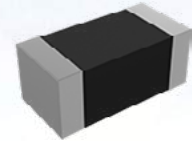


# Multilayer Chip Ferrite Bead - GZ Series



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

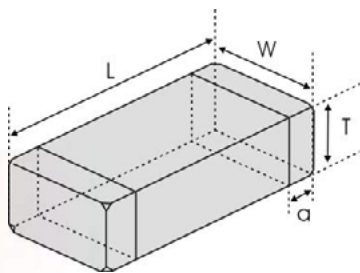
## APPLICATIONS

- 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

<b>GZ</b>	<b>3216</b>	<b>D</b>	<b>121</b>	<b>T</b>	<b>F</b>	<b>(A99)</b>																				
①	②	③	④	⑤	⑥	⑦																				
①	②		③		④																					
<table border="1"> <tr><th colspan="2">Type</th></tr> <tr><td>GZ</td><td>Chip Ferrite Bead for General Use</td></tr> </table>	Type		GZ	Chip Ferrite Bead for General Use	<table border="1"> <tr><th colspan="2">External Dimensions (L×W) (mm)</th></tr> <tr><td>0603 [0201]</td><td>0.6×0.3</td></tr> <tr><td>1005 [0402]</td><td>1.0×0.5</td></tr> <tr><td>1608 [0603]</td><td>1.6×0.8</td></tr> <tr><td>2012 [0805]</td><td>2.0×1.25</td></tr> <tr><td>3216 [1206]</td><td>3.2×1.6</td></tr> </table>		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	<table border="1"> <tr><th colspan="2">Material Code</th></tr> <tr><td colspan="2">D, E, U</td></tr> </table>		Material Code		D, E, U		⑤	
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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]	0.85±0.2 [0.033±0.008] 1.1±0.2 [0.043±0.008]	0.5±0.3 [.020±.012]

## SPECIFICATION

### 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	

## SPECIFICATION

### 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	

## SPECIFICATION

### 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

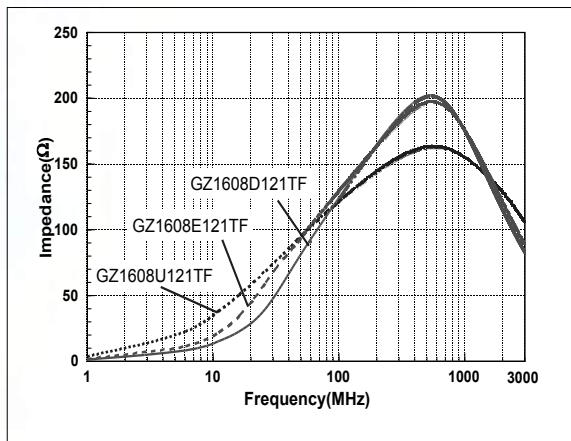
Part Number	Impedance	Z Test Frequency	Max.DC Resistance	Max.Rated Current	Thickness
Units	$\Omega$	MHz	$\Omega$	mA	mm [inch]
Symbol	Z	Freq.	DCR	I <sub>r</sub>	T
GZ3216D000TF	0~15	100	0.03	2200	0.85±0.2 [.033±.008]
GZ3216D310TF	31±25%	100	0.05	2000	
GZ3216D600TF	60±25%	100	0.10	1000	
GZ3216D301TF	300±25%	100	0.20	600	1.10±0.2 [0.043±0.008]
GZ3216D100TFA99	0~15	100	0.05	2000	
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.



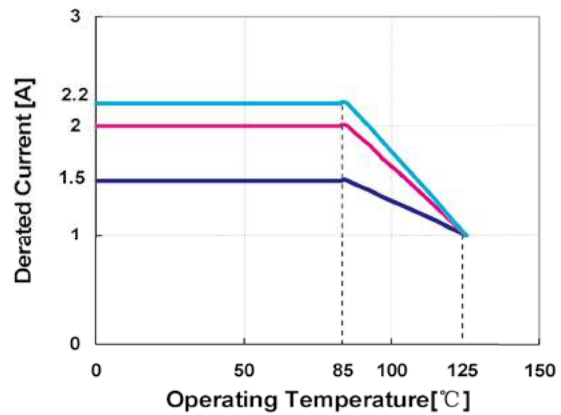
# TYPICAL ELECTRICAL CHARACTERISTICS

## D, E, U Material Comparison

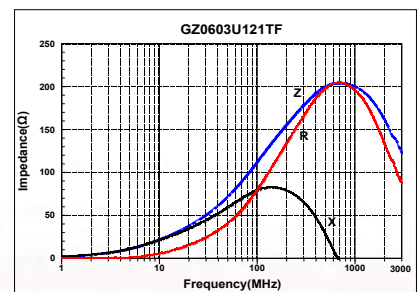
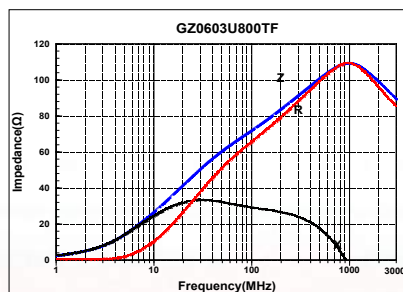
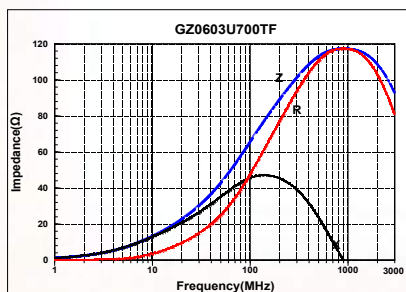
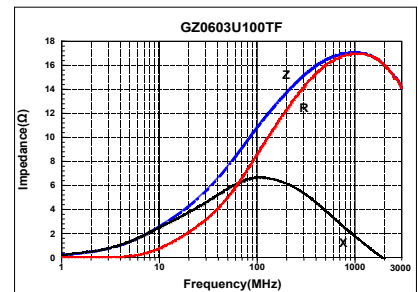
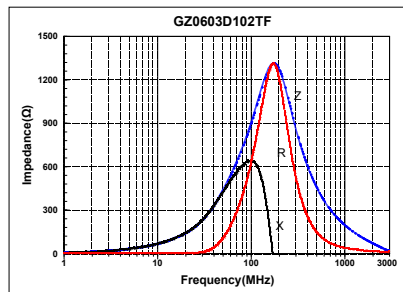
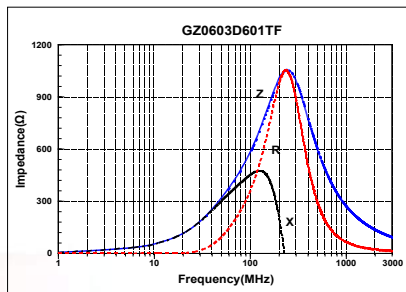
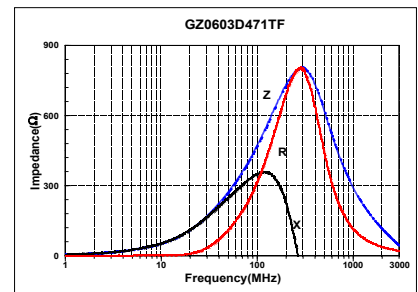
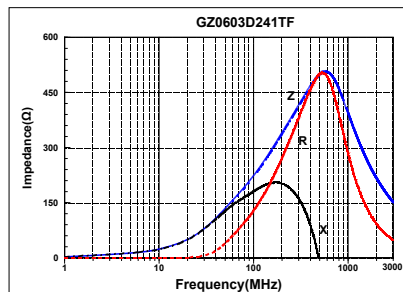
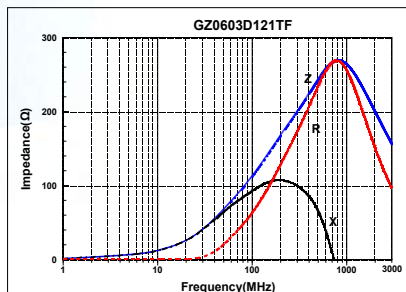
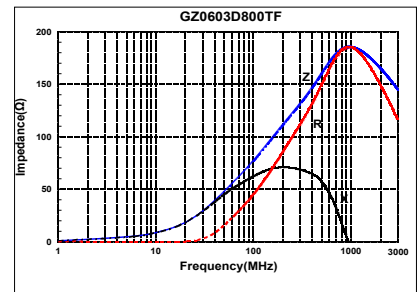
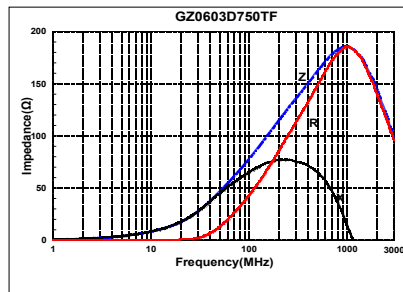
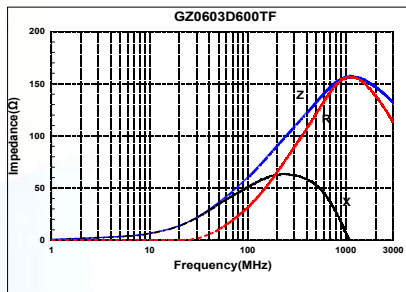


## Rated Current

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.

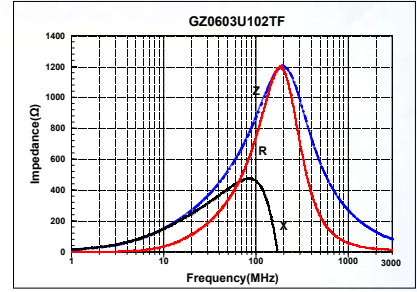
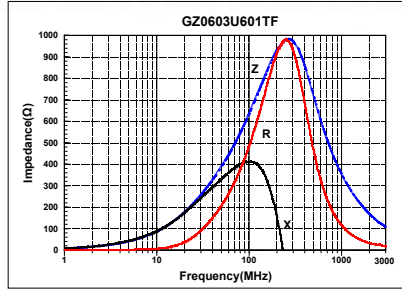
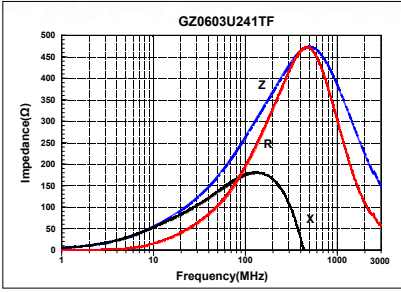


## GZ0603 TYPE

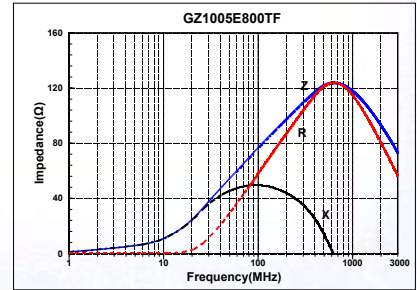
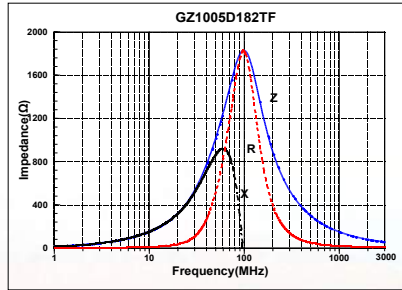
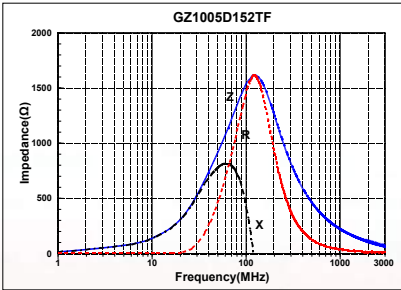
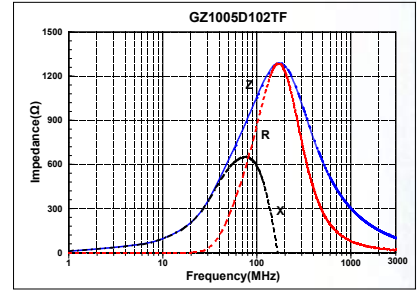
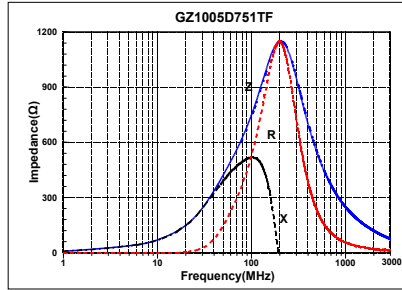
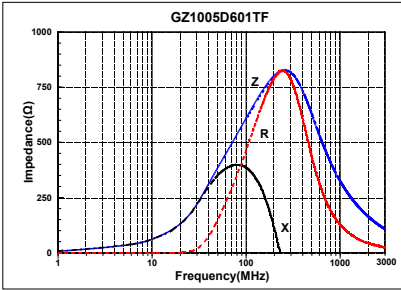
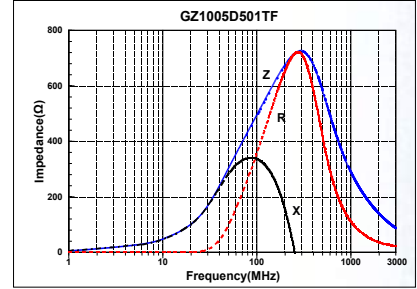
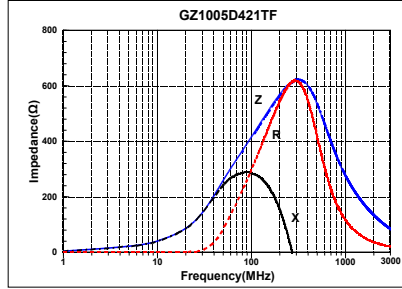
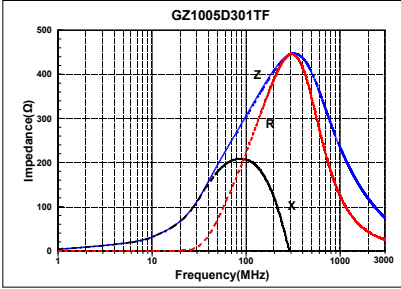
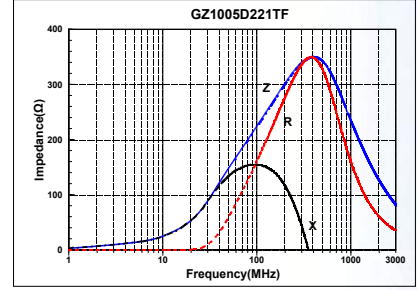
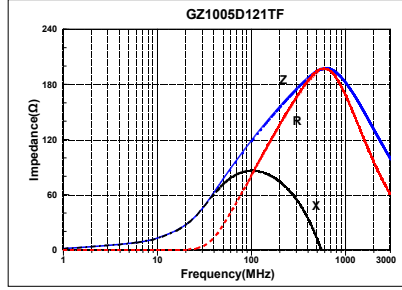
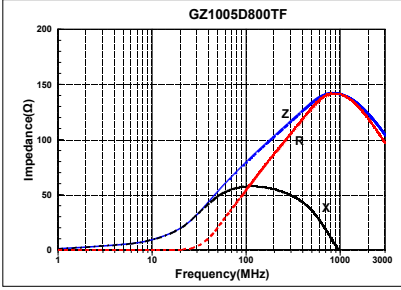
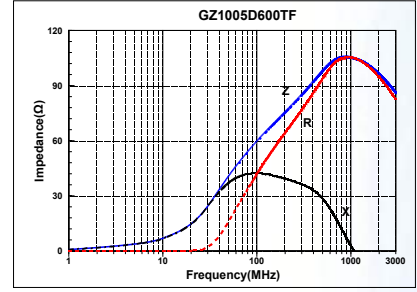
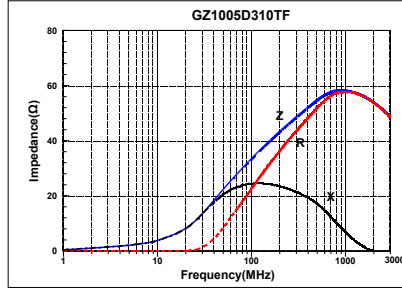
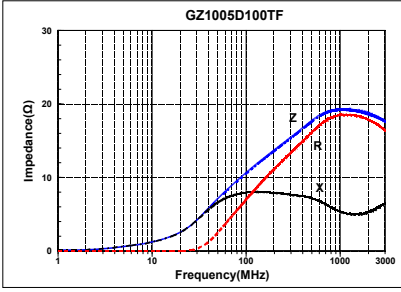


# TYPICAL ELECTRICAL CHARACTERISTICS

## GZ0603 TYPE

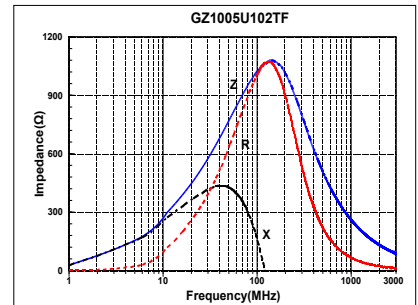
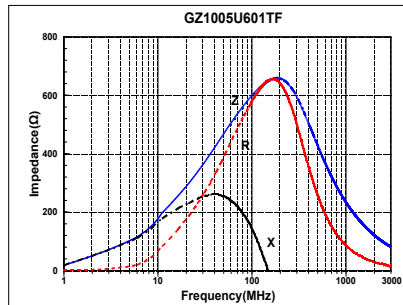
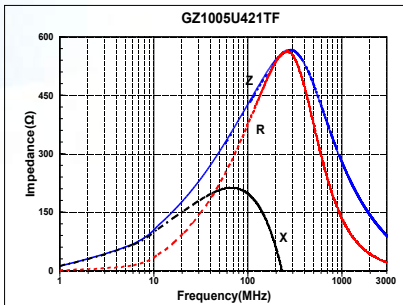
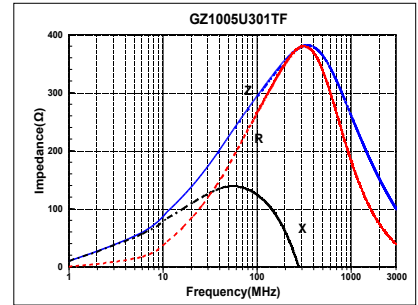
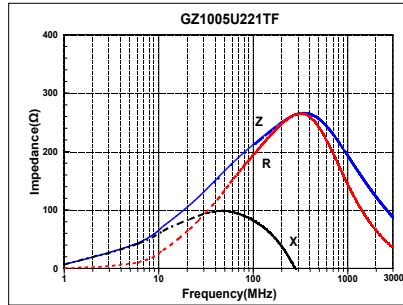
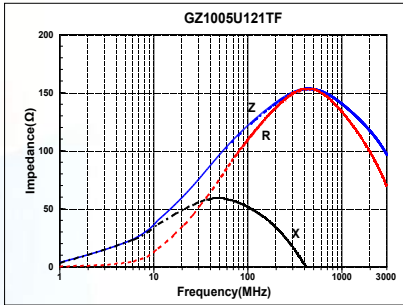
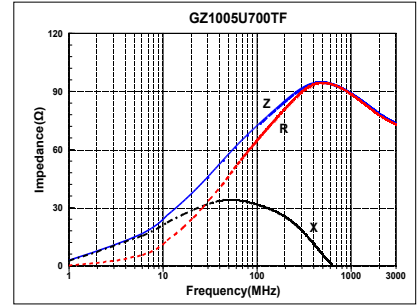
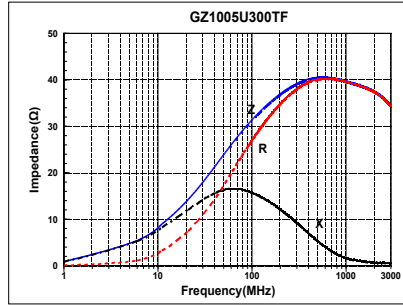
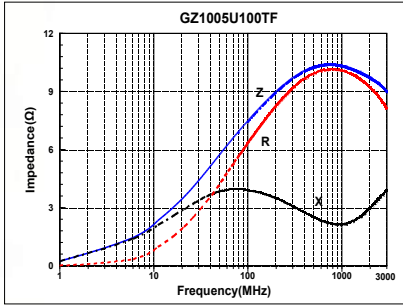
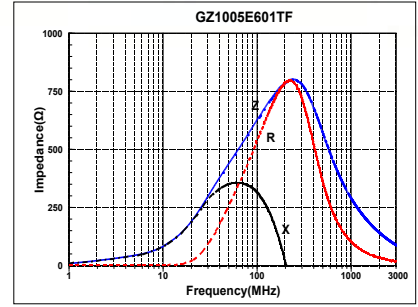
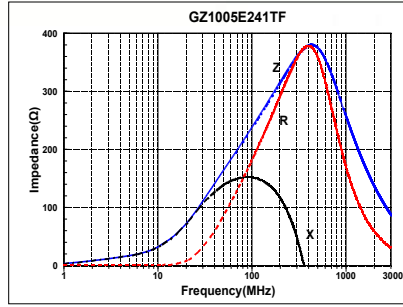
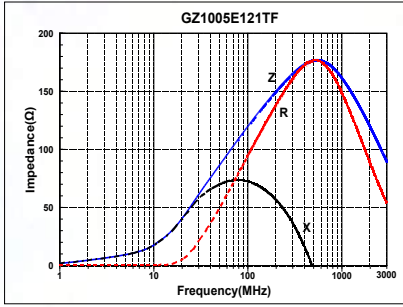


## GZ1005 TYPE

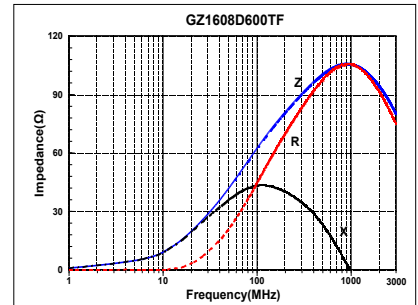
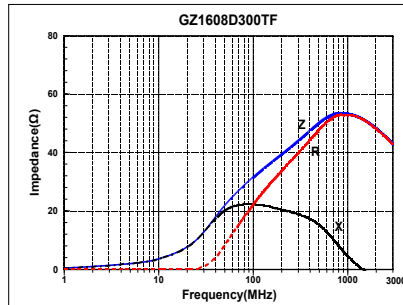
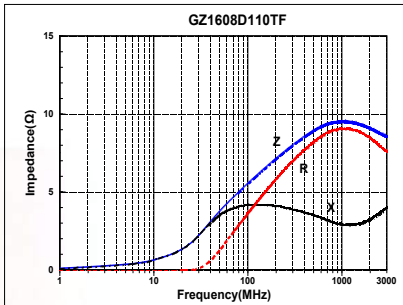


# TYPICAL ELECTRICAL CHARACTERISTICS

## GZ1005 TYPE

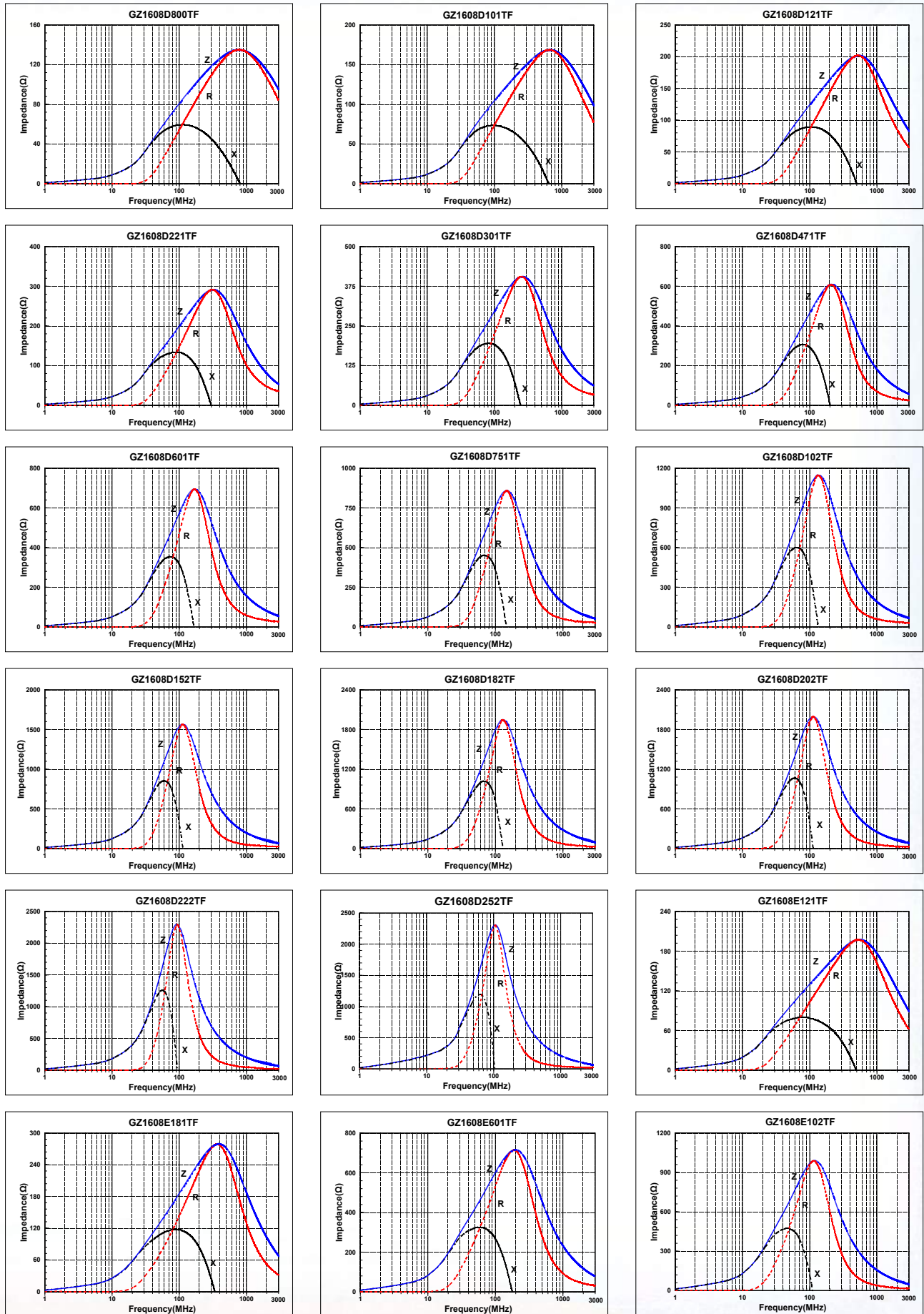


## GZ1608 TYPE



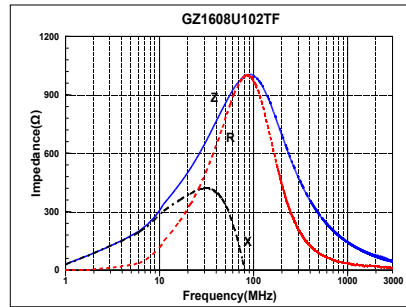
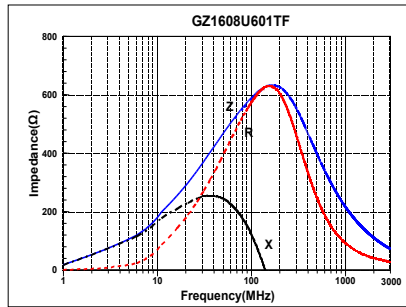
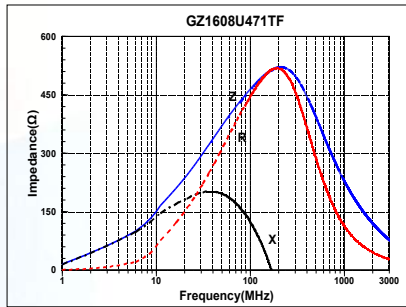
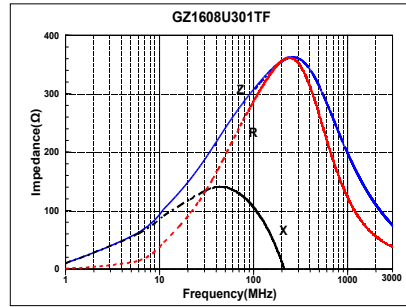
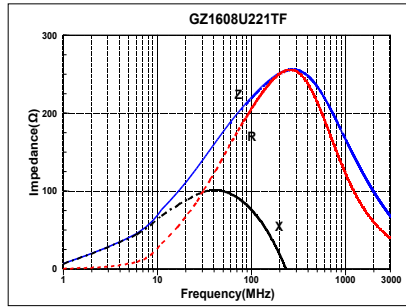
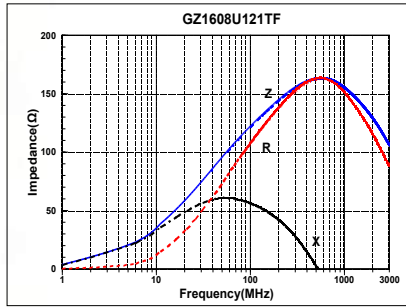
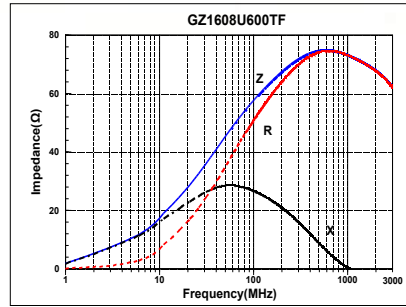
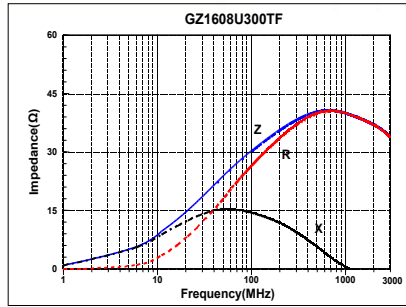
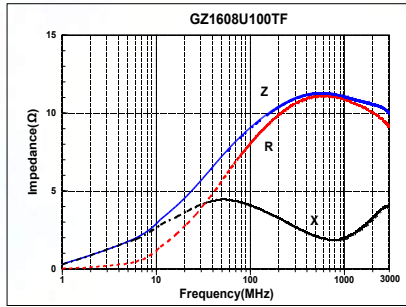
# TYPICAL ELECTRICAL CHARACTERISTICS

## GZ1608 TYPE

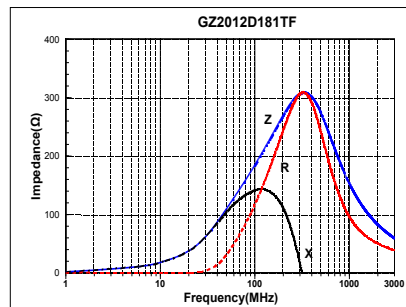
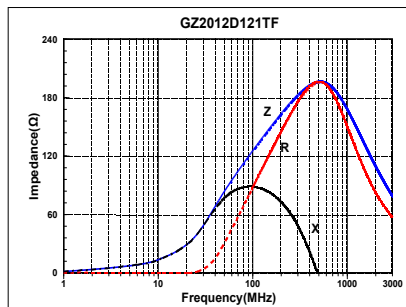
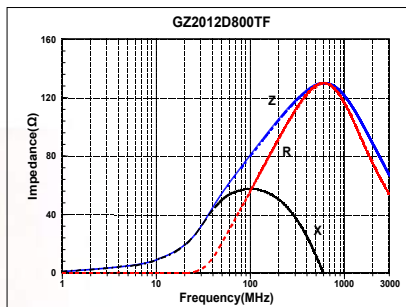
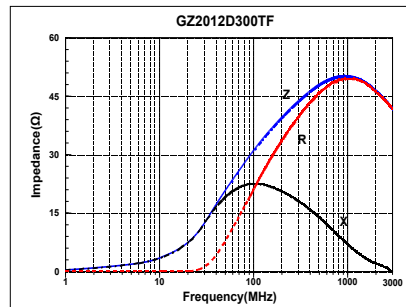
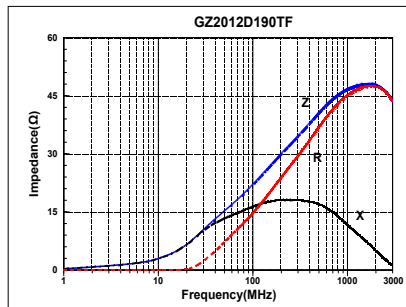
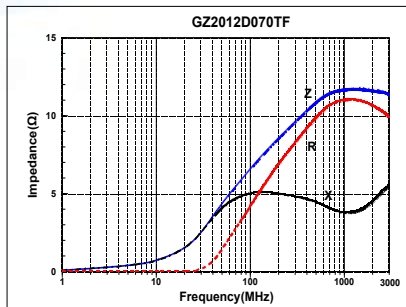


# TYPICAL ELECTRICAL CHARACTERISTICS

## GZ1608 TYPE

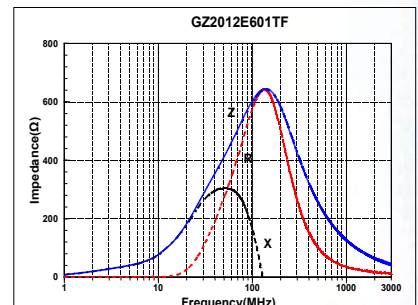
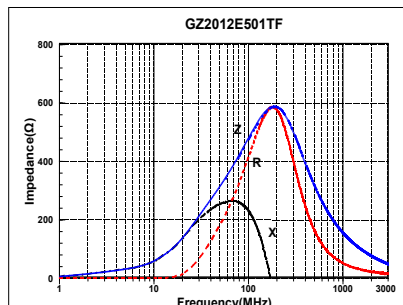
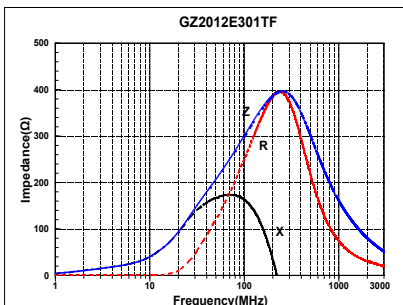
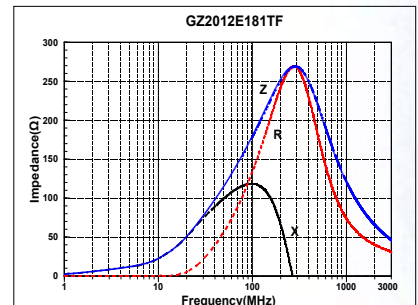
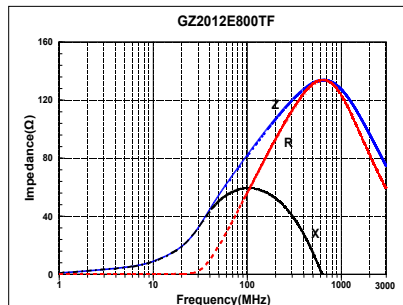
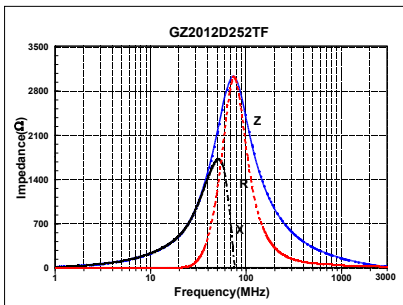
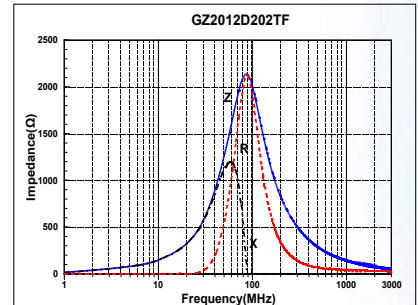
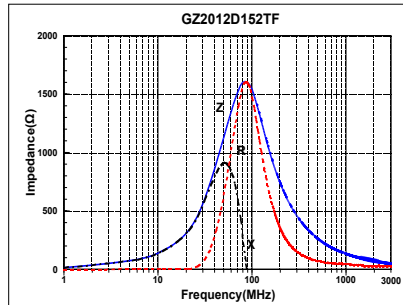
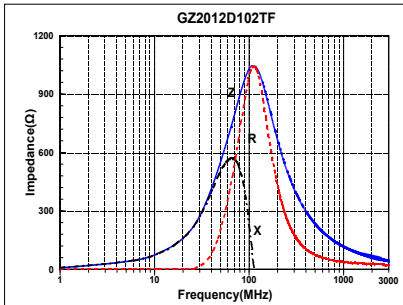
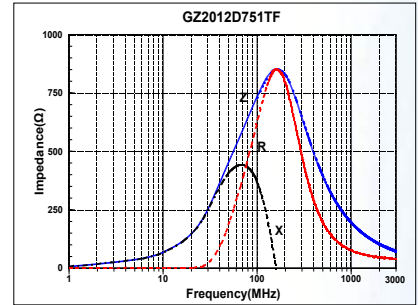
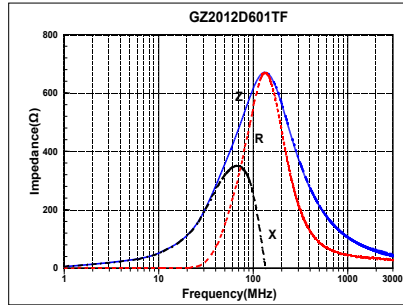
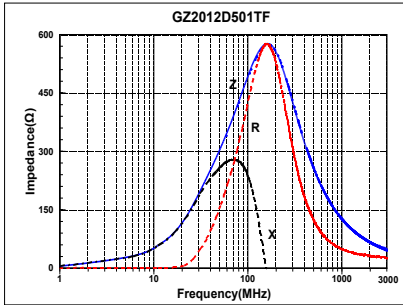
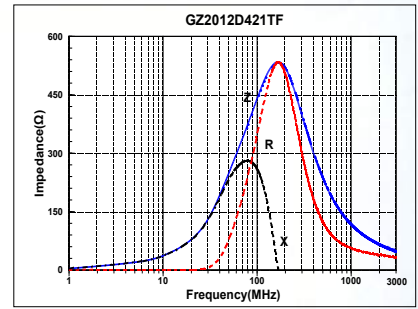
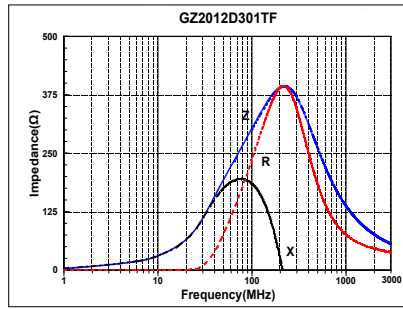
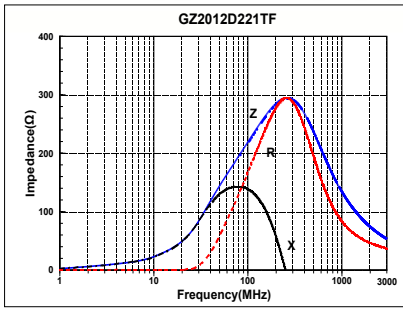


## GZ2012 TYPE



# TYPICAL ELECTRICAL CHARACTERISTICS

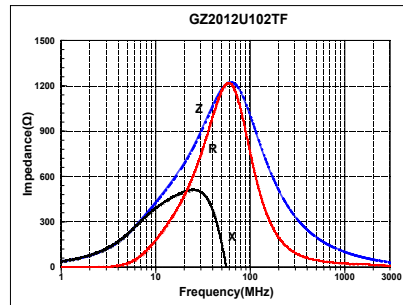
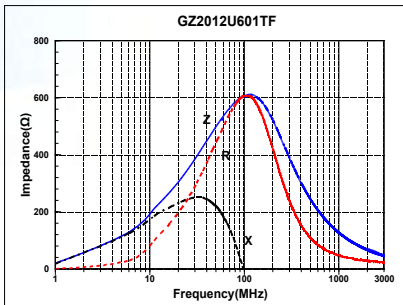
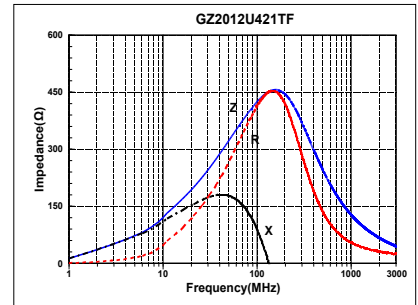
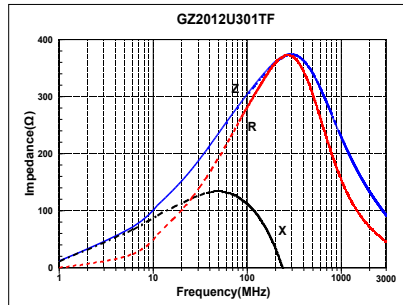
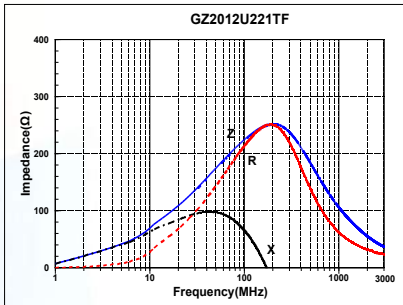
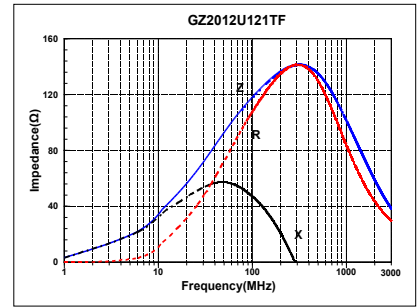
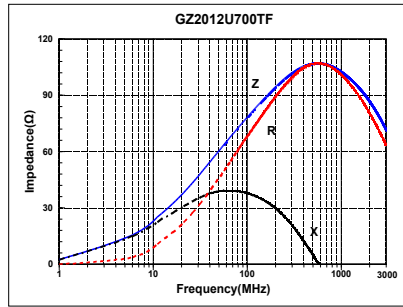
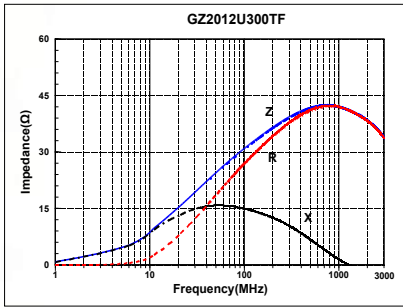
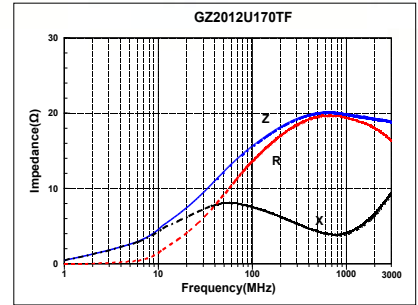
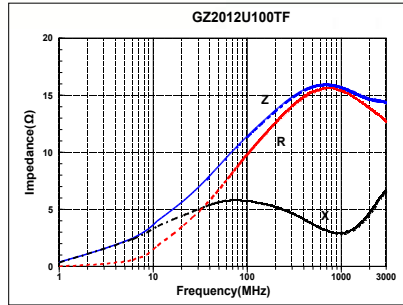
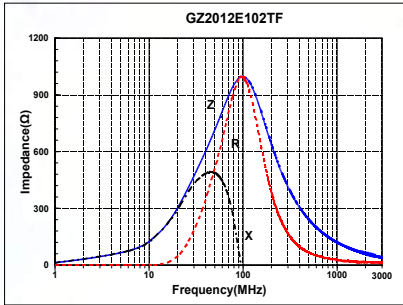
## GZ2012 TYPE



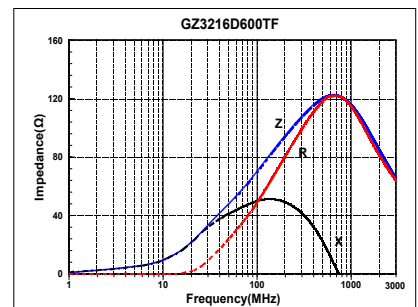
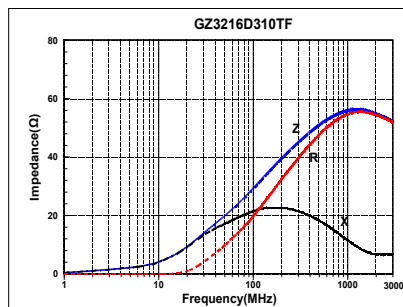
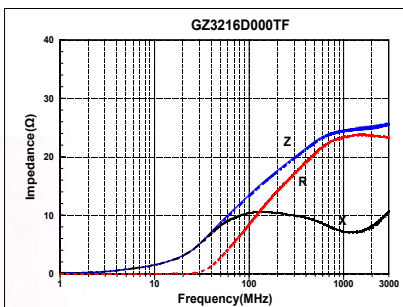


# TYPICAL ELECTRICAL CHARACTERISTICS

## GZ2012 TYPE

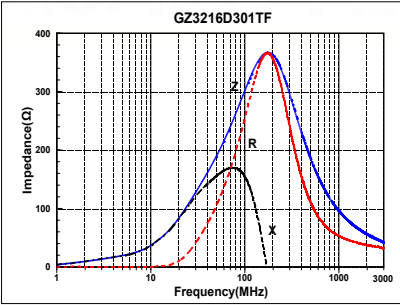


## GZ3216 TYPE



# TYPICAL ELECTRICAL CHARACTERISTICS

## GZ3216 TYPE



## GZ3216-A99 TYPE

