Automotive Multilayer Chip Ferrite Beads



FEATURES

- 3.2 mm x 1.6 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

Pb-free

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

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

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)
ILHB1206ZIR190VHC1	19	10	6000	32.68	2921	17.2	n/a	120
ILHB1206AAR190VHC1	19	50	2000	33.3	978	19	> 10 GHz	117
ILHB1206ZIR300VHC2	30	10	6000	38	522	30	5500	38
ILHB1206AAR310VHC2	31	10	6000	41	621	31	6000	38
ILHB1206AAR310VHC1	31	45	3000	49	978	29	> 10 GHz	111
ILHB1206AAR380VHC1	38	15	5000	63	1210	38	> 10 GHz	117
ILHB1206ZIR380VHC1	38	150	5000	62.9	1179	37.4	> 3 GHz	114
ILHB1206AAR500VHC1	50	20	4000	81	543	50	2625	111
ILHB1206AAR500VHC2	50	20	4000	69	463	54	2556	36
ILHB1206ZIR600VHC1	60	20	4000	92	621	58	2489	107
ILHB1206AAR600VHC1	60	25	2500	101	529	61	2921	114
ILHB1206ZIR600VHC2	60	25	4000	75	422	60	1440	31
ILHB1206AAR600VHC2	60	30	1500	71	416	57	1227	41
ILHB1206AAR700VHC1	70	30	3000	106	522	70	1713	103
ILHB1206AAR800VHC1	80	30	3000	114	469	75	1479	103
ILHB1206AAR900VHC1	90	80	2000	149	647	93	3000	110
ILHB1206AAR101VHC1	100	30	3000	162	581	103	2500	103
ILHB1206AAR121VHC1	120	30	3000	186	451	122	1402	103
ILHB1206AAR121VHC2	120	30	3000	119	182	110	182	35
ILHB1206ZIR121VHC1	120	40	2500	186	495	123	1402	106
ILHB1206ZIR121VHC2	120	30	3000	120	182	110	187	35
ILHB1206AAR151VHC1	150	30	3000	230	364	156	1060	95
ILHB1206ZIR221VHC2	220	80	2000	265	241	222	463	37
ILHB1206ZIR301VHC2	300	100	2000	326	166	288	282	35
ILHB1206AAR391VHC1	390	50	2500	452	175	372	276	85
ILHB1206ZIR391VHC2	390	70	2000	422	168	386	255	30
ILHB1206AAR501VHC1	500	70	2000	593	157	508	257	78

For technical questions, contact: magnetics@vishay.com

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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)
ILHB1206AFR501VHC2	500	70	2000	532	136	502	178	46
ILHB1206ZIR501VHC1	500	70	2000	592	155	511	254	76
ILHB1206AAR601VHC1	600	70	2000	637	127	600	159	72
ILHB1206ZIR601VHC2	600	100	1500	609	115	600	138	32
ILHB1206ZIR601VHC1	600	100	1500	637	127	603	159	72
ILHB1206ZIR102VHC2	1000	300	500	1100	73	1000	100	25
ILHB1206AAR102VHC2	1000	300	1000	1167	61	917	89	25

Notes

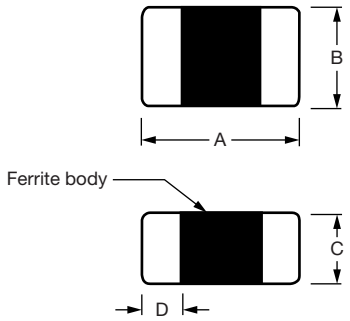
- All test data is referenced to 25 °C ambient (unless otherwise indicated)
- Operating temperature range: -55 °C to +125 °C
- Storage condition: < 40 °C and < 70 % RH (in packaging)
- The part temperature (ambient + temp. rise) should not exceed the maximum rating under worst case operating conditions. 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

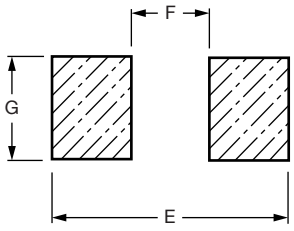
GLOBAL PART NUMBER

I L H B	1 2 0 6	A A	R	3 0 1	V	H C	1
PRODUCT FAMILY	SIZE	HEIGHT	PACKAGE CODE	INDUCTANCE VALUE	IMPEDANCE TOLERANCE	APPLICATION	SERIES
		ZI = 0.85 mm **AA** = 1.1 mm **AF** = 1.6 mm	**R** = tape and reel	**301** = Ω	**V** = ± 25 %	**HC** = high current	

DIMENSIONS in inches [millimeters]



Dimensional outline



Typical pad layout

SIZE	A	B	C	D	E	F	G
1206ZI	0.126 ± 0.008 [3.2 ± 0.2]	0.063 ± 0.008 [1.6 ± 0.2]	0.033 ± 0.008 [0.85 ± 0.2]	0.020 ± 0.012 [0.5 ± 0.3]	0.183 ± 0.033 [4.65 ± 0.85]	0.085 ± 0.014 [2.15 ± 0.35]	0.063 ± 0.016 [1.6 ± 0.4]
1206AA	0.126 ± 0.008 [3.2 ± 0.2]	0.063 ± 0.008 [1.6 ± 0.2]	0.043 ± 0.008 [1.1 ± 0.2]	0.020 ± 0.012 [0.5 ± 0.3]	0.183 ± 0.033 [4.65 ± 0.85]	0.085 ± 0.014 [2.15 ± 0.35]	0.063 ± 0.016 [1.6 ± 0.4]
1206AF	0.126 ± 0.008 [3.2 ± 0.2]	0.063 ± 0.008 [1.6 ± 0.2]	0.063 ± 0.008 [1.6 ± 0.2]	0.020 ± 0.012 [0.5 ± 0.3]	0.183 ± 0.033 [4.65 ± 0.85]	0.085 ± 0.014 [2.15 ± 0.35]	0.063 ± 0.016 [1.6 ± 0.4]

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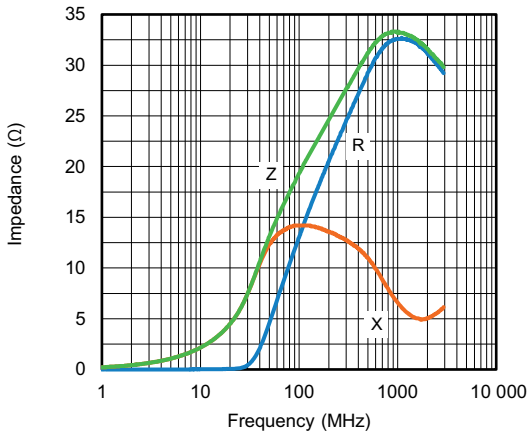

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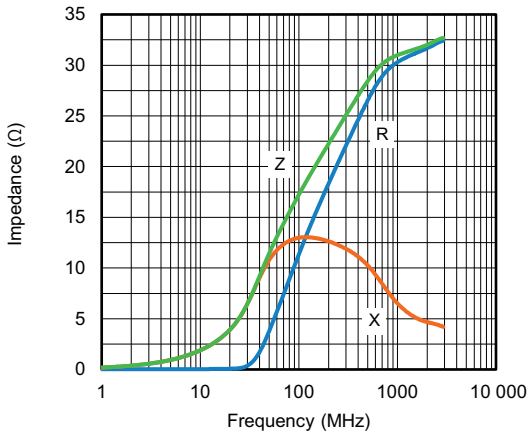

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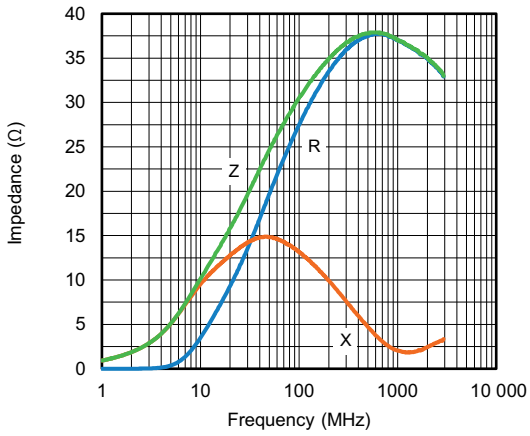

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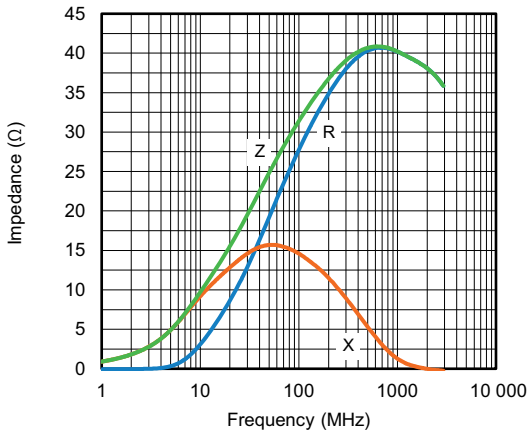

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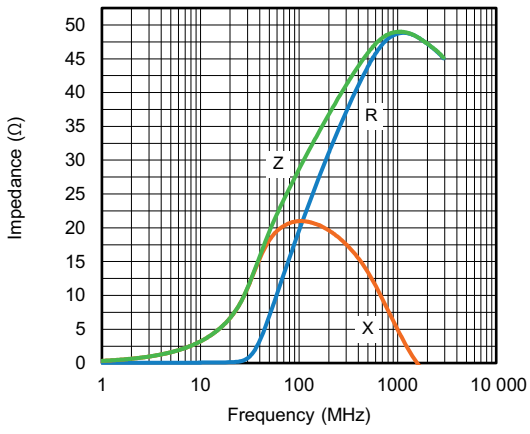

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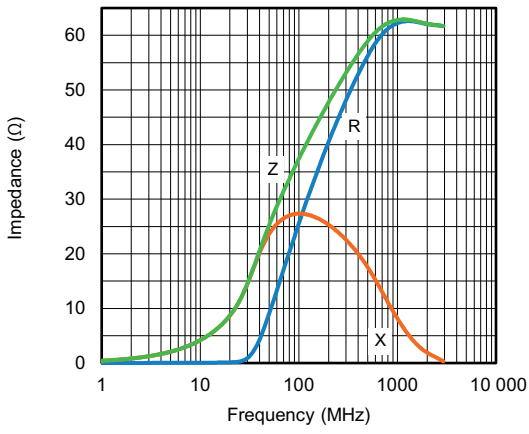

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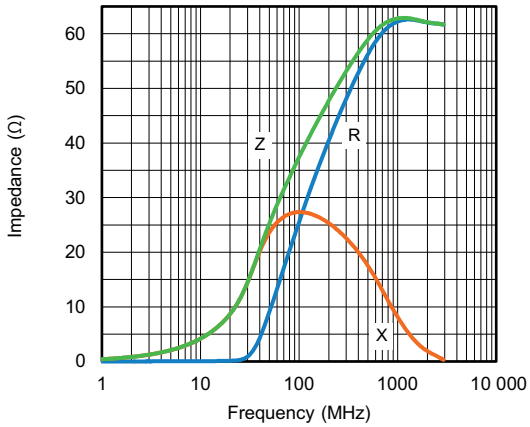

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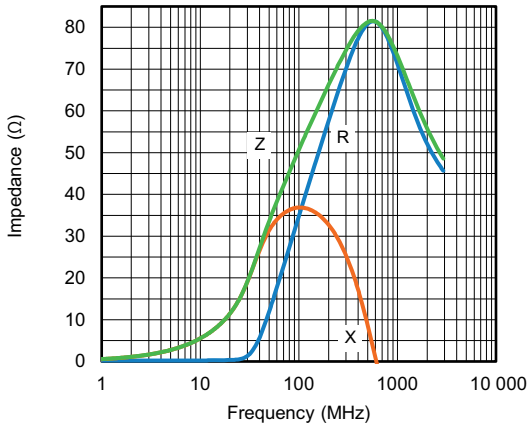

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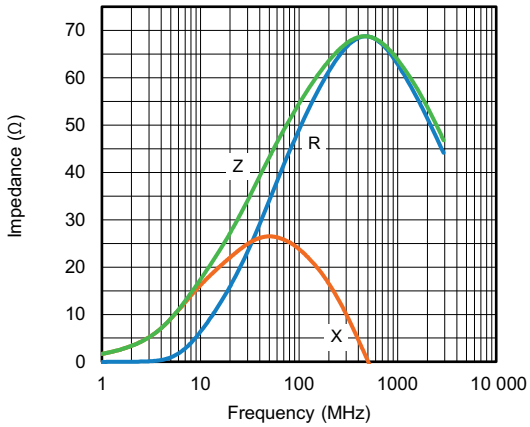

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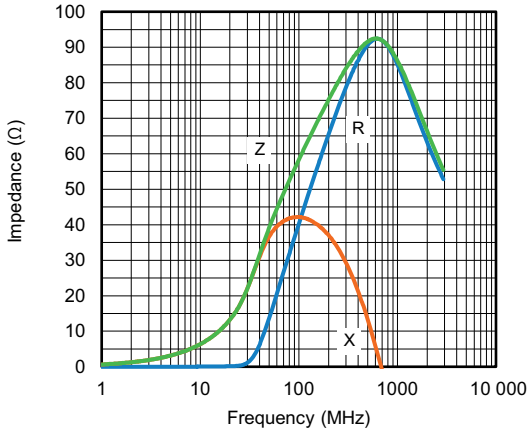

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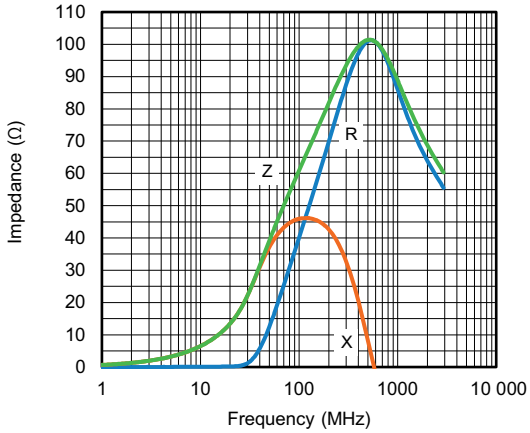

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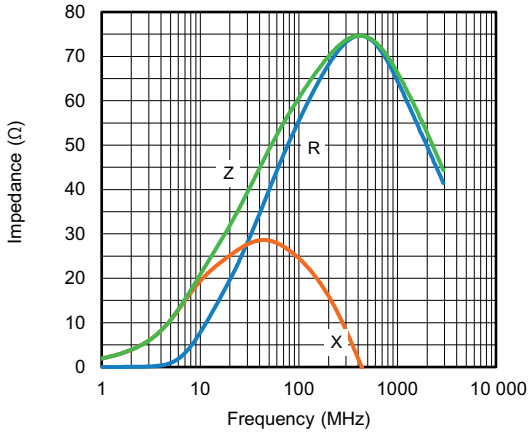

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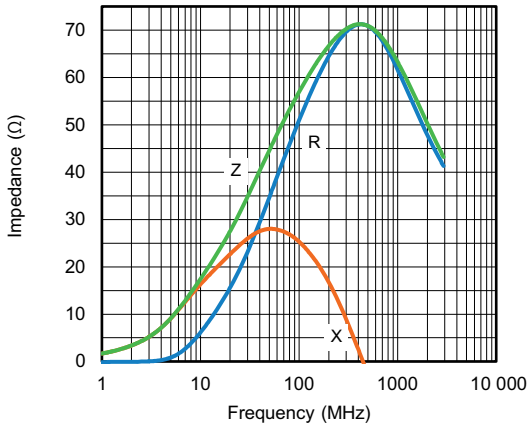

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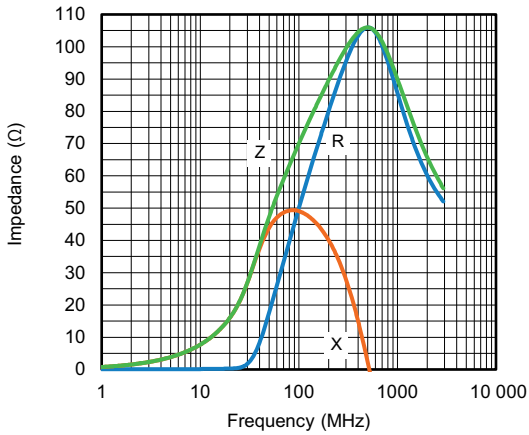

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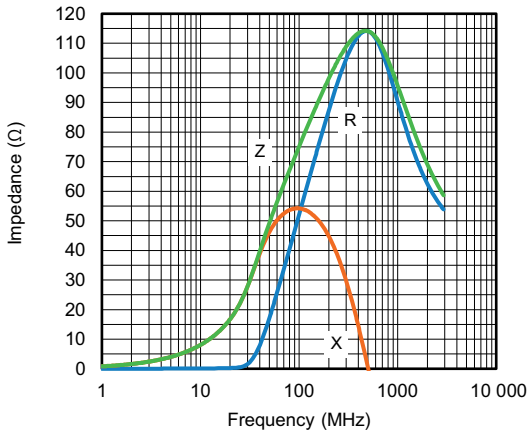

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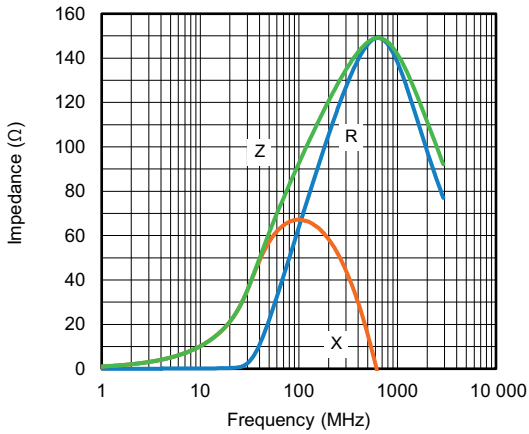

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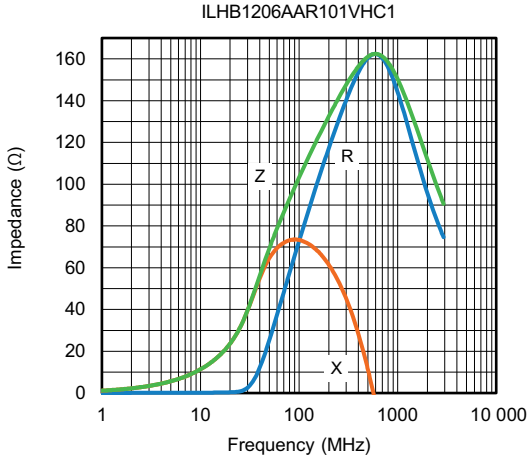

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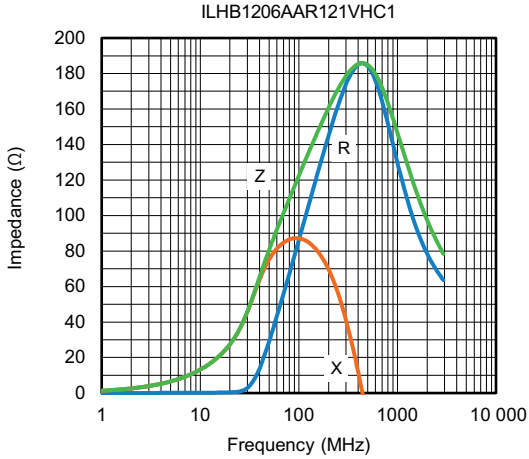

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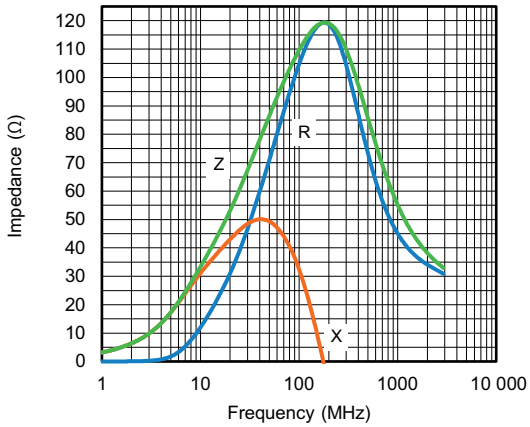

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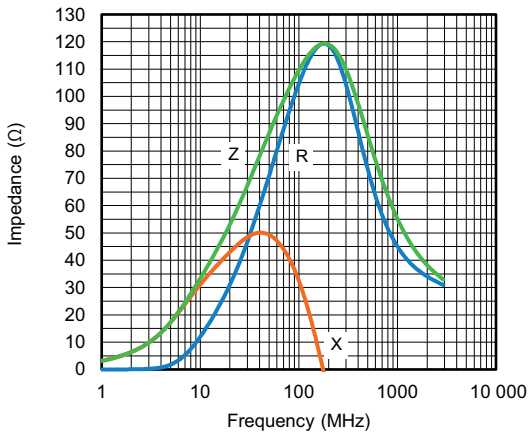

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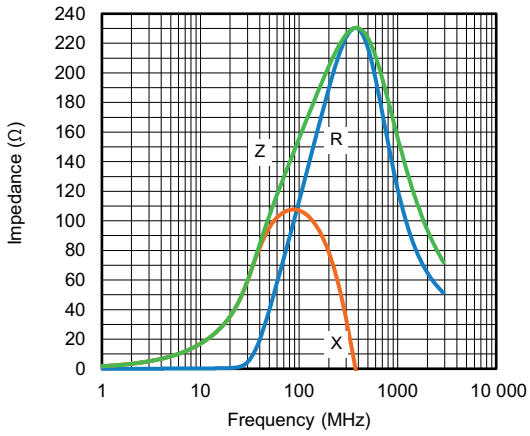

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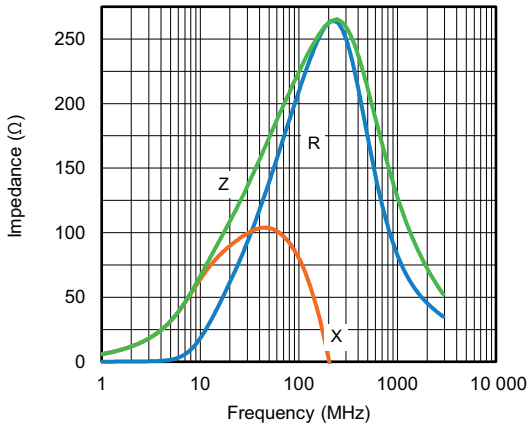

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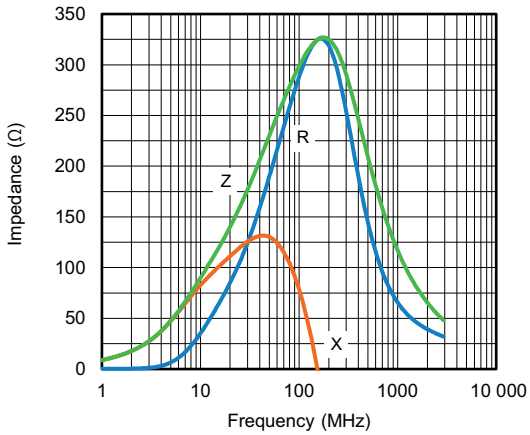

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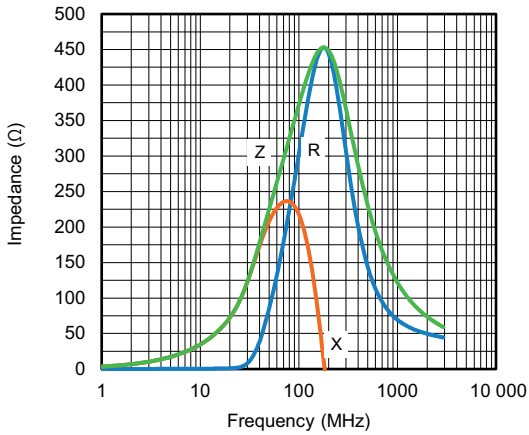

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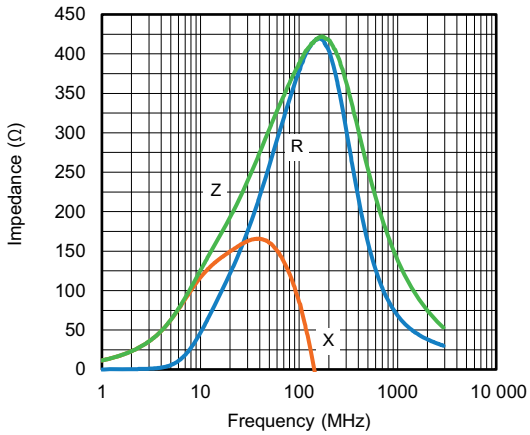

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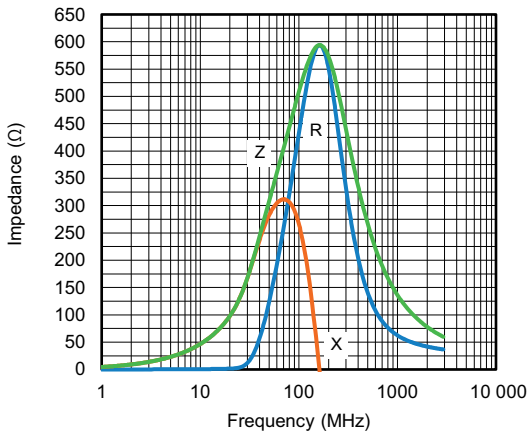

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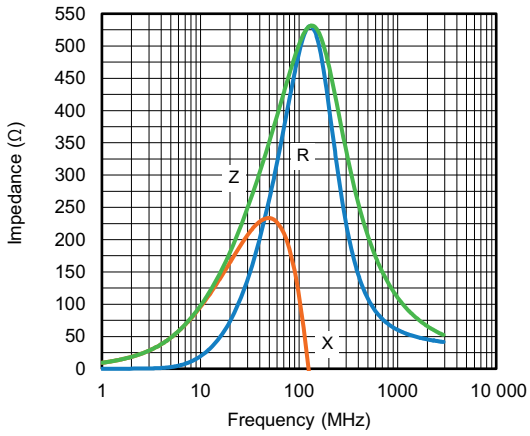

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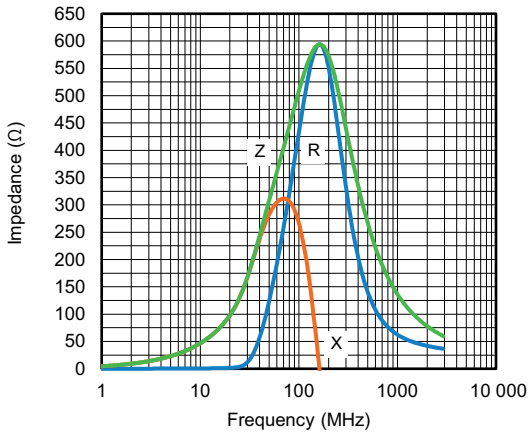

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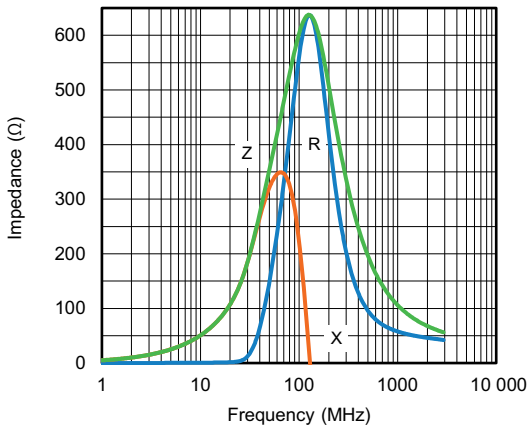

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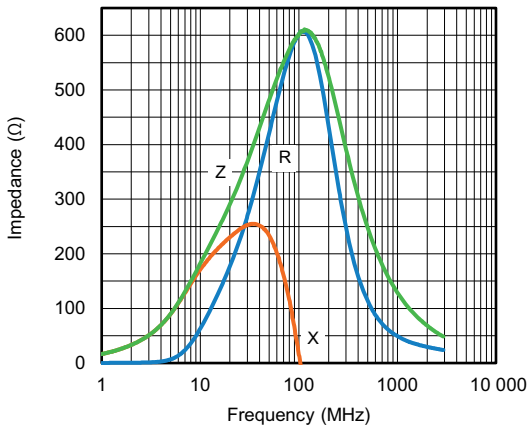

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PERFORMANCE GRAPHS

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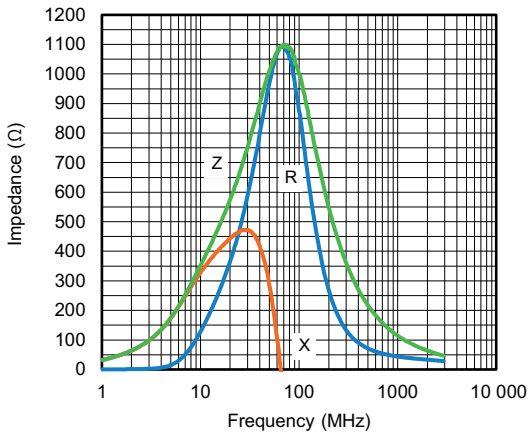

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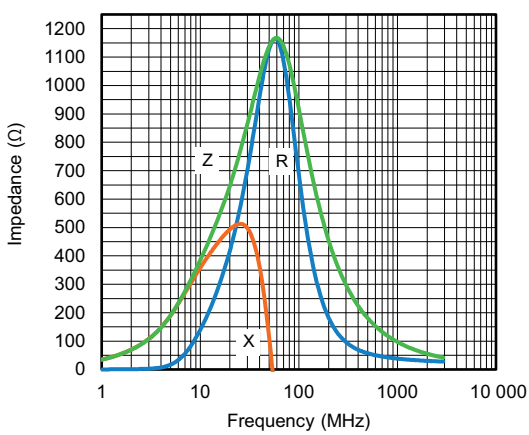

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