

# Multilayer Chip Ferrite Bead – GZ Series

Operating Temp. : -55 ~+125



## 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**

**1608**

**D**

**121**

**T**

**F**

Type	
GZ	Chip Ferrite Bead for General Use

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

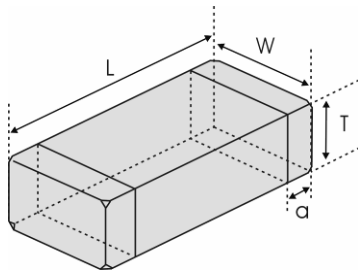
Material Code
D, E, U

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

Packing	
T	Tape & Reel

Hazardous Substance Free Products
F

## 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]	0.85±0.2 [.033±.008]	0.5±0.3 [.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 [.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	$\Omega$	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	
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 [.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	



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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 [.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 [.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	
GZ2012E102TF	1000±25%	100	0.35	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
GZ2012U100TF	0~15	100	0.04	2200	0.85±0.2 [.033±.008]
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	

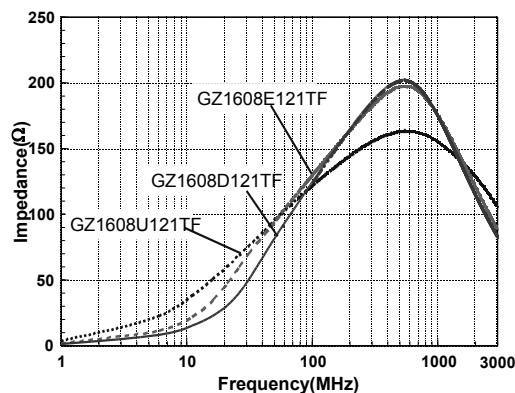
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Units	$\Omega$	MHz	$\Omega$	mA	mm [inch]
Symbol	Z	Freq.	DCR	I <sub>r</sub>	T
GZ3216D000TF	0~15	100	0.03	2200	0.85±0.2 [.033±.008]
GZ3216D310TF	31±25%	100	0.05	2000	
GZ3216D600TF	60±25%	100	0.10	1000	
GZ3216D800TF	80±25%	100	0.10	1000	
GZ3216D121TF	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.

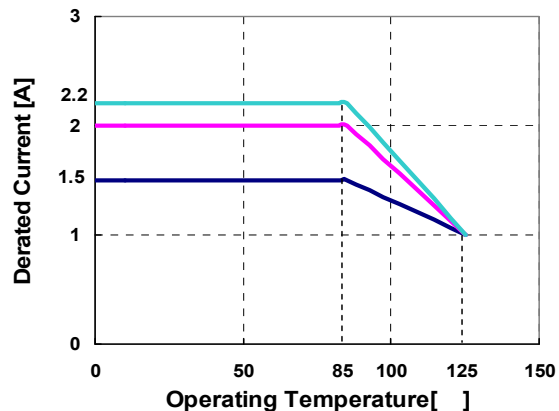
## TYPICAL ELECTRICAL CHARACTERISTICS

### 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.



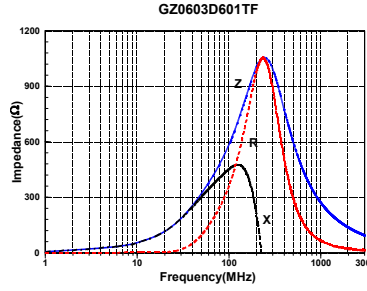
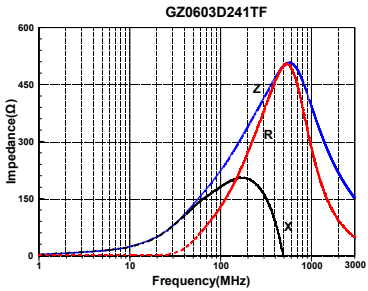
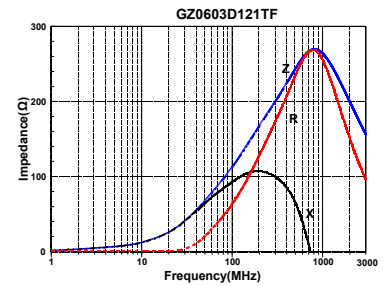
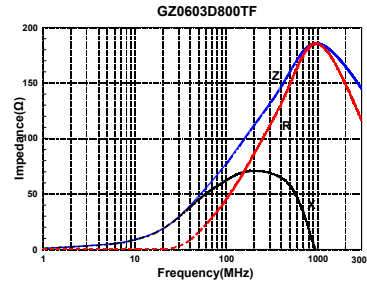
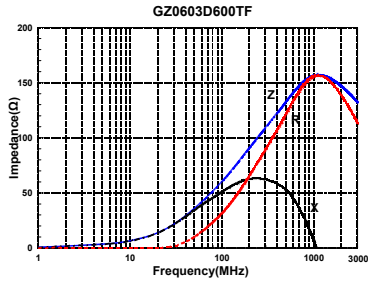
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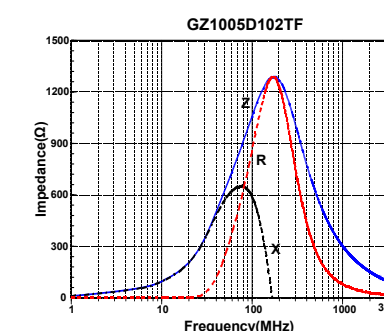
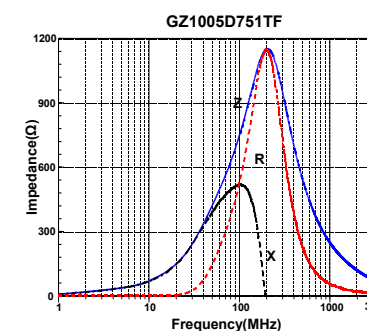
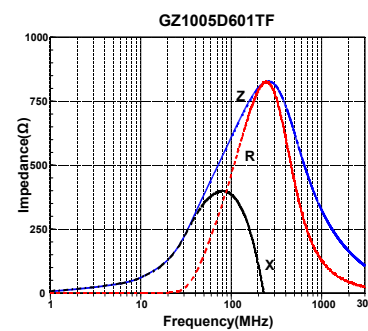
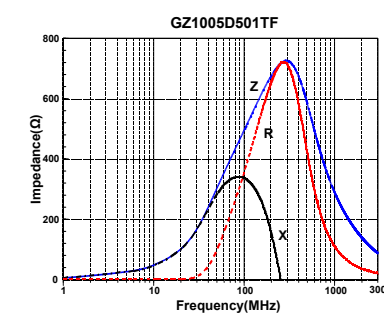
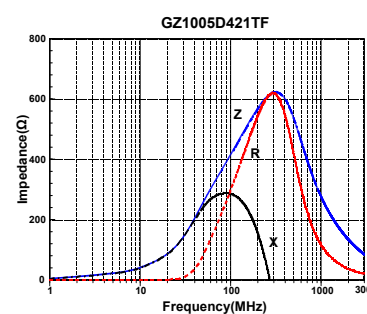
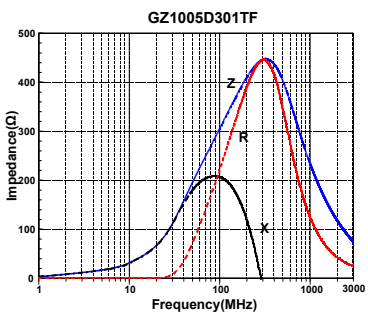
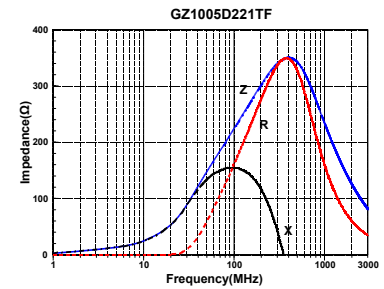
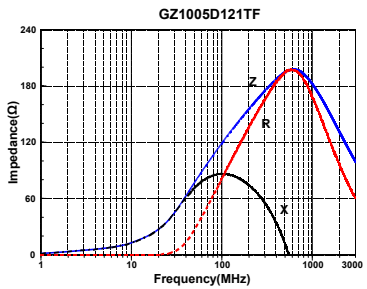
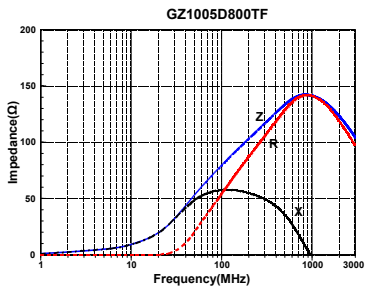
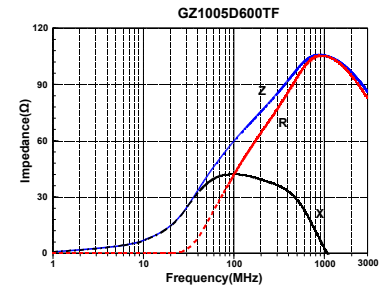
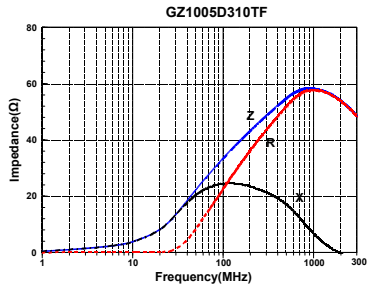
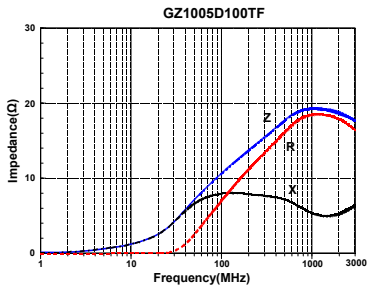
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# DETAIL ELECTRICAL CHARACTERISTICS

## GZ0603 TYPE



## GZ1005 TYPE

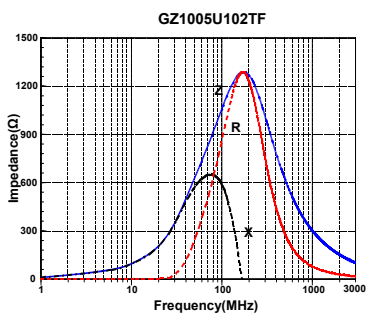
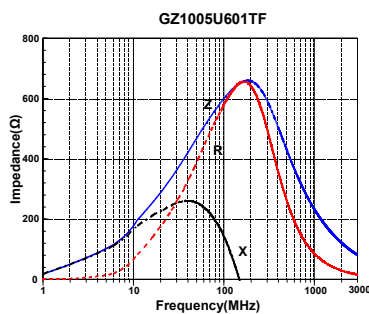
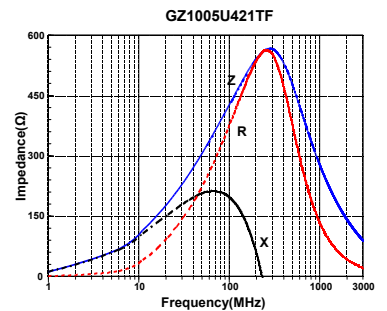
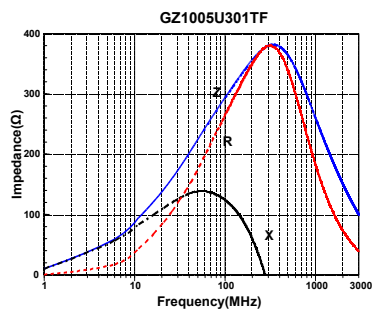
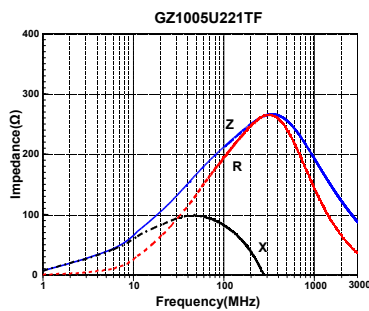
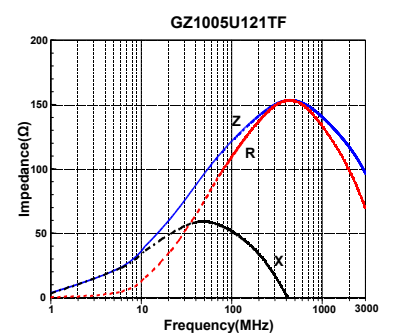
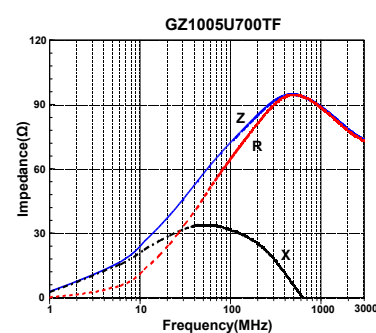
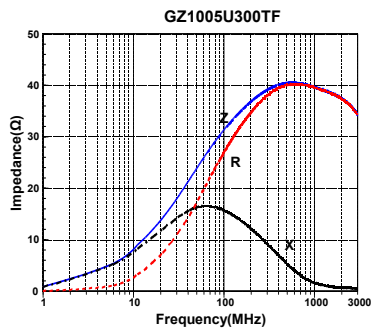
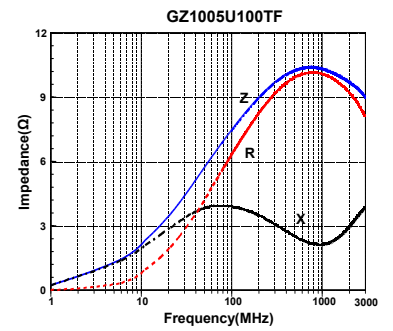
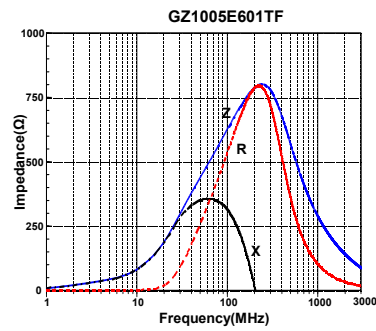
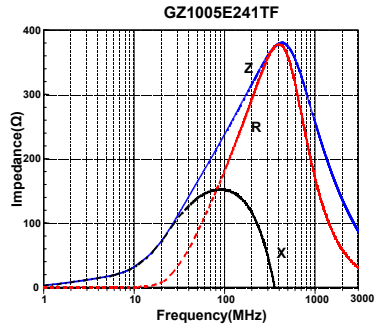
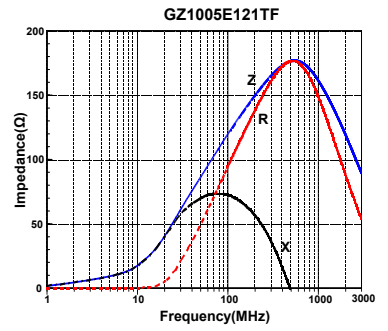
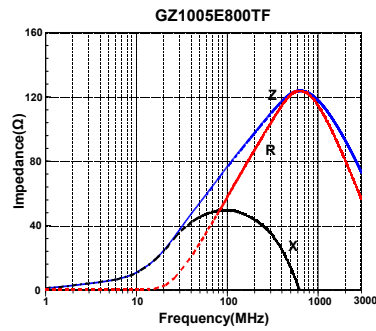
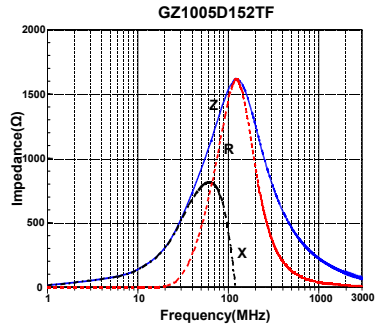


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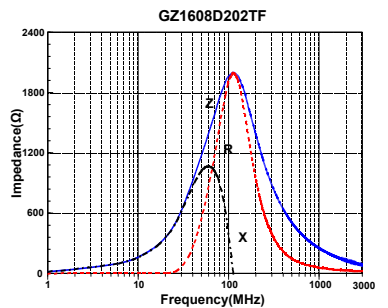
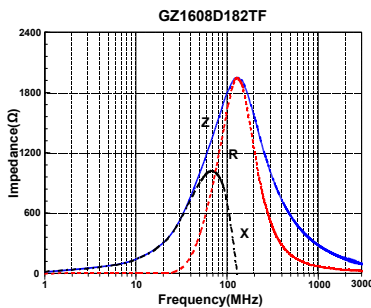
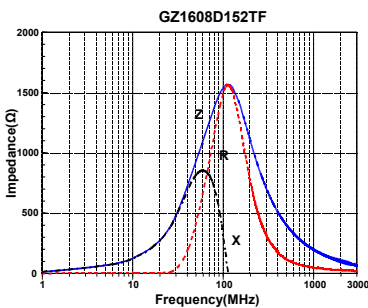
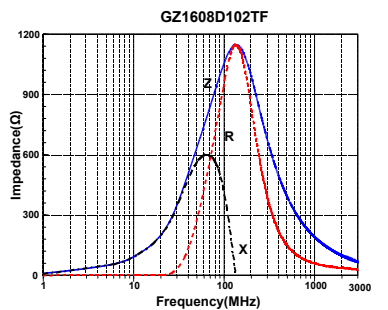
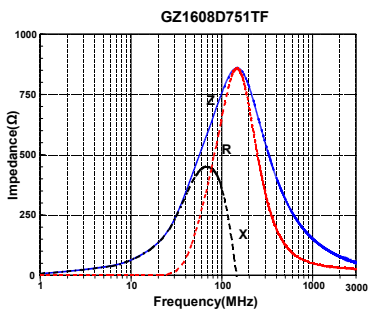
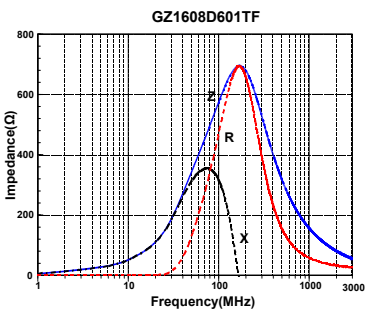
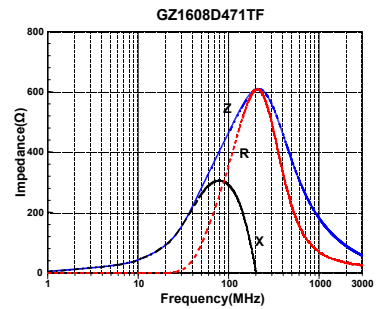
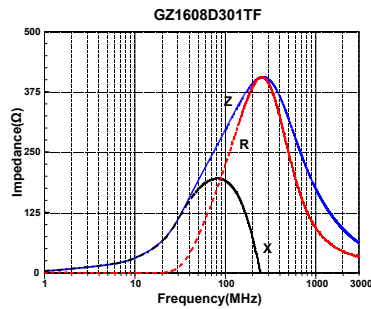
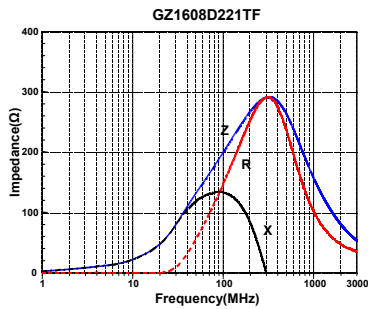
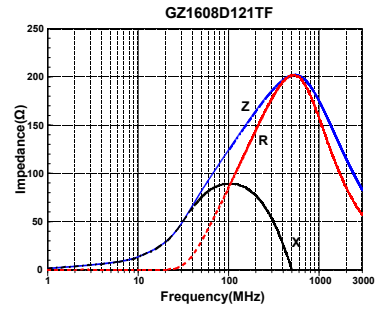
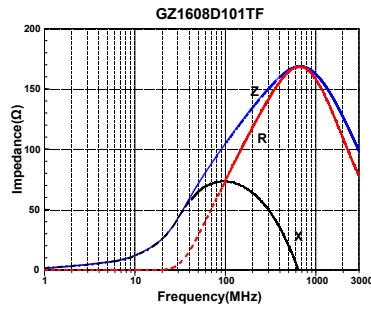
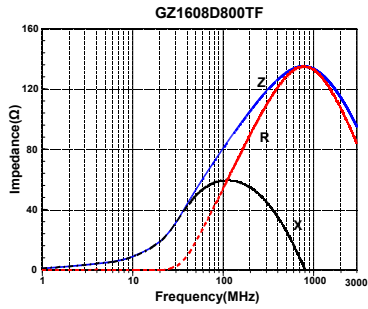
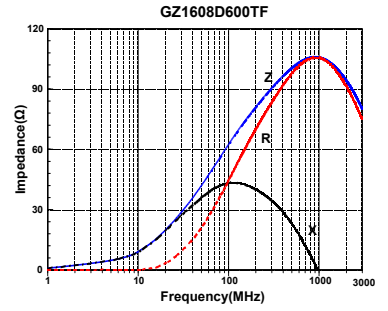
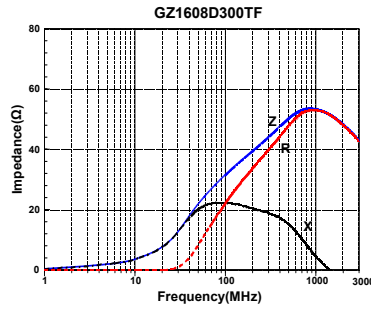
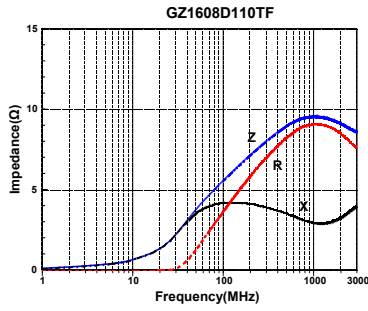
# DETAIL ELECTRICAL CHARACTERISTICS

## GZ1005 TYPE



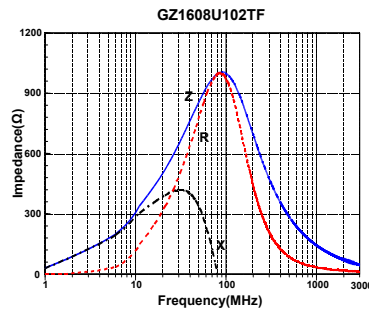
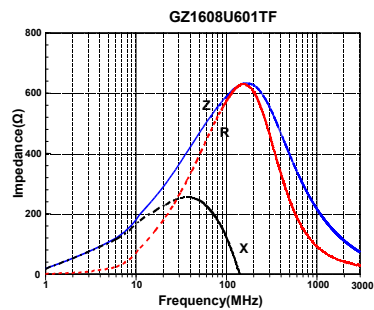
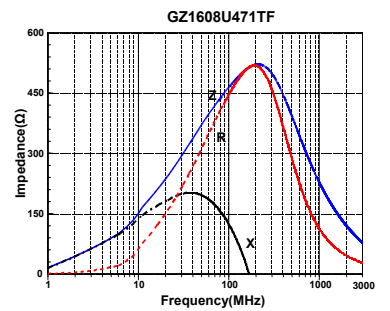
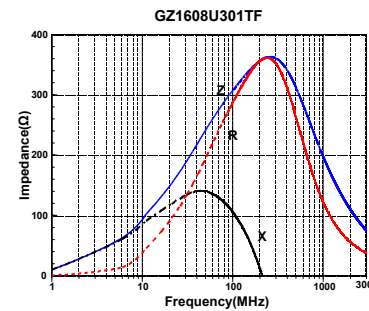
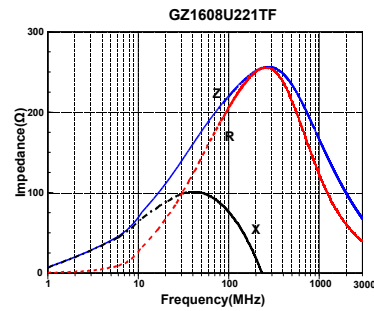
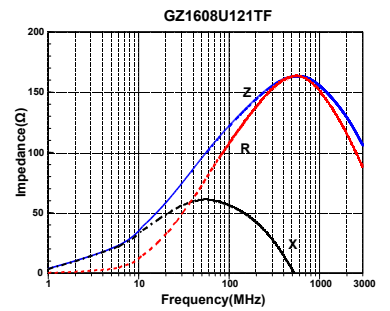
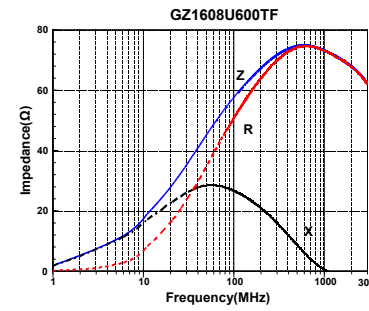
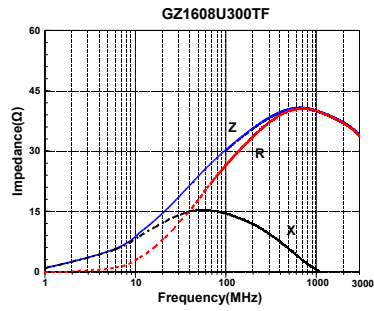
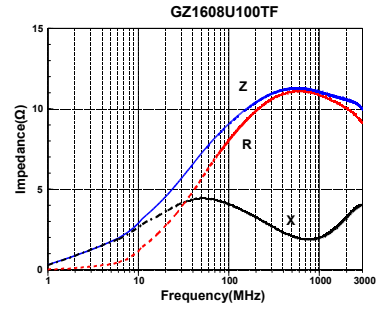
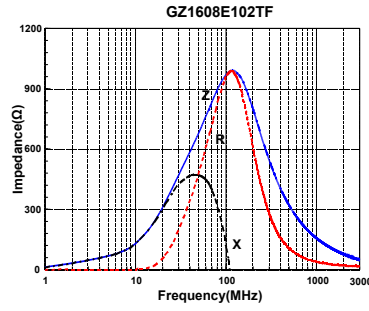
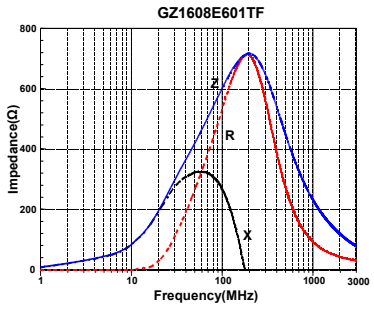
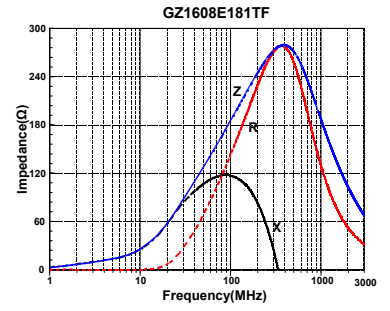
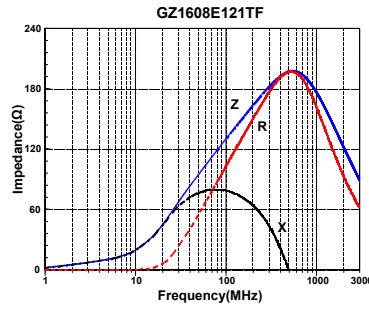
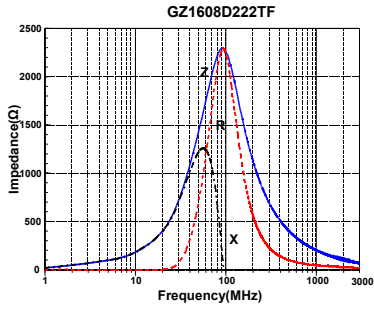
# DETAIL ELECTRICAL CHARACTERISTICS

## GZ1608 TYPE



# DETAIL ELECTRICAL CHARACTERISTICS

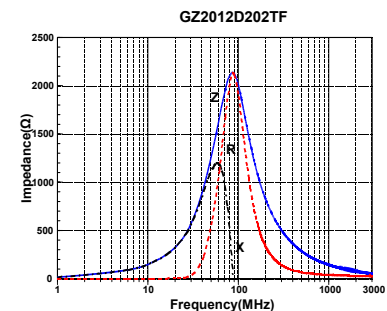
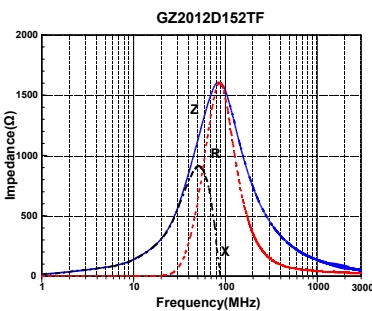
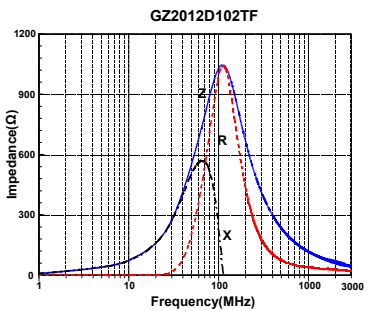
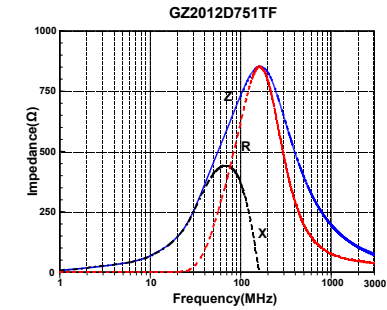
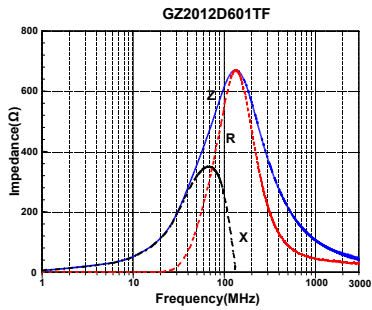
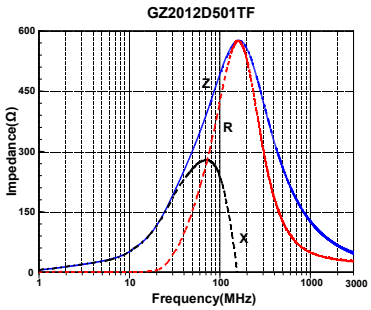
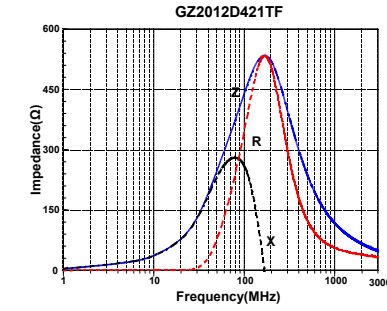
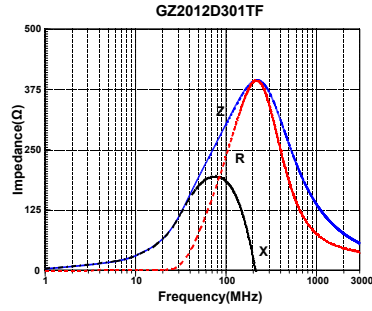
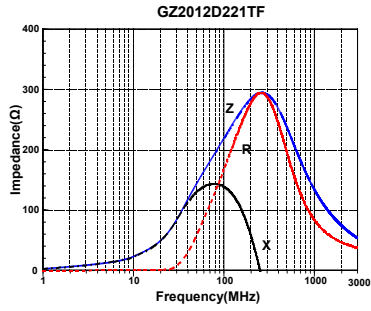
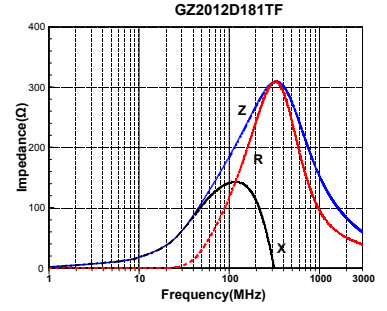
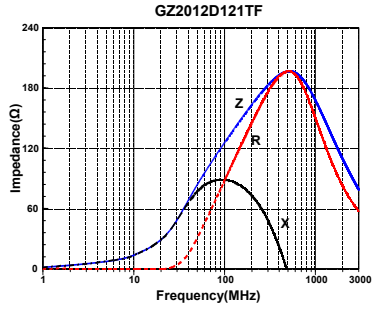
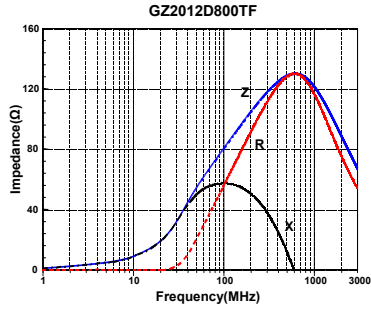
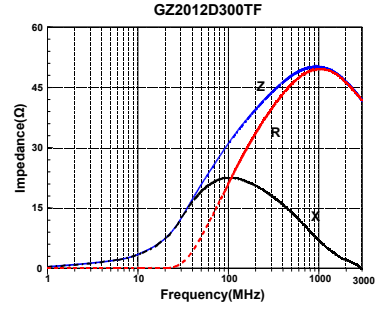
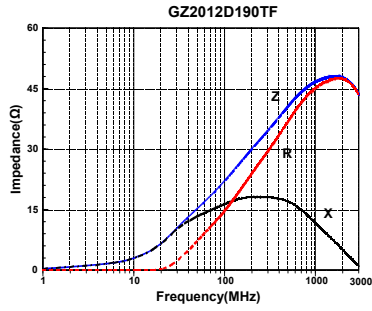
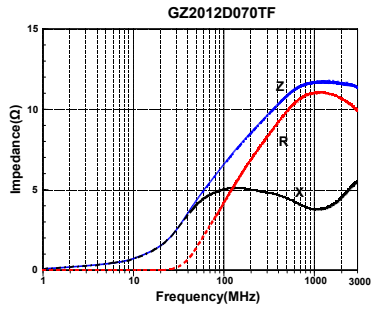
## GZ1608 TYPE





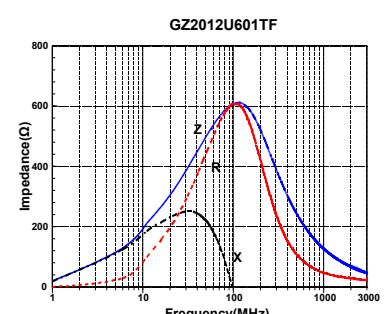
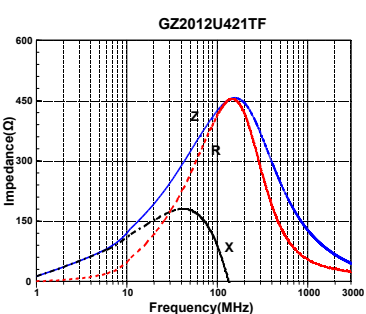
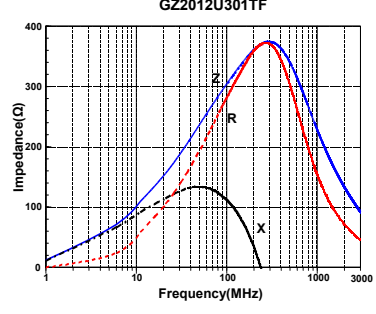
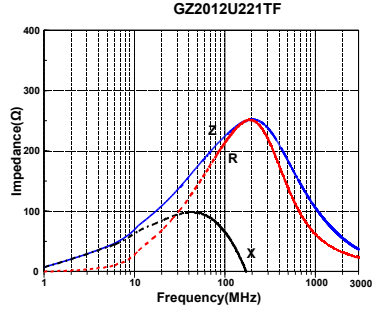
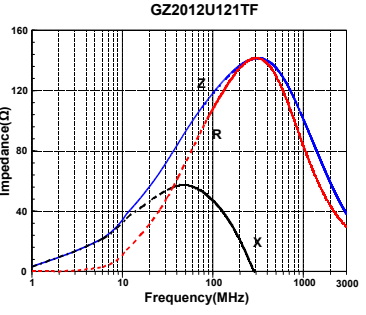
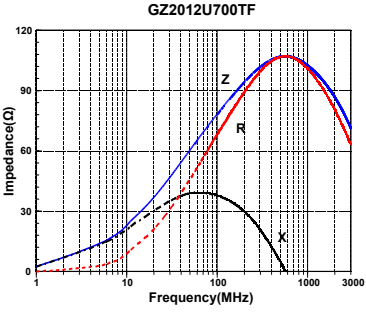
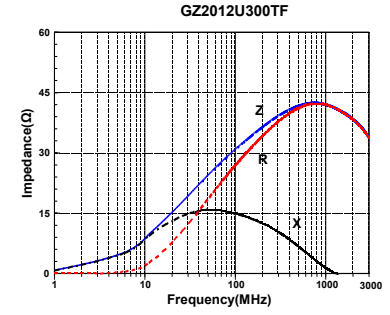
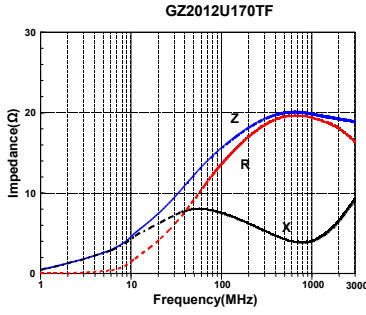
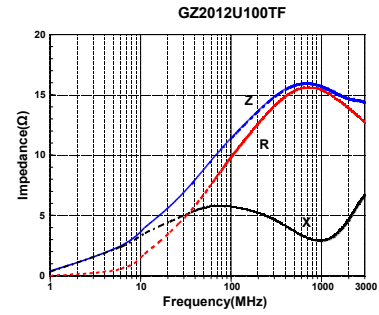
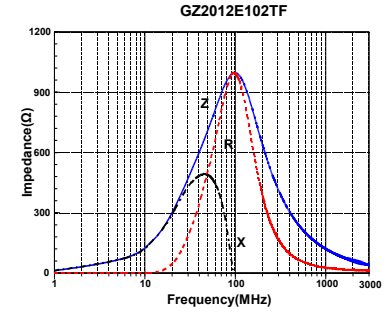
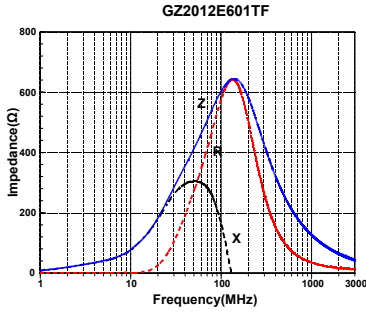
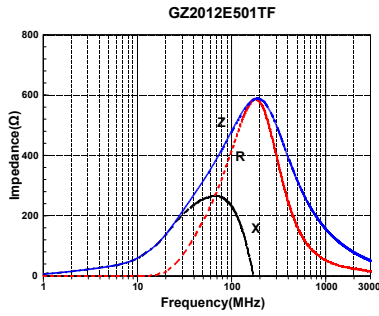
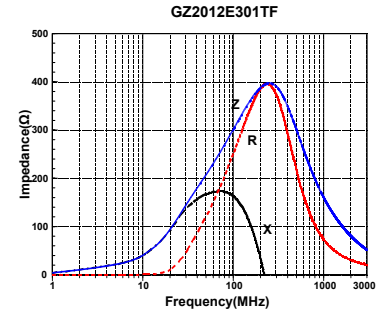
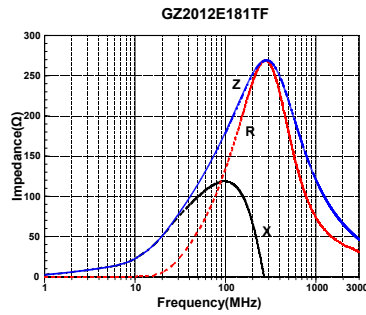
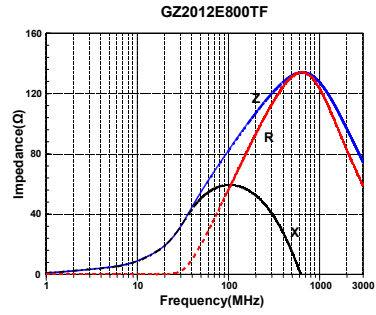
# DETAIL ELECTRICAL CHARACTERISTICS

## GZ2012 TYPE



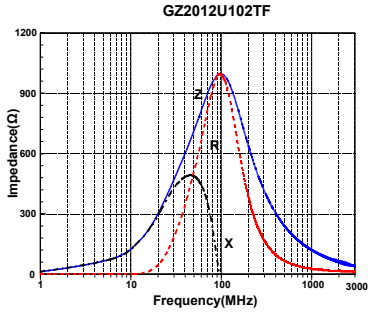
# DETAIL ELECTRICAL CHARACTERISTICS

## GZ2012 TYPE

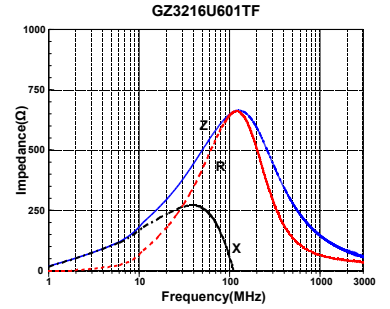
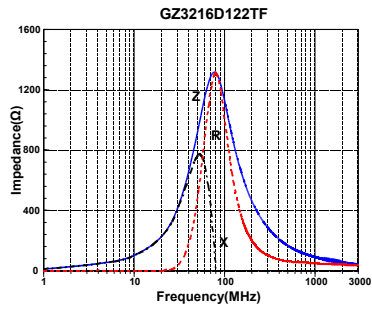
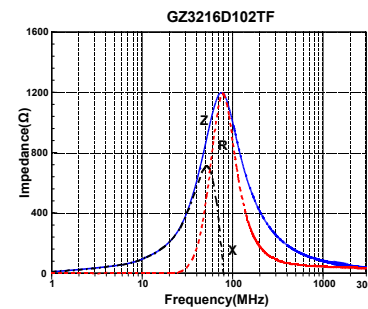
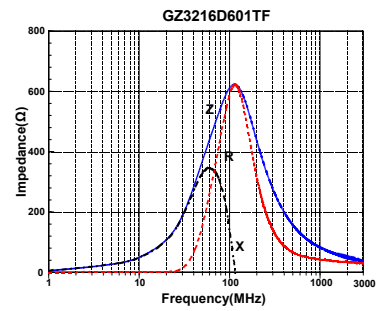
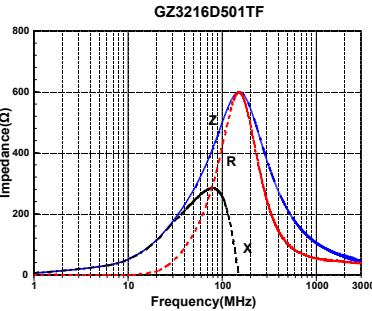
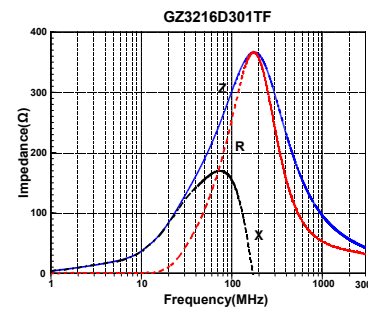
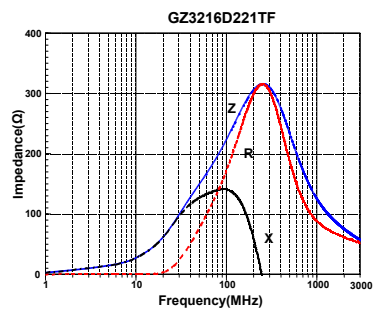
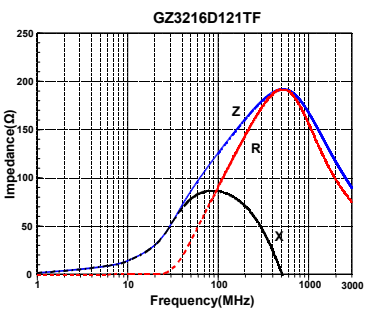
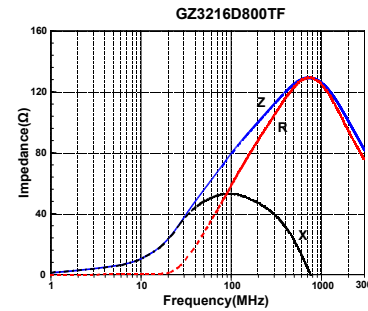
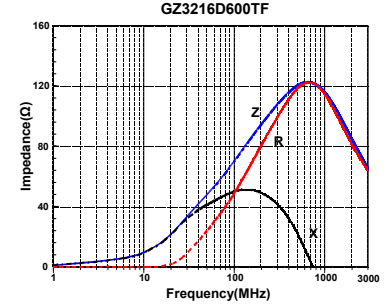
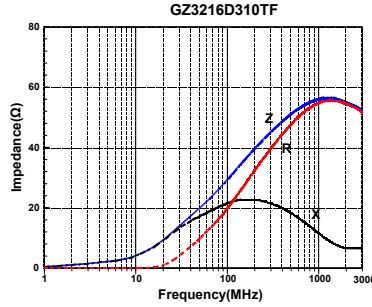
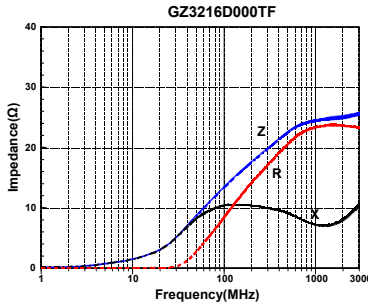


# DETAIL ELECTRICAL CHARACTERISTICS

## GZ2012 TYPE



## GZ3216 TYPE



## PACKAGING

Type	Tape Width	Reel Diameter	Quantity (pcs)
0603[0201]	8mm	178mm	15K
1005[0402]	8mm	178mm	10K
1608[0603]	8mm	178mm	4K
2012[0805]	8mm	178mm	4K

## RECOMMENDED SOLDERING TECHNOLOGIES

### Re-flowing Profile:

Preheat condition: 150 ~200 /60~120sec.

Allowed time above 217 : 60~90sec.

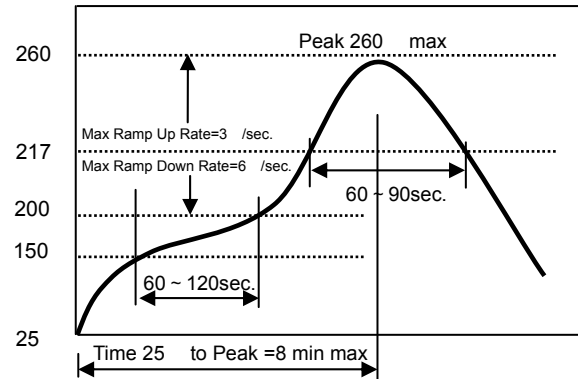
Max temp: 260

Max time at max temp: 10sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max

[Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]



### Iron Soldering Profile.

Iron soldering power: Max.30W

Pre-heating: 150 /60 sec.

Soldering Tip temperature: 350 Max.

Soldering time: 3sec Max.

Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering

[Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.]

