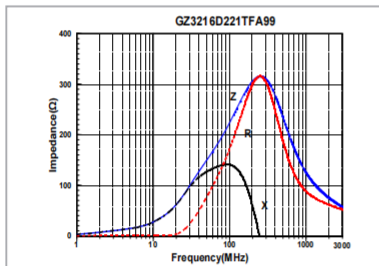
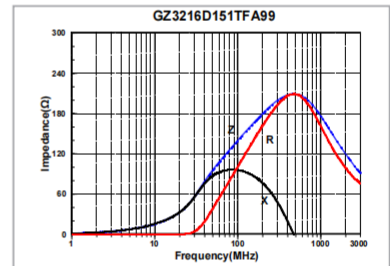
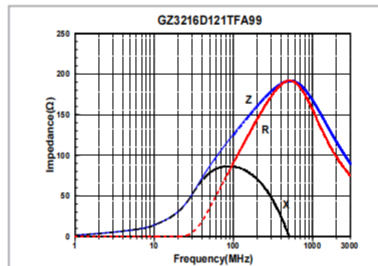
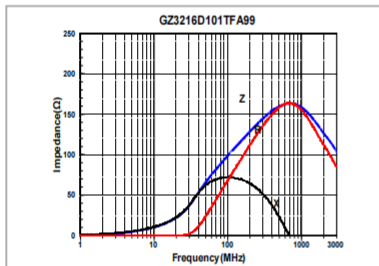
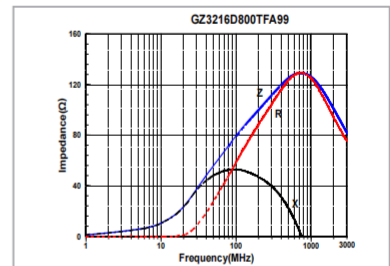
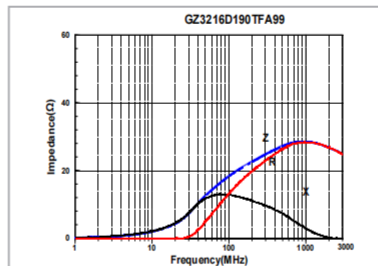
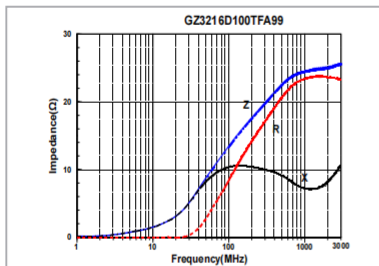
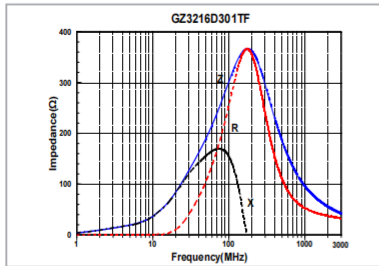


**GZ3216 TYPE**



**DETAIL ELECTRICAL CHARACTERISTICS**

**GZ3216 TYPE**



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