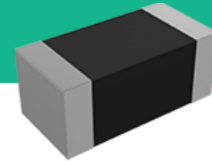


# Multilayer Chip Ferrite Bead – PZ Series



Operating temp. : -55°C ~ +125°C

## FEATURES

- ◆ Internal silver printed layers and magnetic shielded structures to minimize crosstalk.
- ◆ Large withstand current (allowable current: up to 6A).
- ◆ Can be used in a wide range of frequency to suppress EMI.
- ◆ Three types material and wide range of impedance values for various applications.

## APPLICATIONS

- ◆ Noise suppression for power line or large current signal of electric equipments such as computers and peripheral devices, power adapter, LCD TVs, communication equipments, OA equipments, etc.

## PRODUCT IDENTIFICATION

1 PZ	2 3216	3 U	4 121	5 -3R0	6 T	7 F	8 (A99)
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1 Type	
PZ	Chip Ferrite Bead For Large Current

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

6 Packing	
T	Tape & Reel

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
4516 [1806]	4.5×1.6

3 Material Code	
D, E, U	

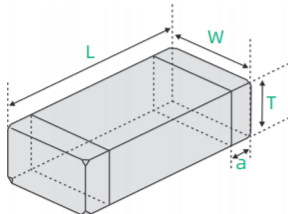
5 Rated Current	
R60	0.6A
2R5	2.5A
3R0	3.0A

7 Hazardous Substance Free Products	
F	

8 Internal Code	
A99	

## SHAPE AND DIMENSIONS

Unit: mm [inch]



Type	L	W	T	a
PZ0603 [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]
PZ1005 [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]
PZ1608 [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]
PZ2012 [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]
PZ3216 [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]
			1.1±0.2 [.043±.008]	
PZ4516 [1806]	4.5±0.2 [.178±.008]	1.6±0.2 [.063±.008]	1.6±0.2 [.063±.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 PZ0603 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
PZ0603D600-R50TF	60±25%	100	0.18	500	0.3±0.05 [.012±.002]
PZ0603D800-R50TF	80±25%	100	0.20	500	
PZ0603D121-R45TF	120±25%	100	0.25	450	
PZ0603D241-R35TF	240±25%	100	0.41	350	
PZ0603D601-R25TF	600±25%	100	1.00	250	
PZ0603D102-R20TF	1000±25%	100	1.40	200	
PZ0603U100-1R0TF	5~15	100	0.05	1000	
PZ0603U800-R50TF	80±25%	100	0.18	500	
PZ0603U121-R45TF	120±25%	100	0.23	450	
PZ0603U241-R35TF	240±25%	100	0.38	350	

## PZ1005 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
PZ1005D100-1R0TF	0~30	100	0.05	1000	0.5±0.15 [.020±.006]
PZ1005E100-1R8TF	0~15	100	0.02	1800	
PZ1005E700-R80TF	70±25%	100	0.10	800	
PZ1005E121-R70TF	120±25%	100	0.13	700	
PZ1005E221-R60TF	220±25%	100	0.18	600	
PZ1005E601-R45TF	600±25%	100	0.34	450	
PZ1005U700-1R2TF	70±25%	100	0.10	1200	
PZ1005U121-1R0TF	120±25%	100	0.12	1000	
PZ1005U221-R80TF	220±25%	100	0.18	800	
PZ1005U601-R45TF	600±25%	100	0.34	450	

## PZ1608 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
PZ1608D300-3R0TF	30±25%	100	0.03	3000	0.8±0.15 [.031±.006]
PZ1608D600-2R0TF	60±25%	100	0.08	2000	
PZ1608D750-1R0TF	75±25%	100	0.15	1000	
PZ1608D121-1R0TF	120±25%	100	0.20	1000	
PZ1608D221-1R0TF	220±25%	100	0.20	1000	
PZ1608D601-R50TF	600±25%	100	0.35	500	
PZ1608E600-1R4TF	60±25%	100	0.10	1400	
PZ1608U100-3R0TF	0~15	100	0.02	3000	
PZ1608U300-3R0TF	30±25%	100	0.03	3000	
PZ1608U600-2R5TF	60±25%	100	0.04	2500	
PZ1608U121-2R0TF	120±25%	100	0.05	2000	
PZ1608U221-1R4TF	220±25%	100	0.10	1400	
PZ1608U331-1R2TF	330±25%	100	0.14	1200	
PZ1608U391-1R0TF	390±25%	100	0.14	1000	
PZ1608U471-1R0TF	470±25%	100	0.20	1000	

## SPECIFICATIONS PZ2012 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
PZ2012D390-4R0TF	39±25%	100	0.02	4000	0.85±0.2 [.033±.008]
PZ2012D800-3R0TF	80±25%	100	0.04	3000	
PZ2012D121-2R5TF	120±25%	100	0.06	2500	
PZ2012D221-1R5TF	220±25%	100	0.08	1500	
PZ2012D301-1R5TF	300±25%	100	0.12	1500	
PZ2012D471-R80TF	470±25%	100	0.25	800	
PZ2012D601-R80TF	600±25%	100	0.25	800	
PZ2012U300-3R0TF	30±25%	100	0.02	3000	
PZ2012U300-4R0TF	30±25%	100	0.015	4000	
PZ2012U600-3R0TF	60±25%	100	0.025	3000	
PZ2012U121-2R5TF	120±25%	100	0.04	2500	
PZ2012U221-2R0TF	220±25%	100	0.07	2000	
PZ2012U301-1R5TF	300±25%	100	0.10	1500	
PZ2012U421-1R0TF	420±25%	100	0.20	1000	
PZ2012U601-R80TF	600±25%	100	0.25	800	

## PZ3216 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
PZ3216D190-6R0TF	19±25%	100	0.010	6000	0.85±0.2 [.033±.008]
PZ3216D600-4R0TF	60±25%	100	0.02	4000	
PZ3216U300-6R0TF	30±25%	100	0.01	6000	
PZ3216U600-4R0TF	60±25%	100	0.025	4000	
PZ3216U221-2R0TF	220±25%	100	0.08	2000	
PZ3216U301-2R0TF	300±25%	100	0.10	2000	
PZ3216U391-2R0TF	390±25%	100	0.07	2000	
PZ3216U601-1R5TF	600±25%	100	0.10	1500	
PZ3216U102-R50TF	1000±25%	100	0.30	500	1.1±0.2 [.043±.008]
PZ3216D000-4R0TFA99	0~10	100	0.02	4000	
PZ3216D050-6R0TFA99	0~15	100	0.01	6000	
PZ3216D100-6R0TFA99	0~20	100	0.01	6000	
PZ3216D190-2R0TFA99	19±25%	100	0.05	2000	
PZ3216D310-3R0TFA99	31±25%	100	0.045	3000	
PZ3216D380-5R0TFA99	38±25%	100	0.015	5000	
PZ3216D500-4R0TFA99	50±25%	100	0.02	4000	
PZ3216D600-2R5TFA99	60±25%	100	0.025	2500	
PZ3216D700-3R0TFA99	70±25%	100	0.03	3000	
PZ3216D800-3R0TFA99	80±25%	100	0.03	3000	
PZ3216D900-2R0TFA99	90±25%	100	0.08	2000	
PZ3216D101-3R0TFA99	100±25%	100	0.03	3000	
PZ3216D121-3R0TFA99	120±25%	100	0.03	3000	
PZ3216D151-3R0TFA99	150±25%	100	0.03	3000	
PZ3216D391-2R5TFA99	390±25%	100	0.05	2500	
PZ3216D501-2R0TFA99	500±25%	100	0.07	2000	
PZ3216D601-2R0TFA99	600±25%	100	0.07	2000	
PZ3216U310-6R0TFA99	31±25%	100	0.01	6000	
PZ3216U500-4R0TFA99	50±25%	100	0.02	4000	
PZ3216U600-1R5TFA99	60±25%	100	0.03	1500	
PZ3216U121-3R0TFA99	120±25%	100	0.03	3000	
PZ3216U102-1R0TFA99	1000±25%	100	0.30	1000	

**SPECIFICATIONS** PZ3216 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
PZ3216U501-2R0TFA99	500±25%	100	0.07	2000	1.6±0.2 [.063±.008]

Note: The thickness of PZ3216 series may be increased to 1.1±0.2 mm when the I<sub>r</sub> of product increased.

PZ4516 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
PZ4516U600-6R0TF	60±25%	100	0.01	6000	1.6±0.2 [.063±.008]
PZ4516U720-6R0TF	72±25%	100	0.01	6000	
PZ4516U181-3R0TF	180±25%	100	0.025	3000	
PZ4516U471-2R0TF	470±25%	100	0.05	2000	
PZ4516U102-1R5TF	1000±25%	100	0.09	1500	

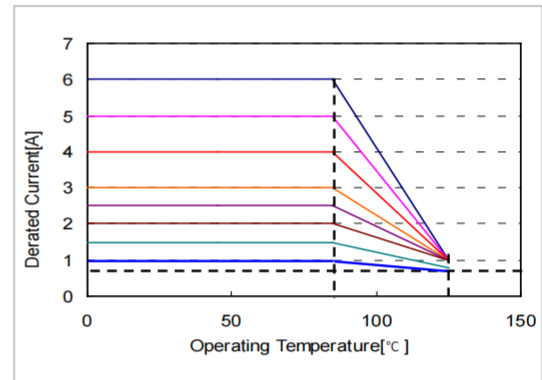
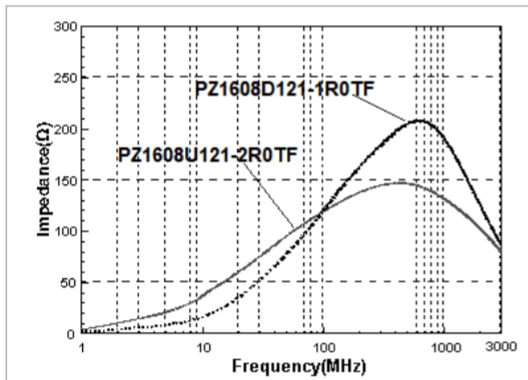
※: Products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

**TYPICAL ELECTRICAL CHARACTERISTICS**

D, E, U Material Comparison

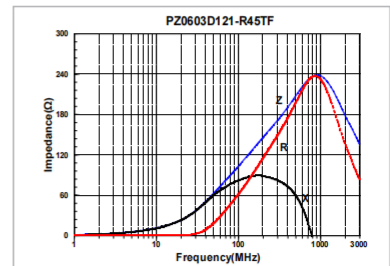
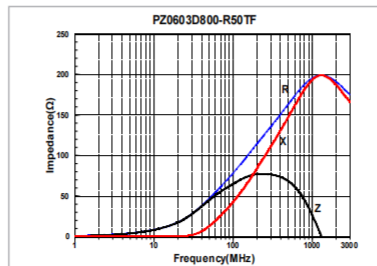
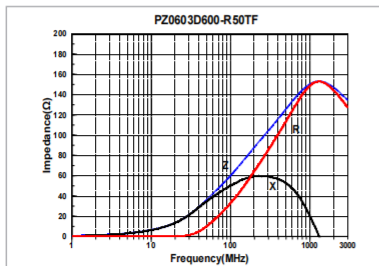
**Rated Current**

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



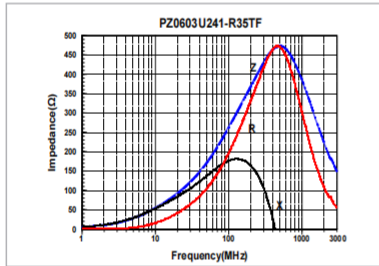
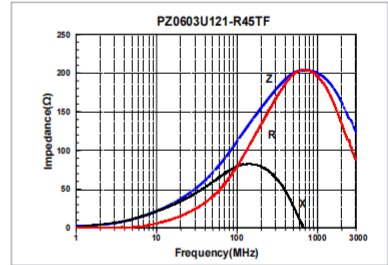
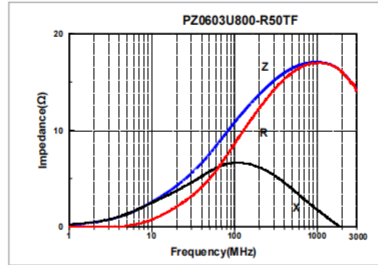
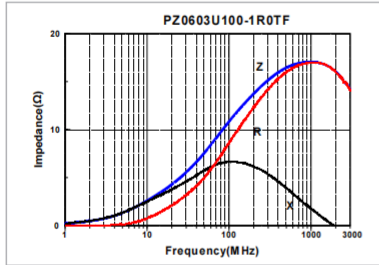
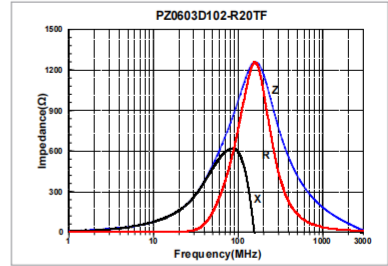
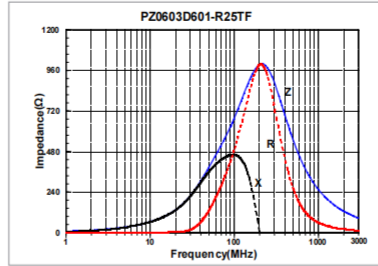
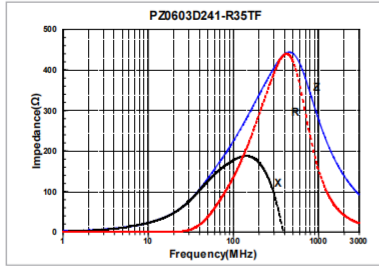
**DETAIL ELECTRICAL CHARACTERISTICS**

PZ0603 TYPE

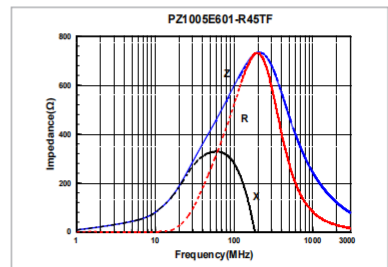
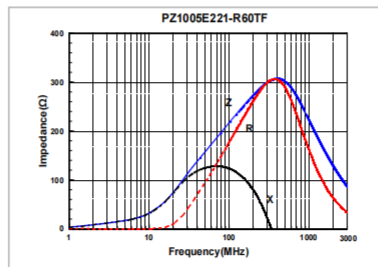
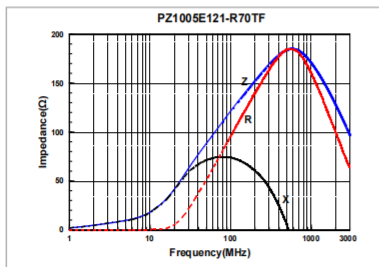
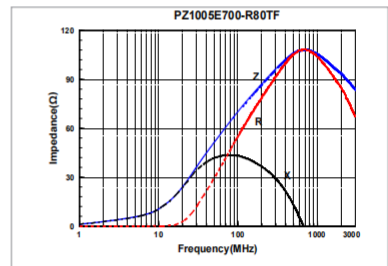
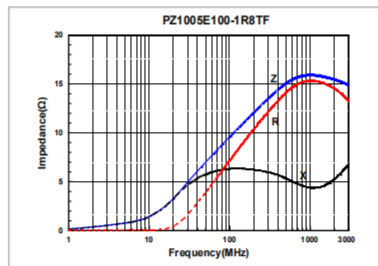
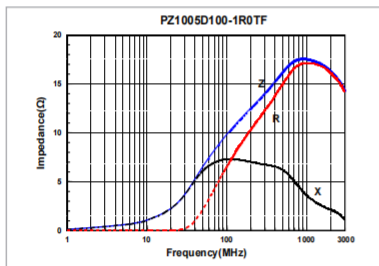


**DETAIL ELECTRICAL CHARACTERISTICS**

**PZ0603 TYPE**



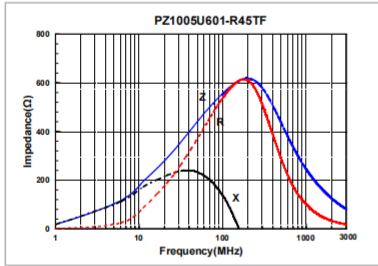
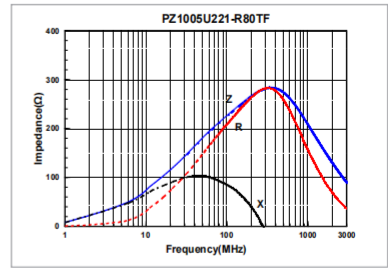
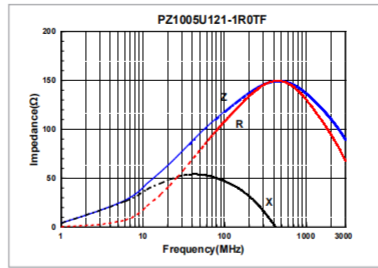
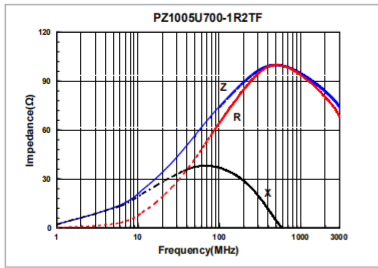
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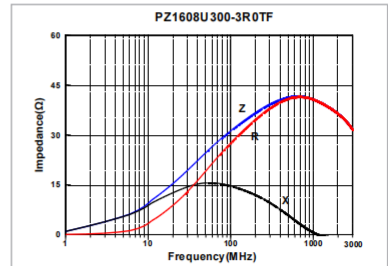
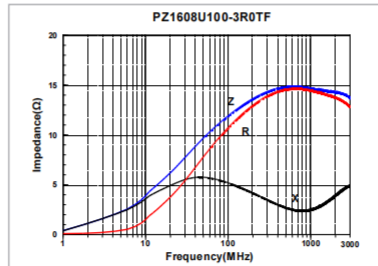
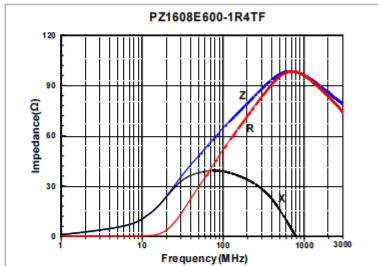
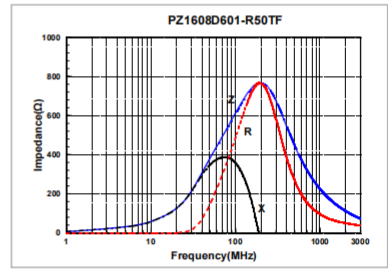
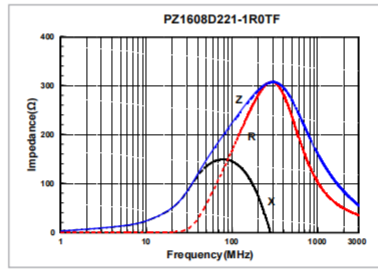
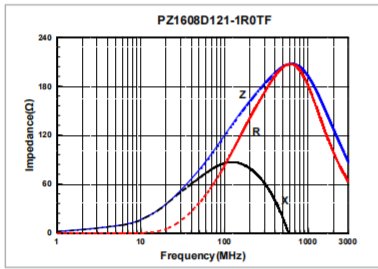
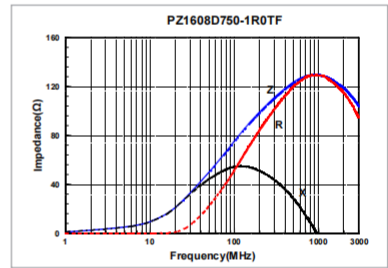
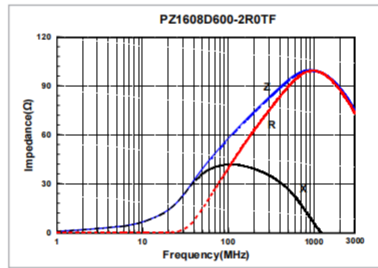
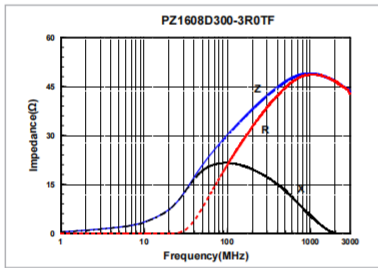
Multilayer Chip Ferrite Bead  
 Wire Wound Ferrite Bead  
 Multilayer Chip Common Mode Filter  
 Wire Wound Chip Common Mode Choke Coil for Signal Line

**DETAIL ELECTRICAL CHARACTERISTICS**

**PZ1005 TYPE**

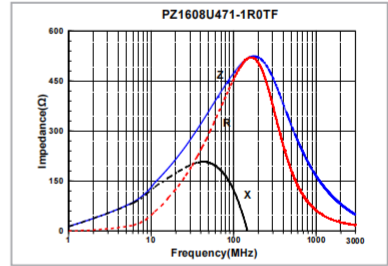
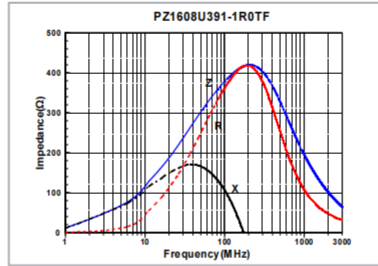
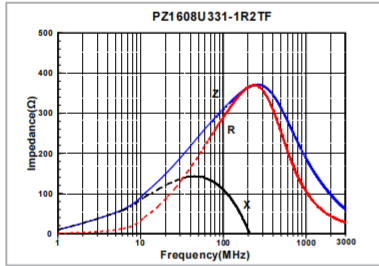
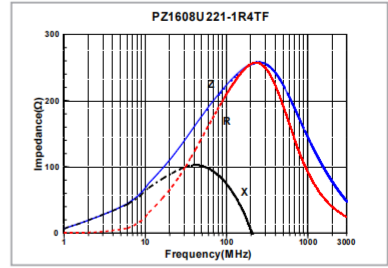
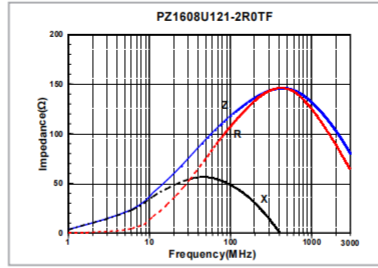
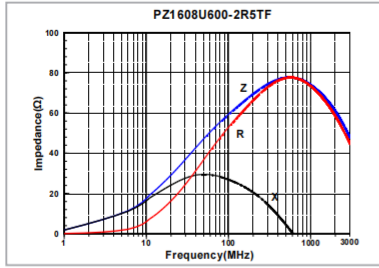


**PZ1608 TYPE**

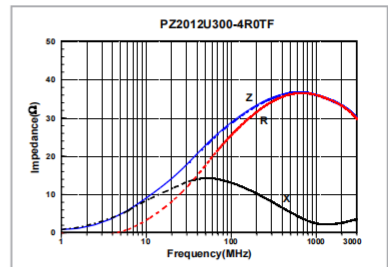
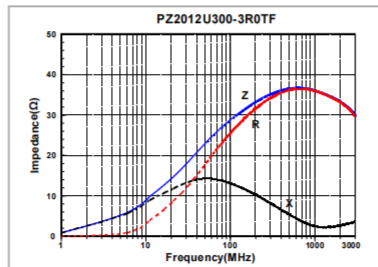
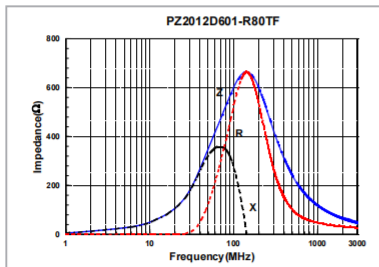
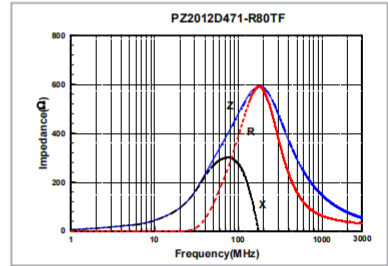
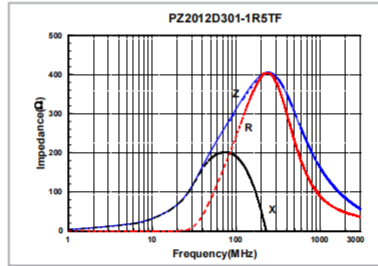
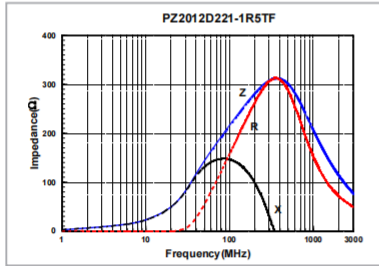
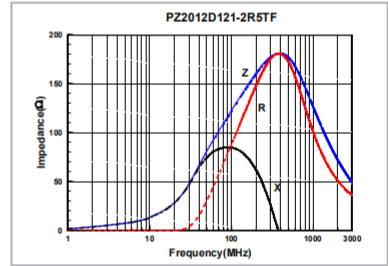
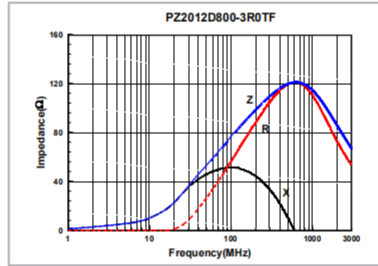
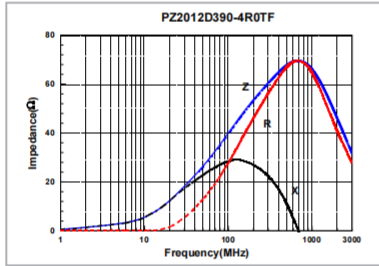


**DETAIL ELECTRICAL CHARACTERISTICS**

**PZ1608 TYPE**

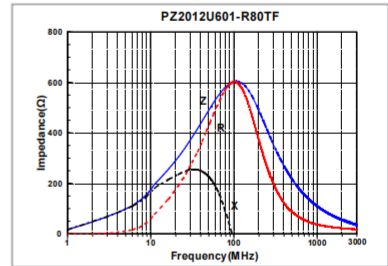
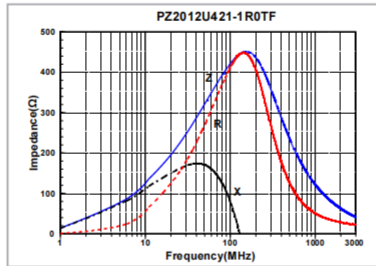
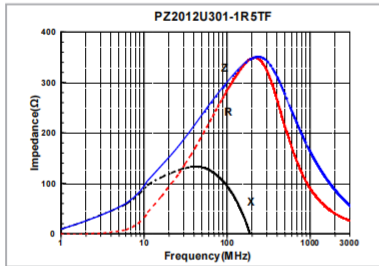
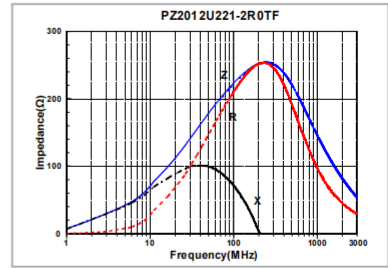
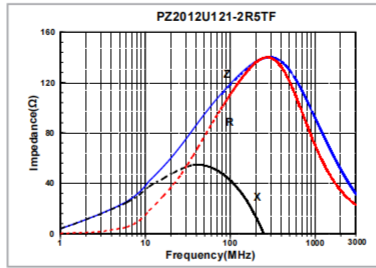
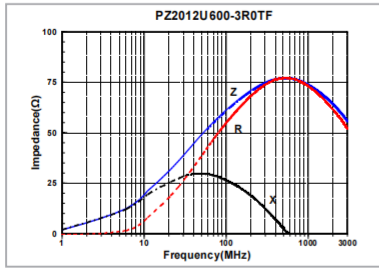


**PZ2012 TYPE**

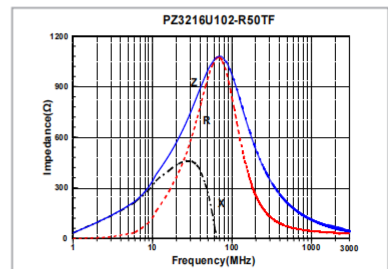
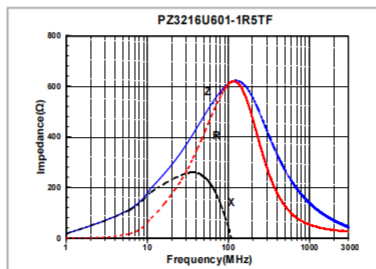
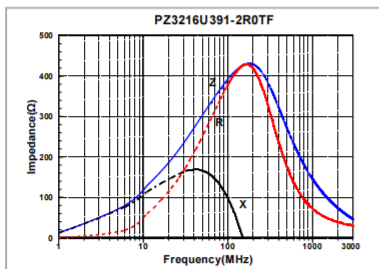
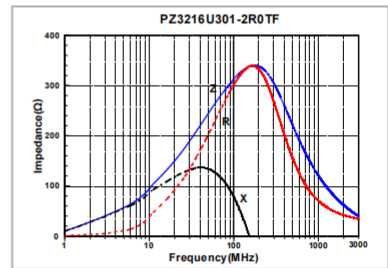
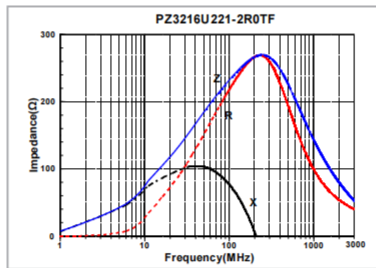
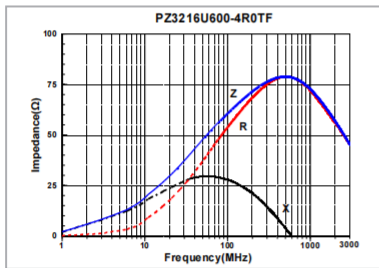
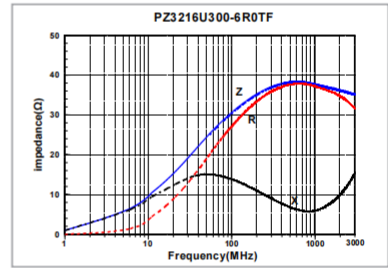
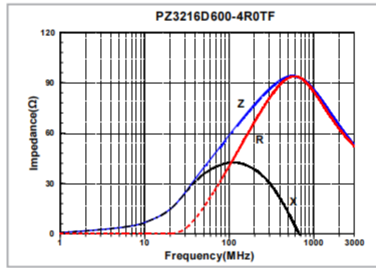
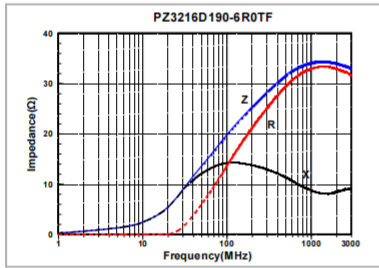


**DETAIL ELECTRICAL CHARACTERISTICS**

**PZ2012 TYPE**



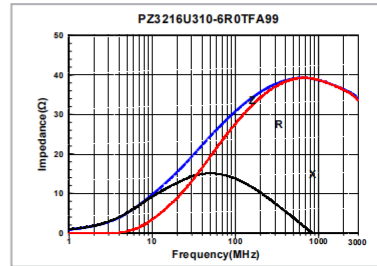
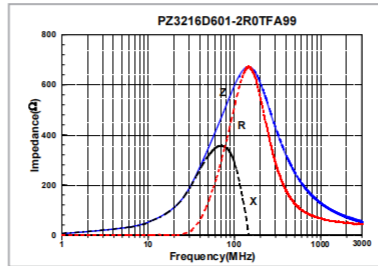
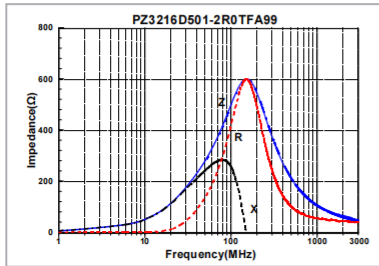
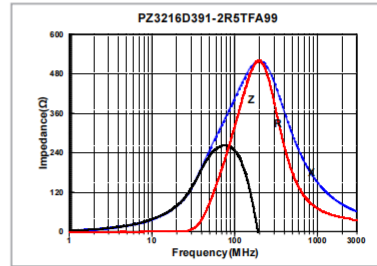
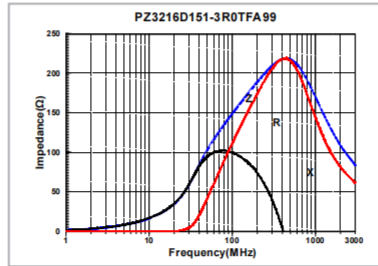
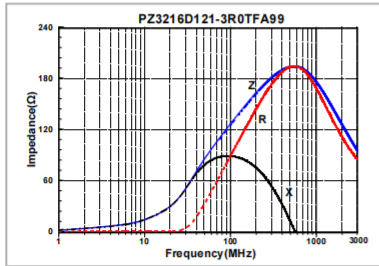
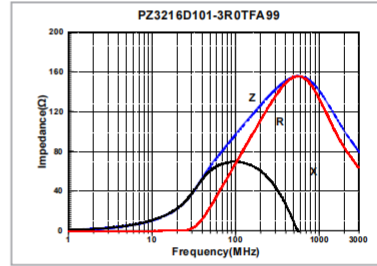
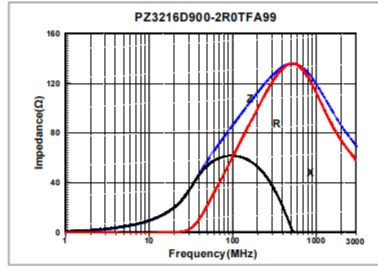
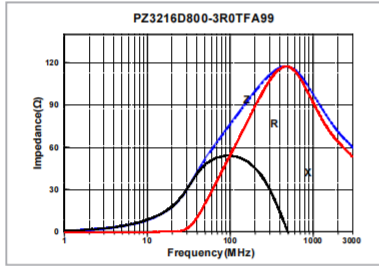
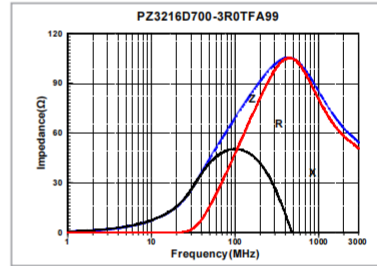
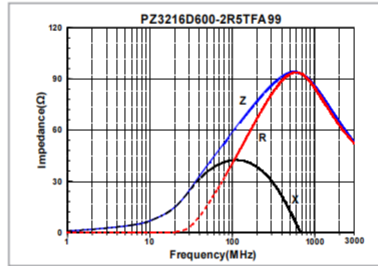
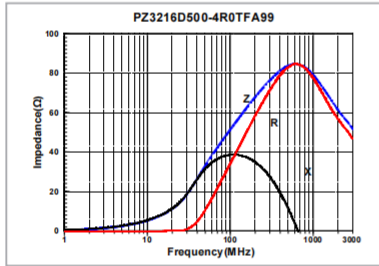
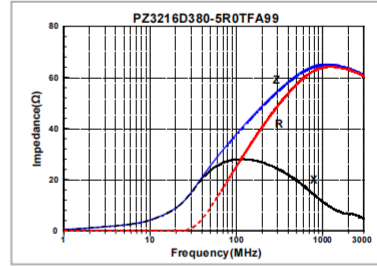
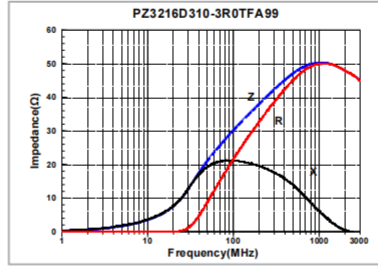
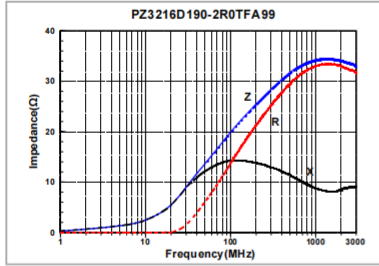
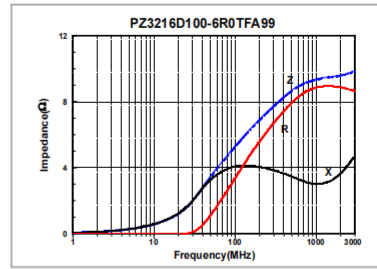
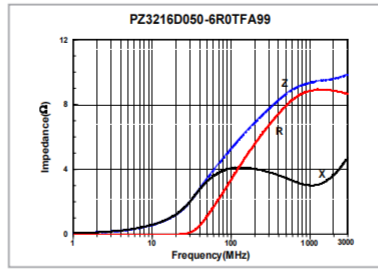
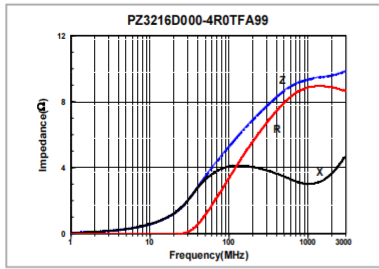
**PZ3216 TYPE**





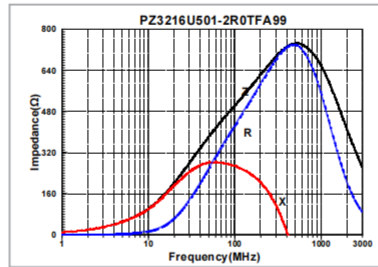
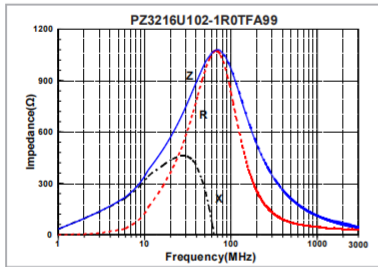
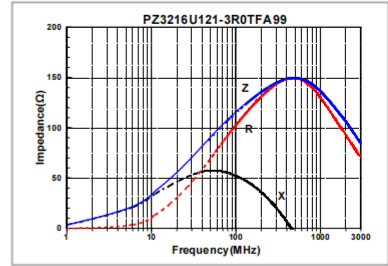
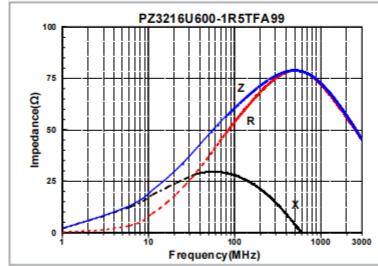
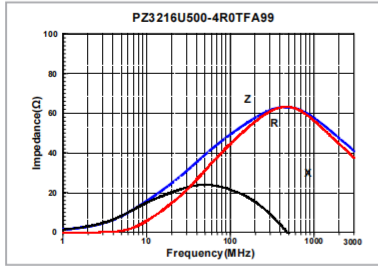
**DETAIL ELECTRICAL CHARACTERISTICS**

**PZ3216 TYPE**

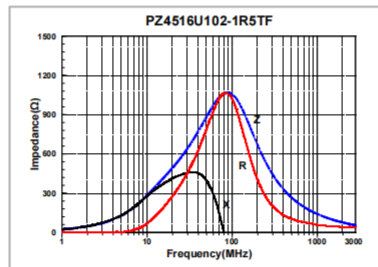
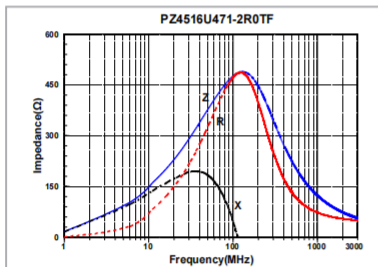
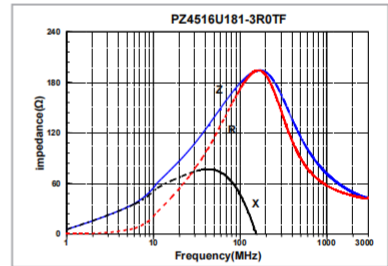
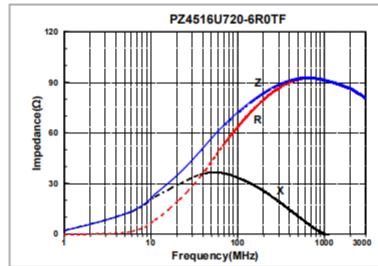
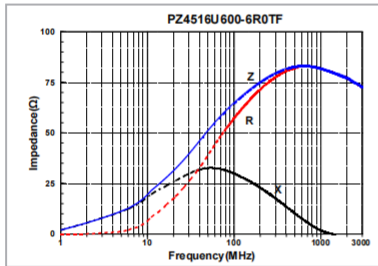


**DETAIL ELECTRICAL CHARACTERISTICS**

**PZ3216 TYPE**



**PZ4516 TYPE**



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