

Automotive Multilayer Chip Ferrite Beads



LINKS TO ADDITIONAL RESOURCES



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



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**

PART NUMBER	Z $\pm$ 25 % AT 100 MHz (Ω)	DCR MAX. AT 25 °C (m Ω)	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)
ILHB0805ER221VHC42	220	40	3000	288	287	220	621	65
ILHB0805ER221VHC31	220	70	2000	288	298	220	621	67
ILHB0805ER221VHC32	220	80	1500	324	350	220	890	95
ILHB0805ER221VGP11	220	200	600	295	247	216	515	92
ILHB0805ER221VGP12	220	200	600	245	203	220	389	29
ILHB0805ER221VSS11	220	250	600	389	244	225	529	129
ILHB0805ER221VSS12	220	300	600	7342	238	220	613	231
ILHB0805ER301VHC31	300	100	1500	346	195	303	350	31
ILHB0805ER301VHC32	300	120	1500	373	192	300	332	83
ILHB0805ER301VGP11	300	200	500	397	231	300	439	88
ILHB0805ER301VGP12	300	200	500	410	228	338	509	58
ILHB0805ER301VGP13	300	200	500	365	159	337	306	34
ILHB0805ER301VSS11	300	300	600	447	219	272	394	124
ILHB0805ER331VHC41	330	50	2500	392	182	330	323	62
ILHB0805ER421VHC31	420	200	1000	454	141	430	192	34
ILHB0805ER421VGP11	420	250	500	460	119	450	180	30
ILHB0805ER421VGP12	420	300	500	525	180	424	294	83
ILHB0805ER421VSS11	420	400	600	22625	192	413	369	192
ILHB0805ER471VHC31	470	250	800	568	170	475	283	82
ILHB0805ER501VGP11	500	300	500	589	157	496	241	72
ILHB0805ER501VGP12	500	300	500	721	192	607	411	62
ILHB0805ER601VHC41	600	90	200	601	110	600	120	53
ILHB0805ER601VHC31	600	250	800	656	140	596	189	77
ILHB0805ER601VHC32	600	250	800	607	115	600	130	34
ILHB0805ER601VGP11	600	300	500	671	145	600	197	73
ILHB0805ER601VGP12	600	300	500	662	141	607	208	55
ILHB0805ER601VGP13	600	300	500	611	119	597	142	31
ILHB0805ER601VSS11	600	350	600	949	170	600	272	115
ILHB0805ER601VSS12	600	450	600	25770	168	525	257	165
ILHB0805ER751VGP11	750	350	500	799	125	750	162	70
ILHB0805ER102VHC41	1000	120	1500	1011	95	1000	104	47
ILHB0805ER102VGP11	1000	350	500	1032	116	1008	131	67
ILHB0805ER102VGP12	1000	350	500	1180	78	1100	110	45
ILHB0805ER102VSS12	1000	400	500	1313	131	1025	174	101
ILHB0805ER102VGP13	1000	400	500	1290	59	1000	100	23
ILHB0805ER102VSS11	1000	500	500	31868	139	1100	197	137
ILHB0805ER152VGP11	1500	400	500	1523	90	1500	95	63
ILHB0805ER152VSS11	1500	450	200	1789	117	1573	140	96
ILHB0805ER202VGP11	2000	500	500	2497	74	1985	99	59
ILHB0805ER222VSS11	2200	600	200	2379	114	2211	122	89
ILHB0805ER252VSS11	2500	700	200	2512	103	2500	105	85
ILHB0805ER252VGP11	2500	700	200	2834	72	2000	84	56
ILHB0805ER272VSS12	2700	800	200	3000	90	2713	100	76

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) Z_{pk} = peak of impedance curve
- (3) F at Z_{pk} = frequency of Z_{pk}
- (4) F at Z_{DO} = 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

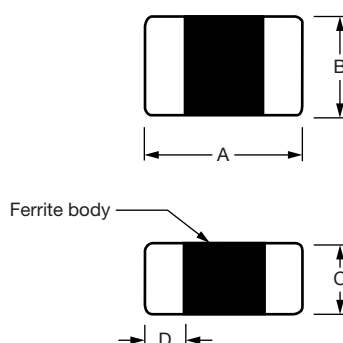
V = $\pm 25\%$

H C 1 1

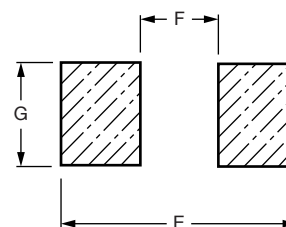
APPLICATION

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

DIMENSIONS in inches [millimeters]

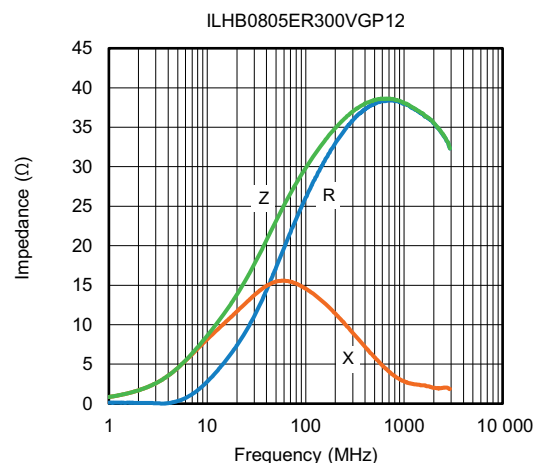
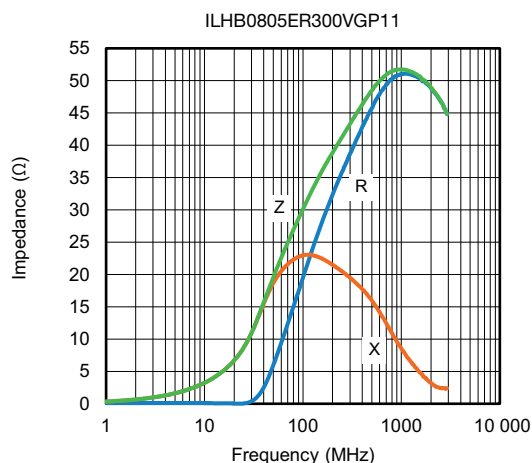
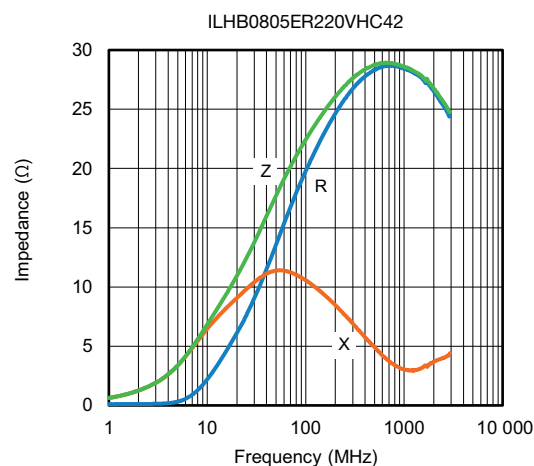
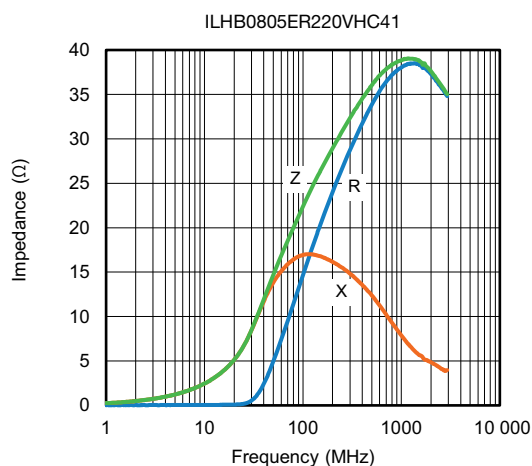
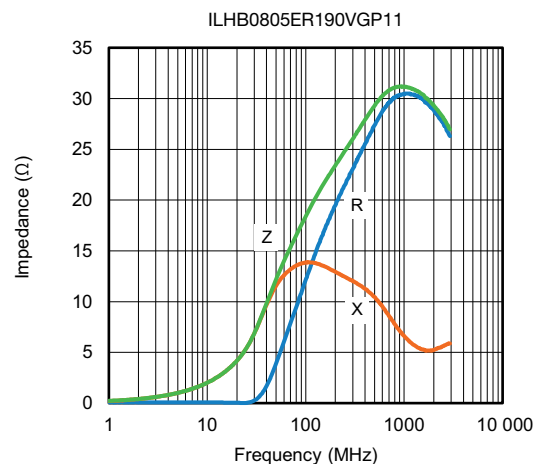
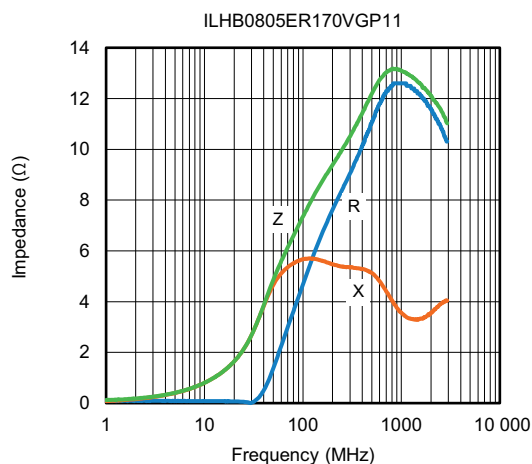


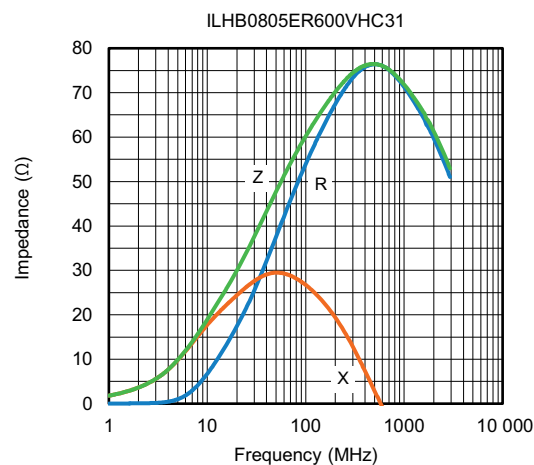
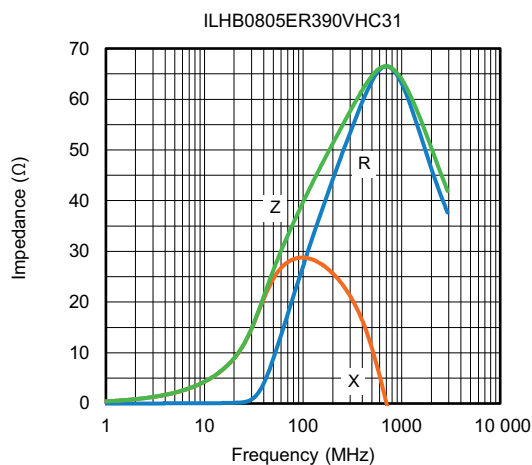
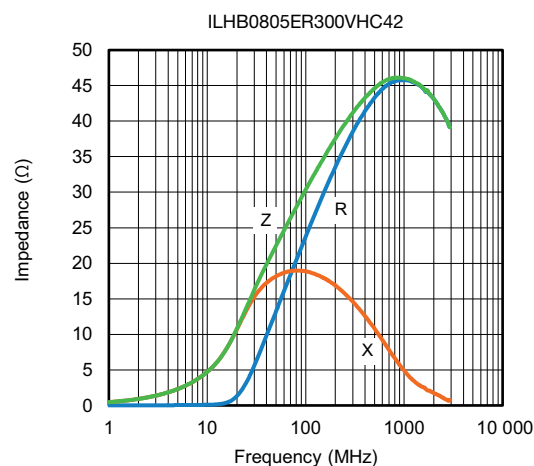
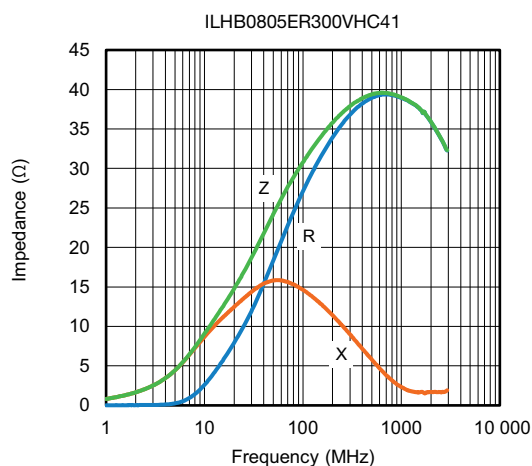
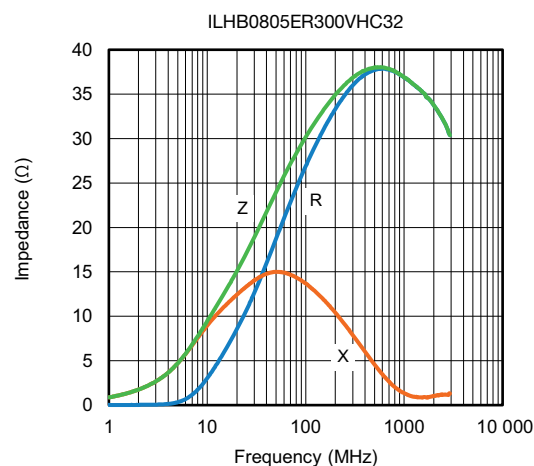
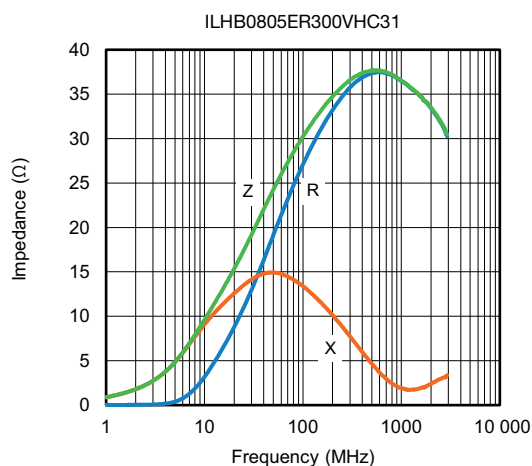
Dimensional outline

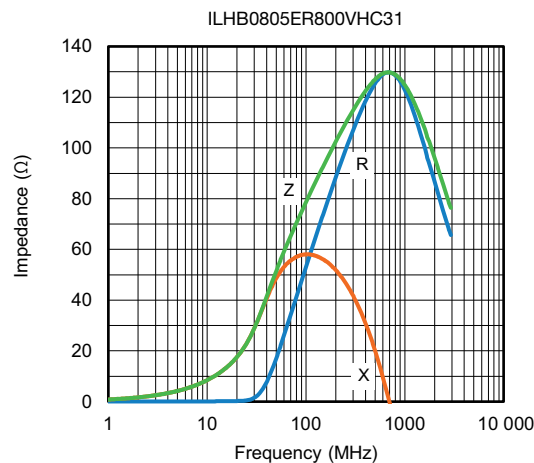
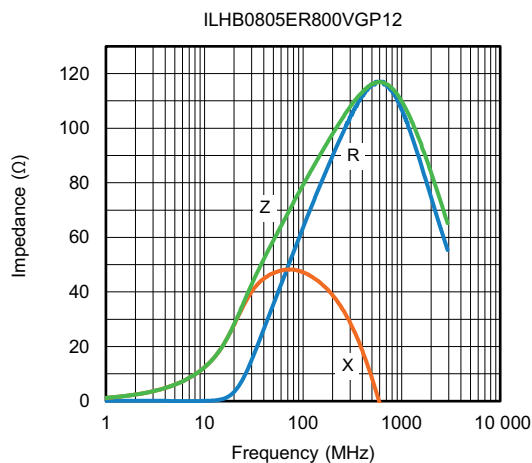
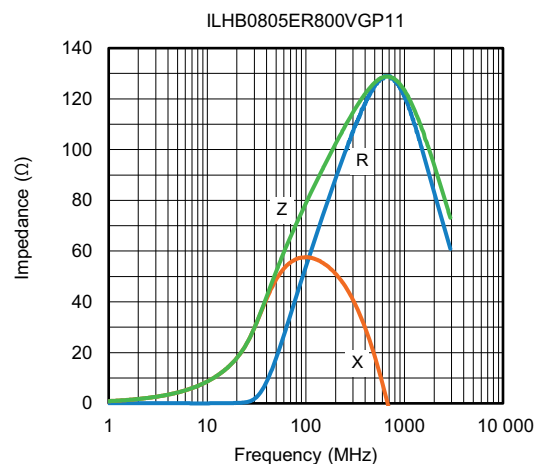
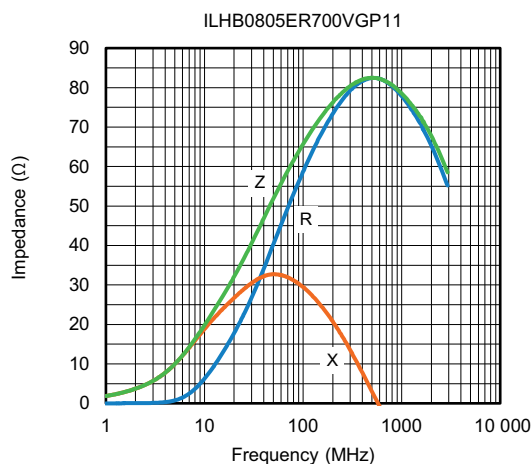
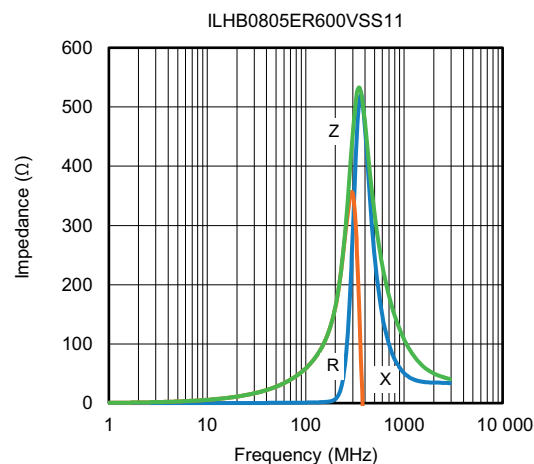
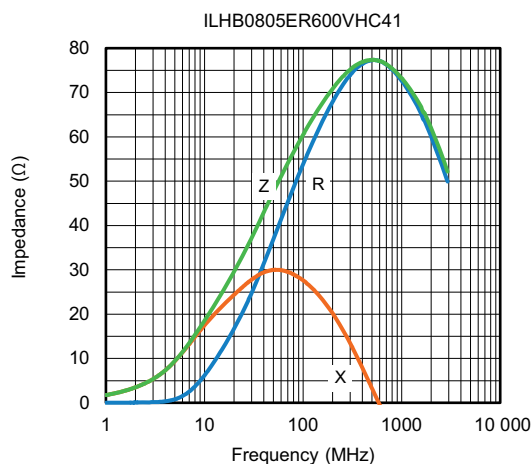


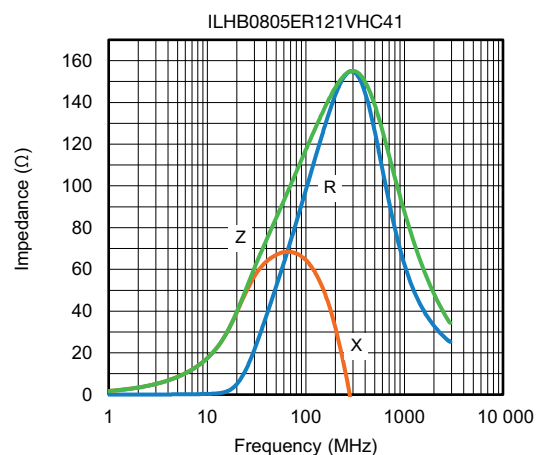
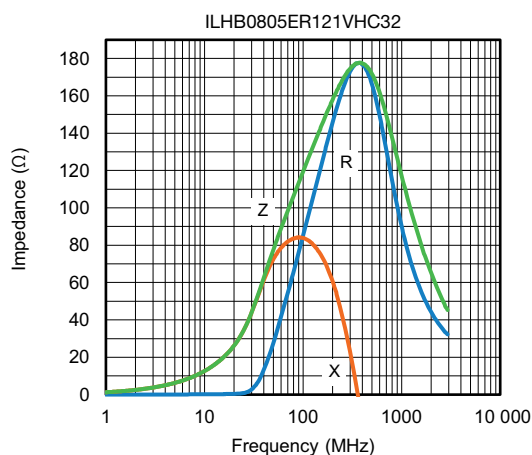
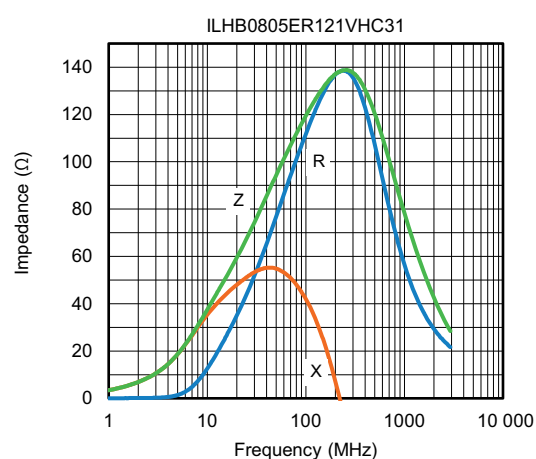
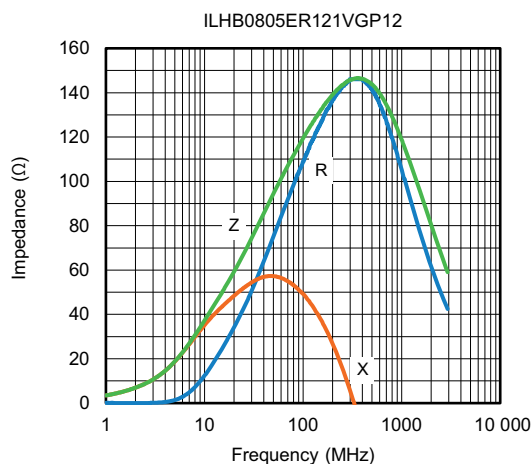
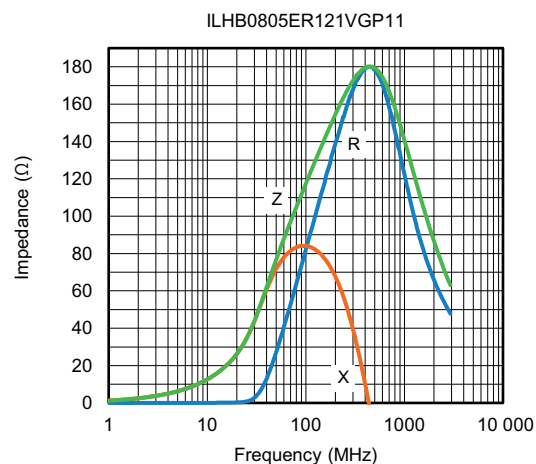
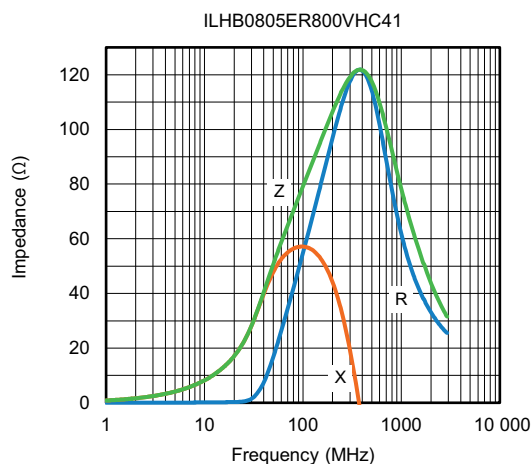
Typical pad layout

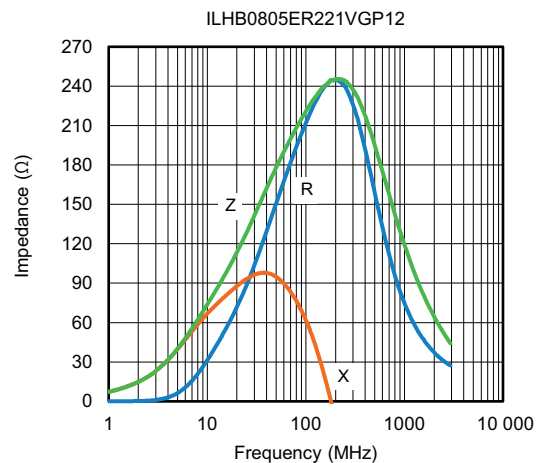
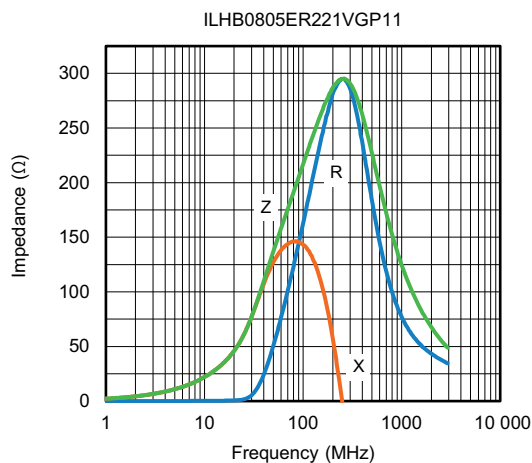
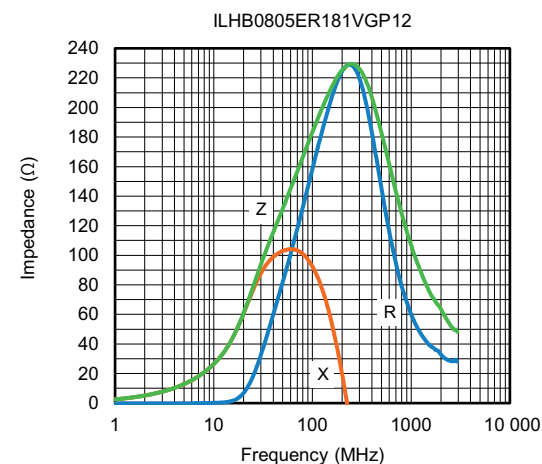
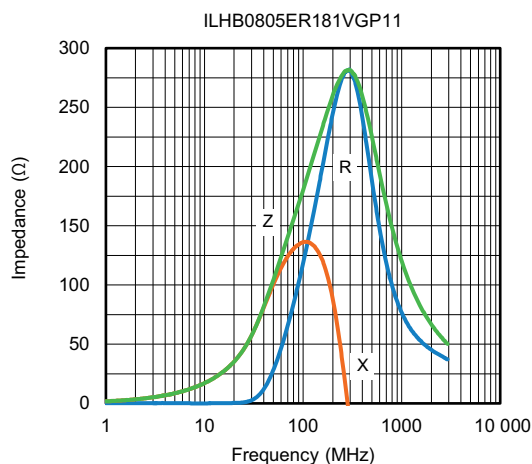
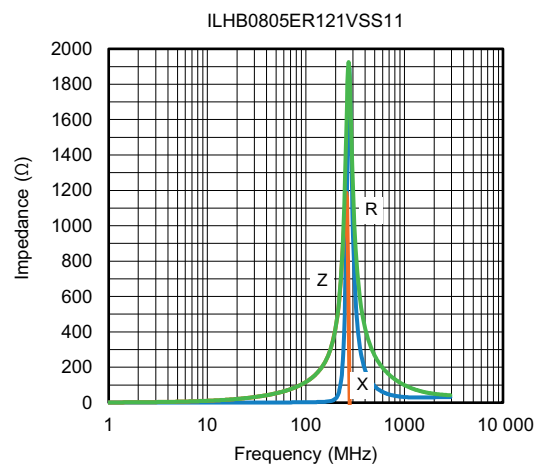
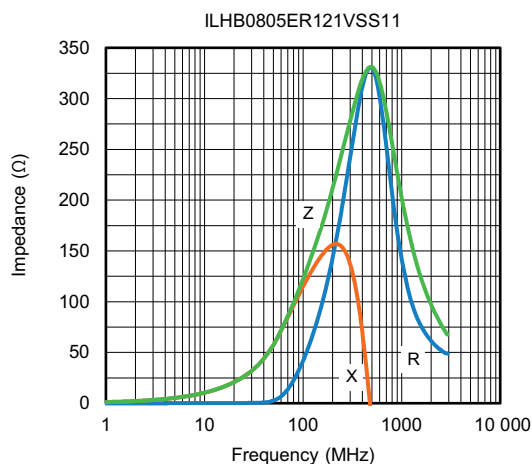
SIZE	A	B	C	D	E	F	G
0805	0.079 $\pm$ 0.012 [2.0 + 0.3 -0.1]	0.049 $\pm$ 0.006 [1.25 $\pm$ 0.2]	0.033 $\pm$ 0.008 [0.85 $\pm$ 0.2]	0.020 $\pm$ 0.012 [0.5 $\pm$ 0.3]	0.118 [3.0]	0.039 [1.0]	0.049 [1.25]

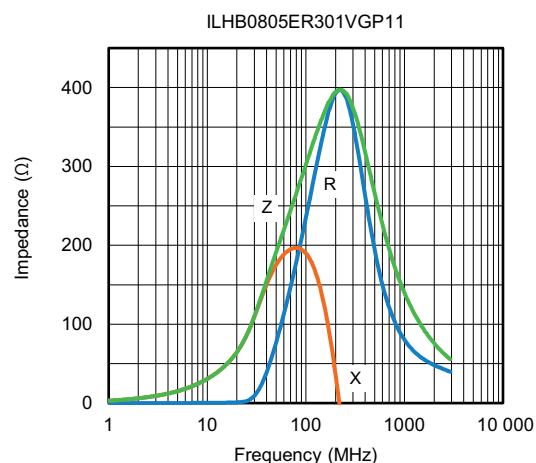
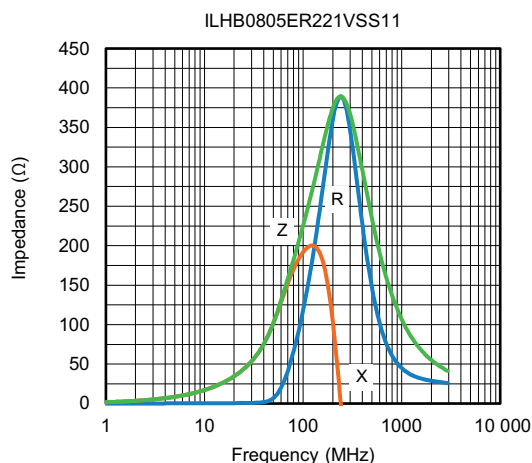
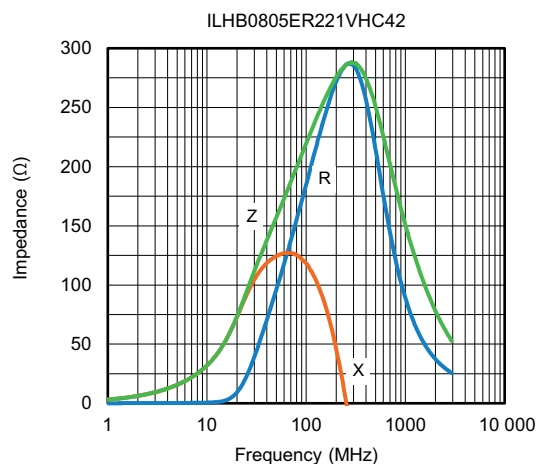
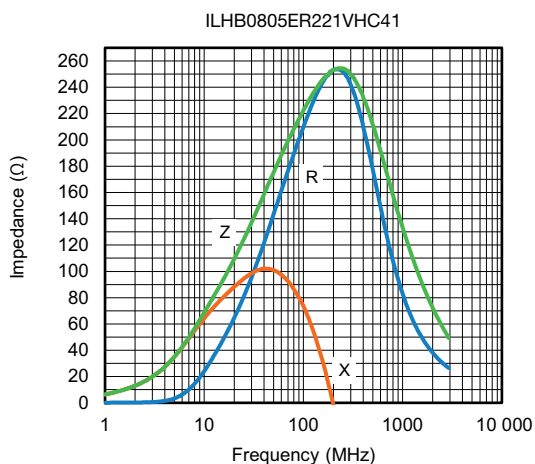
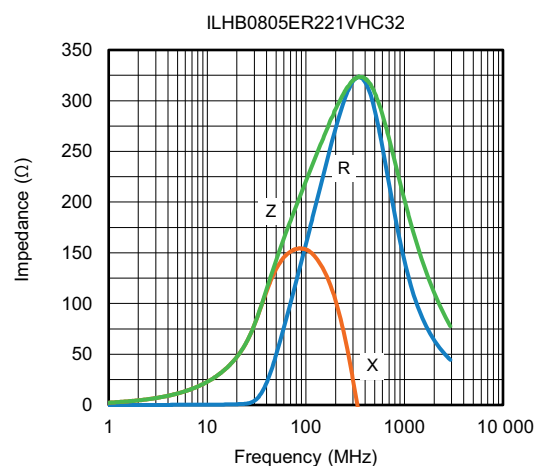
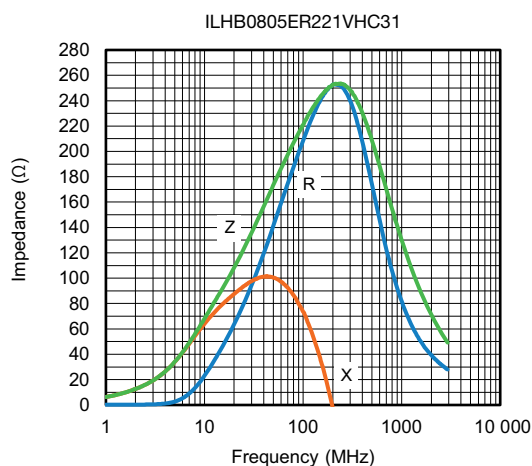
PERFORMANCE GRAPHS


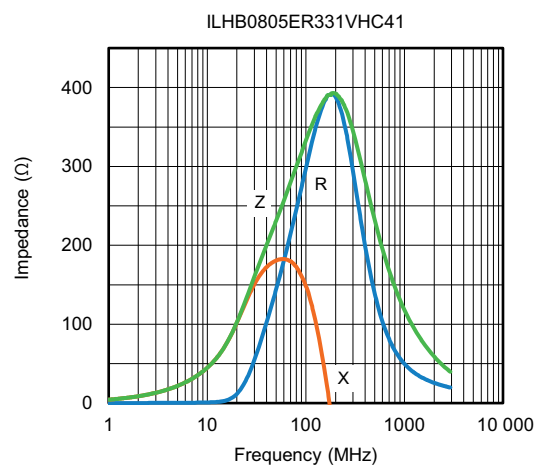
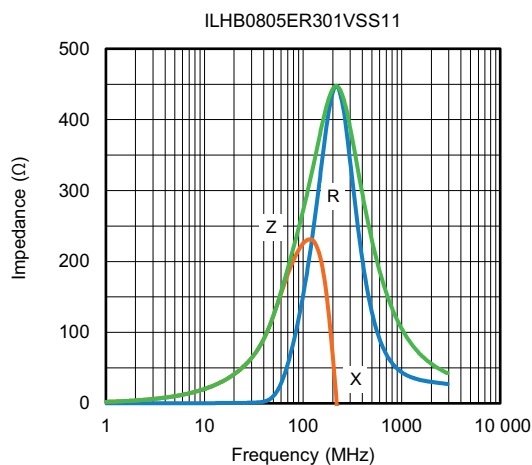
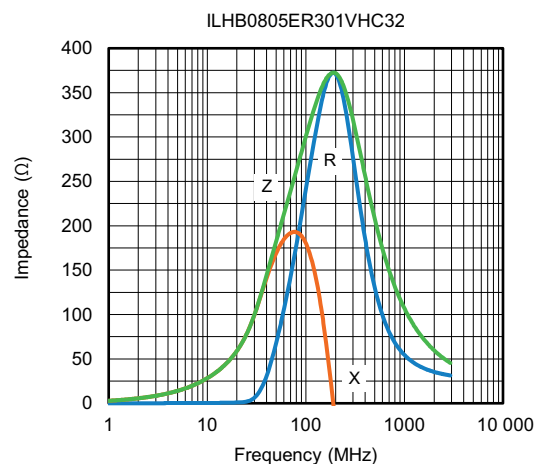
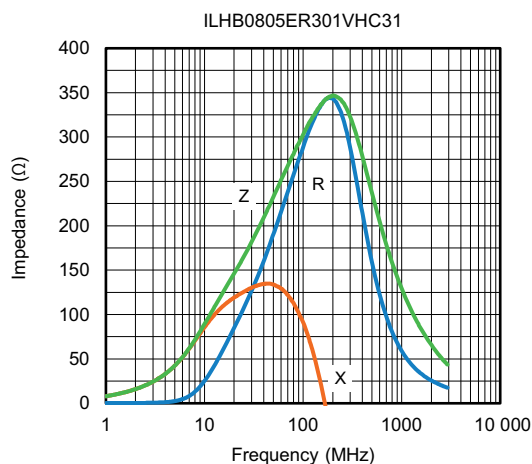
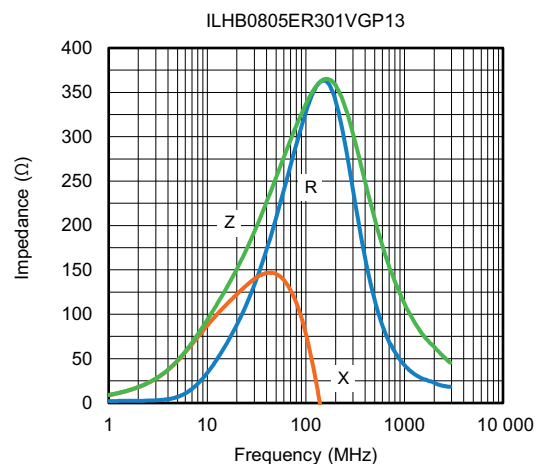
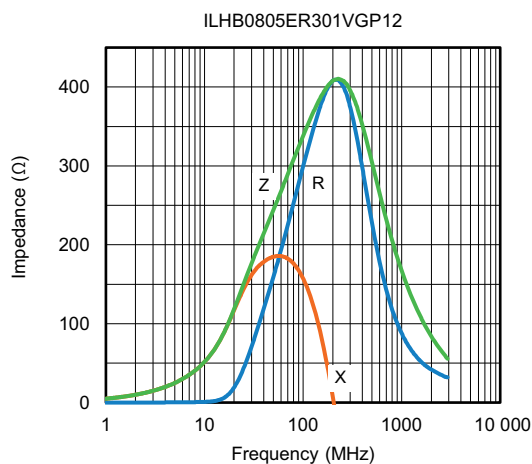
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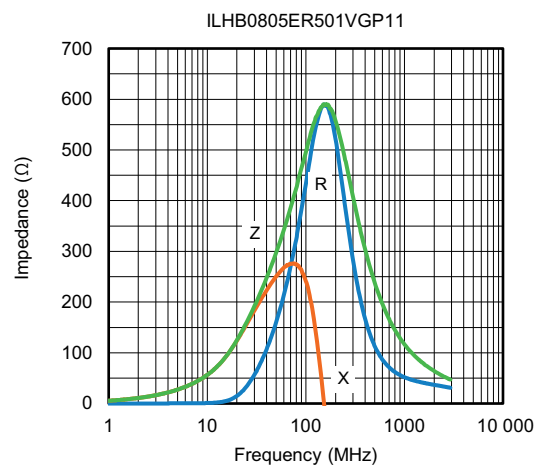
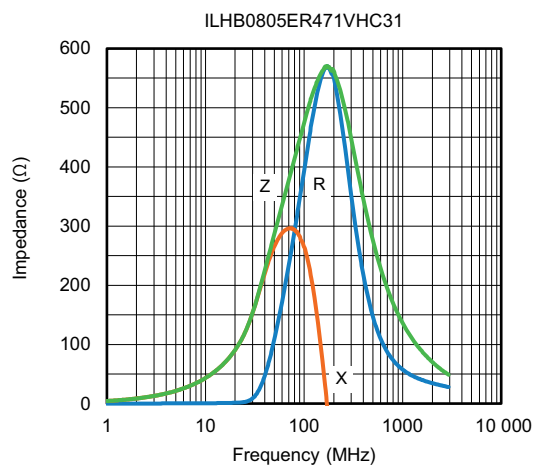
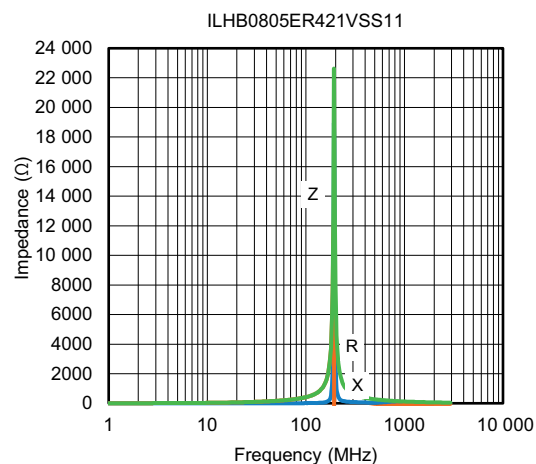
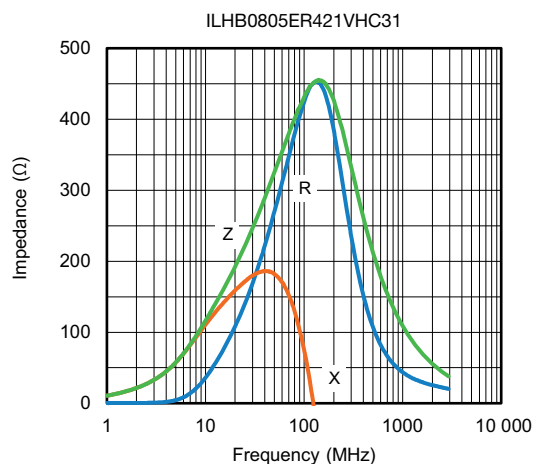
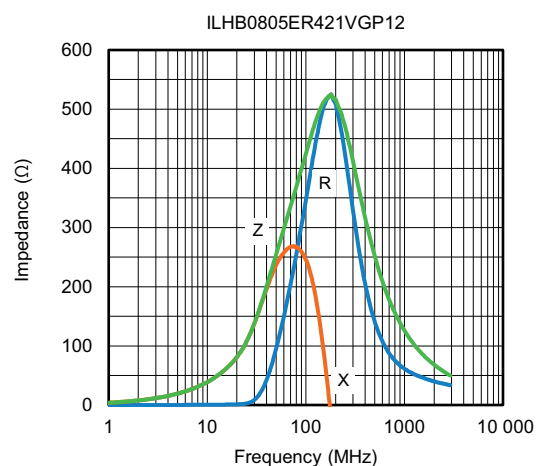
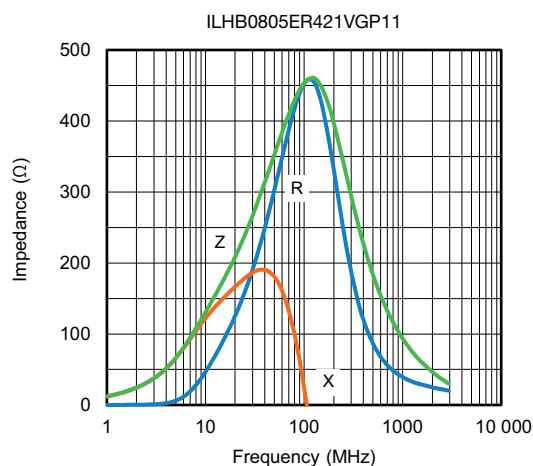
PERFORMANCE GRAPHS


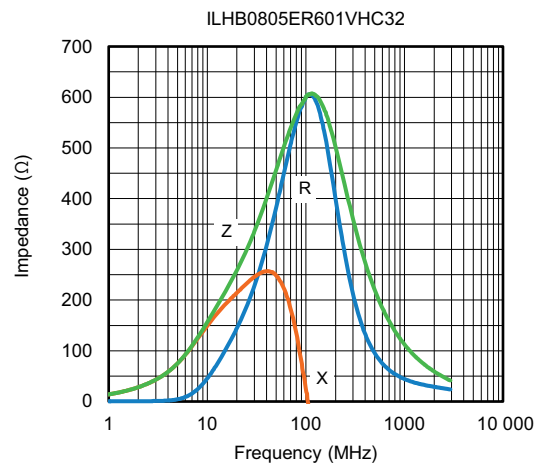
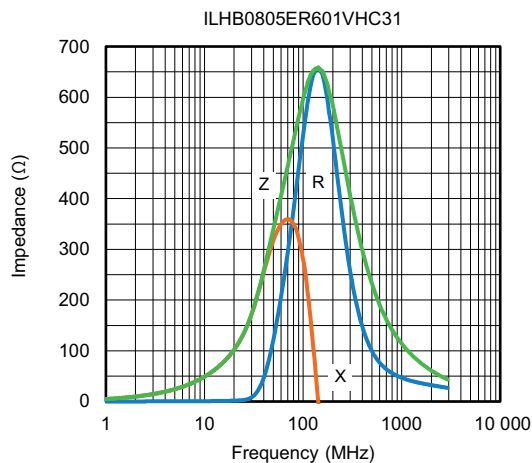
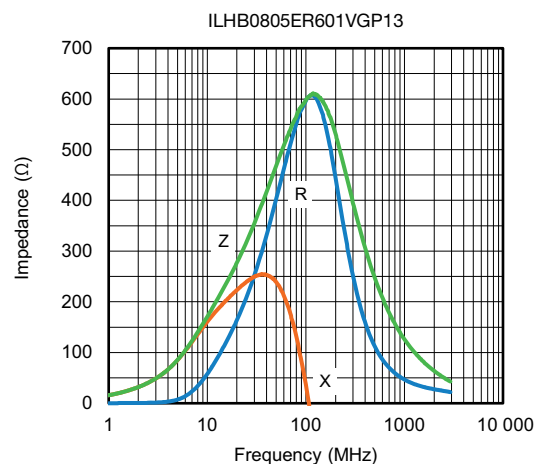
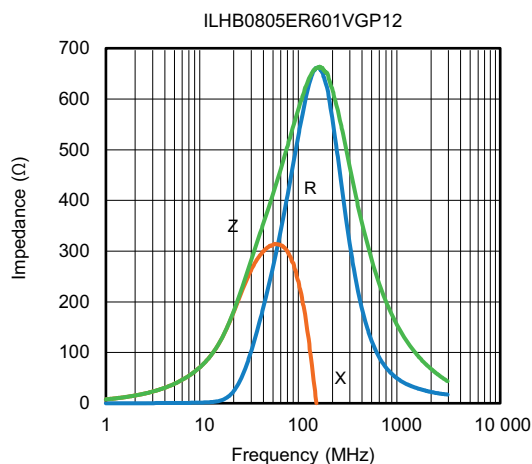
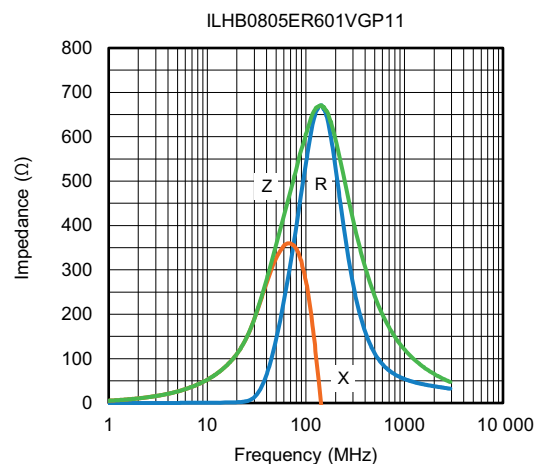
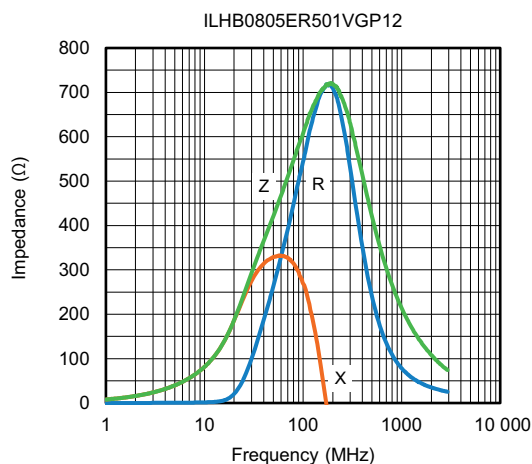
PERFORMANCE GRAPHS


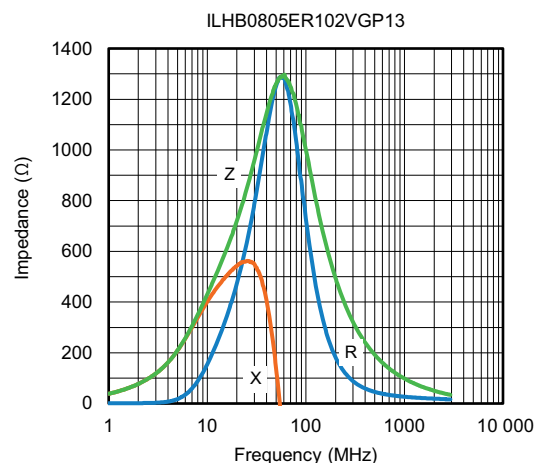
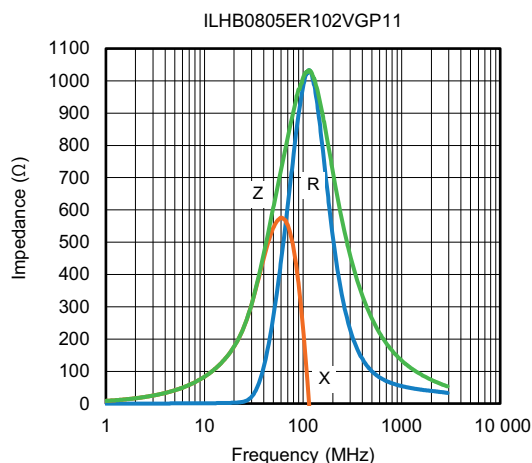
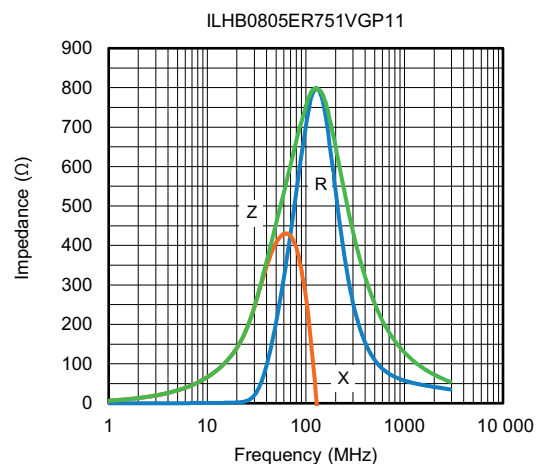
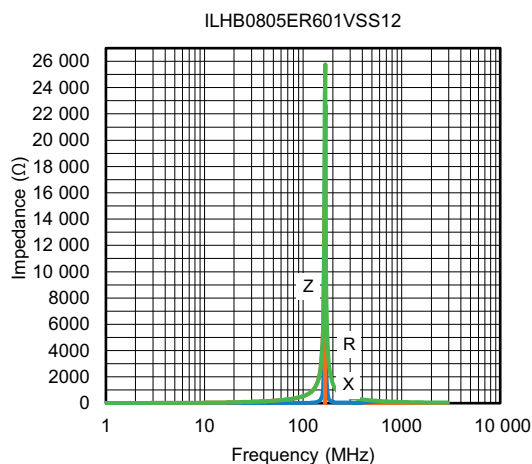
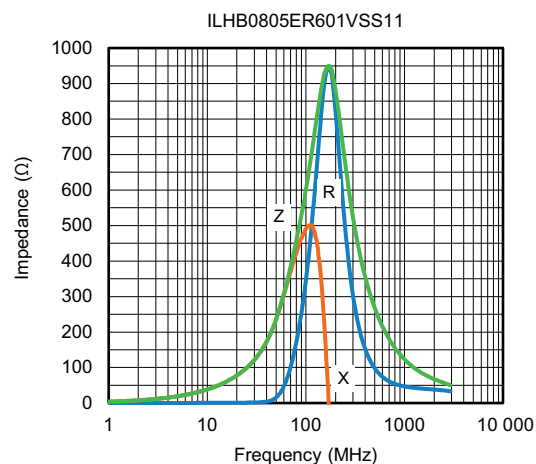
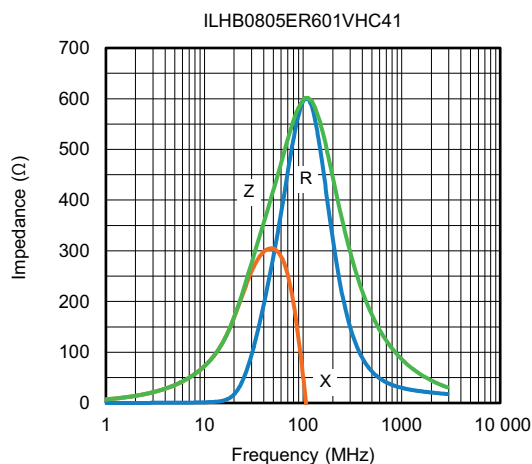
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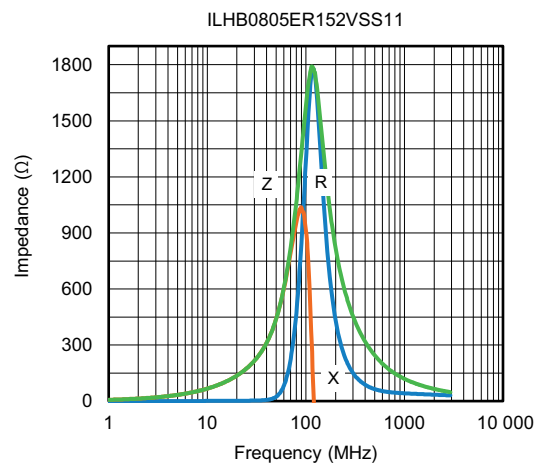
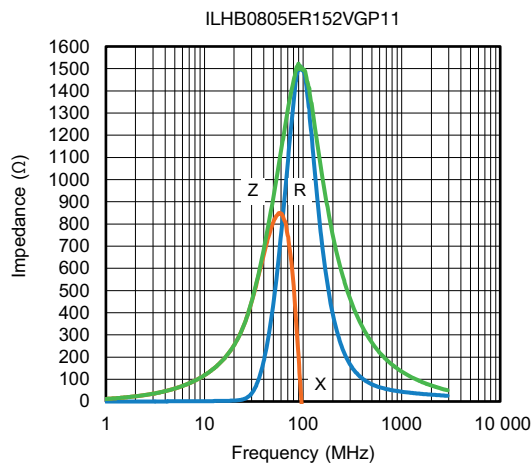
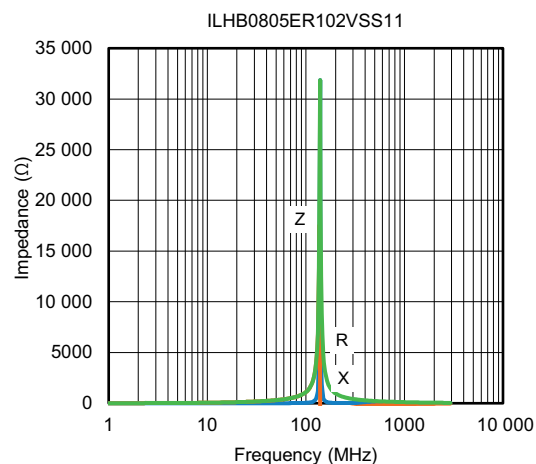
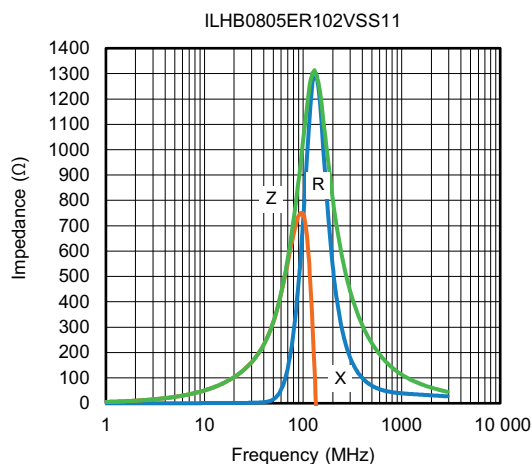
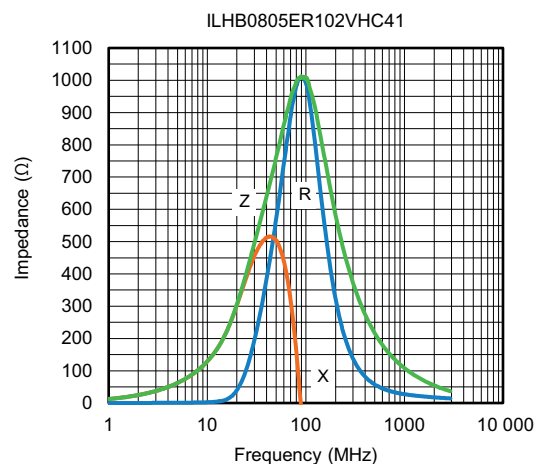
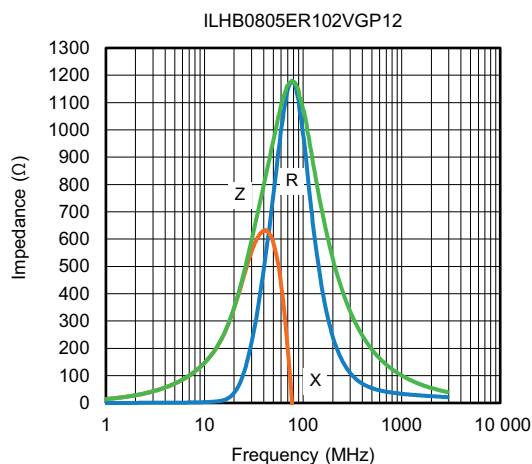
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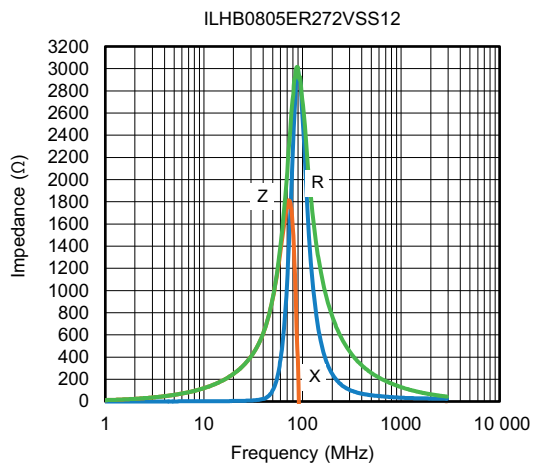
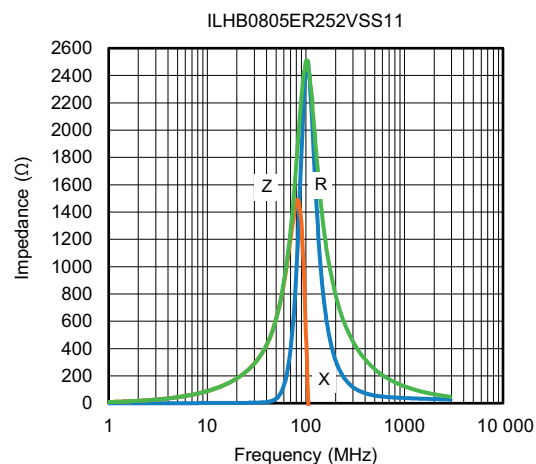
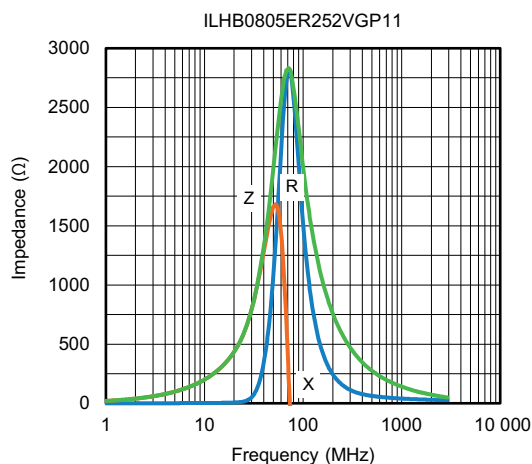
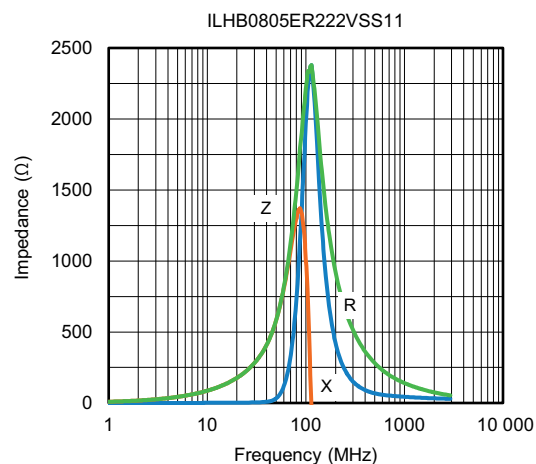
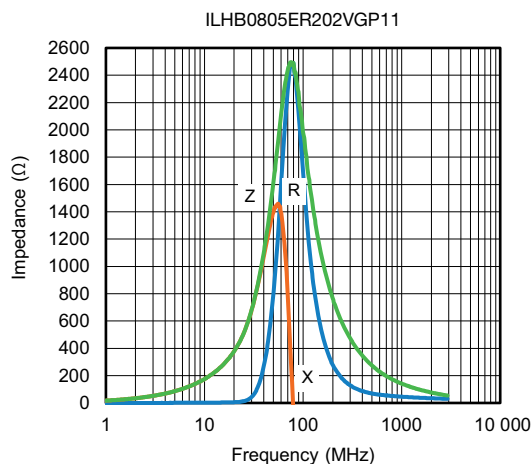
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