

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

- 2.0 mm x 1.2 mm x 0.85 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

AUTOMOTIVE GRADE


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)
ILHB0805ER170VGP11	17	40	2000	21.6	739	17	n/a	37
ILHB0805ER190VGP11	19	40	2000	31	940	19	6000	117
ILHB0805ER220VHC41	22	10	6000	39	1132	22	8000	119
ILHB0805ER220VHC42	22	10	6000	29	682	22	4200	38
ILHB0805ER300VHC41	30	10	6000	40	647	31	2500	42
ILHB0805ER300VHC42	30	10	6000	46	811	30	5000	74
ILHB0805ER300VHC31	30	15	4000	38	529	30	3000	36
ILHB0805ER300VHC32	30	20	3000	38	536	30	3000	38
ILHB0805ER300VGP11	30	50	1500	52	1004	30	6500	127
ILHB0805ER300VGP12	30	50	1500	39	673	30	3500	42
ILHB0805ER300VSS11	30	100	1000	n/a	n/a	n/a	n/a	n/a
ILHB0805ER390VHC31	39	20	4000	66	664	40	3100	104
ILHB0805ER600VHC41	60	20	4000	77	502	60	2177	37
ILHB0805ER600VHC31	60	25	3000	76	495	60	2100	33
ILHB0805ER600VSS11	60	200	800	533	350	59	1580	298
ILHB0805ER700VGP11	70	100	1000	82	489	65	1806	38
ILHB0805ER800VHC41	80	20	4000	122	379	79	965	107
ILHB0805ER800VHC31	80	40	3000	130	655	79	2696	113
ILHB0805ER800VGP11	80	100	1000	129	655	79	2590	108
ILHB0805ER800VGP12	80	100	1000	117	597	79	2149	72
ILHB0805ER121VHC31	120	40	2500	139	251	119	495	34
ILHB0805ER121VHC32	120	60	2500	178	384	120	965	99
ILHB0805ER121VGP11	120	150	800	180	463	117	1294	107
ILHB0805ER121VGP12	120	150	800	146	336	119	965	36
ILHB0805ER121VSS12	120	200	600	331	476	122	1602	217
ILHB0805ER121VHC41	120	20	4000	155	294	117	656	65
ILHB0805ER121VSS11	120	250	600	1925	278	116	879	268
ILHB0805ER181VGP11	180	180	700	281	275	180	647	111
ILHB0805ER181VGP12	180	200	600	230	244	183	515	60
ILHB0805ER221VHC41	220	40	3000	254	235	222	463	34



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 ILHB0805ER221VHC42, ILHB0805ER221VHC31, 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

I L H B
PRODUCT FAMILY

0 8 0 5
SIZE

E R
PACKAGE CODE

ER = tape and reel

3 0 1
INDUCTANCE VALUE

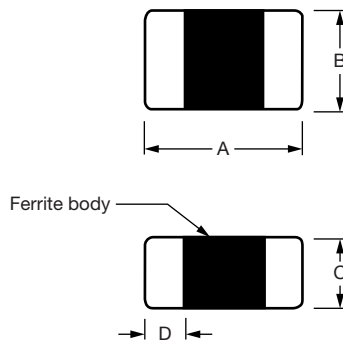
301 = Ω

V
IMPEDANCE TOLERANCE

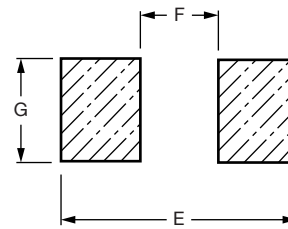
V = $\pm 25\%$

H C 1 1
APPLICATION

HCxx = high current
HFxx = high frequency
GPxx = general purpose
SSxx = signal specific

DIMENSIONS in inches [millimeters]


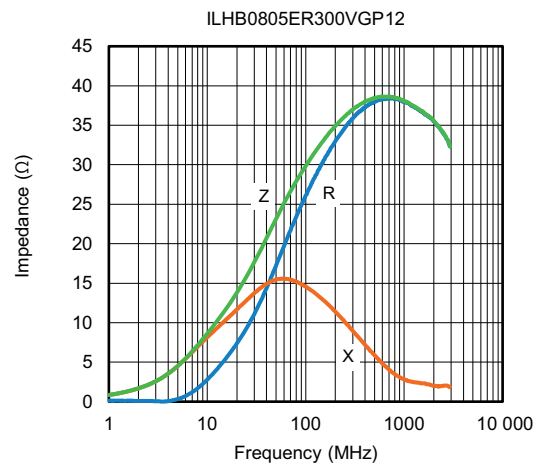
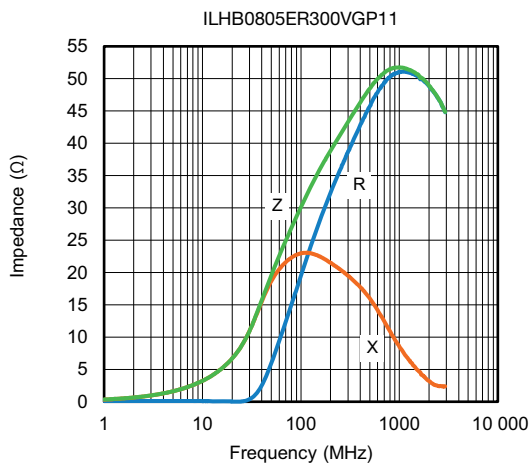
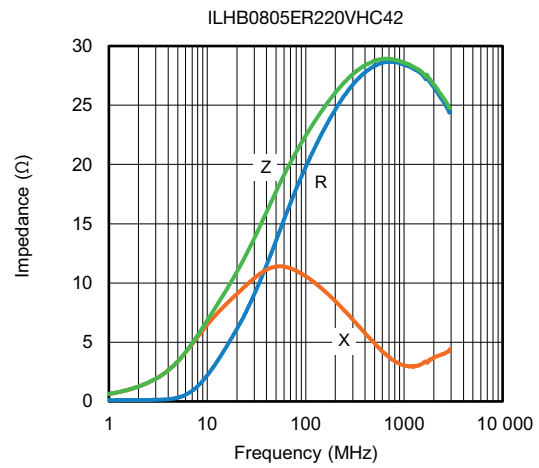
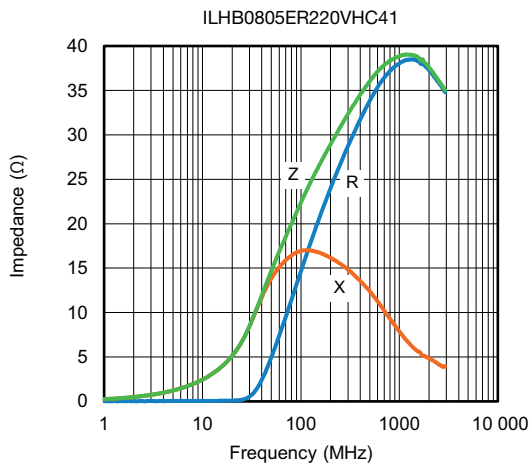
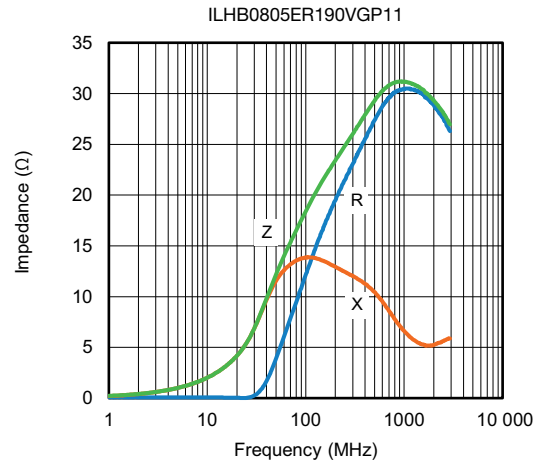
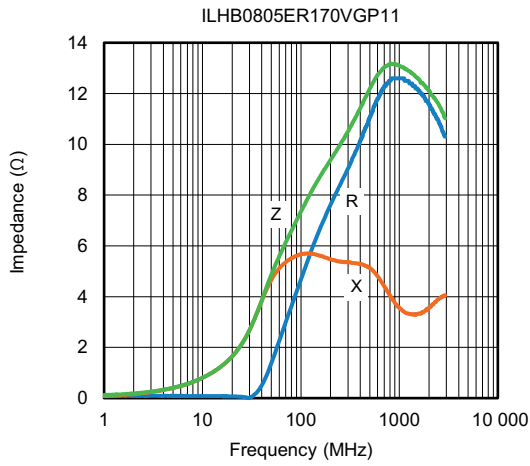
Dimensional outline



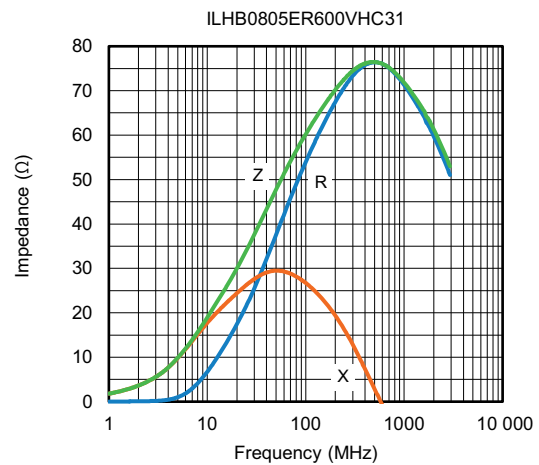
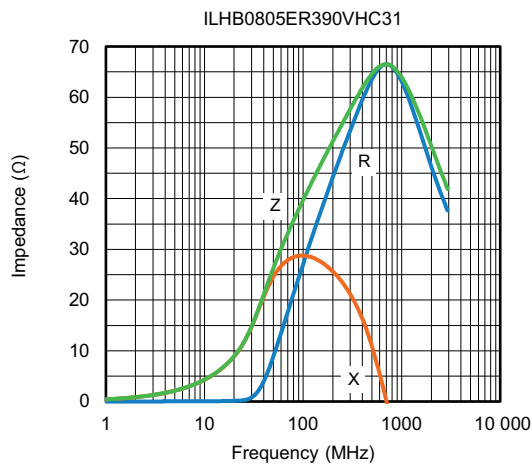
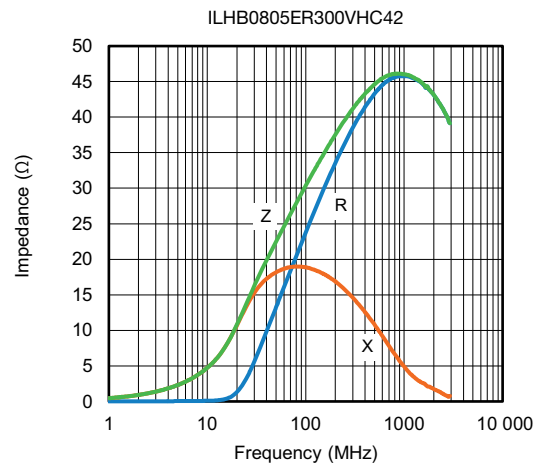
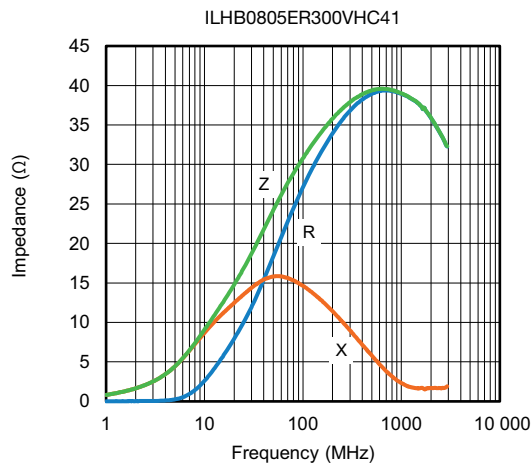
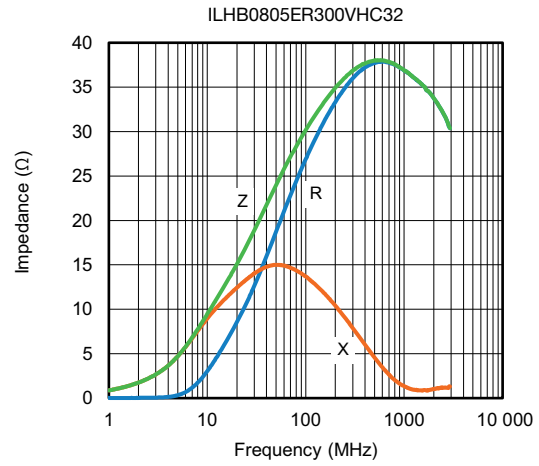
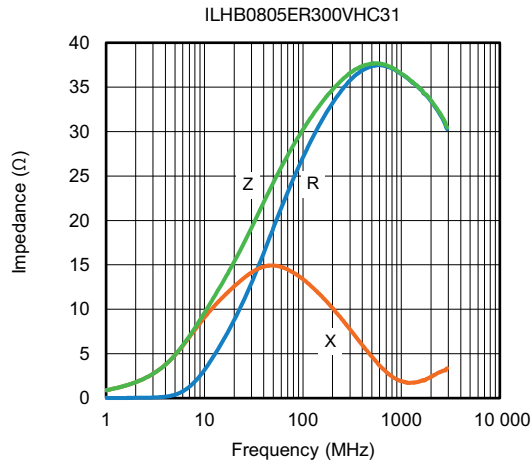
Typical pad layout

SIZE	A	B	C	D	E	F	G
0805	0.079 ± 0.012 [2.0 + 0.3 -0.1]	0.049 ± 0.006 [1.25 ± 0.2]	0.033 ± 0.008 [0.85 ± 0.2]	0.020 ± 0.012 [0.5 ± 0.3]	0.118 [3.0]	0.039 [1.0]	0.049 [1.25]

PERFORMANCE GRAPHS

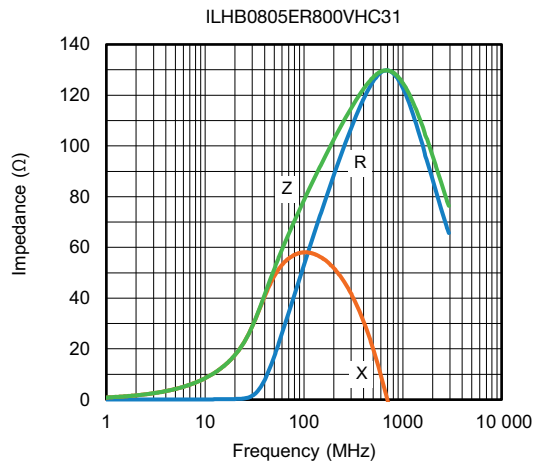
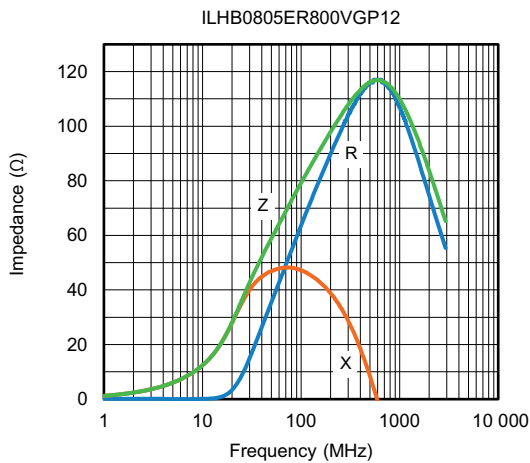
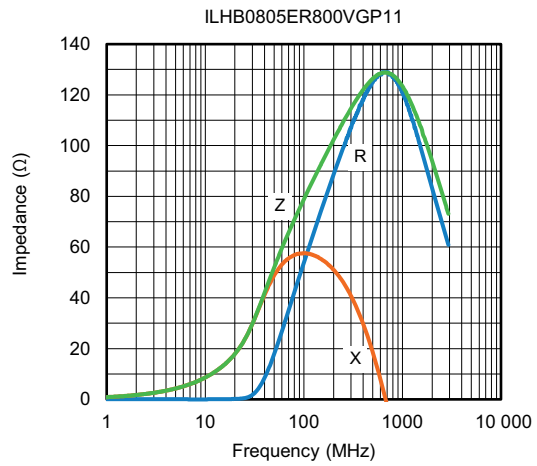
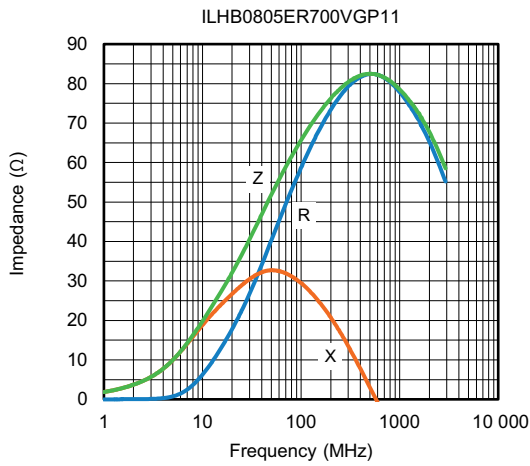
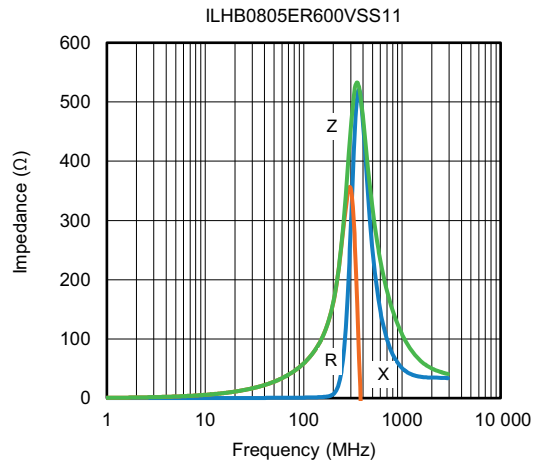
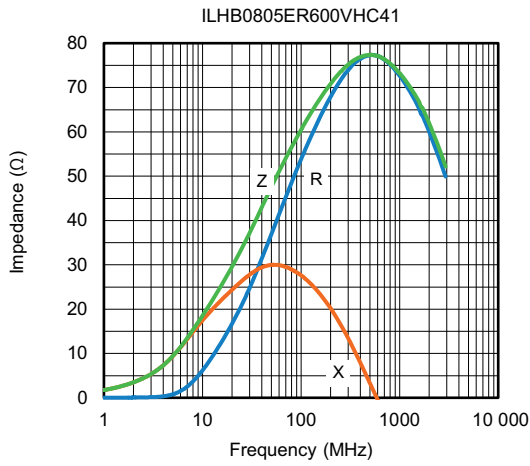


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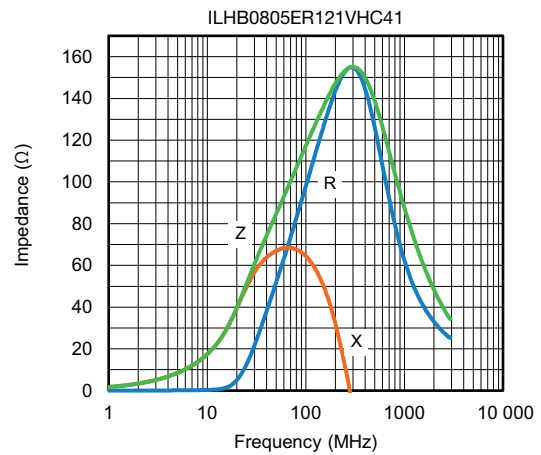
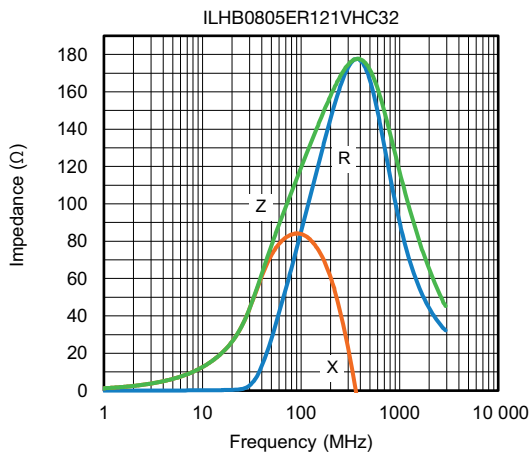
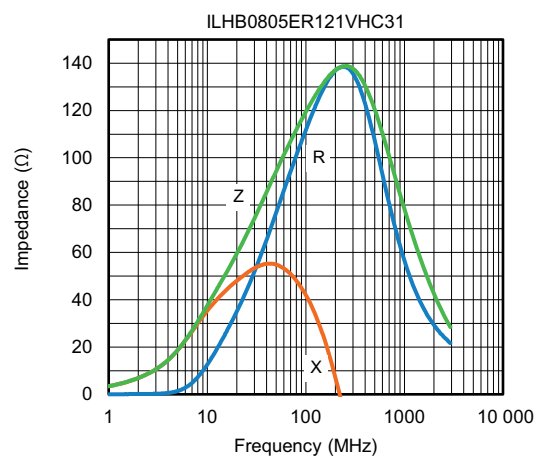
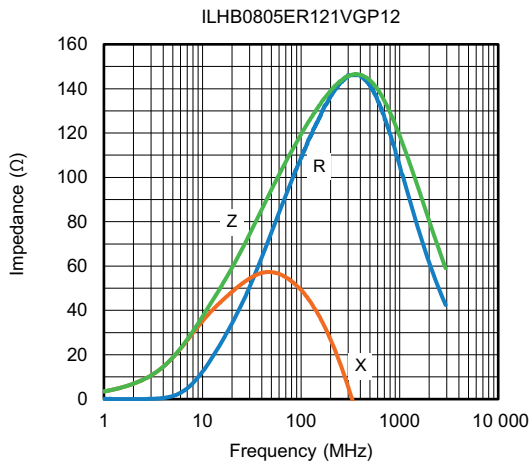
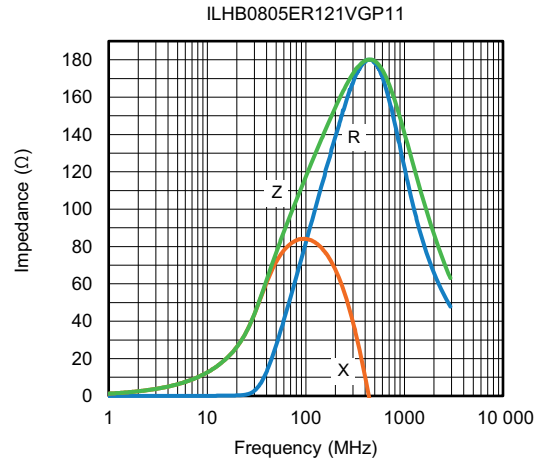
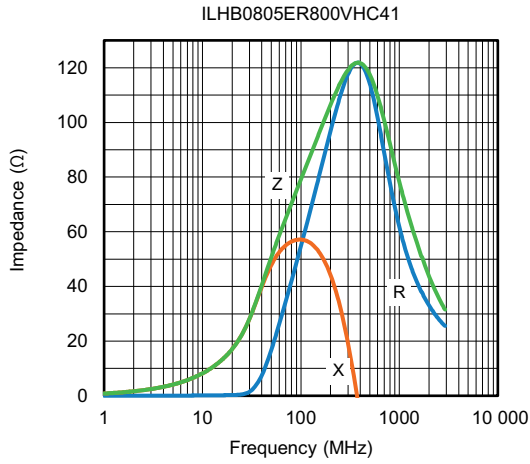




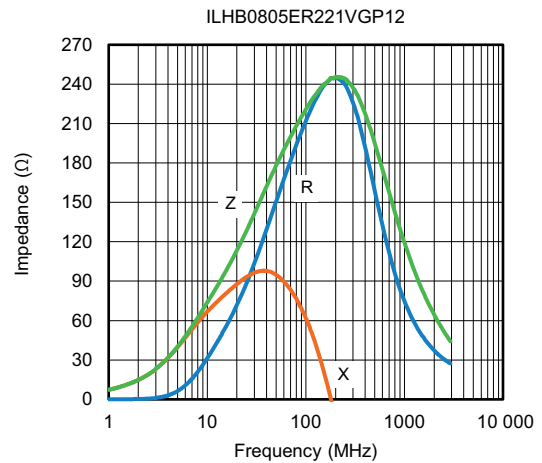
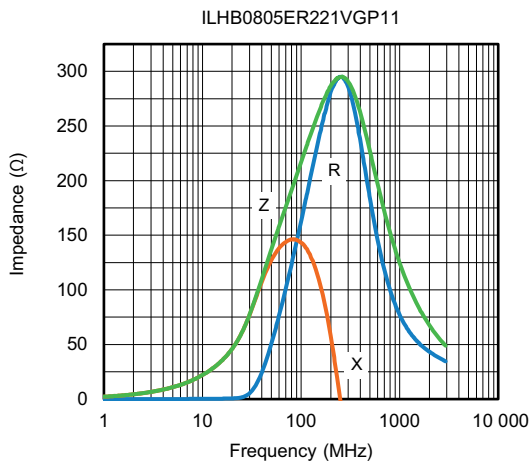
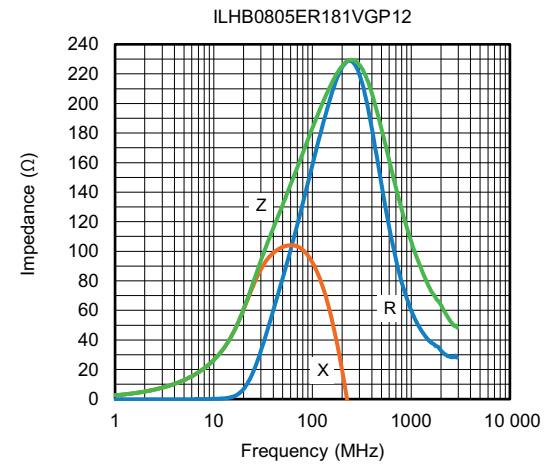
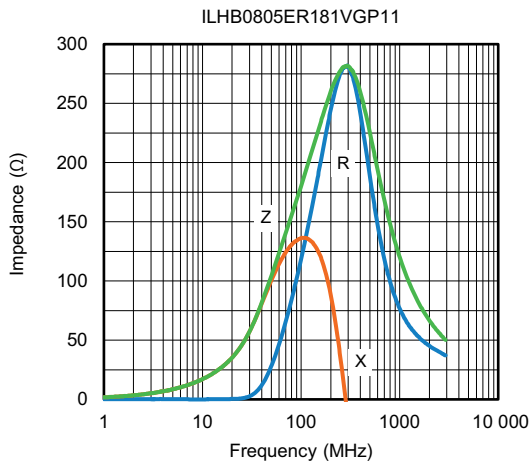
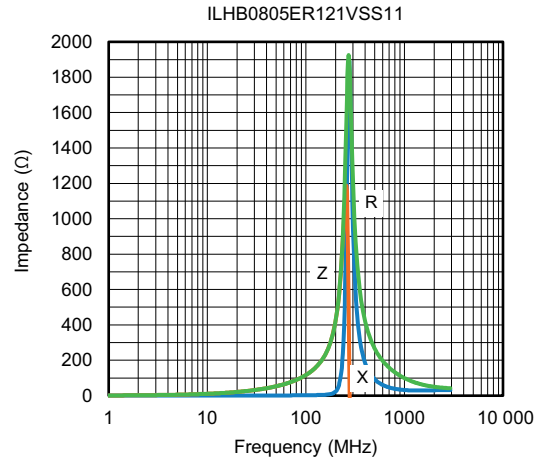
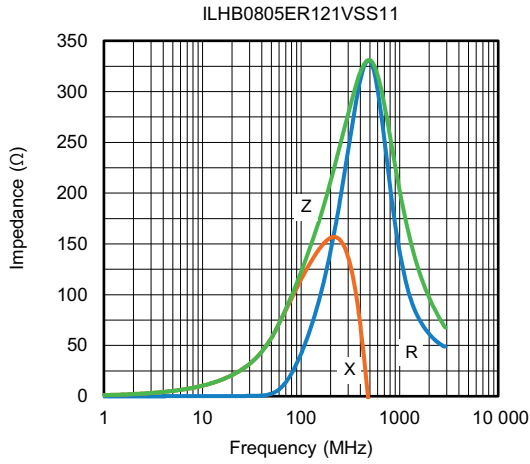
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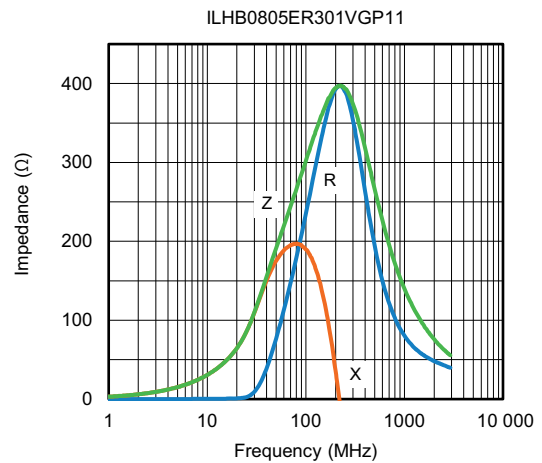
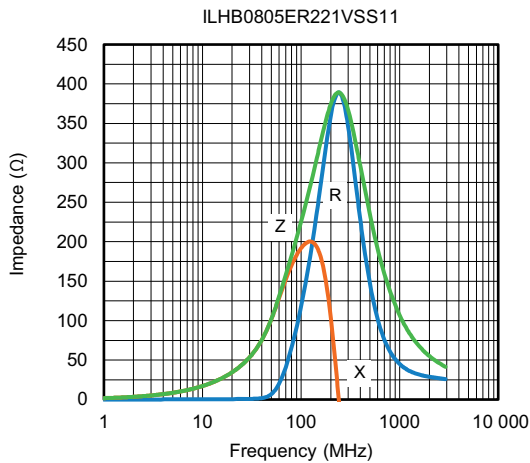
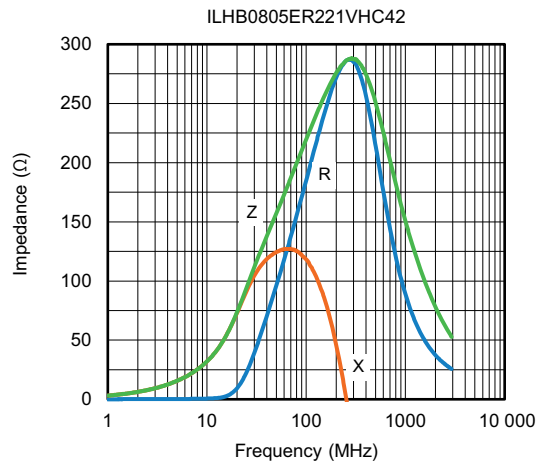
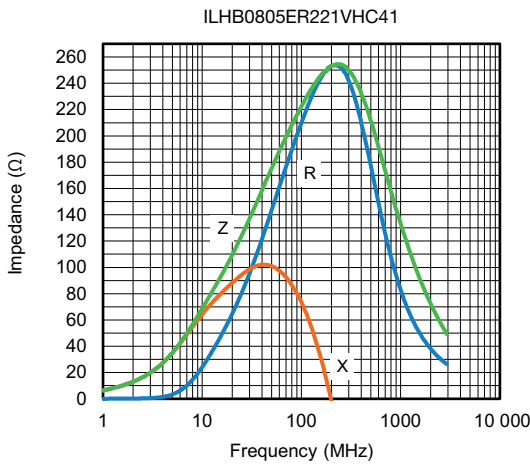
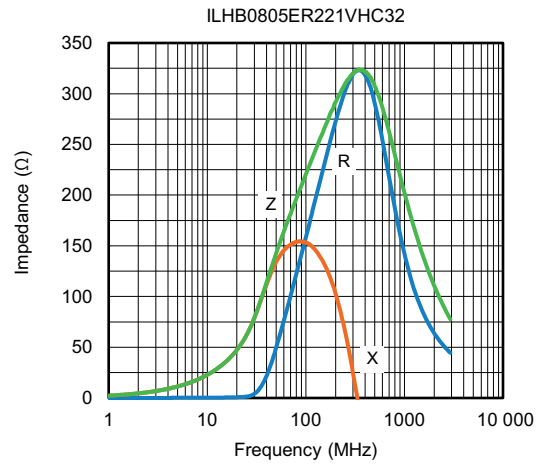
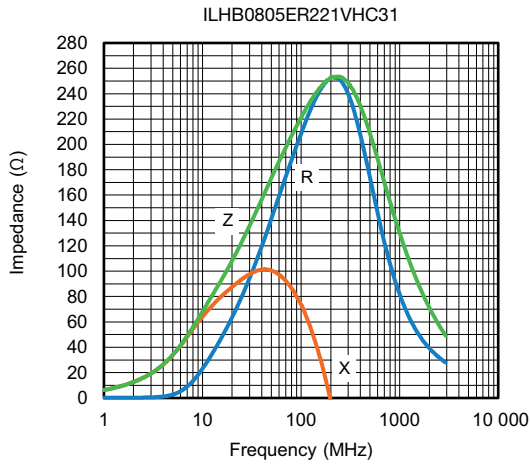
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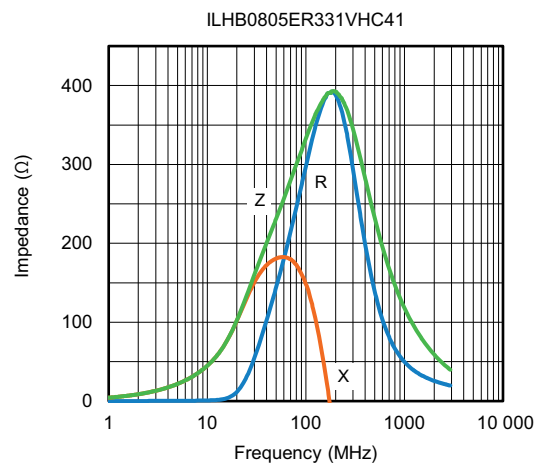
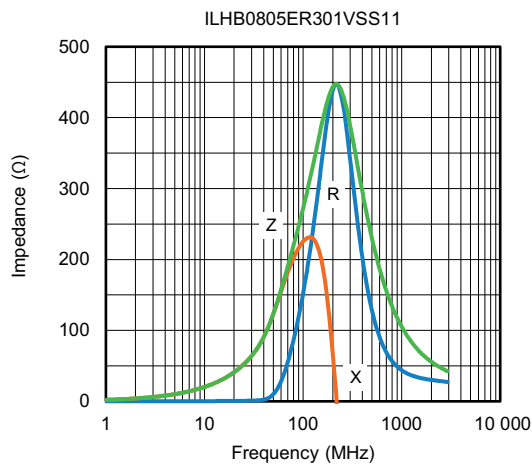
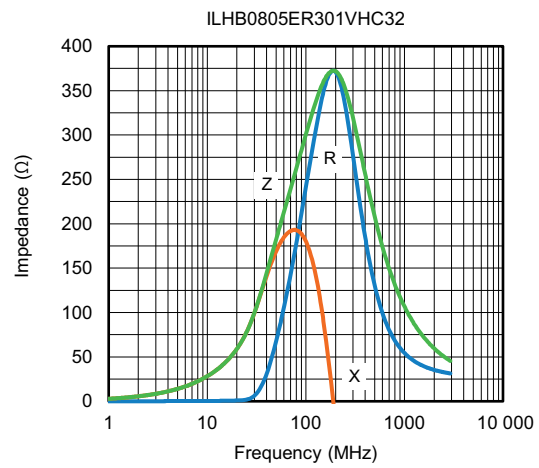
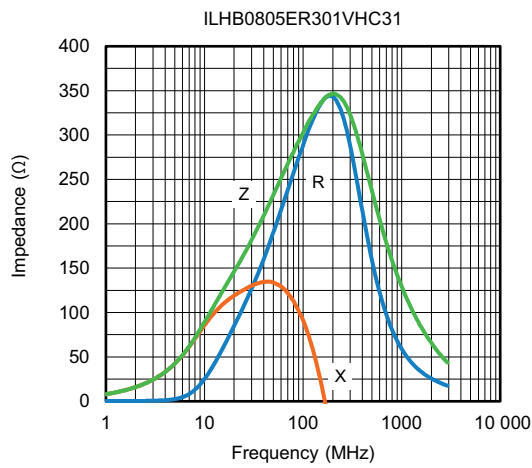
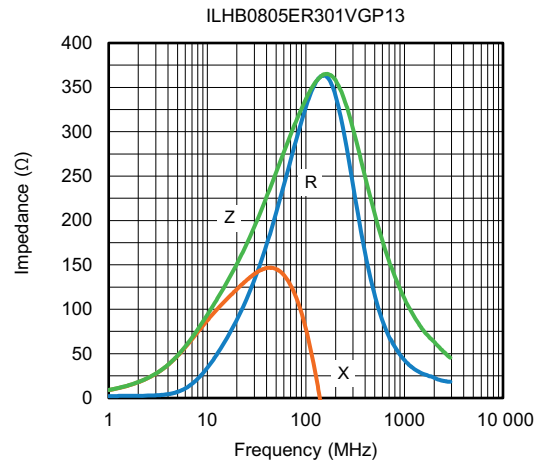
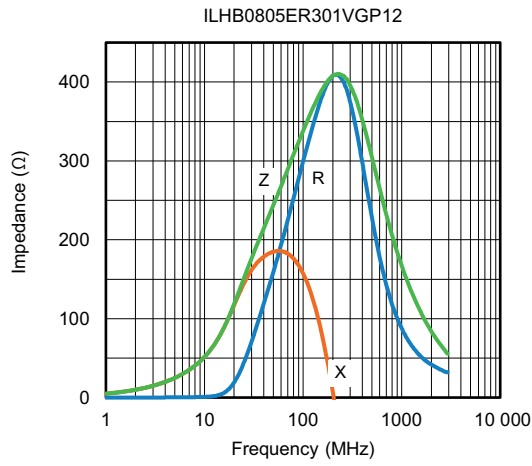
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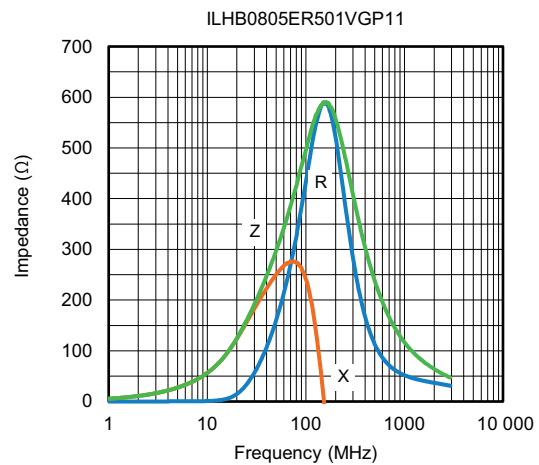
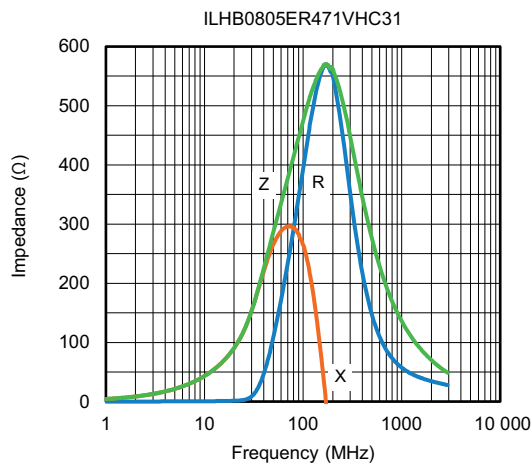
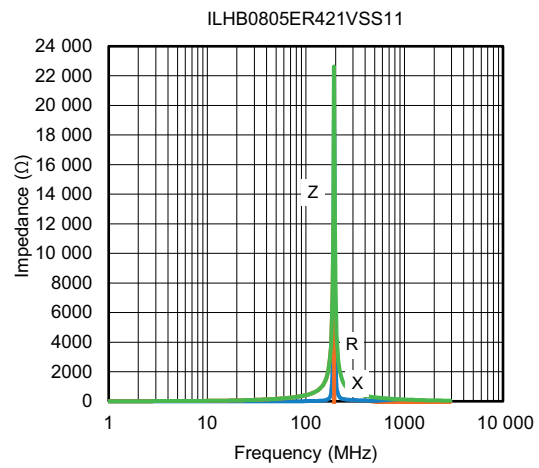
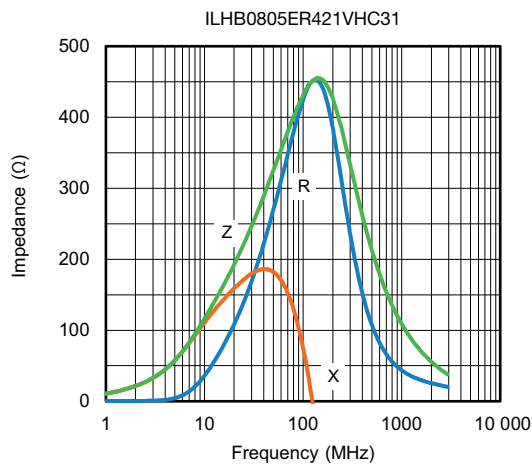
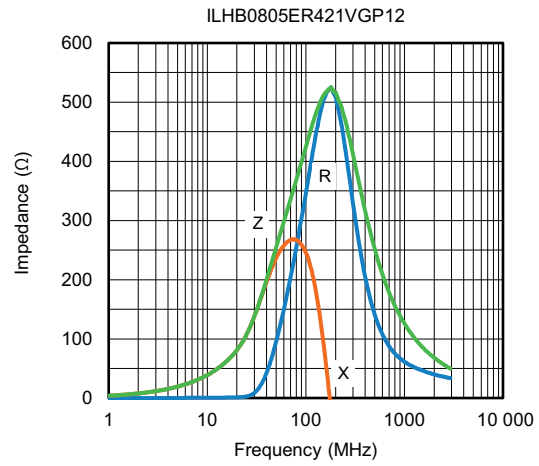
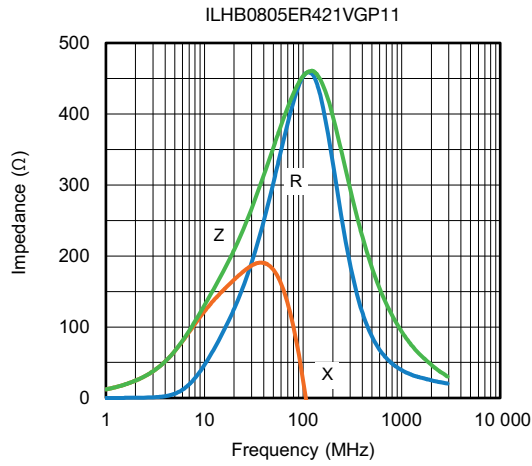
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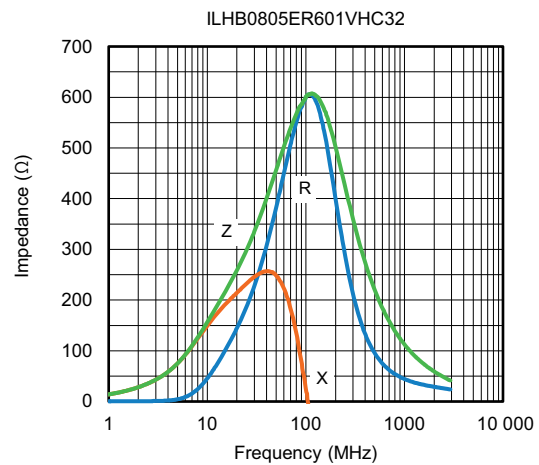
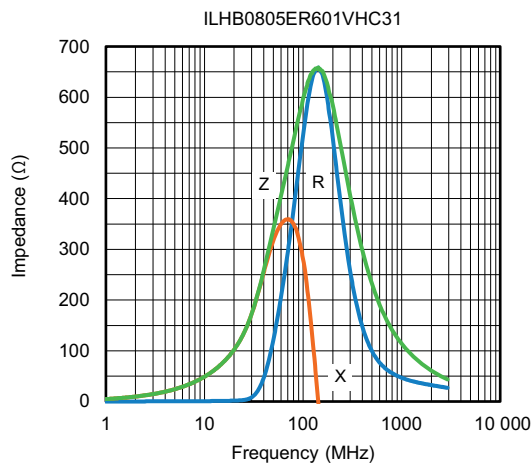
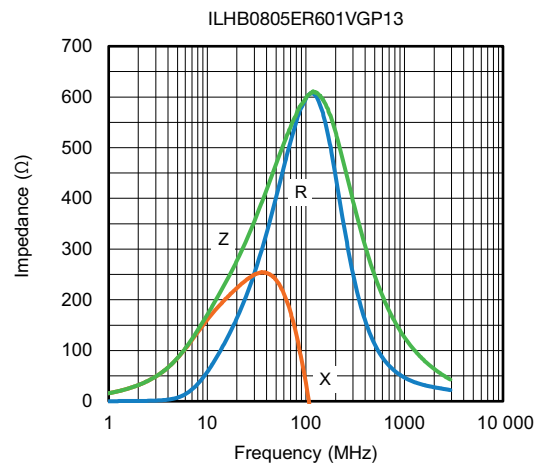
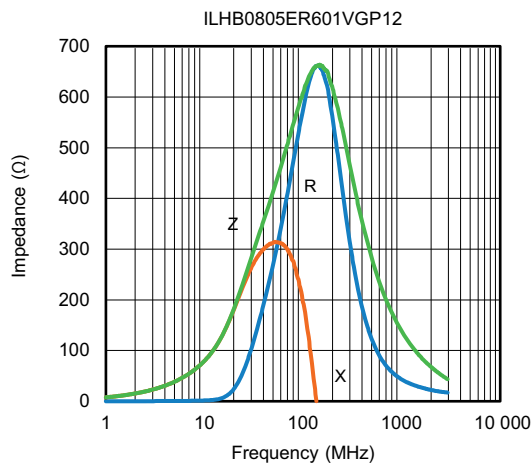
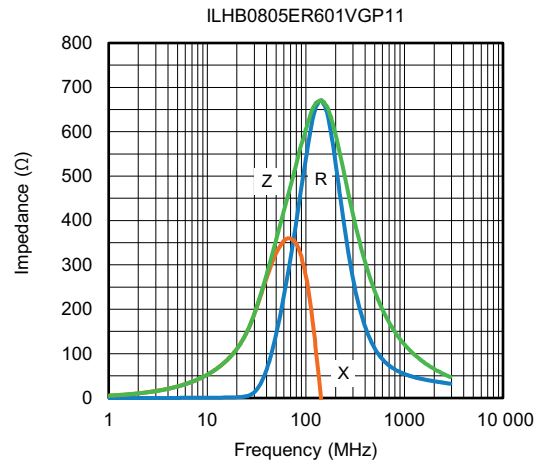
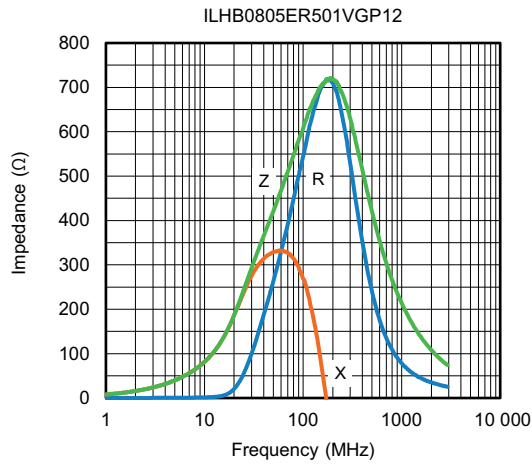
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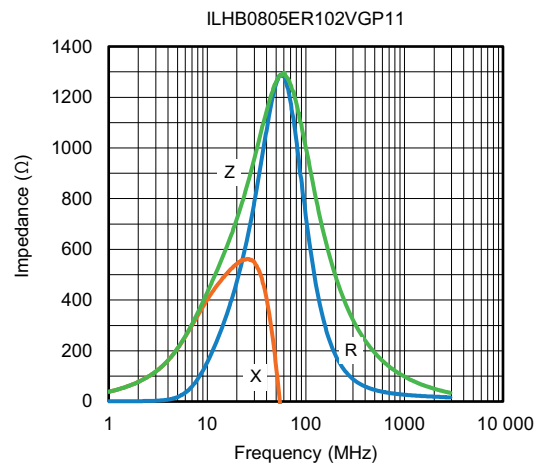
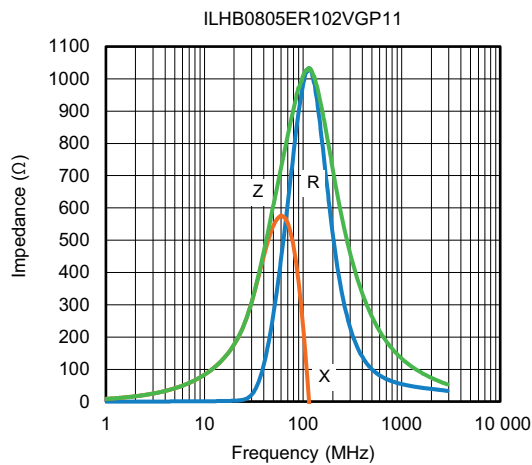
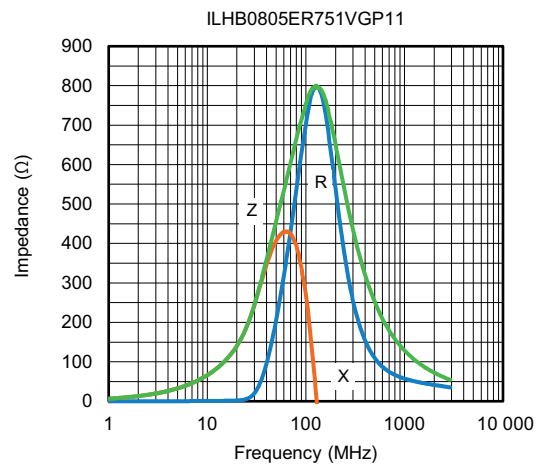
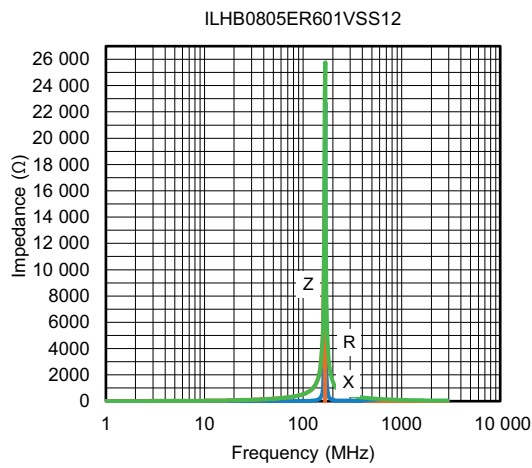
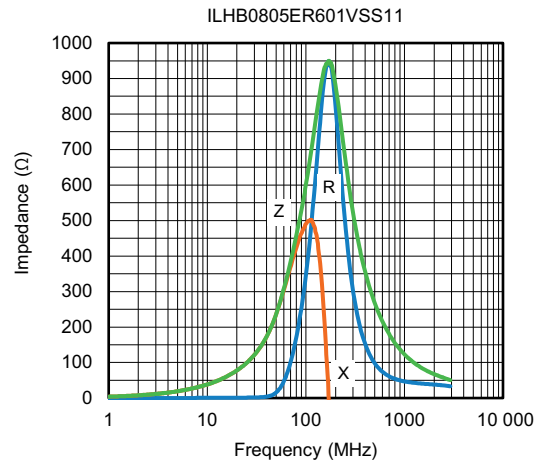
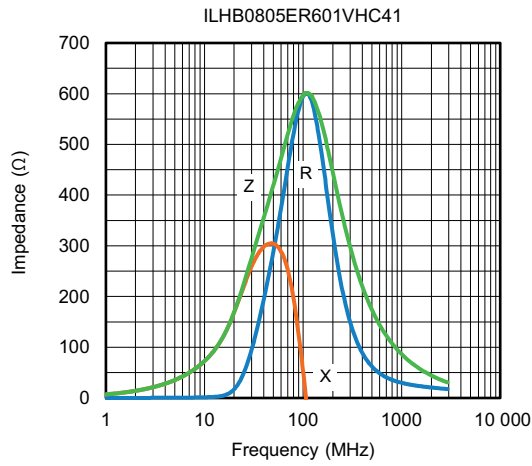
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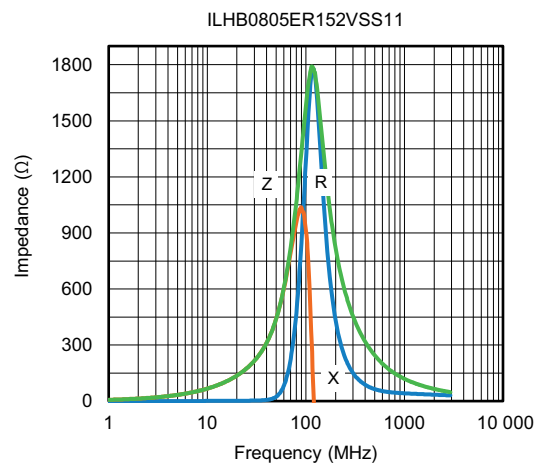
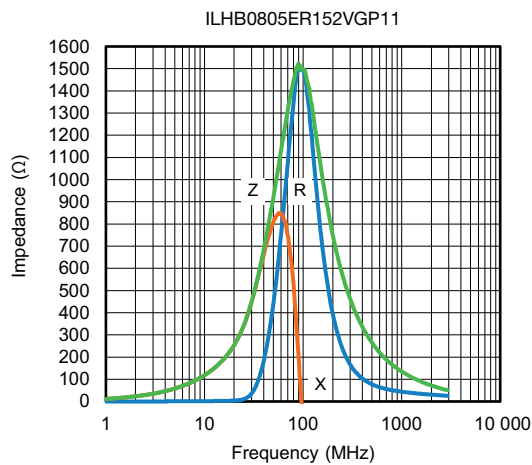
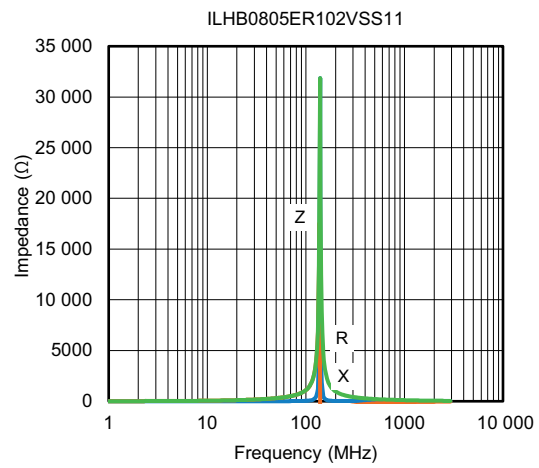
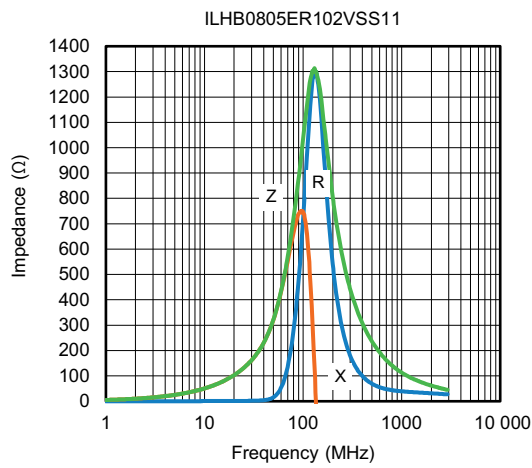
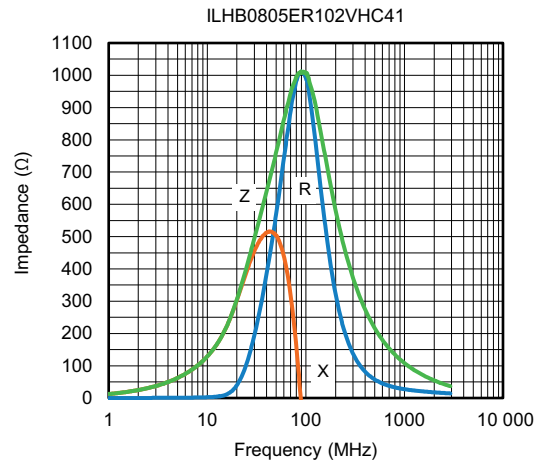
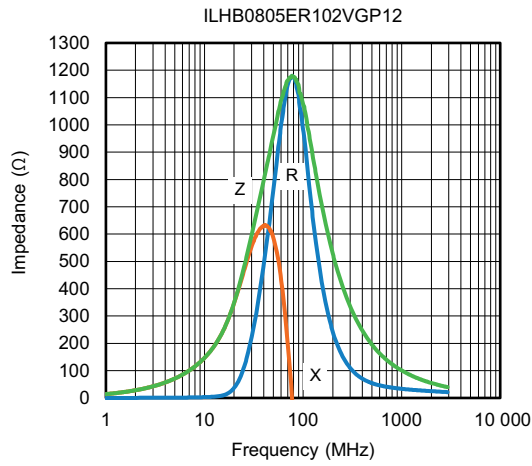
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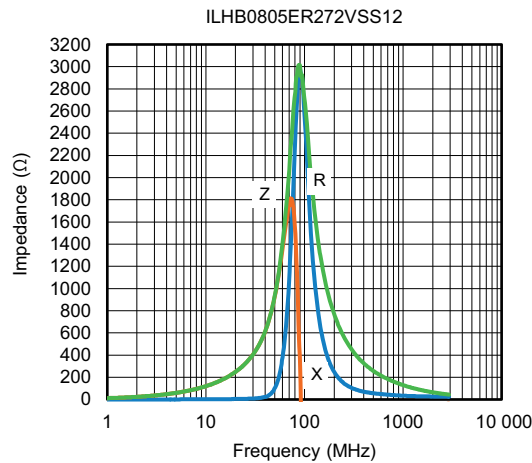
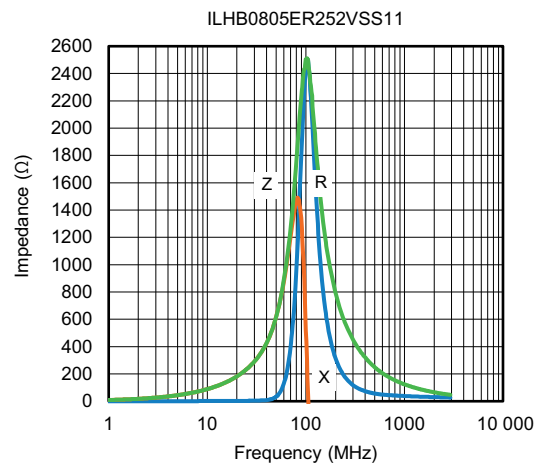
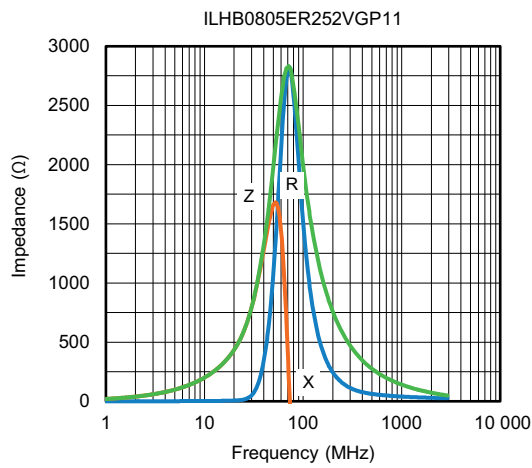
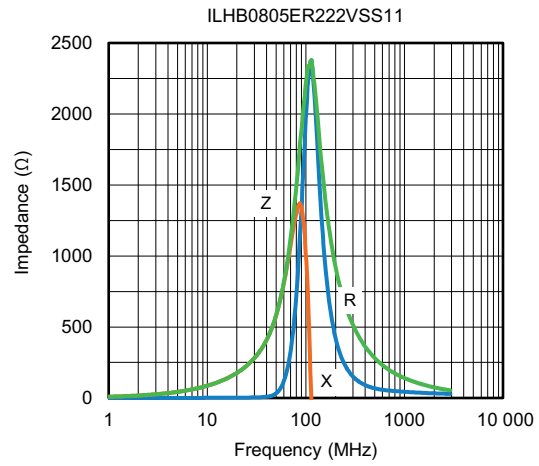
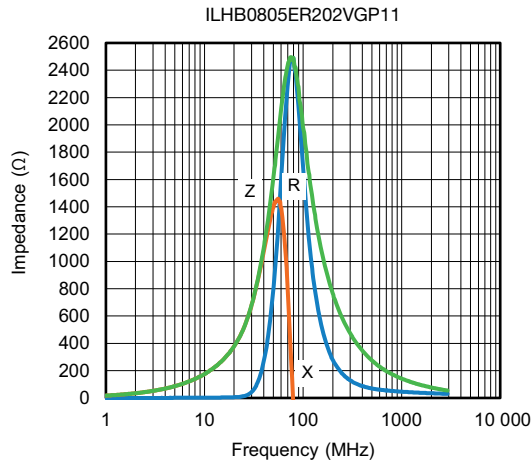
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