

Automotive Multilayer Chip Ferrite Beads



LINKS TO ADDITIONAL RESOURCES



White Paper

MECHANICAL SPECIFICATIONS

Solderability: per J-STD-002

Resistance to Solder Heat: 255 °C, 30 s max., 3x max. through reflow

Terminal Strength: 17.7 N force for 60 s

Flex: 0.079" [2 mm] mounted on 0.063" [1.6 mm] thick PC board

FEATURES

- 1.6 mm x 0.8 mm x 0.8 mm package
- Multilayer chip ferrite bead for high current filtering
- Wide variety of impedance values
- Extended current rating
- Multiple performance curves to target specific frequencies
- Silver (Ag) inner conductor with Cu / Ni / Sn electrode plating
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
 COMPLIANT
 HALOGEN
FREE
GREEN
 (5-2008)

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature: -55 °C to +125 °C

Thermal Shock: 1000 cycles, -55 °C (for 30 min ± 3 min) to +125 °C (for 30 min ± 3 min) with 20 s max. transition interval

Biased Humidity: 85 % RH at 85 °C, 1000 h at full rated current

STANDARD ELECTRICAL SPECIFICATIONS

PART NUMBER	Z ± 25 % AT 100 MHz (Ω)	DCR MAX. AT 25 °C (mΩ)	RATED DC CURRENT TYP. AT 85 °C ⁽¹⁾ (mA)	Z _{pk} ⁽²⁾ (Ω)	F AT Z _{pk} ⁽³⁾ (MHz)	Z TYP. AT 100 MHz (Ω)	F AT Z _{DO} ⁽⁴⁾ (MHz)	XL / XR x OVER ⁽⁵⁾ (MHz)
ILHB0603ER220VHC41	22	10	6000	28	522	22	2921	32.5
ILHB0603ER260VHC41	26	7	6000	32.6	710	26.5	2806	33
ILHB0603ER280VHC41	28	10	6000	38	475	28	2297	27.7
ILHB0603ER300VHC42	30	10	5000	48	691	30	2920	83
ILHB0603ER300VHC31	30	30	3000	50	1000	30	8000	108
ILHB0603ER300VHC32	30	30	3000	38	489	30	2921	26
ILHB0603ER300VGP11	30	50	2000	52	890	30	7000	111
ILHB0603ER300VGP12	30	50	2000	38	489	30	2920	31
ILHB0603ER300VHC41	30	60	1800	238	638	28	4000	439
ILHB0603ER600VHC42	60	20	3500	89	710	60	2921	76
ILHB0603ER600VHC33	60	40	2500	78	475	60	1957	30
ILHB0603ER600VHC31	60	80	2000	104	867	60	5000	114
ILHB0603ER600VGP11	60	100	500	110	1000	60	4000	114
ILHB0603ER600VGP12	60	100	500	76	522	60	4000	36
ILHB0603ER600VHC41	60	100	1200	489	558	60	4000	400
ILHB0603ER600VHC32	60	100	1400	100	769	65	4000	75
ILHB0603ER700VHC41	70	20	4000	87	457	70	1560	37
ILHB0603ER750VHC31	75	150	1000	142	903	75	5000	134
ILHB0603ER800VGP11	80	150	400	313	759	80	3000	110
ILHB0603ER101VHC42	100	30	3000	144	495	100	1459	69
ILHB0603ER101VHC41	100	150	1000	1250	390	100	1960	350
ILHB0603ER101VGP11	100	200	300	158	566	100	1831	105
ILHB0603ER121VHC32	120	50	2000	148	416	120	1277	32
ILHB0603ER121VGP11	120	200	300	200	673	120	2423	108
ILHB0603ER121VGP12	120	200	300	185	457	128	1581	65
ILHB0603ER121VGP13	120	200	300	155	482	120	1880	33
ILHB0603ER121VHC31	120	200	1000	200	613	120	2360	111
ILHB0603ER181VHC41	180	50	2200	254	340	180	880	73

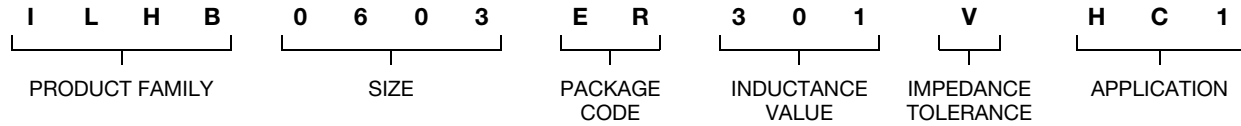


STANDARD ELECTRICAL SPECIFICATIONS

Table with 9 columns: PART NUMBER, Z ± 25 % AT 100 MHz (Ω), DCR MAX. AT 25 °C (mΩ), RATED DC CURRENT TYP. AT 85 °C (1) (mA), Zpk (2) (Ω), F AT Zpk (3) (MHz), Z TYP. AT 100 MHz (Ω), F AT ZDO (4) (MHz), XL / XR x OVER (5) (MHz). Rows list various part numbers like ILHB0603ER181VGP12, ILHB0603ER181VHF11, etc.

Notes

- All test data is referenced to 25 °C ambient (unless otherwise indicated)
Operating temperature range: -55 °C to +125 °C
Storage condition: < 40 °C and < 70 % RH (in packaging)
The part temperature (ambient + temp. rise) should not exceed the maximum rating under worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application
(1) Rated current is the DC current that causes a 40 °C temperature rise at 20 °C ambient
(2) Zpk = peak of impedance curve
(3) F at Zpk = frequency of Zpk
(4) F at ZDO = frequency above 100 MHz where Z drops to nominal Z
(5) XL / XR x over = crossover point for inductive reactance and resistance impedance

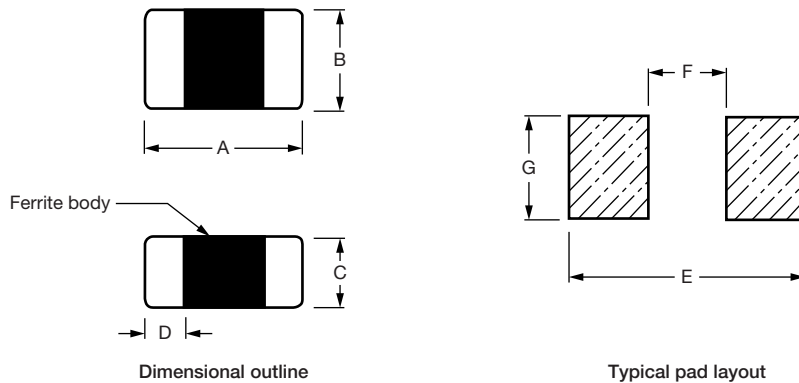
GLOBAL PART NUMBER


ER = tape and reel

301 = Ω

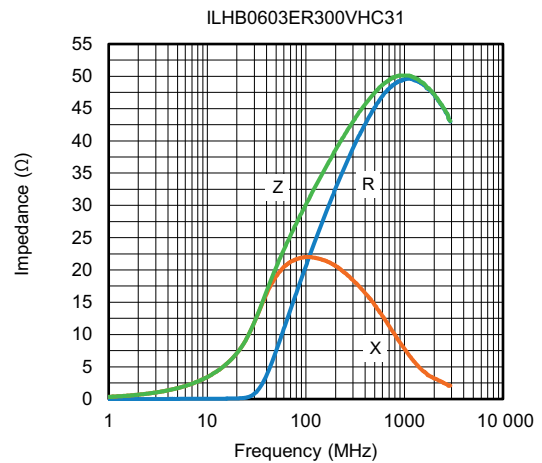
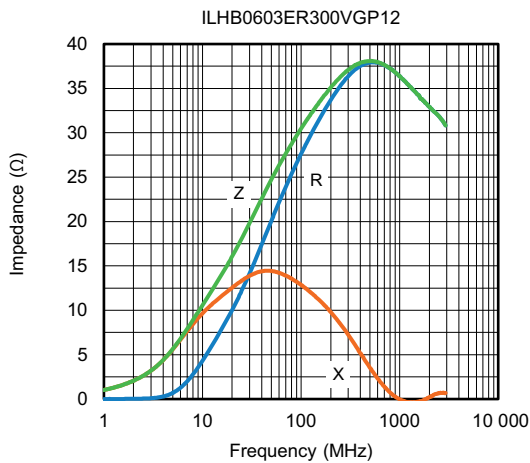
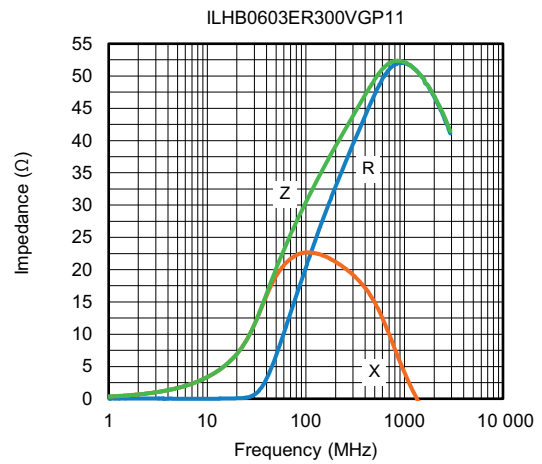
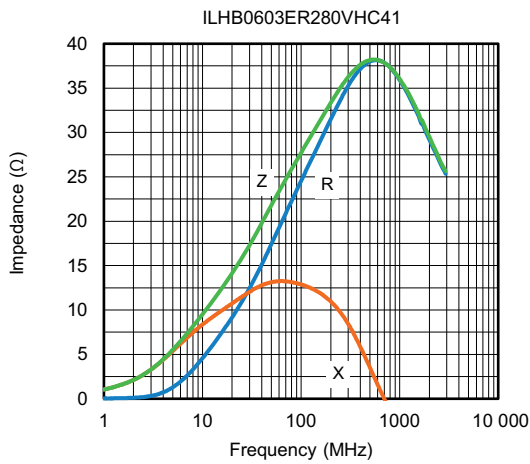
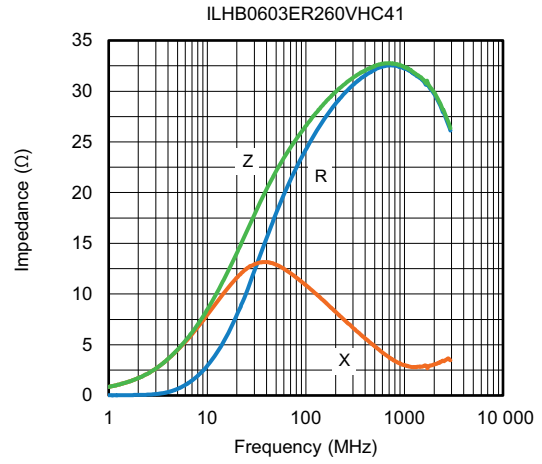
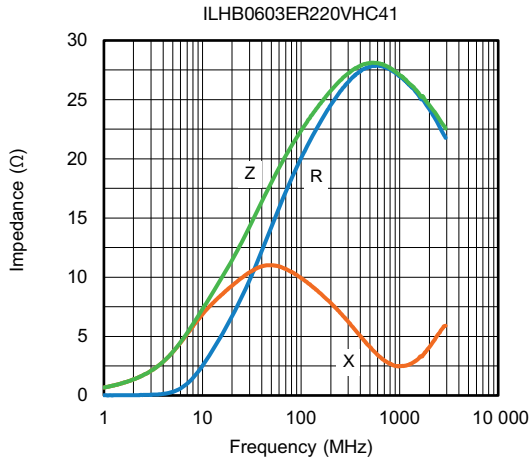
V = ± 25 %

 HCxx = high current
 HFxx = high frequency
 GPxx = general purpose

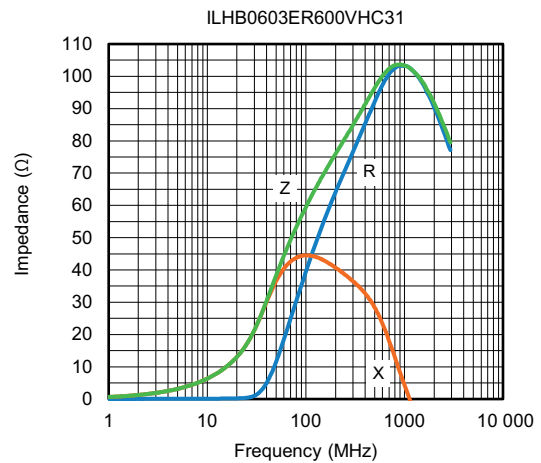
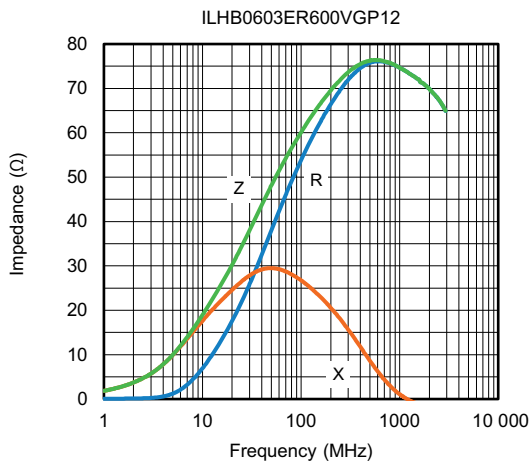
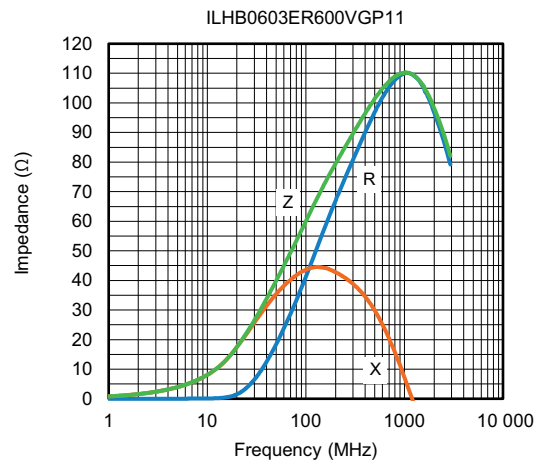
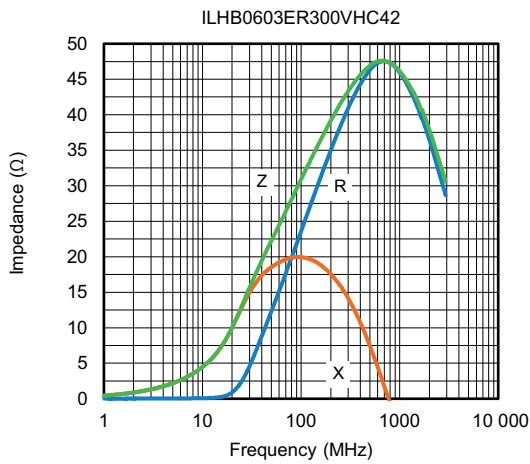
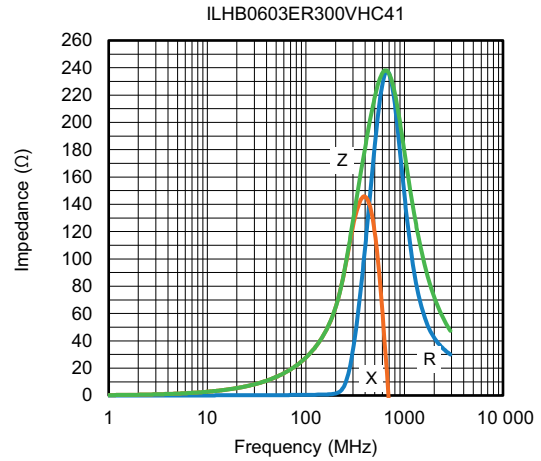
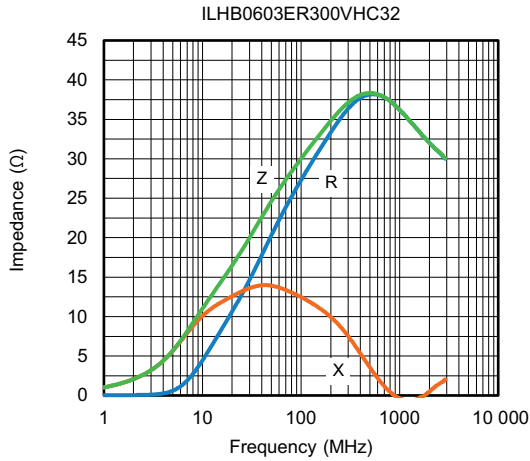
DIMENSIONS in inches [millimeters]


SIZE	A	B	C	D	E	F	G
0603	0.063 ± 0.006 [1.6 ± 0.15]	0.031 ± 0.006 [0.8 ± 0.15]	0.031 ± 0.006 [0.8 ± 0.15]	0.016 ± 0.008 [0.4 ± 0.20]	0.085 [2.15]	0.025 [0.63]	0.041 [1.05]

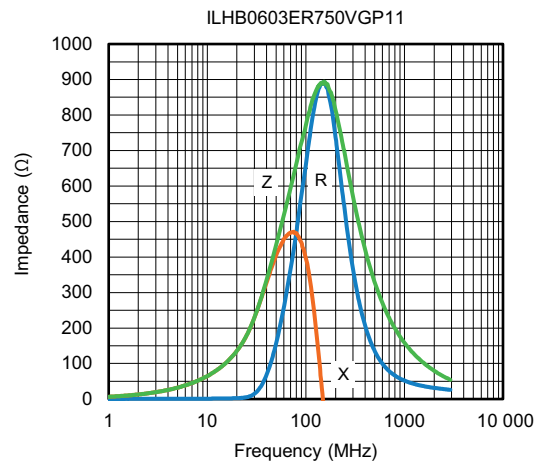
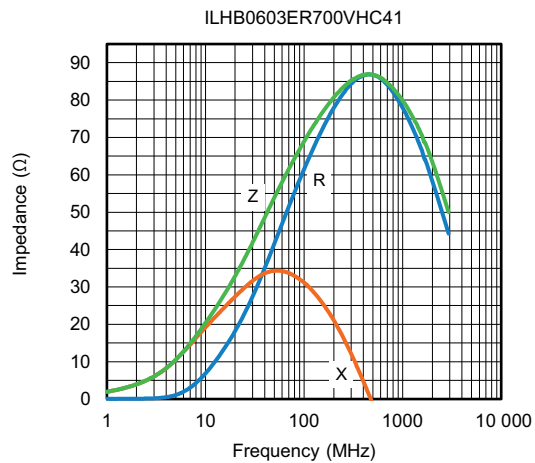
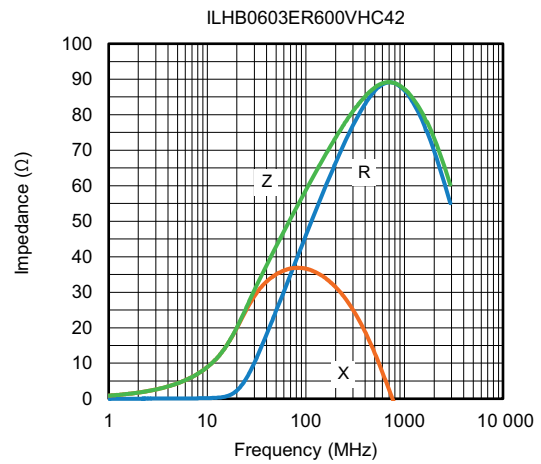
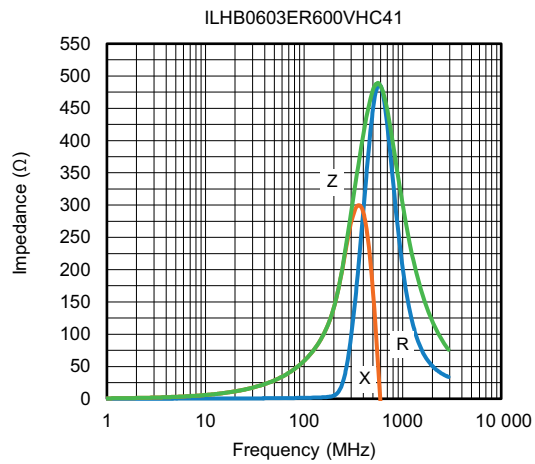
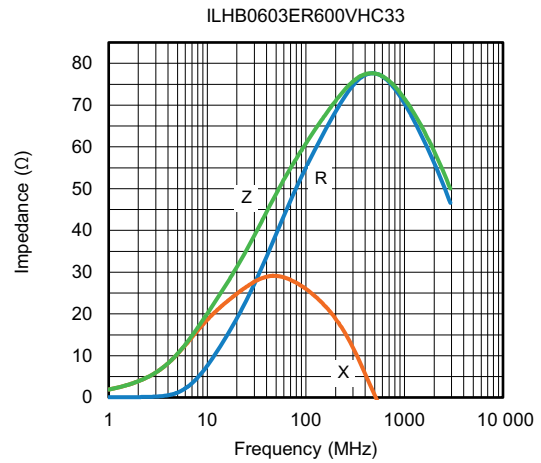
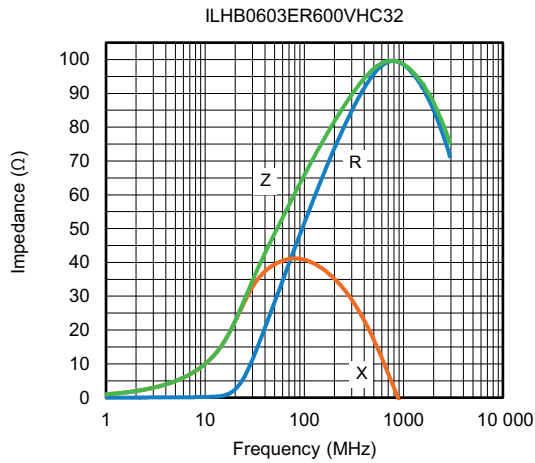
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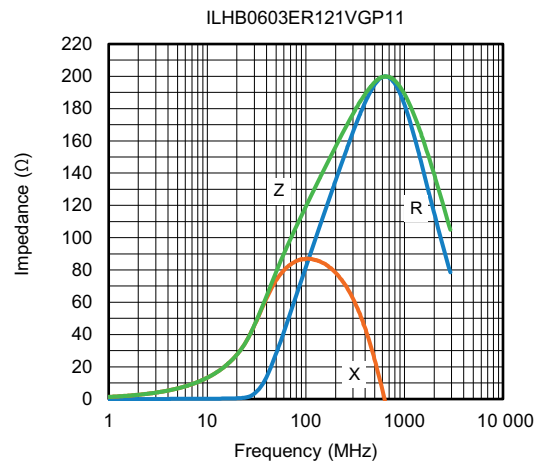
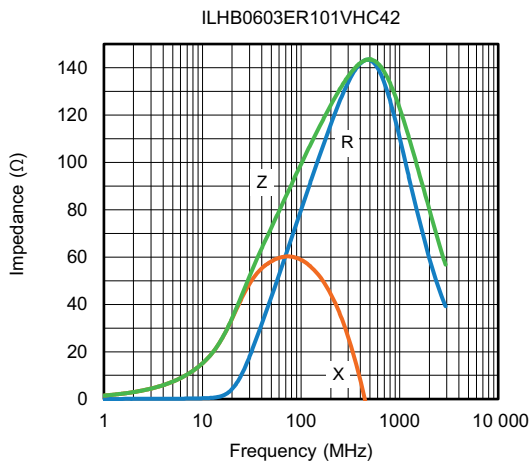
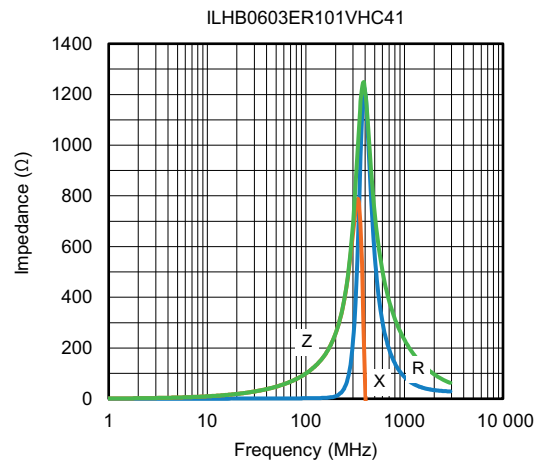
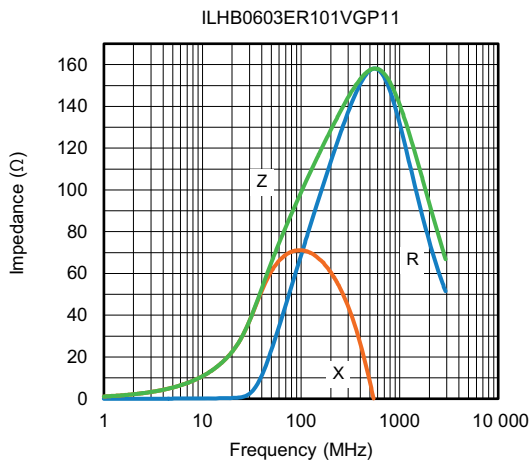
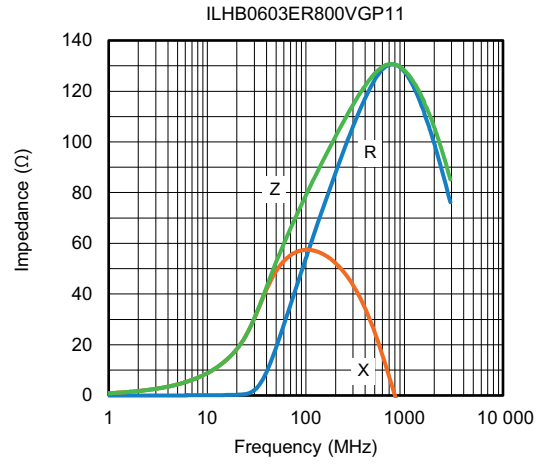
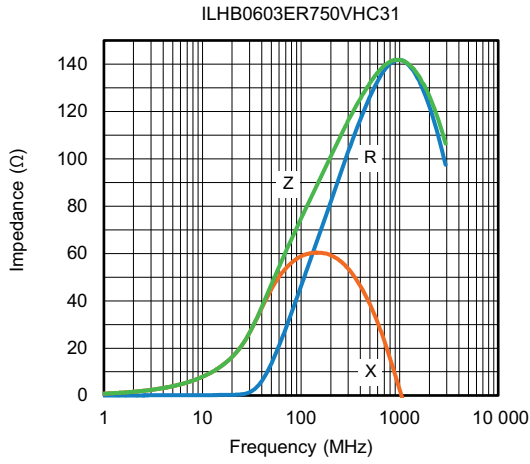


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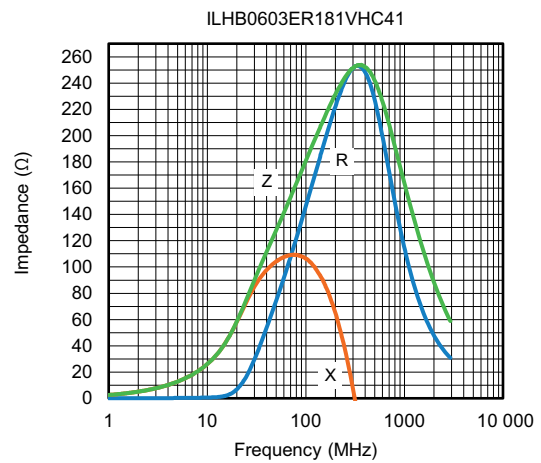
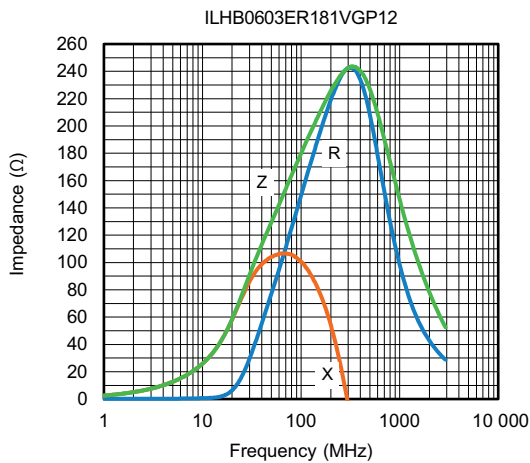
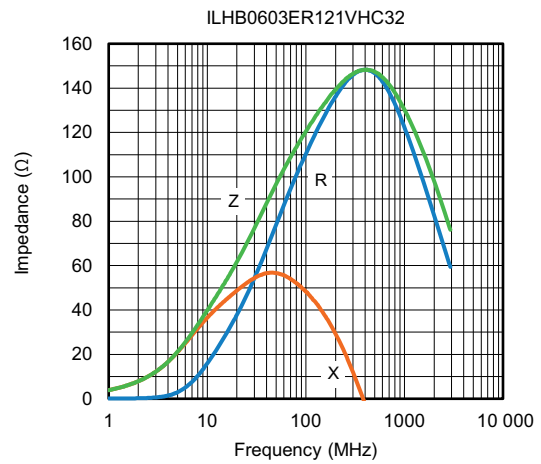
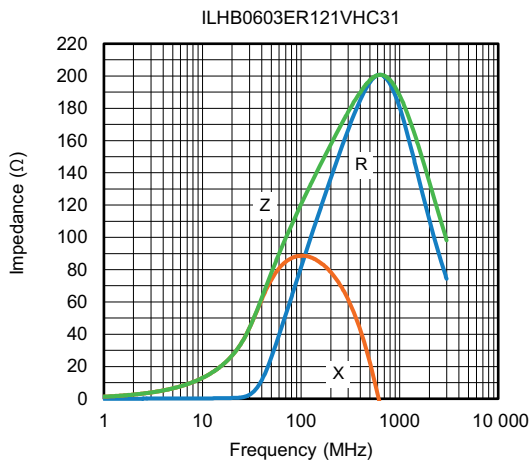
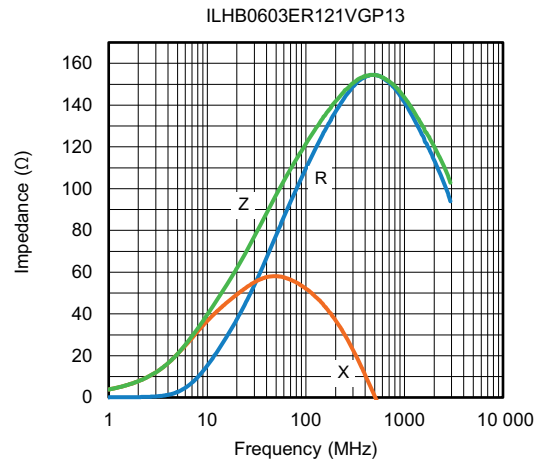
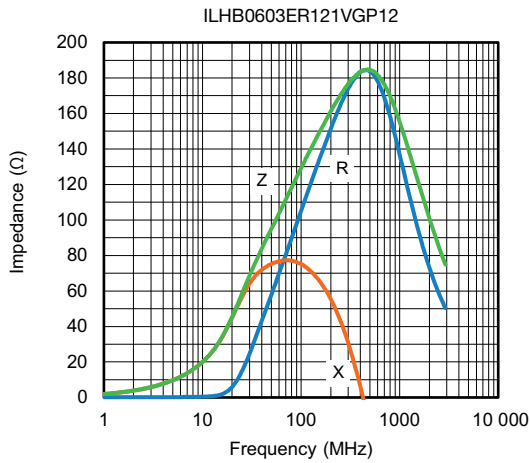


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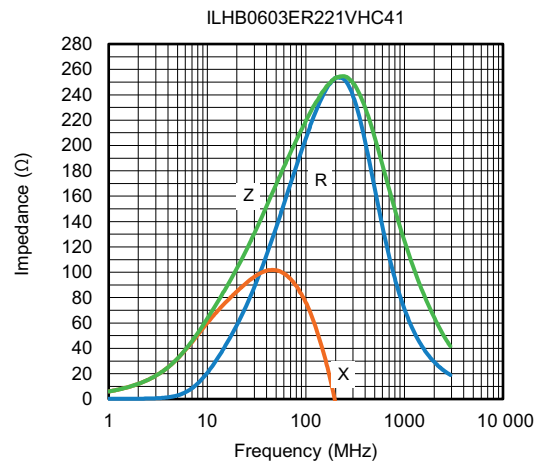
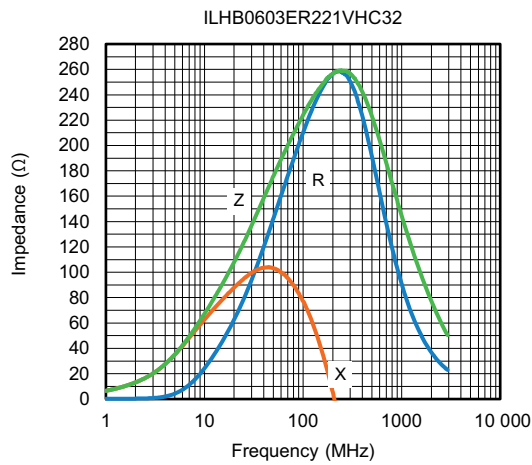
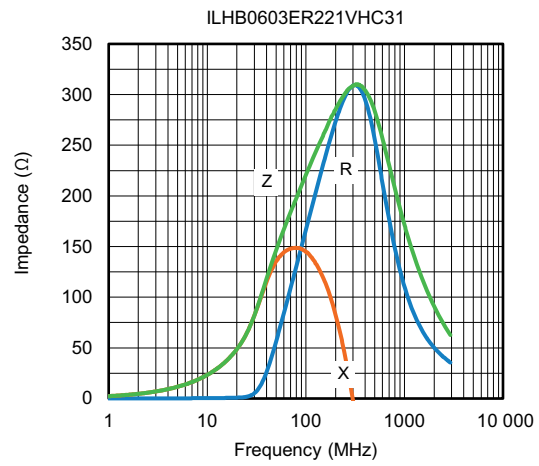
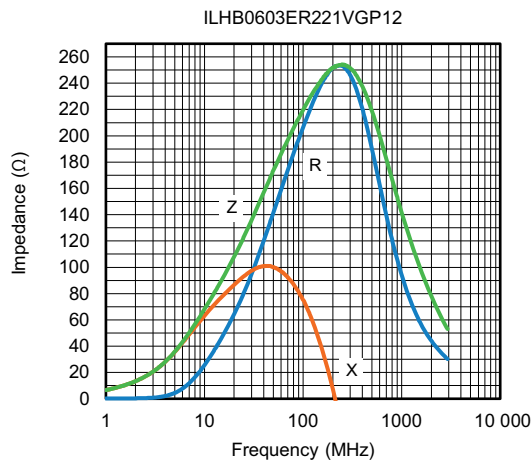
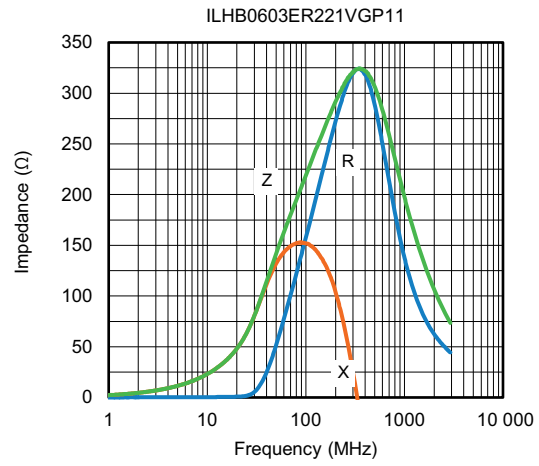
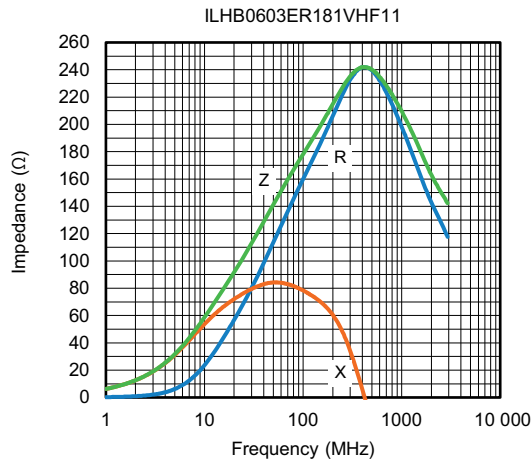




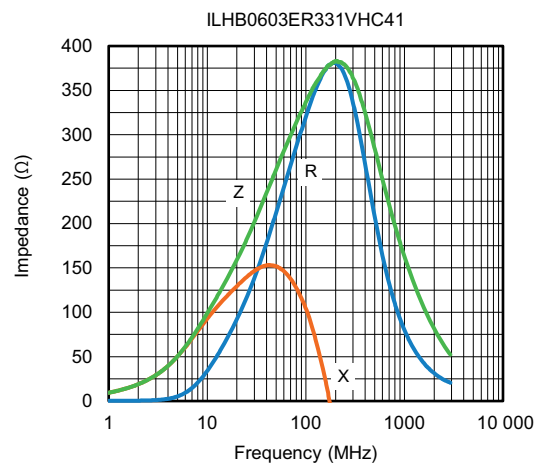
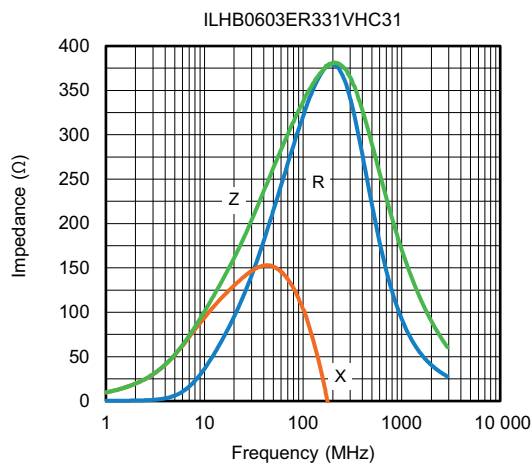
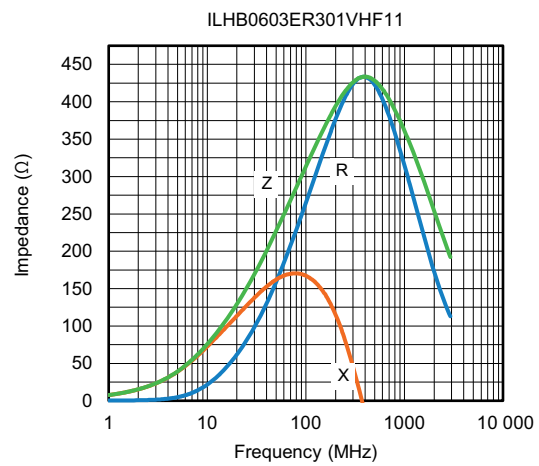
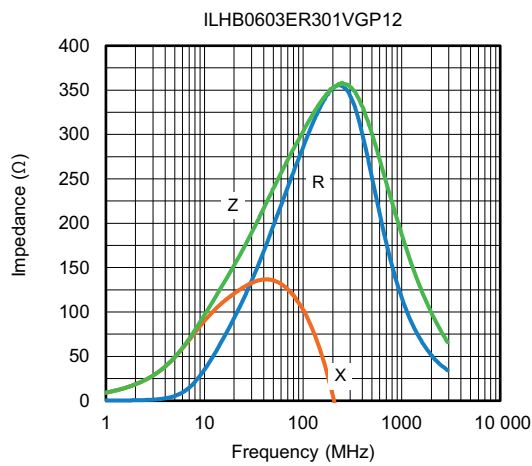
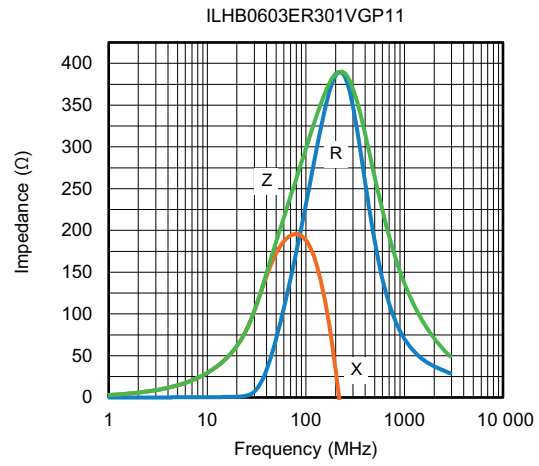
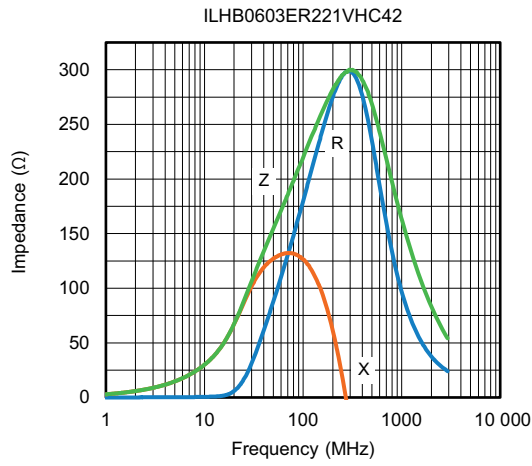
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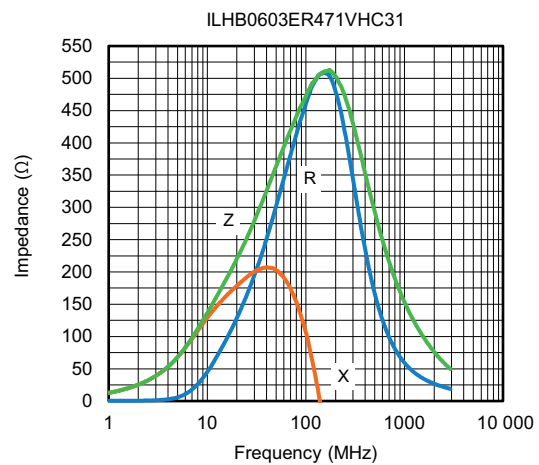
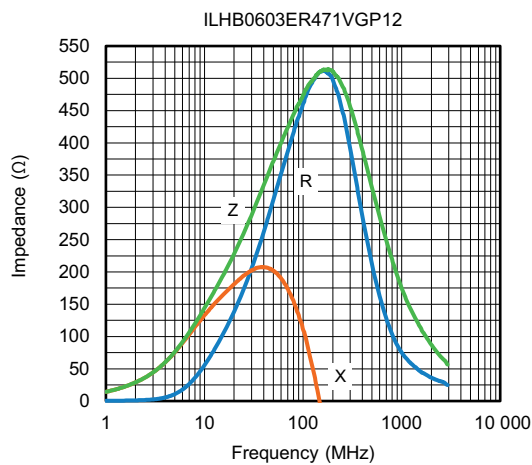
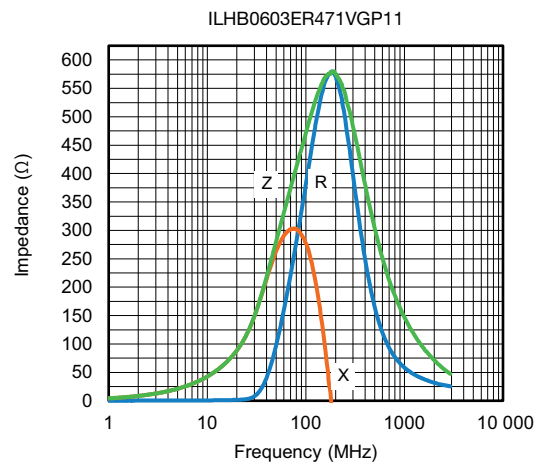
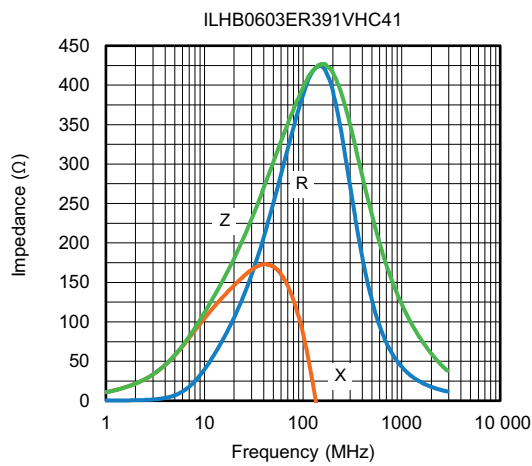
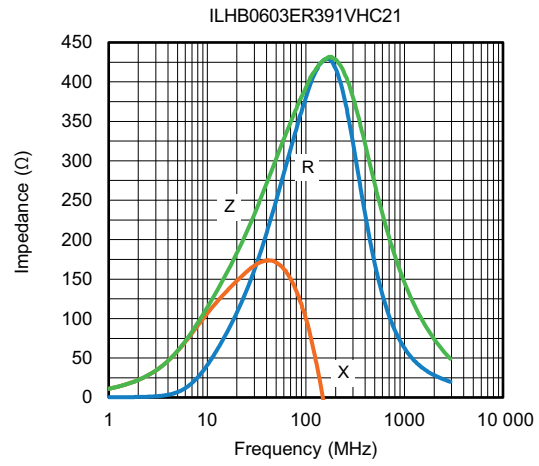
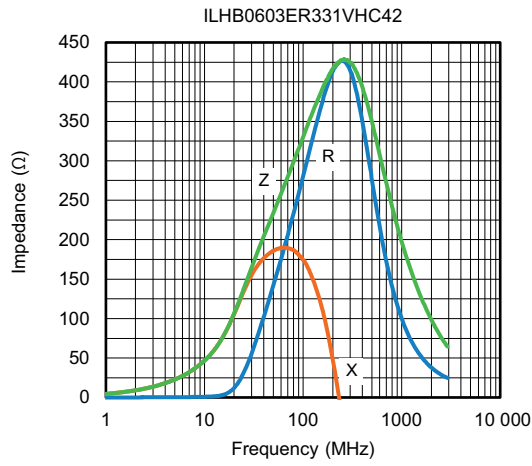
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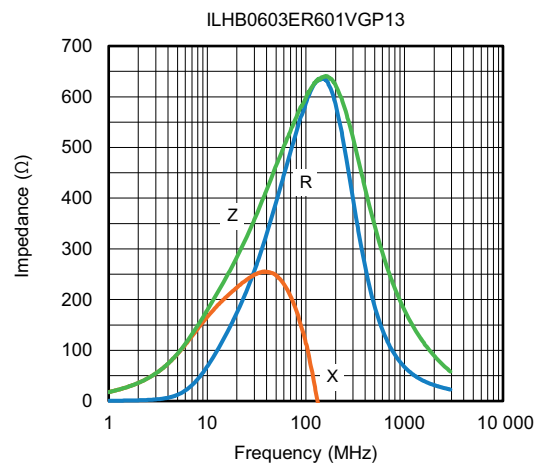
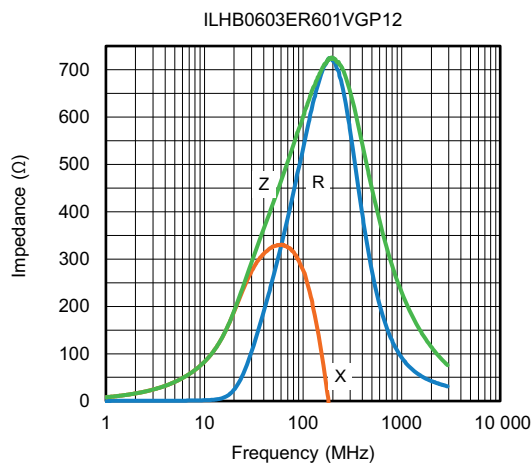
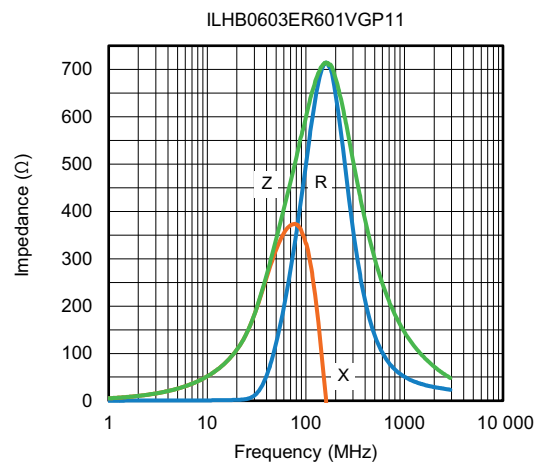
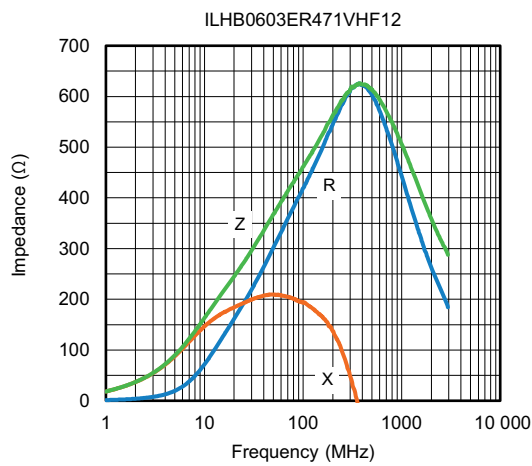
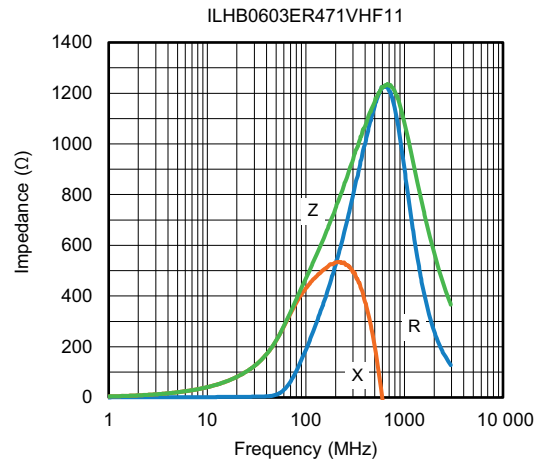
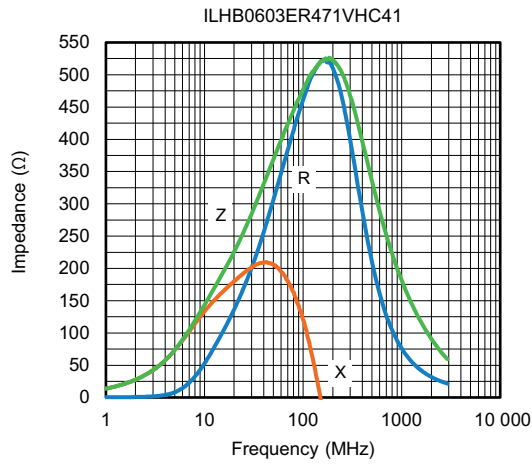
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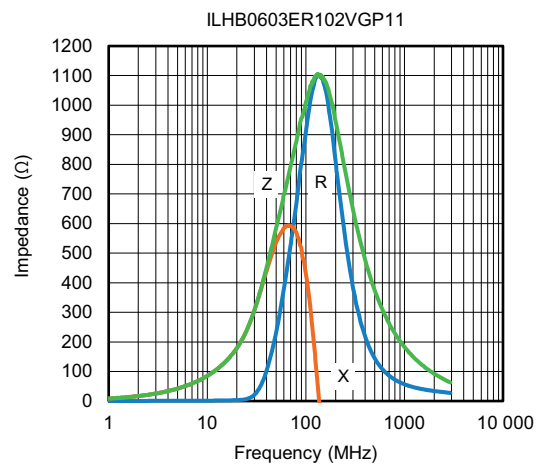
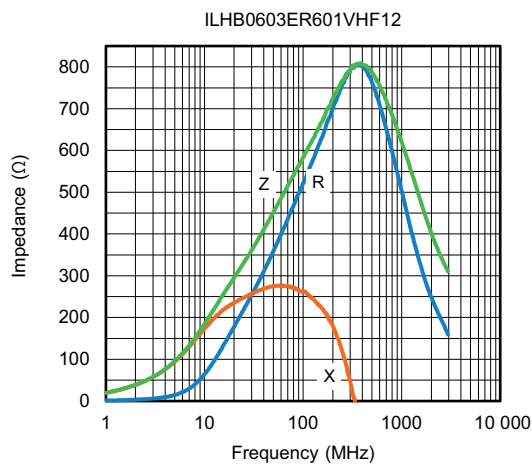
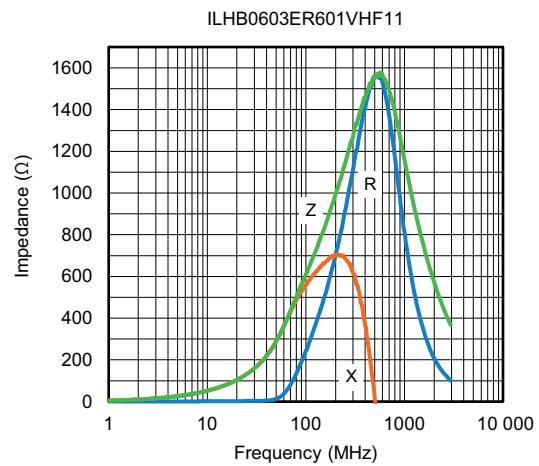
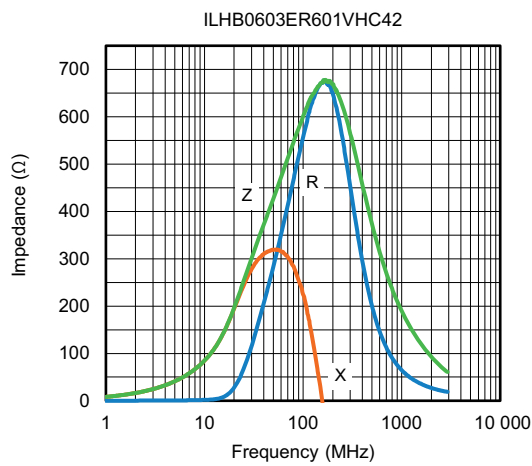
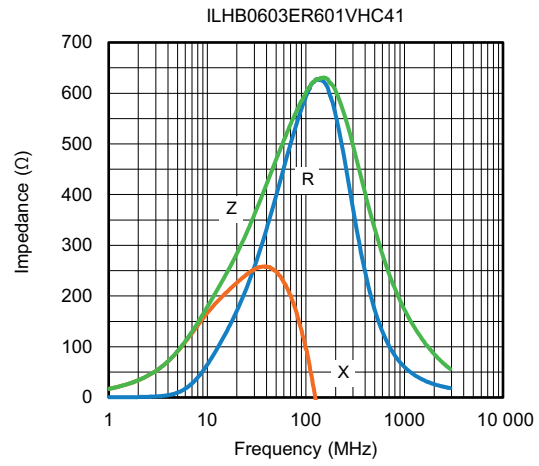
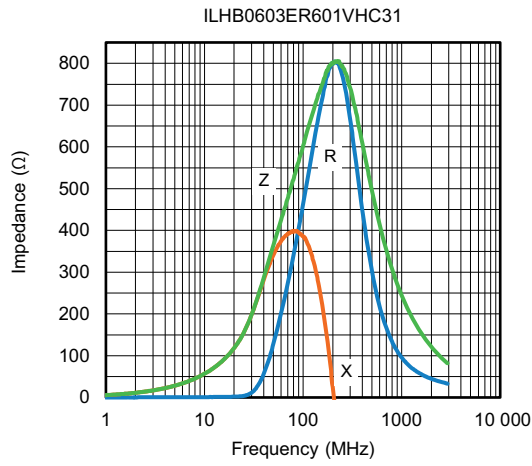
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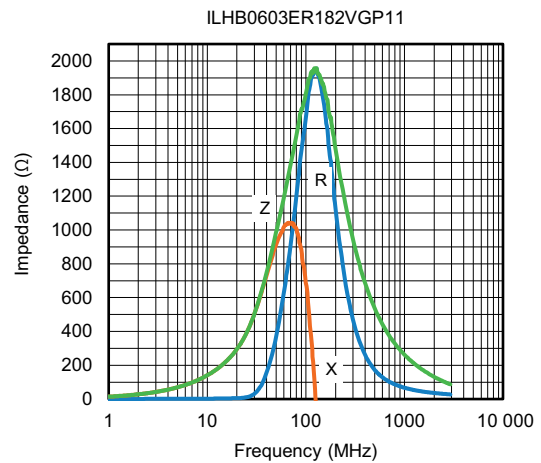
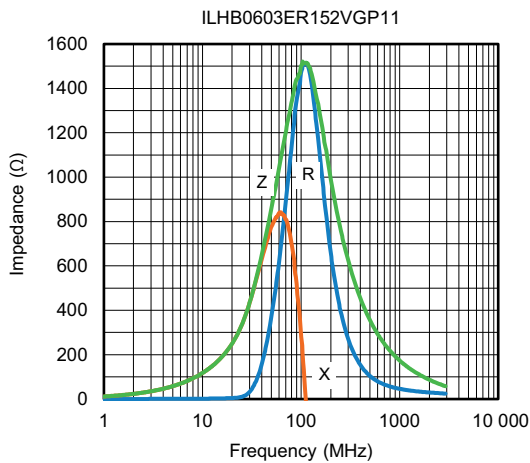
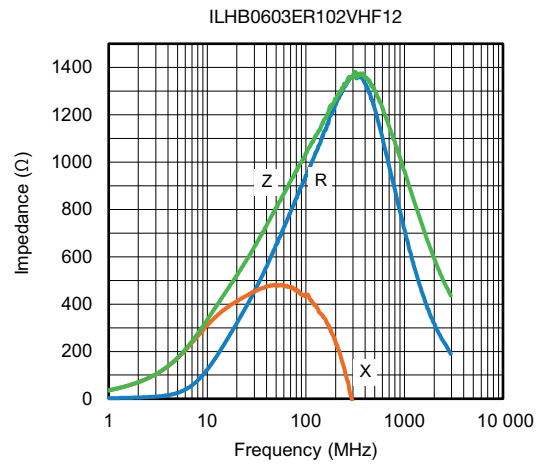
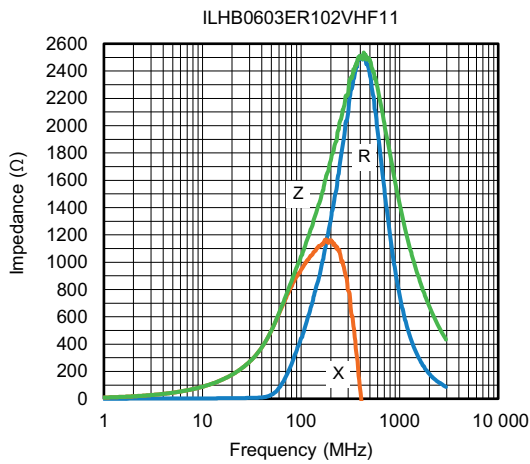
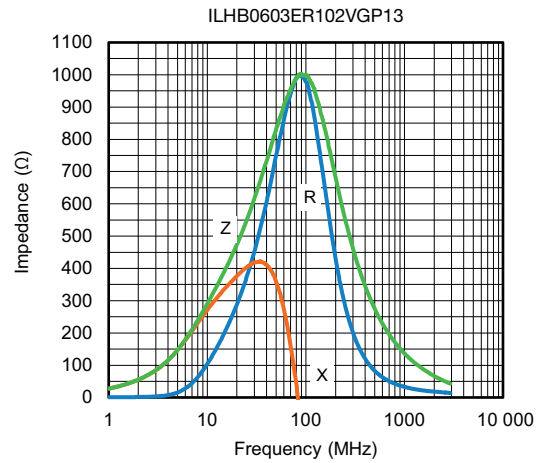
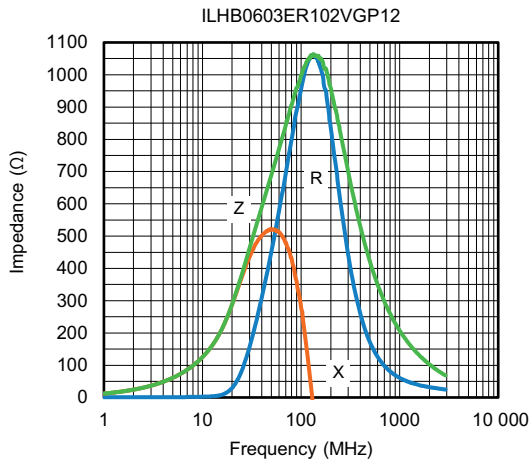
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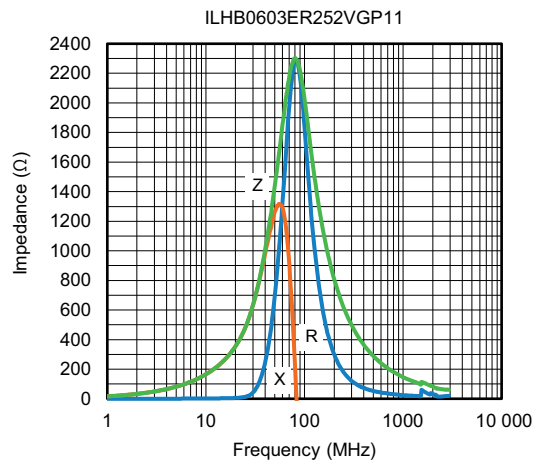
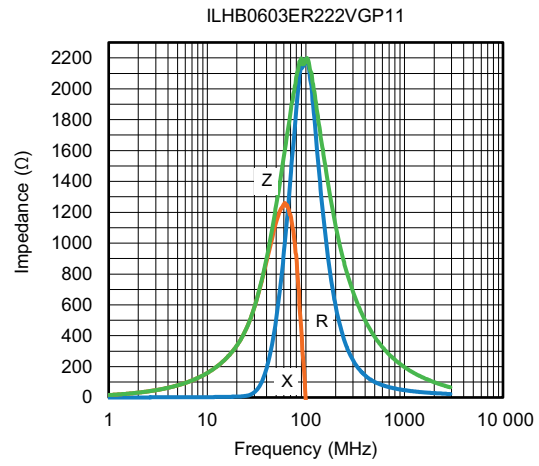
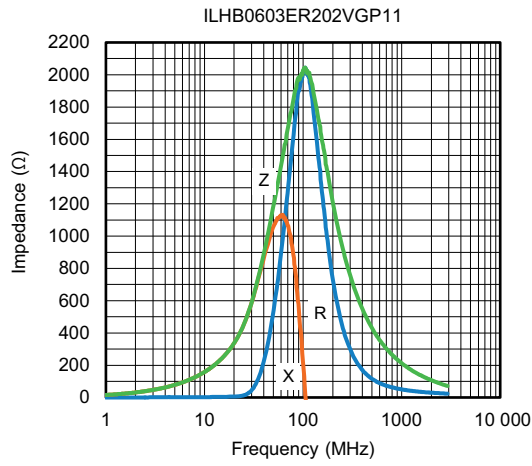
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