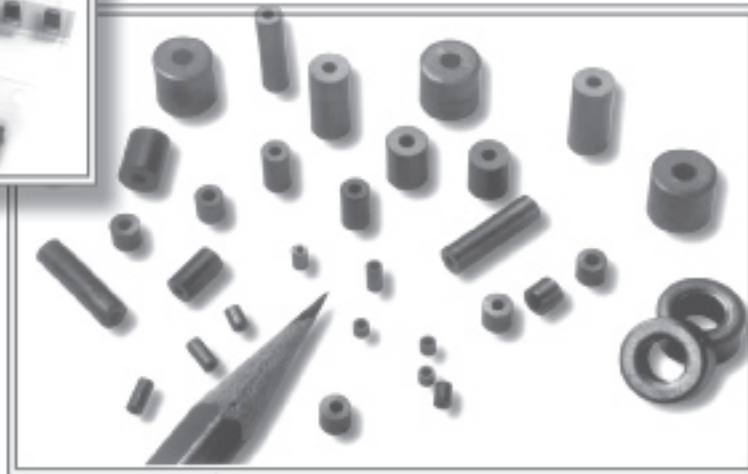


# Board Components



**Fair-Rite Products Corp.**

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) 324-7748

(888) FERRITE / (845) 895-2629  
(888) 337-7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# Engineering Kits

## Expanded Cable & Suppressor Kit

*Part Number 0199000005*

This is our most popular engineering kit. As the name implies, this kit contains a broad sampling of suppression cores to reduce conducted EMI over wires and cables.

## Chip Bead Kit

*Part Number 0199000018*

The chip bead kit has a number of different EIA size chip components with a range of impedance values and signal speeds. Also one of our chip arrays is included in this kit. Parts are RoHS compliant.

## Shield Bead Kit

*Part Number 0199000019*

The shield bead kit has 28 different beads in three suppression materials, 73, 43, and 61.

## Antenna/RFID Kit

*Part Number 0199000024*

The kit contains a range of rods in three low losses, high Q, materials, 78, 61 and 67, to cover frequencies from 10 kHz to 50 MHz.

## Surface Mount Bead Kit

*Part Number 0199000025*

An assortment of surface mount beads for differential and common-mode applications in 73 material for < 50 MHz, 43/44 material for 25-300 MHz and 52/61 material for 250-1000 MHz frequencies. Parts are RoHS compliant.

## Wound Bead Kit

*Part Number 0199000027*

The wound bead kit has twelve wound beads in two suppression materials, 44 and 61, wound in several winding configurations. Parts are RoHS compliant.

## Bead-On-Lead Kit

*Part Number 0199000028*

This bead-on-lead kit has three parts each in three materials, 73, 43 and 61, for through hole applications. Parts are RoHS compliant.

**Fair-Rite Products Corp.**

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337-7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# Engineering Kits

## Rod Kit (52 Matl)

Part Number 0199000029

A new rod kit in the new 52 material. Samples of seven sizes intended for open circuit applications that require a ferrite material with high saturation and Curie temperature.

## 31 Snap-It Kit

Part Number 0199000030

This 31 material snap-it kit has a range parts for different cable diameters. Suggested operating frequency 1-300 MHz.

## 43 Snap-It Kit

Part Number 0199000031

Snap-it assemblies suitable for the 25-300 MHz frequency range. Can accommodate cable diameters from .250 to .590 inches.

## 46 Core and Snap-It Kit

Part Number 0199000032

This kit has a selection of cable cores and snap-its in our new economical 46 material. This material has similar performance as our 43/44 grade materials over the 25-300 MHz frequency range.

## 61 Snap-It Kit

Part Number 0199000033

Our recommendation for suppressing conducted EMI in 200-1000 MHz is the 61 material. This kit has a selection of 61 snap-its.

## Chip Inductor Kit

Part Number 0199000035

The chip inductor kit has several EIA sizes in both ferrite and ceramic chip inductors. Parts are RoHS compliant.

## Multi-Aperture Core Kit

Part Number 0199000036

Kit contains several sizes in four materials, 73, 43, 61 and 67. This allows experimentation from a few kHz into the 50-100 MHz range.

## Fair-Rite Products Corp.

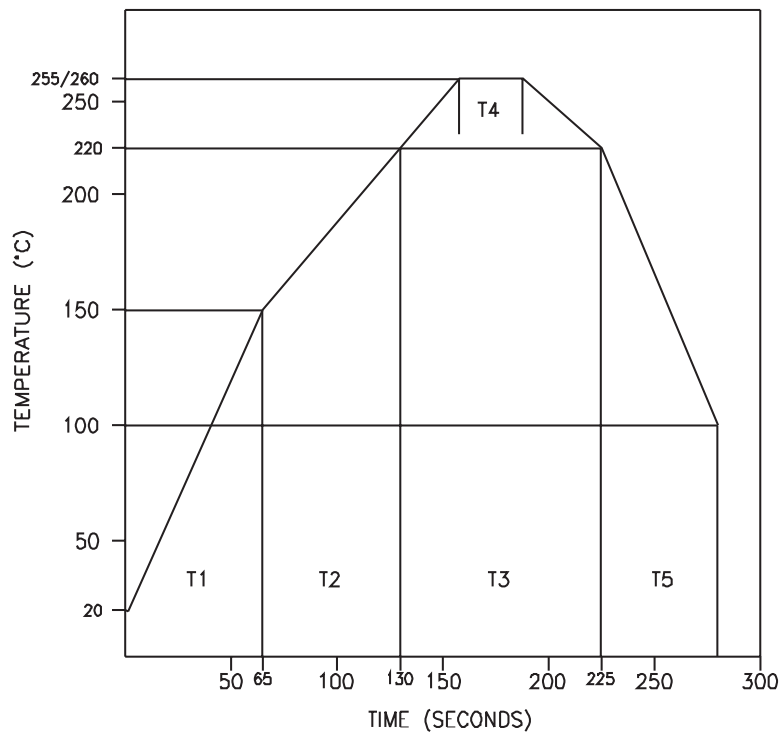
PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337-7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# Solder Profile

## REFLOW SOLDER PROFILE FOR LEAD-FREE COMPONENTS



T1 - Pre Heat	50 - 80 Seconds
T2 - Soak Time	60 - 90 Seconds
T3 - Time Above 220°C	60 - 150 Seconds
T4 - Reflow Solder Time	20 - 40 Seconds
T5 - Cool Down	40 Seconds Minimum

Times might be adjusted to accommodate component size

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337-7483

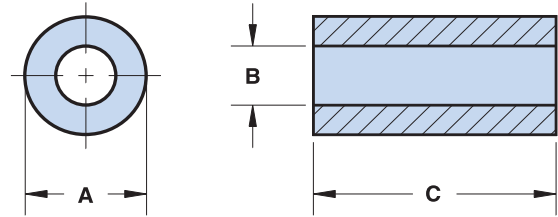
• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# EMI Suppression Beads

Listed by frequency range and in ascending order of "B" dimension.

Fair-Rite offers a broad selection of ferrite EMI suppression beads with guaranteed minimum impedance specifications

- Beads with a "1" as the last digit of the part number are not burnished. Parts that are burnished to break the sharp edges have a "2" as the last digit.
- Upon request beads can be supplied with a Parylene coating. The last digit of the Parylene coated part is a "4". The minimum coating thickness beads is 0.005mm (.0002"). See page 124 for material characteristics of Parylene C.
- The column "H (Oe)" gives for each bead the calculated dc bias field in oersted for 1 turn and 1 ampere direct current. The actual dc H field in the application is this value of "H" times the actual NI (ampere-turn) product. For the effect of the dc bias on the impedance of the bead material, see the material graphs on pages 145-146, Figures 18-23.
- Suppression beads are controlled for impedances only. The impedances listed are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed typical impedance less 20%.
- Single turn impedance tests for 73 and 43 material beads are performed on the 4193A Vector Impedance Analyzer. The 61 material beads are tested on the 4191A RF Impedance Analyzer. **Beads are tested with the shortest practical wire length.**
- Performance curves of all listed EMI suppression beads are compiled on the Fair-Rite Products CD-ROM.
- For larger suppression cores, refer to the section "Round Cable EMI Suppression Cores" found on pages 70-74.
- For any EMI suppression bead requirement not listed here, feel free to contact our customer service group for availability and pricing.
- Our "Shield Bead Kit" (part number 0199000019) contains a selection of these beads. See page 67.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1= not burnished, 2 = burnished and 4 = Parylene coated.



## Lower Frequencies < 50 MHz (73 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number**	A	B	C*	Wt (g)	H (Oe)	Typical Impedance(Ω)			
						1 MHz	5 MHz	10 MHz <sup>+</sup>	25 MHz <sup>+</sup>
2673901301	<b>0.95 - 0.05</b> .036	<b>0.45+0.1</b> .020	<b>3.8±0.2</b> .150	.01	6.0	5.3	13	16	24
2673004601	<b>1.1 - 0.1</b> .041	<b>0.65+0.1</b> .028	<b>4.1 - 0.3</b> .156	.01	4.7	3.3	8.2	12.5	19
2673004701	<b>1.45 - 0.15</b> .054	<b>0.7+0.1</b> .029	<b>2.3±0.15</b> .090	.01	4.0	3.1	7.6	12.5	17
<b>2673030101</b>	<b>1.22 - 0.13</b> .045	<b>0.8+0.1</b> .033	<b>5.3 - 0.45</b> .200	.01	4.1	3.5	8.6	11	17
2673025301	<b>1.25 - 0.1</b> .047	<b>0.8+0.1</b> .033	<b>3.8±0.2</b> .150	.01	4.0	2.9	7.1	10	15
2673010101	<b>1.95 - 0.25</b> .072	<b>0.8+0.1</b> .033	<b>10.0 - 0.4</b> .384	.08	3.3	20.5	48.5	55	77

\*\*Bold part numbers designate preferred parts.

<sup>+</sup> Test frequency

\*This dimension may be modified to suit specific applications.

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629 • www.fair-rite.com  
(888) 324-7748 (888) 337-7483 • E-Mail: ferrites@fair-rite.com

# EMI Suppression Beads

Listed by frequency range and in ascending order of "B" dimension.

## Lower Frequencies < 50 MHz (73 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number**	A	B	C*	Wt (g)	H (Oe)	Typical Impedance(Ω)			
						1 MHz	5 MHz	10 MHz <sup>+</sup>	25 MHz <sup>+</sup>
<b>2673004801</b>	<b>2.1 - 0.15</b> .080	<b>0.85±0.1</b> .034	<b>2.9 - 0.45</b> .105	.03	3.1	5.5	13.5	18	28
<b>2673028602</b>	<b>2.13 - 0.1</b> .082	<b>0.85±0.1</b> .034	<b>5.6±0.15</b> .220	.07	2.7	13	30.5	38	50
2673012401	<b>1.55 - 0.1</b> .059	<b>0.95±0.15</b> .040	<b>4.2 - 0.25</b> .160	.02	3.3	3.5	8.6	11	19
2673002201	<b>1.95 - 0.2</b> .072	<b>1.05±0.1</b> .043	<b>10.4±0.25</b> .410	.09	2.9	14	33.5	38	55
<b>2673000501</b>	<b>2.0 - 0.15</b> .076	<b>1.05±0.1</b> .043	<b>1.65 - 0.25</b> .060	.01	2.8	2.1	6.3	7.5	12
<b>2673000201</b>	<b>2.0 - 0.15</b> .076	<b>1.05±0.1</b> .043	<b>3.8±0.25</b> .150	.04	2.8	5.2	12.5	18	27
<b>2673000101</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>3.25±0.25</b> .128	.13	2.0	8.1	19.5	25	35
<b>2673000301</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>6.0±0.25</b> .236	.24	2.0	15.5	37.5	57	63
<b>2673000701</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>12.7±0.35</b> .500	.51	2.0	34.5	81.5	120	125
<b>2673022401</b>	<b>5.1±0.25</b> .200	<b>1.45±0.25</b> .062	<b>6.35±0.25</b> .250	.56	1.5	20	47.5	54	58
<b>2673021801</b>	<b>5.1±0.25</b> .200	<b>1.45±0.25</b> .062	<b>11.1±0.35</b> .437	1.0	1.5	35.5	84	94	95
2673018001	<b>2.85±0.1</b> .112	<b>1.65±0.15</b> .068	<b>6.65±0.25</b> .262	.13	1.8	8.3	20	29	41
2673004901	<b>2.85±0.1</b> .112	<b>1.65±0.15</b> .068	<b>10.45±0.25</b> .410	.20	1.8	13.5	32.5	40	58
2673001601	<b>3.55±0.15</b> .140	<b>1.65±0.25</b> .070	<b>3.3 - 0.4</b> .122	.11	1.6	5.1	12.5	16	24
2673015301	<b>4.1 - 0.25</b> .156	<b>1.8±0.15</b> .071	<b>6.85±0.25</b> .270	.32	1.5	14	34	41	54
<b>2673000801</b>	<b>7.5±0.25</b> .296	<b>2.25±0.25</b> .094	<b>7.55±0.25</b> .297	1.4	1.0	23	55.5	48	45
2673200201	<b>5.2±0.15</b> .205	<b>2.65±0.25</b> .105	<b>20.6±0.75</b> .812	1.6	1.1	37	89	110	113
2673003201	<b>5.6 - 0.5</b> .210	<b>2.65±0.25</b> .105	<b>12.7±0.5</b> .500	1.0	1.1	23.5	56.5	60	60
<b>2673002402</b>	<b>9.65±0.25</b> .380	<b>5.0±0.2</b> .197	<b>5.05 - 0.45</b> .190	1.2	.59	7.9	19	19	15

\*\*Bold part numbers designate preferred parts.

<sup>+</sup> Test frequency

\*This dimension may be modified to suit specific applications.

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337-7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# EMI Suppression Beads

Listed by frequency range and in ascending order of "B" dimension.

## Broadband Frequencies 25-300 MHz (43 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number**	A	B	C*	Wt (g)	H (Oe)	Typical Impedance (Ω)			
						10 MHz	25 MHz <sup>†</sup>	100 MHz <sup>†</sup>	250 MHz
2643004601	1.1 - 0.1 .041	<b>0.65+0.1</b> .028	4.1 - 0.3 .156	.01	4.7	9	12.5	31	39
2643004701	1.45 - 0.15 .054	<b>0.7+0.1</b> .029	<b>2.3±0.15</b> .090	.01	4.0	8	12.5	26	39
2643004101	<b>3.5±0.2</b> .138	<b>0.75+0.1</b> .031	<b>4.45±0.35</b> .175	.11	2.6	32	48	70	89
2643706001	<b>3.5±0.25</b> .138	<b>0.8+0.1</b> .033	<b>2.7 - 0.45</b> .097	.06	2.5	18	26	45	59
<b>2643020501</b>	<b>1.65±0.025</b> .065	<b>0.85+0.1</b> .034	<b>3.68 - 0.25</b> .140	.02	3.4	12	17	31	47
<b>2643004801</b>	2.1 - 0.15 .080	<b>0.85+0.1</b> .034	<b>2.9 - 0.45</b> .105	.03	3.1	12	18	31	47
2643002201	<b>1.95 - 0.2</b> .072	<b>1.05+0.1</b> .043	<b>10.4±0.25</b> .410	.08	2.9	26	34	58	77
<b>2643000501</b>	2.0 - 0.15 .076	<b>1.05+0.1</b> .043	<b>1.65 - 0.25</b> .060	.01	2.8	6	9	22	33
<b>2643000201</b>	2.0 - 0.15 .076	<b>1.05+0.1</b> .043	<b>3.8±0.25</b> .150	.03	2.8	12	16	31	46
<b>2643000101</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>3.25±0.25</b> .128	.10	2.0	17	26	40	56
<b>2643000301</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>6.0±0.25</b> .236	.18	2.0	29	46	60	83
<b>2643000701</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>12.7±0.35</b> .500	.38	2.0	60	89	125	148
2643200101	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>3.4 - 0.45</b> .125	.19	1.5	19	30	41	61
<b>2643022401</b>	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>6.35±0.25</b> .250	.38	1.5	36	55	82	97
<b>2643021801</b>	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>11.1±0.35</b> .437	.67	1.5	62	96	131	151
2643023801	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>22.85±0.75</b> .900	1.4	1.5	126	192	266	285
<b>2643001501</b>	<b>3.5±0.2</b> .138	<b>1.6±0.1</b> .063	<b>3.25±0.25</b> .128	.10	1.7	13	21	35	50
2643025601	<b>3.5±0.2</b> .138	<b>1.6±0.1</b> .063	<b>6.0±0.25</b> .236	.18	1.7	23	38	55	70
2643023201	<b>2.85±0.1</b> .112	<b>1.65+0.15</b> .068	<b>3.75±0.25</b> .147	.06	1.8	10	15	30	43
2643013801	<b>3.5±0.2</b> .138	<b>1.65+0.25</b> .070	<b>4.05±0.25</b> .160	.12	1.6	14	24	38	52
2643001601	<b>3.55±0.15</b> .140	<b>1.65+0.25</b> .070	<b>3.3 - 0.4</b> .122	.09	1.6	11	19	30	46
2643001301	<b>3.55±0.15</b> .140	<b>1.65+0.25</b> .070	<b>5.95±0.25</b> .234	.18	1.6	21	31	48	65
<b>2643005701</b>	<b>5.1±0.25</b> .200	<b>2.3±0.2</b> .090	<b>12.7±0.35</b> .500	.81	1.2	49	78	120	123
<b>2643000801</b>	<b>7.5±0.2</b> .296	<b>2.25+0.25</b> .094	<b>7.55±0.25</b> .297	1.0	1.0	42	63	92	109

\*\*Bold part numbers designate preferred parts.

<sup>†</sup> Test frequency

\*This dimension may be modified to suit specific applications.

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# EMI Suppression Beads

Listed by frequency range and in ascending order of "B" dimension.

## Broadband Frequencies 25-300 MHz (43 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number**	A	B	C*	Wt (g)	H (Oe)	Typical Impedance( $\Omega$ )			
						10 MHz	25 MHz <sup>+</sup>	100 MHz <sup>+</sup>	250 MHz
2643300101	<b>7.6±0.25</b> .300	<b>2.25±0.25</b> .094	<b>15.1±0.75</b> .595	2.1	1.0	83	115	200	195
2643003201	<b>5.6-0.5</b> .210	<b>2.65±0.25</b> .105	<b>12.7±0.5</b> .500	.87	1.1	42	63	88	110
<b>2643250402</b>	<b>6.35±0.15</b> .250	<b>2.95±0.45</b> .125	<b>12.7±0.5</b> .500	1.2	.91	43	69	102	111
<b>2643250302</b>	<b>6.35±0.15</b> .250	<b>2.95±0.45</b> .125	<b>15.9±0.5</b> .625	1.5	.91	53	85	122	132
<b>2643250202</b>	<b>6.35±0.15</b> .250	<b>2.95±0.45</b> .125	<b>25.4±0.75</b> 1.000	2.5	.91	83	135	200	196
2643375102	<b>9.5±0.25</b> .375	<b>4.5±0.75</b> .192	<b>6.35±0.35</b> .250	1.4	.60	21	35	50	66
2643375002	<b>9.5±0.25</b> .375	<b>4.5±0.75</b> .192	<b>14.5±0.6</b> .570	3.1	.60	47	78	115	119
<b>2643006302</b>	<b>9.5±0.25</b> .375	<b>4.75±0.3</b> .193	<b>10.4±0.25</b> .410	2.2	.60	34	53	80	92
2643023402	<b>9.5±0.25</b> .375	<b>4.75±0.3</b> .193	<b>15.9±0.45</b> .625	3.4	.60	51	83	120	127
<b>2643023002</b>	<b>9.5±0.25</b> .375	<b>4.75±0.3</b> .193	<b>19.05±0.7</b> .750	4.1	.60	60	100	145	148
<b>2643002402</b>	<b>9.65±0.25</b> .380	<b>5.0±0.2</b> .197	<b>5.05 - 0.45</b> .190	1.1	.59	16	26	43	56
2643012702	<b>9.65±0.25</b> .380	<b>6.35±0.15</b> .250	<b>7.35±0.25</b> .290	1.3	.51	15	24	38	55

\*\*Bold part numbers designate preferred parts.

<sup>+</sup> Test frequency

\*This dimension may be modified to suit specific applications.

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com



# EMI Suppression Beads

Listed by frequency range and in ascending order of "B" dimension.

## Higher Frequencies 250-1000 MHz (61 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number**	A	B	C*	Wt (g)	H (Oe)	Typical Impedance( $\Omega$ )			
						100 MHz	250MHz <sup>+</sup>	500 MHz <sup>+</sup>	1000 MHz
<b>2661030101</b>	<b>1.22 - 0.13</b> .045	<b>0.8+0.1</b> .033	<b>5.3 - 0.45</b> .200	.01	4.1	17	32	53	93
<b>2661002201</b>	<b>1.95 - 0.2</b> .072	<b>1.05+0.1</b> .043	<b>10.4±0.25</b> .410	.08	2.9	53	76	97	122
<b>2661000101</b>	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>3.25±0.25</b> .128	.10	2.0	30	45	62	95
2661000301	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>6.0±0.25</b> .236	.18	2.0	54	82	103	120
2661000701	<b>3.5±0.2</b> .138	<b>1.3±0.1</b> .051	<b>12.7±0.35</b> .500	.38	2.0	120	158	178	185
2661022401	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>6.35±0.25</b> .250	.38	1.5	58	82	103	138
2661021801	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>11.1±0.35</b> .437	.67	1.5	102	141	167	185
2661023801	<b>5.1±0.25</b> .200	<b>1.45+0.25</b> .062	<b>22.85±0.75</b> .900	1.4	1.5	210	286	325	350
2661005701	<b>5.1±0.25</b> .200	<b>2.3±0.2</b> .090	<b>12.7±0.35</b> .500	.81	1.2	97	130	150	167
2661000801	<b>7.5±0.25</b> .296	<b>2.25+0.25</b> .094	<b>7.55±0.25</b> .297	1.0	1.0	75	103	120	143
2661250402	<b>6.35±0.15</b> .250	<b>2.95+0.45</b> .125	<b>12.7±0.5</b> .500	1.2	.91	85	115	135	155
2661250202	<b>6.35±0.15</b> .250	<b>2.95+0.45</b> .125	<b>25.4±0.75</b> 1.000	1.4	.91	165	230	275	330
2661375102	<b>9.5±0.25</b> .375	<b>4.5+0.75</b> .192	<b>6.35±0.35</b> .250	2.5	.60	42	63	83	117
2661002402	<b>9.65±0.25</b> .380	<b>5.0±0.2</b> .197	<b>5.05 - 0.45</b> .190	1.1	.59	35	54	75	112

\*\*Bold part numbers designate preferred parts.

<sup>+</sup> Test frequency

\*This dimension may be modified to suit specific applications.

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629 • www.fair-rite.com  
(888) 324-7748 (888) 337-7483 • E-Mail: ferrites@fair-rite.com

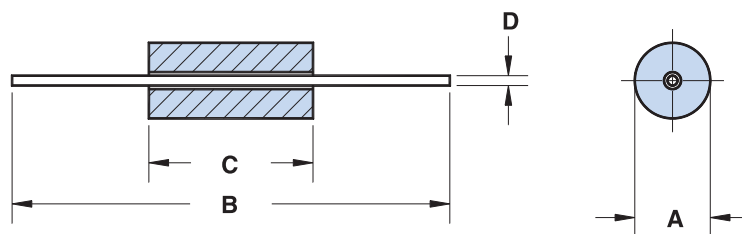
# Beads-on-Leads

Listed by frequency range and in ascending order of Impedance.

Ferrite suppression beads are supplied assembled on tinned copper wire for automated circuit board assembly.

- Parts with a "2" as the last digit of the part number are supplied taped and reeled per IEC 60286-1 and EIA RS-296-F standards. Taped and reeled parts are supplied 4500 pieces on a 14" reel. Taping details: Component pitch 5mm. Inside tape spacing 52.5mm. Tape width 6mm.

- Beads-on-leads can be supplied bulk packed. The last digit of bulk packed parts is a "1"



- Wires are oxygen free high conductivity copper with a lead-free tin coating. The resistance of the wire is 3.5 mOhm for the 22 AWG and 2.2 mOhm for the 20 AWG wire. If required beads-on-leads can be supplied with a tin/lead coating.
- Beads-on-leads are controlled for impedances only. The impedances listed are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed impedance less 20%. The impedances of the 73 & 43 beads-on-leads are measured on the 4193A Vector Impedance Analyzer. The 61 beads-on-leads are tested for impedance on the 4191A RF Impedance Analyzer.
- Performance curves for all beads-on-leads can be found on the Fair-Rite Products CD-ROM.
- For any bead-on-lead requirement not listed, please contact our customer service group for availability and pricing.
- Our "Bead-on-Lead Suppression Kit" (part number 0199000028) is available for prototype evaluation. See page 67.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1 = bulk packed, 2 = taped and reeled.

## Lower Frequencies < 50 MHz (73 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number*	A	B	C	D	Wt (g)	Typical Impedance ( $\Omega$ )			
						1 MHz	5 MHz	10 MHz <sup>+</sup>	25 MHz <sup>+</sup>
<b>2773001112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>4.45±0.25</b> .175	<b>0.65</b> 22 AWG	.4	12	34	48	61
2773015112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>5.25±0.25</b> .206	<b>0.65</b> 22 AWG	.4	17	43	55	68
2773005112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>6.0±0.25</b> .236	<b>0.65</b> 22 AWG	.4	22	51	63	78
2773003112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>6.7±0.25</b> .263	<b>0.65</b> 22 AWG	.5	26	59	70	86
2773004112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>7.6±0.3</b> .300	<b>0.65</b> 22 AWG	.5	30	69	80	100
<b>2773002112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>8.9±0.3</b> .350	<b>0.65</b> 22 AWG	.6	36	84	94	115
<b>2773007112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>9.5±0.3</b> .374	<b>0.65</b> 22 AWG	.6	38	90	110	115
2773008112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>11.4±0.4</b> .450	<b>0.65</b> 22 AWG	.7	43	112	125	145
<b>2773009112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>13.8±0.5</b> .545	<b>0.65</b> 22 AWG	.7	46	138	151	170

\*Bold part numbers designate preferred parts.

<sup>+</sup> Test frequency

# Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337 -7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# Beads-on-Leads

Listed by frequency range and in ascending order of Impedance.

## Broadband Frequencies 25-300 MHz (43 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number*	A	B	C	D	Wt (g)	Typical Impedance(Ω)			
						10 MHz	25 MHz <sup>+</sup>	100 MHz <sup>+</sup>	250 MHz
<b>2743001112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>4.45±0.25</b> .175	<b>0.65</b> 22 AWG	.4	31	49	68	65
2743015112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>5.25±0.25</b> .206	<b>0.65</b> 22 AWG	.4	36	54	82	78
2743005112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>6.0±0.25</b> .236	<b>0.65</b> 22 AWG	.4	40	60	91	90
2743003112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>6.7±0.25</b> .263	<b>0.65</b> 22 AWG	.5	44	65	100	101
2743004112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>7.6±0.3</b> .300	<b>0.65</b> 22 AWG	.5	50	75	110	115
<b>2743002112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>8.9±0.3</b> .350	<b>0.65</b> 22 AWG	.6	57	88	133	134
<b>2743007112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>9.5±0.3</b> .374	<b>0.65</b> 22 AWG	.6	61	96	150	143
2743008112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>11.4±0.4</b> .450	<b>0.65</b> 22 AWG	.7	72	116	180	168
<b>2743009112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>13.8±0.5</b> .545	<b>0.65</b> 22 AWG	.7	86	143	220	196
2743012201	<b>9.8±0.3</b> .385	<b>62.0±1.5</b> 2.440	<b>11.4±0.4</b> .449	<b>0.8</b> 20 AWG	4.5	121	193	271	253
<b>2743013211</b>	<b>9.8±0.3</b> .385	<b>62.0±1.5</b> 2.440	<b>14.0±0.5</b> .550	<b>0.8</b> 20 AWG	5.5	147	235	331	281
2743014221	<b>9.8±0.3</b> .385	<b>62.0±1.5</b> 2.440	<b>16.5±0.5</b> .650	<b>0.8</b> 20 AWG	6.5	173	280	391	296

## Higher Frequencies 250-1000 MHz (61 material)

Part Number*	A	B	C	D	Wt (g)	Typical Impedance(Ω)			
						100 MHz	250 MHz <sup>+</sup>	500 MHz <sup>+</sup>	1000 MHz
<b>2761001112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>4.45±0.25</b> .175	<b>0.65</b> 22 AWG	.4	52	72	83	90
2761015112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>5.25±0.25</b> .206	<b>0.65</b> 22 AWG	.4	62	85	97	105
2761005112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>6.0±0.25</b> .236	<b>0.65</b> 22 AWG	.4	70	96	110	118
2761003112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>6.7±0.25</b> .263	<b>0.65</b> 22 AWG	.5	79	107	122	131
2761004112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>7.6±0.3</b> .300	<b>0.65</b> 22 AWG	.5	89	121	138	148
<b>2761002112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>8.9±0.3</b> .350	<b>0.65</b> 22 AWG	.6	105	142	161	171
2761007112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>9.5±0.3</b> .374	<b>0.65</b> 22 AWG	.6	112	151	171	182
2761008112	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>11.4±0.4</b> .450	<b>0.65</b> 22 AWG	.7	134	181	204	217
<b>2761009112</b>	<b>3.5±0.25</b> .138	<b>62.0±1.5</b> 2.440	<b>13.8±0.5</b> .545	<b>0.65</b> 22 AWG	.7	162	218	246	261

\*Bold part numbers designate preferred parts.

<sup>+</sup> Test frequency

# Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629 • www.fair-rite.com  
(888) 324-7748 (888) 337-7483 • E-Mail: ferrites@fair-rite.com

# PC Beads (Through Hole)

Multiple single turn or multi-turn printed circuit EMI suppression beads are available in two Fair-Rite materials. The broadband 44 material and in the high frequency 52 material grade. PC Beads are made in two standard component heights.

- Parts with a "1" as the last digit of the part number are supplied with a minimum wire length "F" dimension of 2.4 mm (.095"). A longer minimum wire length of 3.1 mm (.125") is also available, these parts have a "2" as the last digit.
- Wires are oxygen free high conductivity copper with a lead-free tin coating. If required PC Beads can be supplied with a tin/lead coating. Wires on top of the beads are covered with a layer of epoxy.
- PC Beads are controlled for impedance only. The impedances listed are typical values. Minimum impedance values are specified for the + marked frequencies.  
The minimum guaranteed impedance is the listed impedance less 20%.  
The PC Beads in 44 material are measured on the 4193A Vector Impedance Analyzer. The 52 PC Beads are tested for impedance on the 4191A RF Impedance Analyzer.
- Recommended operating and storage temperature for the PC Beads is -55 °C to +125 °C.
- Performance curves for all PC beads are on the Fair-Rite Products CD-ROM.
- For equivalent PC Beads suitable for surface mounting see pages 38-41.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1 = standard wire length 2.4 mm (.095") minimum, 2 longer wire length 3.1 mm (.125") minimum.

## Broadband Frequencies 10-300 MHz (44 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number	Fig.	A	B	C Max.	D	E	F Min.	G	Wt (g)	Typical Impedance (Ω)			
										10 MHz	25 MHz <sup>+</sup>	100 MHz <sup>+</sup>	250 MHz
2944776101	1	8.0 - 0.35 .308	7.6 - 0.5 .290	11.8 .464	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	2.6	115	188	288	305
2944786101	1	8.0 - 0.35 .308	7.6 - 0.5 .290	6.8 .267	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	1.3	66	95	150	155
2944778101	2	11.2 - 0.5 .430	5.75 - 0.5 .216	11.8 .464	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	2.7	115	188	288	305
2944788101	2	11.2 - 0.5 .430	5.75 - 0.5 .216	6.8 .267	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	1.4	66	95	150	155
2944778301	3	11.2 - 0.5 .430	11.2 - 0.5 .430	11.8 .464	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	6.0	142	219	338	335
2944788301	3	11.2 - 0.5 .430	11.2 - 0.5 .430	6.8 .267	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	3.0	76	110	175	180
2944770301	4	13.45±0.25 .530	11.2 - 0.5 .430	11.8 .464	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	7.4	142	219	338	335
2944780301	4	13.45±0.25 .530	11.2 - 0.5 .430	6.8 .267	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	3.7	76	110	175	180

<sup>+</sup> Test frequency

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337 -7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

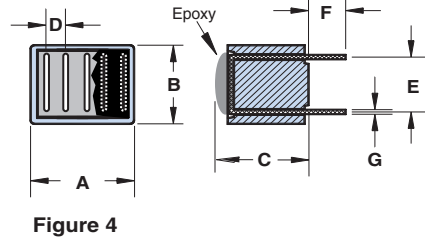
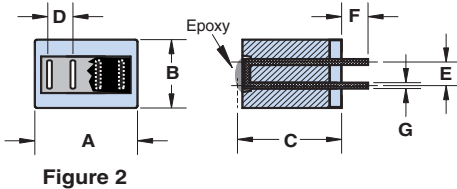
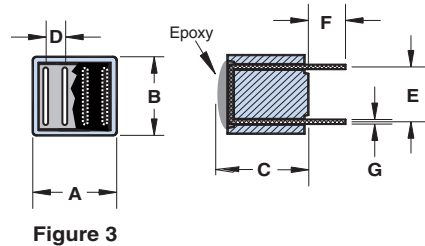
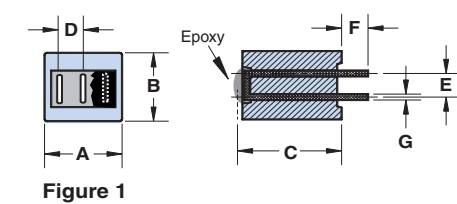
# PC Beads (Through Hole)

## Higher Frequencies 250-1000 MHz (52 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number	Fig.	A	B	C Max.	D	E	F Min.	G	Wt (g)	Typical Impedance ( $\Omega$ )			
										100 MHz	250 MHz <sup>+</sup>	500 MHz <sup>+</sup>	1000 MHz
2952776101	1	8.0 - 0.35 .308	7.6 - 0.5 .290	11.8 .464	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	2.6	270	380	345	250
2952786101	1	8.0 - 0.35 .308	7.6 - 0.5 .290	6.8 .267	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	1.3	125	180	180	170
2952778101	2	11.2 - 0.5 .430	5.75 - 0.5 .216	11.8 .464	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	2.7	270	380	345	250
2952788101	2	11.2 - 0.5 .430	5.75 - 0.5 .216	6.8 .267	2.54±0.1 .100	2.54±0.1 .100	2.4 .095	0.65 22 AWG	1.4	125	180	180	170
2952778301	3	11.2 - 0.5 .430	11.2 - 0.5 .430	11.8 .464	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	6.0	320	460	395	300
2952788301	3	11.2 - 0.5 .430	11.2 - 0.5 .430	6.8 .267	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	3.0	150	220	220	210
2952770301	4	13.45±0.25 .530	11.2 - 0.5 .430	11.8 .464	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	7.4	320	460	395	300
2952780301	4	13.45±0.25 .530	11.2 - 0.5 .430	6.8 .267	2.54±0.1 .100	7.6±0.2 .300	2.4 .095	0.65 22 AWG	3.7	150	220	220	210

<sup>+</sup> Test frequency



### Typical Multi Turn Printed Circuit Board Layouts

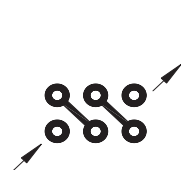


Figure 1A:  
3 Turn winding  
for parts in Fig. 1

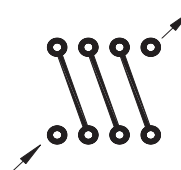


Figure 3A:  
4 Turn turn winding  
for parts in Fig. 3.

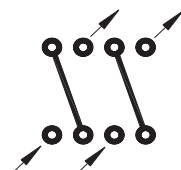


Figure 3B:  
2 x 2 Turn winding  
for parts in Fig. 3.

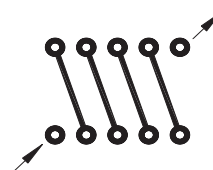


Figure 4A:  
5 Turn winding  
for parts in Fig. 4.

# Wound Beads

Six and eleven hole beads, in two NiZn materials, are available both as beads (product class 26) and wound with tinned copper wire in several winding configurations (product class 29).

- Parts with a "1" as the last digit of the part number are supplied bulk packed. Wound beads with part numbers 29--666631 and 29--666651 can be supplied radially taped and reeled per IEC 60286-1 and EIA 468-B standards. For these taped and reeled wound beads the last digit of the part number is a "4". Taped and reeled wound beads are supplied 500 pieces on a 13" reel.
- Wire used for winding is oxygen free high conductivity copper with a lead-free tin plating. If required the wound beads can be supplied with a tin/lead coating.
- Beads are controlled for impedance limits only. The impedances listed are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed impedance less 20%. The 44 material beads and wound beads are tested on the 4193A Vector Impedance Meter. The 61 material parts on the 4191A RF Impedance Analyzer.
- Recommended storage temperature and operating temperature is -55°C to 125°C
- Performance curves for all wound beads can be found on the Fair-Rite Products CD-ROM.
- For any wound bead requirement not listed in here, please contact our customer service group for availability and pricing.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1 = bulk packed, 4 = taped and reeled.

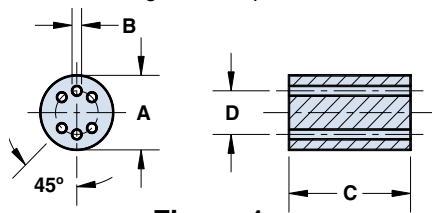


Figure 1

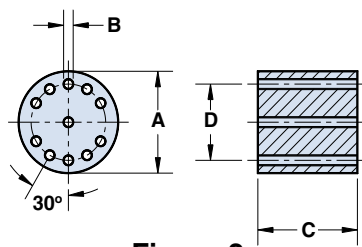


Figure 2

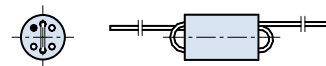


Figure 1-1



Figure 1-2

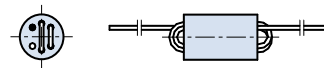


Figure 1-3

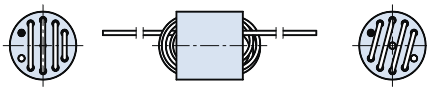


Figure 2-1

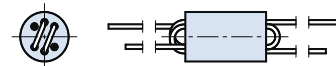


Figure 1-4

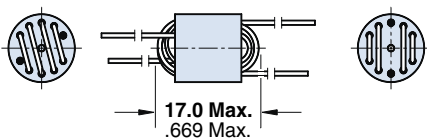


Figure 2-2

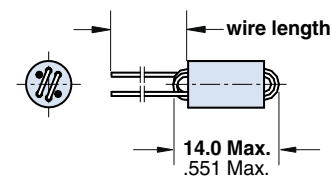


Figure 1-5

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748 (888) 337-7483

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com

# Wound Beads

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number	Fig.	A	B	C	D <sub>Ref</sub>	Wt (g)	Typical Impedance (Ω)			
							10 MHz <sup>+</sup>	50 MHz <sup>+</sup>	100 MHz <sup>+</sup>	200 MHz <sup>+</sup>
2644666611 <sup>①</sup>	1	<b>6.0±0.25</b> .236	<b>0.75+0.15</b> .032	<b>10.0±0.25</b> .394	<b>3.5</b> .138	1.2	213	400	470	380
2661666611 <sup>①</sup>	1	<b>6.0±0.25</b> .236	<b>0.75+0.15</b> .032	<b>10.0±0.25</b> .394	<b>3.5</b> .138	1.2	—	280	380	510
2644777711 <sup>②</sup>	2	<b>10.0±0.25</b> .394	<b>0.9+0.15</b> .038	<b>10.0±0.25</b> .394	<b>7.5</b> .295	3.3	375	905	500	400

① Tested with 1½ turns. ② Tested with 2½ turns. (A ½ turn is defined as a single pass through a hole.)

## Broadband Frequencies 1-200 MHz (44 material)

Part Number	Fig.	Turns	Wire Size	Wire Length	Wt (g)	Typical Impedance (Ω)				
						1 MHz	10 MHz <sup>+</sup>	50 MHz <sup>+</sup>	100 MHz <sup>+</sup>	200 MHz
2944666661	1-1	1½	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.3	45	213	400	470	380
2944666651	1-2	2	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.3	58	300	650	600	415
2944666671	1-3	2½	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.4	87	400	850	725	410
2944666681	1-4	2 x 1½	<b>0.53</b> 24 AWG	③	1.4	45	213	400	470	380
2944666631	1-5	3	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.4	115	500	1000	690	400
2944777741	2-1	4½	<b>0.65</b> 22 AWG	<b>38.0±3.0</b> 1.500	3.8	150	815	1250	500	375
2944777721	2-2	2 x 2½	<b>0.65</b> 22 AWG	③	3.9	45	375	905	500	400

## Higher Frequencies 50-500 MHz (61 material)

Part Number	Fig.	Turns	Wire Size	Wire Length	Wt (g)	Typical Impedance (Ω)				
						10 MHz	50 MHz <sup>+</sup>	100 MHz <sup>+</sup>	200 MHz <sup>+</sup>	400 MHz
2961666661	1-1	1½	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.3	75	280	380	510	600
2961666651	1-2	2	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.3	100	400	560	760	700
2961666671	1-3	2½	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.4	150	560	780	960	600
2961666681	1-4	2 x 1½	<b>0.53</b> 24 AWG	③	1.4	75	280	380	510	600
2961666631	1-5	3	<b>0.53</b> 24 AWG	<b>38.0±3.0</b> 1.500	1.4	175	700	1000	1100	625

③ Wire length of one winding is **38.0±3.0** (1.500). Wire length of second winding is **28.0±3.0** (1.125) <sup>+</sup> Test frequency

# Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629 • www.fair-rite.com  
(888) 324-7748 (888) 337-7483 • E-Mail: ferrites@fair-rite.com

# Multi-Aperture Cores

**Multi-aperture cores are used in balun (balance-unbalance) transformers and find wide applications as broadband transformers in communications and CATV circuits. They are also employed in airbag designs to prevent accidental activation.**

- All multi-aperture cores are supplied burnished.
- Multi-aperture cores in 73 and 43 materials are controlled for impedance only. The 61 NiZn material is controlled for both impedance and AL value. The high frequency 67 material is controlled for AL value. All listed impedance values are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed typical impedance less 20%.
- Multi-aperture cores are measured for impedance on the 4193A Vector Impedance Analyzer. The cores are wound with a single turn through both holes, with the shortest practical wire length.
- The 61 and 67 material multi-hole beads are tested for AL value. The test frequency is 10 kHz at < 10 gauss. The test winding is five turns wound through both holes.
- Performance curves for all multi-hole cores can be found on the Fair-Rite Products CD-ROM.
- For any multi-aperture core requirement not listed, please contact our customer service group for availability and pricing.
- Our "Multi-Aperture Core Kit" (part number 0199000036) is available for proto type evaluation. See page 68.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade last digit 2 = burnished.

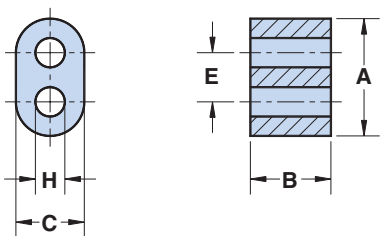


Figure 1

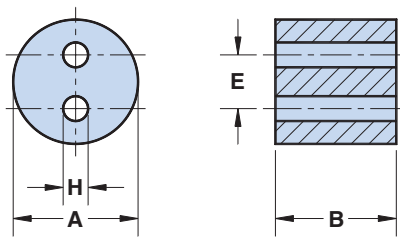


Figure 2

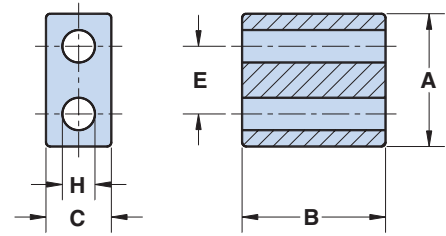


Figure 3

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629  
(888) 324-7748

• www.fair-rite.com  
• E-Mail: ferrites@fair-rite.com



# Multi-Aperture Cores

## Lower Frequencies < 50 MHz (73 material)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number	Fig.	A	B	C	E	H	Wt (g)	Typical Impedance ( $\Omega$ )	
								10 MHz	25 MHz <sup>+</sup>
2873002302	1	<b>3.45±0.25</b> .136	<b>2.35±0.25</b> .093	<b>2.0±0.15</b> .079	<b>1.45±0.1</b> .057	<b>0.75+0.25</b> .034	.1	35	44
2873002702	1	<b>7.0±0.25</b> .276	<b>3.1±0.25</b> .122	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.3	28	38
2873002402	1	<b>7.0±0.25</b> .276	<b>6.2±0.25</b> .244	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.5	80	75
2873001802	2	<b>6.35±0.25</b> .250	<b>6.15±0.25</b> .242	—	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	.8	115	106
2873001702	2	<b>6.35±0.25</b> .250	<b>12.0±0.35</b> .471	—	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	1.6	200	200
2873001502	1	<b>13.3±0.6</b> .525	<b>6.6±0.25</b> .260	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	1.7	57	50
2873000302	1	<b>13.3±0.6</b> .525	<b>10.3±0.3</b> .407	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	2.6	94	75
2873000102	1	<b>13.3±0.6</b> .525	<b>13.4±0.3</b> .528	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.5	127	93
2873000202	1	<b>13.3±0.6</b> .525	<b>14.35±0.5</b> .565	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.7	125	106
2873006802	1	<b>13.3±0.6</b> .525	<b>27.0±0.75</b> 1.062	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	7.0	195	180

## Broadband Frequencies 20-300 MHz (43 material)

Part Number	Fig.	A	B	C	E	H	Wt (g)	Typical Impedance ( $\Omega$ )	
								25 MHz	100 MHz <sup>+</sup>
2843002302	1	<b>3.45±0.25</b> .136	<b>2.35±0.25</b> .093	<b>2.0±0.15</b> .079	<b>1.45±0.1</b> .057	<b>0.75+0.25</b> .034	.1	29	44
2843002702	1	<b>7.0±0.25</b> .276	<b>3.1±0.25</b> .122	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.3	37	50
2843002402	1	<b>7.0±0.25</b> .276	<b>6.2±0.25</b> .244	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.5	74	100
2843001802	2	<b>6.35±0.25</b> .250	<b>6.15±0.25</b> .242	—	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	.8	100	131
2843001702	2	<b>6.35±0.25</b> .250	<b>12.0±0.35</b> .471	—	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	1.6	188	256
2843001502	1	<b>13.3±0.6</b> .525	<b>6.6±0.25</b> .260	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	1.7	59	88
2843000302	1	<b>13.3±0.6</b> .525	<b>10.3±0.3</b> .407	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	2.6	104	130
2843000102	1	<b>13.3±0.6</b> .525	<b>13.4±0.3</b> .528	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.5	122	175
2843000202	1	<b>13.3±0.6</b> .525	<b>14.35±0.5</b> .565	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.7	123	180
2843006802	1	<b>13.3±0.6</b> .525	<b>27.0±0.75</b> 1.062	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	7.0	219	300
2843010402	3	<b>19.45±0.4</b> .765	<b>12.7±0.5</b> .500	<b>9.5±0.25</b> .375	<b>9.9±0.25</b> .390	<b>4.75±0.2</b> .187	7.5	135	200
2843010302	3	<b>19.45±0.4</b> .765	<b>25.4±0.7</b> 1.000	<b>9.5±0.25</b> .375	<b>9.9±0.25</b> .390	<b>4.75±0.2</b> .187	18	295	400
2843009902	3	<b>28.7±0.6</b> 1.130	<b>28.7±0.7</b> 1.130	<b>14.25±0.3</b> .560	<b>14.0±0.3</b> .550	<b>6.35±0.15</b> .250	48	380	500

<sup>+</sup> Test frequency

# Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629 • www.fair-rite.com  
(888) 324-7748 (888) 337-7483 • E-Mail: ferrites@fair-rite.com

# Multi-Aperture Cores

## Higher Frequencies > 250 MHz (61 & 67 materials)

Dimensions (Bold numbers are in millimeters, light numbers are nominal in inches.)

Part Number	Fig.	A	B	C	E	H	Wt (g)	Typical Impedance ( $\Omega$ )		Minimum AL (nH)
								100 MHz <sup>+</sup>	250 MHz	
2861002302	1	<b>3.45±0.25</b> .136	<b>2.35±0.25</b> .093	<b>2.0±0.15</b> .079	<b>1.45±0.1</b> .057	<b>0.75+0.25</b> .034	.1	38	50	60
2867002302	1	<b>3.45±0.25</b> .136	<b>2.35±0.25</b> .093	<b>2.0±0.15</b> .079	<b>1.45±0.1</b> .057	<b>0.75+0.25</b> .034	.1	–	–	18
2861002702	1	<b>7.0±0.25</b> .276	<b>3.1±0.25</b> .122	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.3	44	58	80
2867002702	1	<b>7.0±0.25</b> .276	<b>3.1±0.25</b> .122	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.3	–	–	24
2861002402	1	<b>7.0±0.25</b> .276	<b>6.2±0.25</b> .244	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.5	88	120	160
2867002402	1	<b>7.0±0.25</b> .276	<b>6.2±0.25</b> .244	<b>4.2 - 0.25</b> .160	<b>2.9±0.1</b> .114	<b>1.7+ 0.2</b> .071	.5	–	–	48
2861001802	2	<b>6.35±0.25</b> .250	<b>6.15±0.25</b> .242	–	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	.8	119	155	220
2867001802	2	<b>6.35±0.25</b> .250	<b>6.15±0.25</b> .242	–	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	.8	–	–	65
2861001702	2	<b>6.35±0.25</b> .250	<b>12.0±0.35</b> .471	–	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	1.6	230	320	440
2867001702	2	<b>6.35±0.25</b> .250	<b>12.0±0.35</b> .471	–	<b>2.75±0.2</b> .108	<b>1.1 + 0.3</b> .050	1.6	–	–	130
2861001502	1	<b>13.3±0.6</b> .525	<b>6.6±0.25</b> .260	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	1.7	69	90	145
2867001502	1	<b>13.3±0.6</b> .525	<b>6.6±0.25</b> .260	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	1.7	–	–	44
2861000302	1	<b>13.3±0.6</b> .525	<b>10.3±0.3</b> .407	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	2.6	106	145	230
2867000302	1	<b>13.3±0.6</b> .525	<b>10.3±0.3</b> .407	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	2.6	–	–	68
2861000102	1	<b>13.3±0.6</b> .525	<b>13.4±0.3</b> .528	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.5	138	175	300
2867000102	1	<b>13.3±0.6</b> .525	<b>13.4±0.3</b> .528	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.5	–	–	89
2861000202	1	<b>13.3±0.6</b> .525	<b>14.35±0.5</b> .565	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.7	150	210	320
2867000202	1	<b>13.3±0.6</b> .525	<b>14.35±0.5</b> .565	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	3.7	–	–	95
2861006802	1	<b>13.3±0.6</b> .525	<b>27.0±0.75</b> 1.062	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	7.0	280	400	600
2867006802	1	<b>13.3±0.6</b> .525	<b>27.0±0.75</b> 1.062	<b>7.5±0.35</b> .295	<b>5.7±0.25</b> .225	<b>3.8±0.25</b> .150	7.0	–	–	180
2861010002	3	<b>30.2±0.6</b> 1.190	<b>28.7±0.7</b> 1.130	<b>15.0±0.4</b> .590	<b>14.6±0.4</b> .575	<b>6.8±0.2</b> .268	46	600	800	800

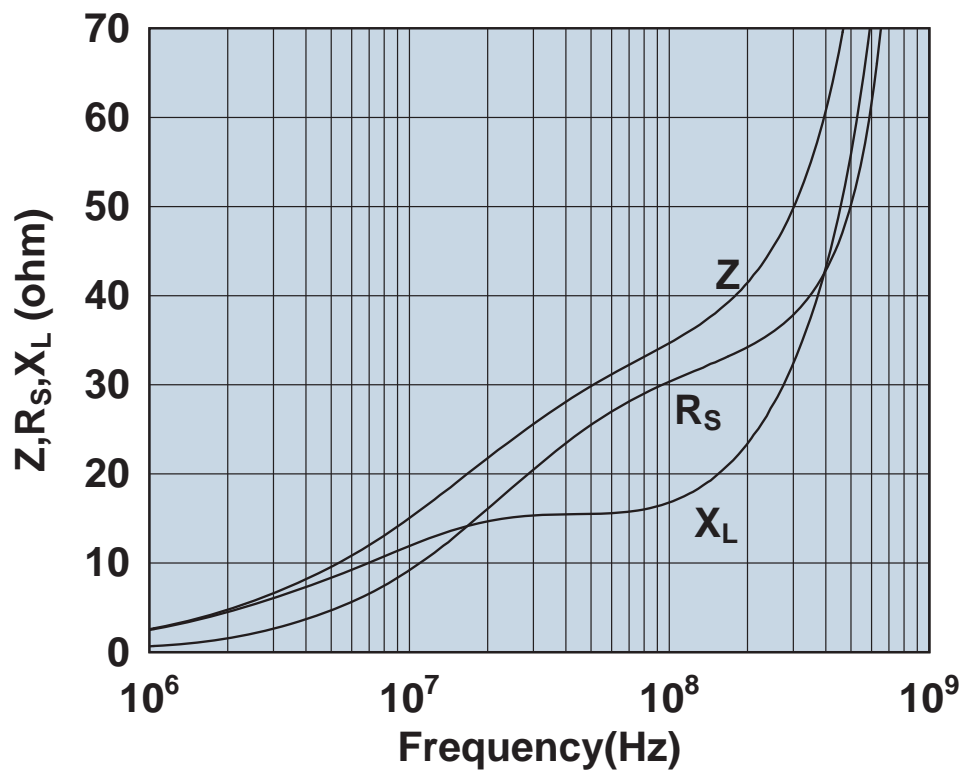
<sup>+</sup> Test frequency

## Fair-Rite Products Corp.

PO Box J, One Commercial Row, Wallkill, NY 12589-0288

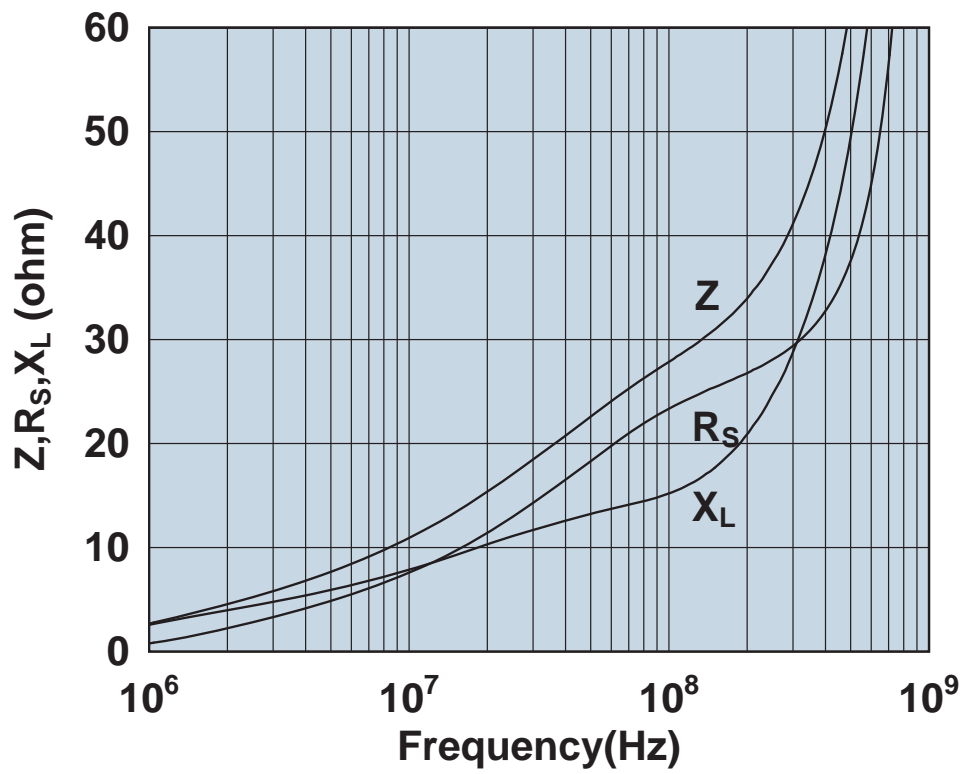
Phone: (888) FAIR RITE / (845) 895-2055 • FAX: (888) FERRITE / (845) 895-2629 • www.fair-rite.com  
(888) 324-7748 (888) 337-7483 • E-Mail: ferrites@fair-rite.com

2643000101



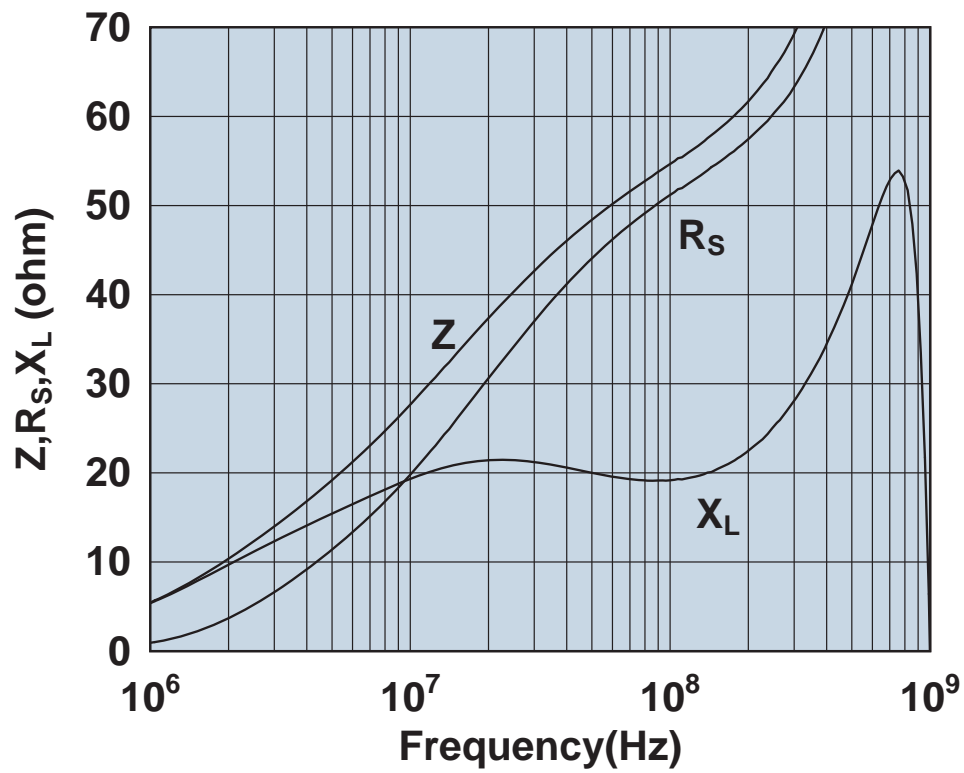
Impedance, reactance, and resistance vs. frequency.

2643000201



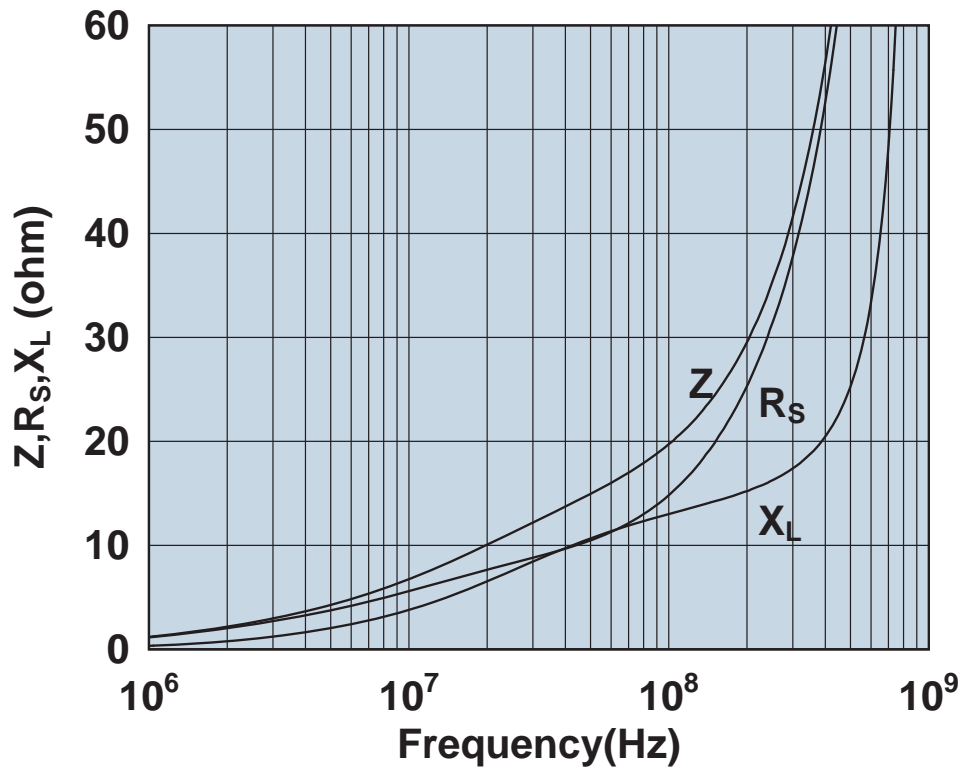
Impedance, reactance, and resistance vs. frequency.

2643000301



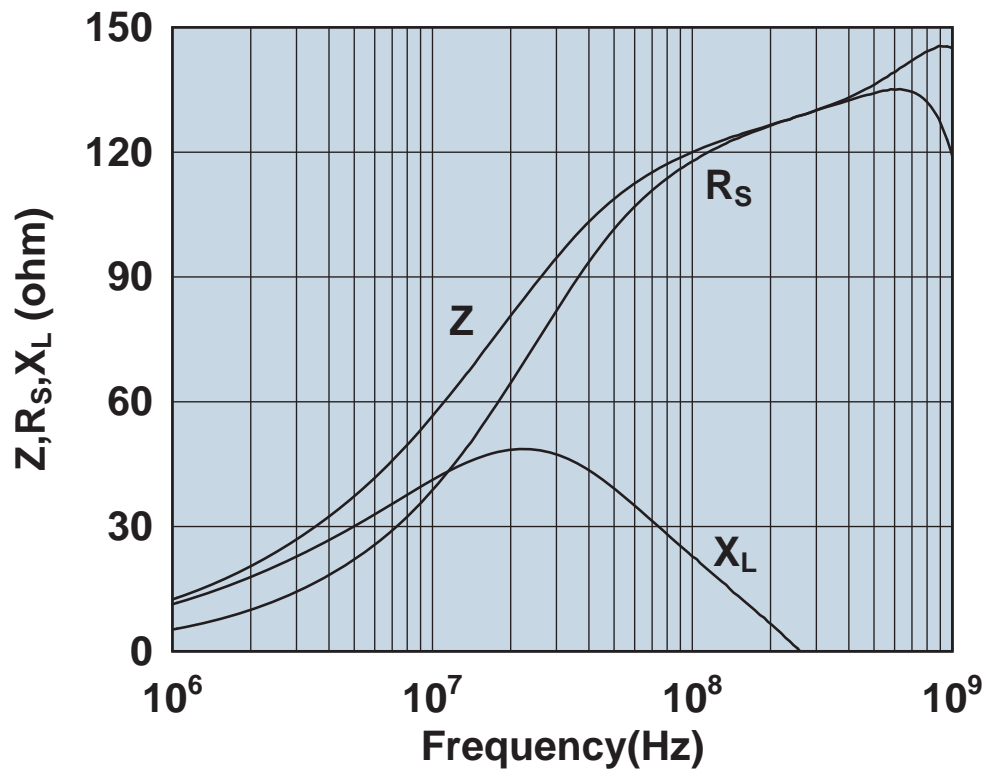
Impedance, reactance, and resistance vs. frequency.

2643000501



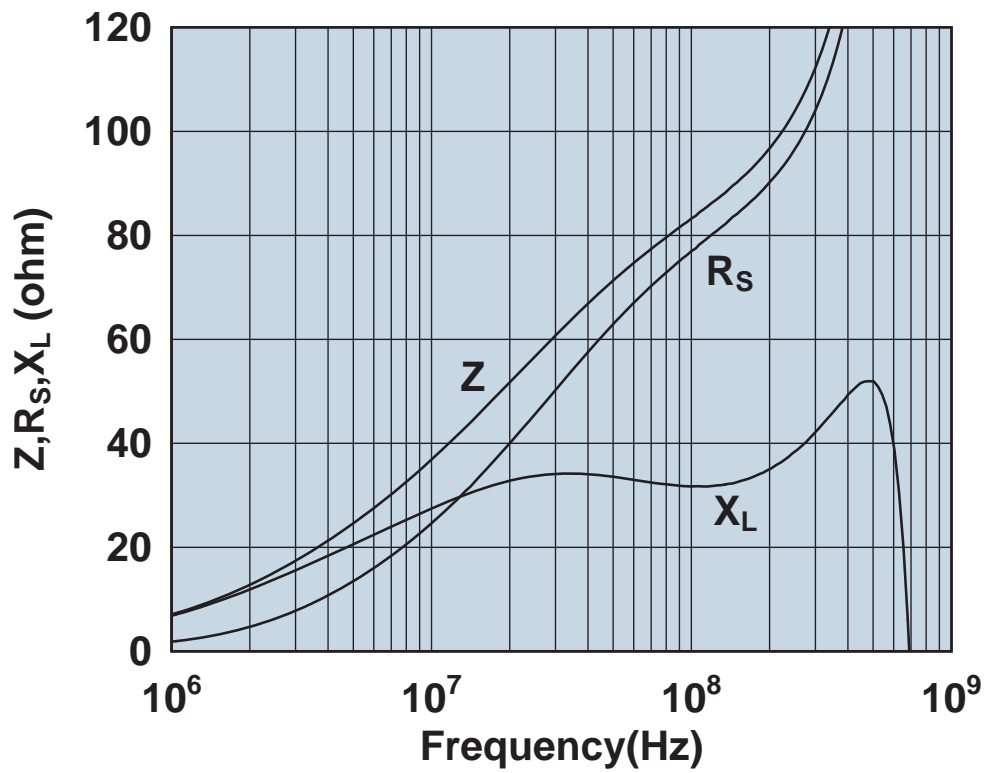
Impedance, reactance, and resistance vs. frequency.

2643000701



Impedance, reactance, and resistance vs. frequency.

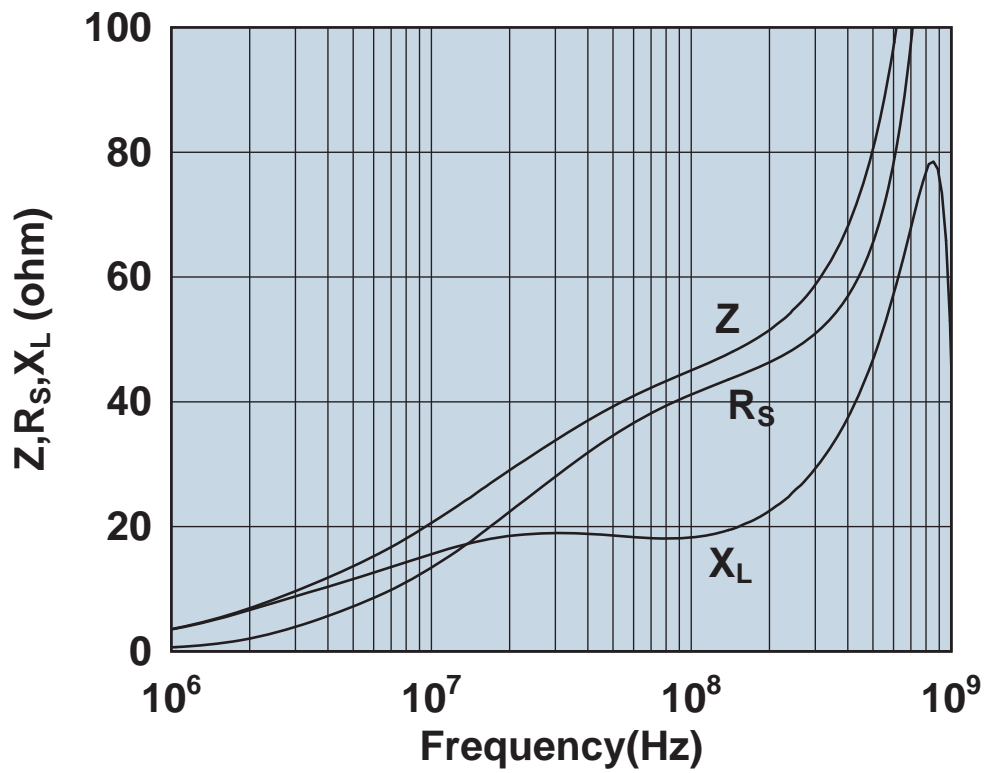
2643000801



Impedance, reactance, and resistance vs. frequency.

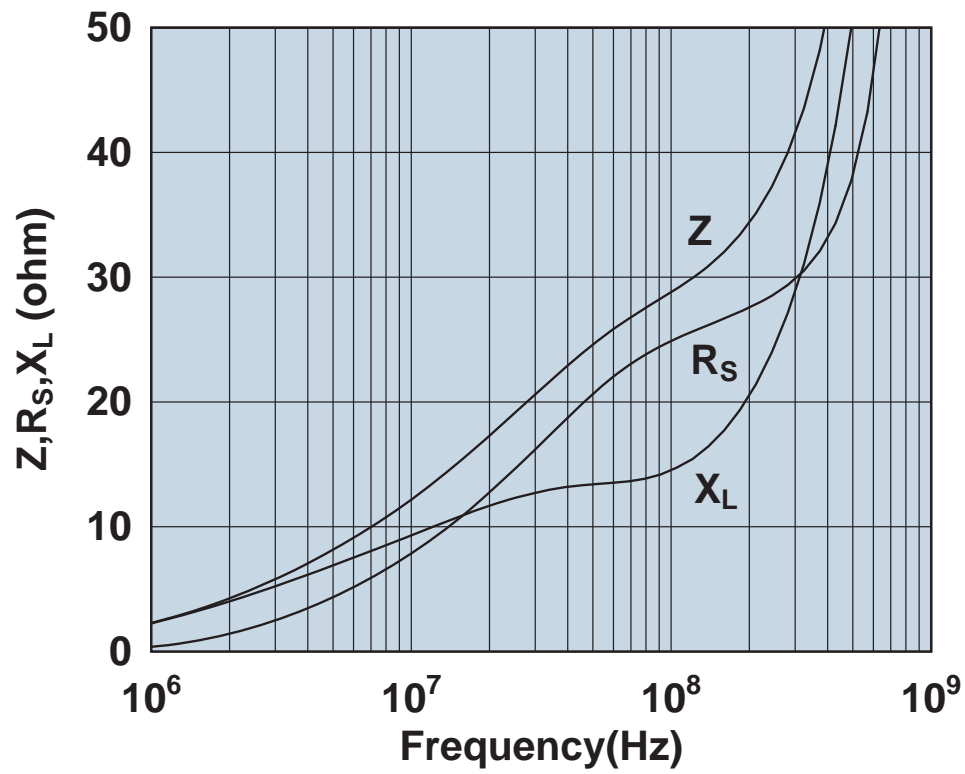


2643001301



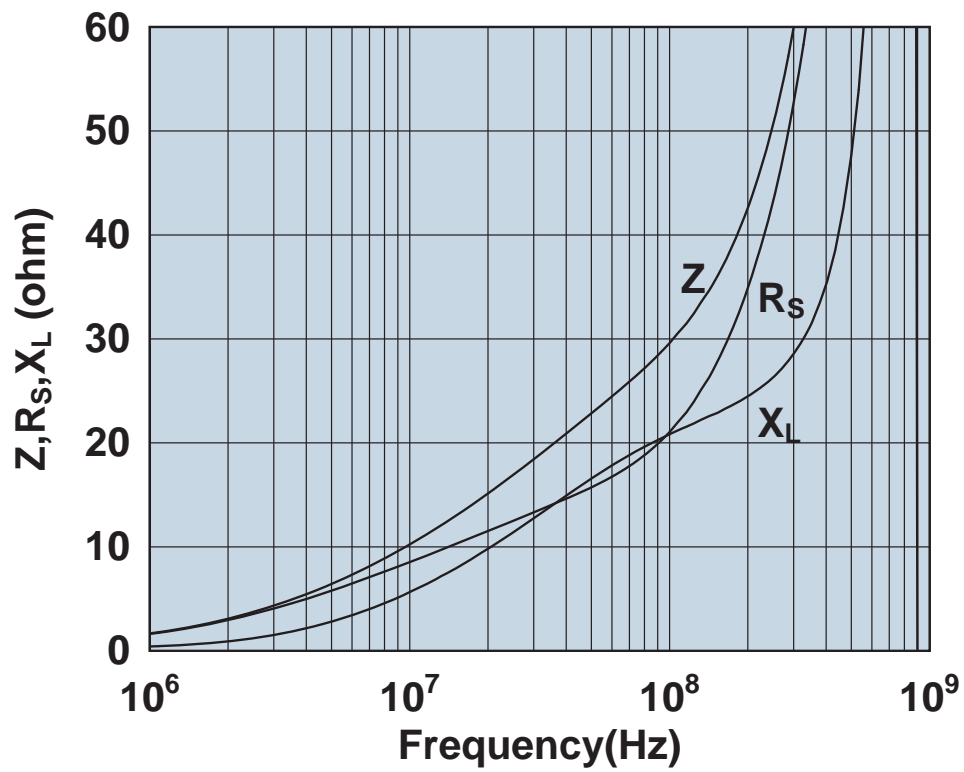
Impedance, reactance, and resistance vs. frequency.

2643001501



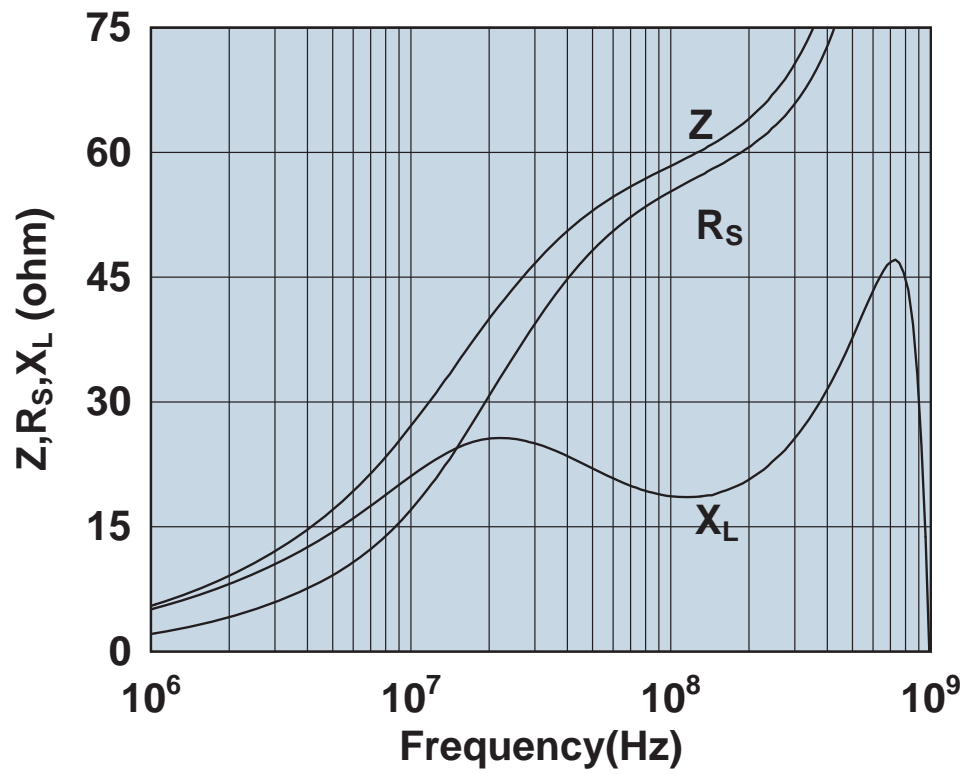
Impedance, reactance, and resistance vs. frequency.

2643001601



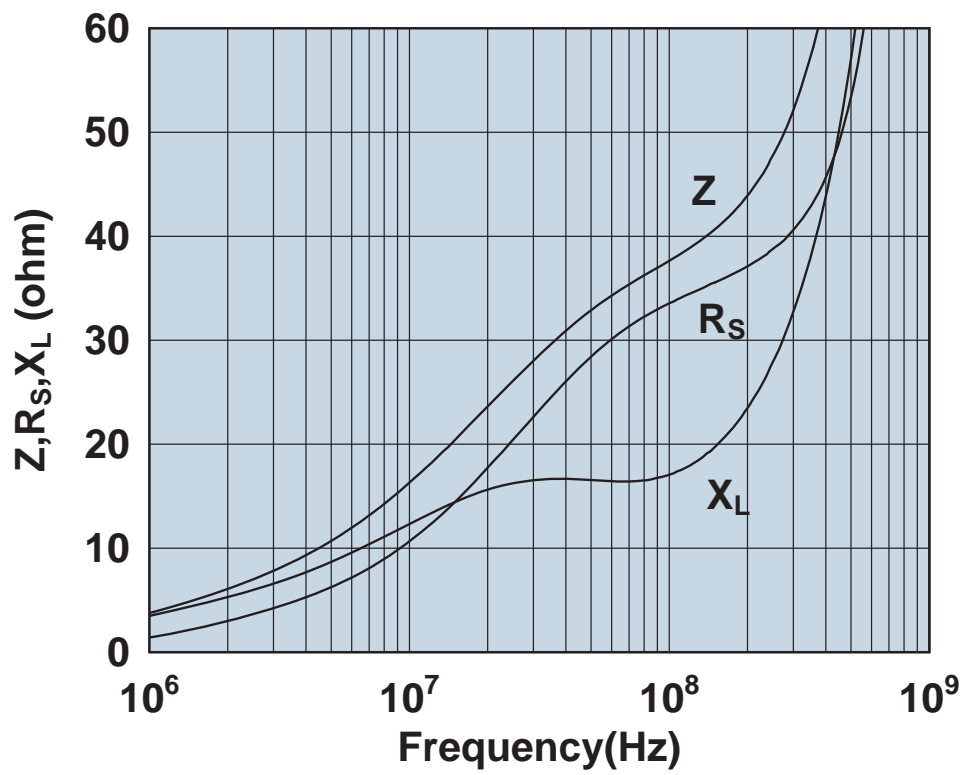
Impedance, reactance, and resistance vs. frequency.

2643002201



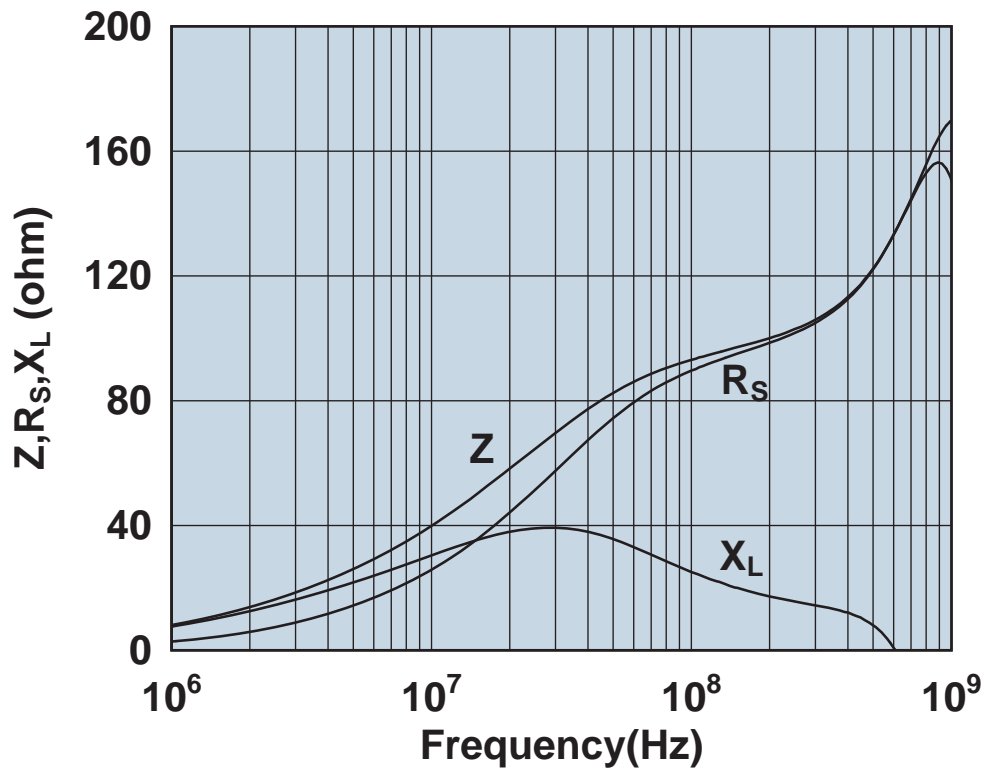
Impedance, reactance, and resistance vs. frequency.

2643002402



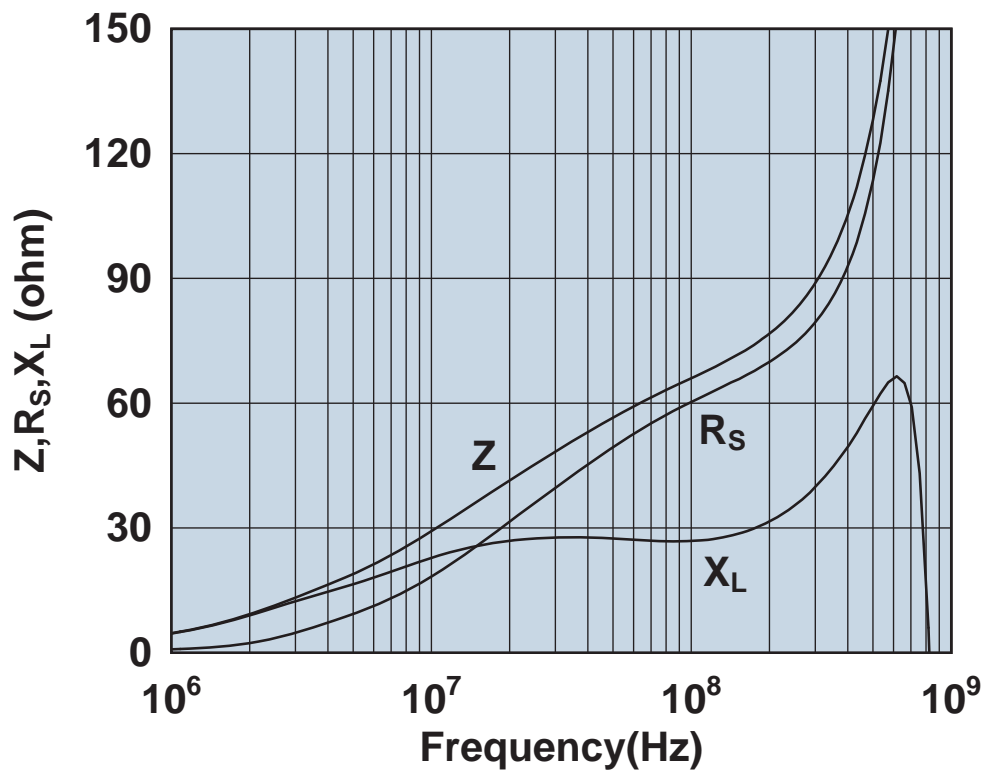
Impedance, reactance, and resistance vs. frequency.

2643003201



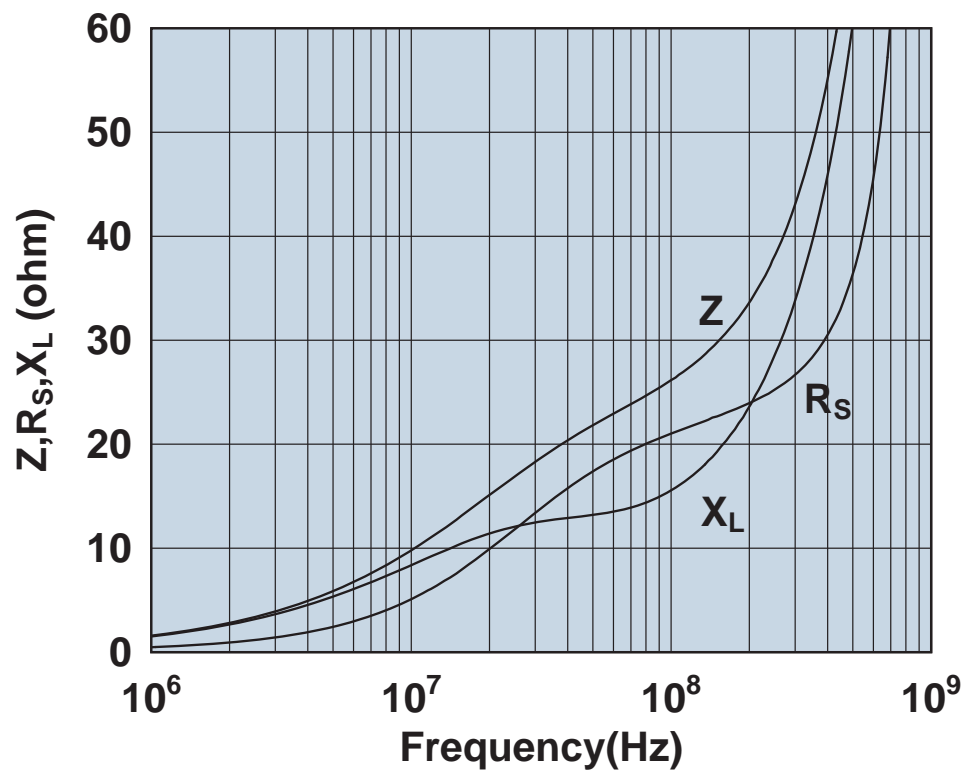
Impedance, reactance, and resistance vs. frequency.

2643004101



Impedance, reactance, and resistance vs. frequency.

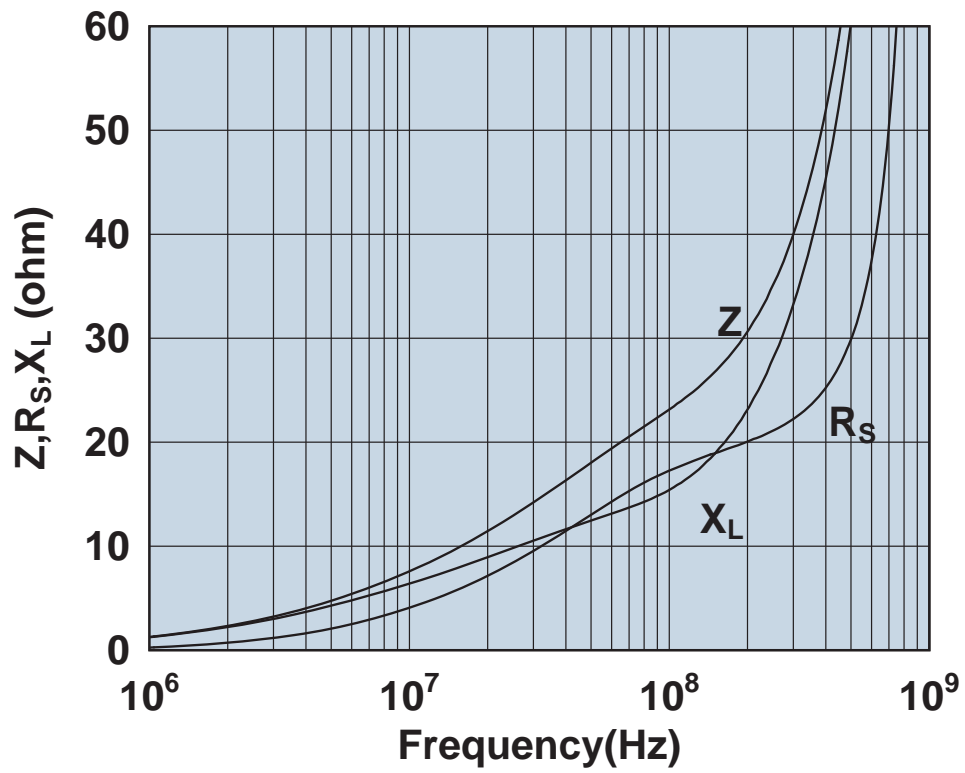
2643004601



Impedance, reactance, and resistance vs. frequency.

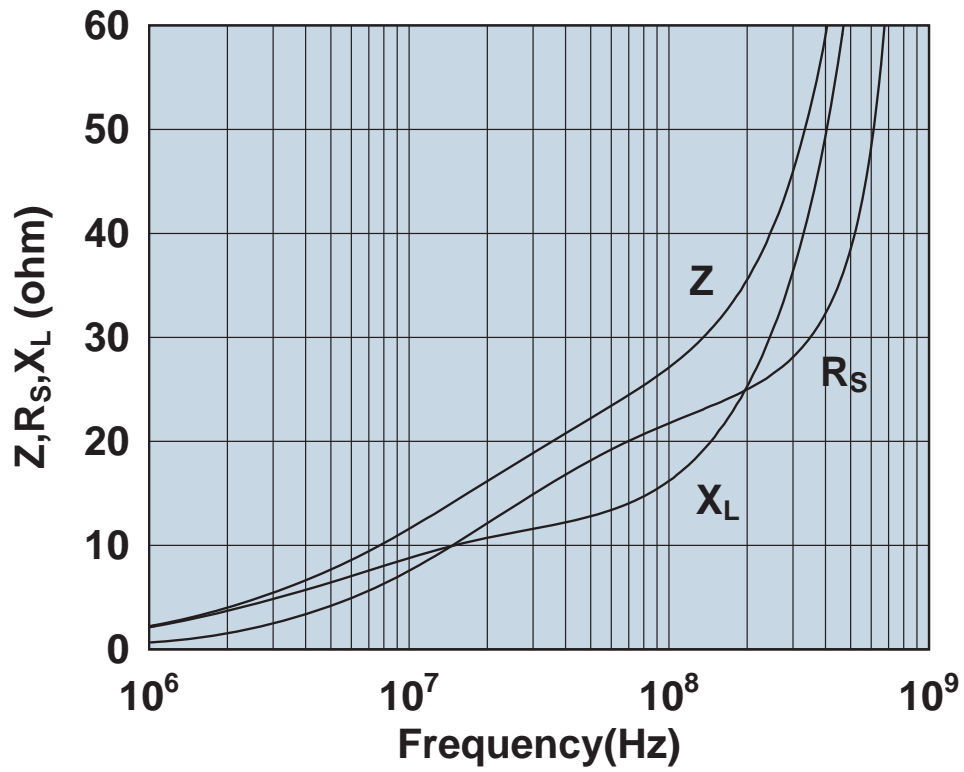


2643004701



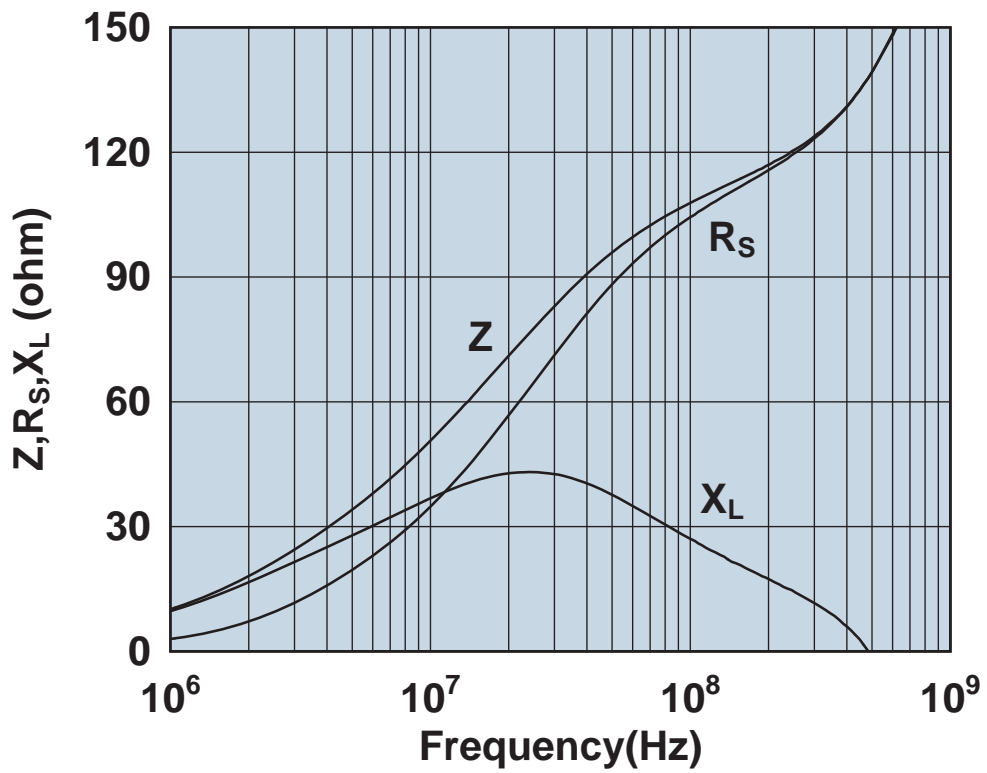
Impedance, reactance, and resistance vs. frequency.

2643004801



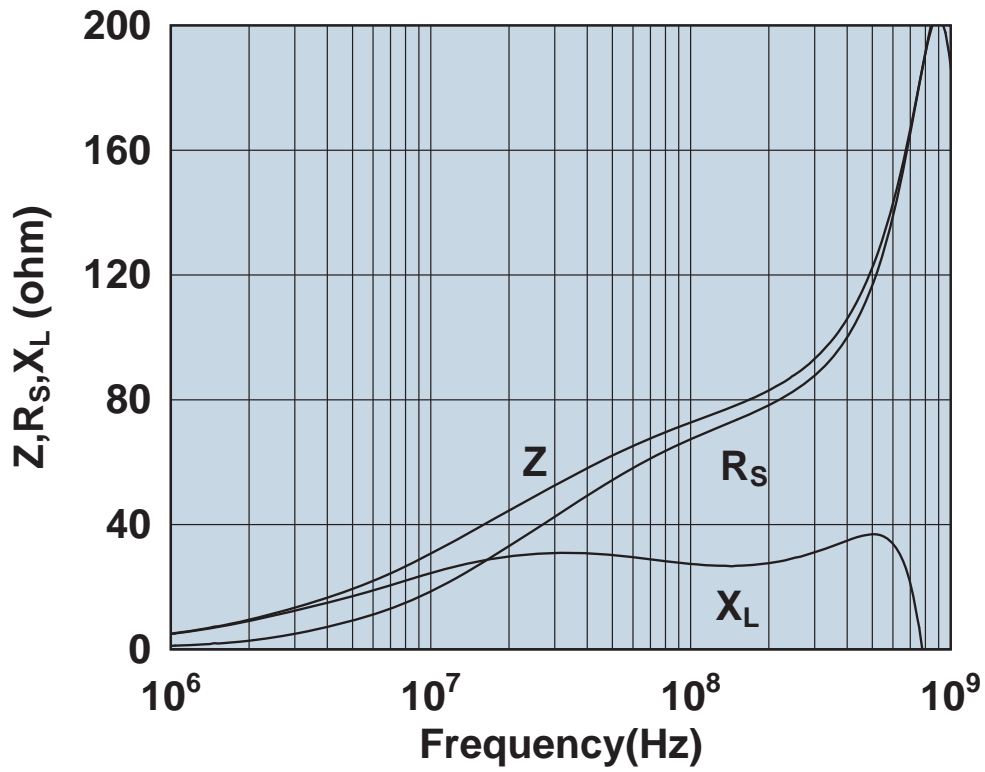
Impedance, reactance, and resistance vs. frequency.

2643005701



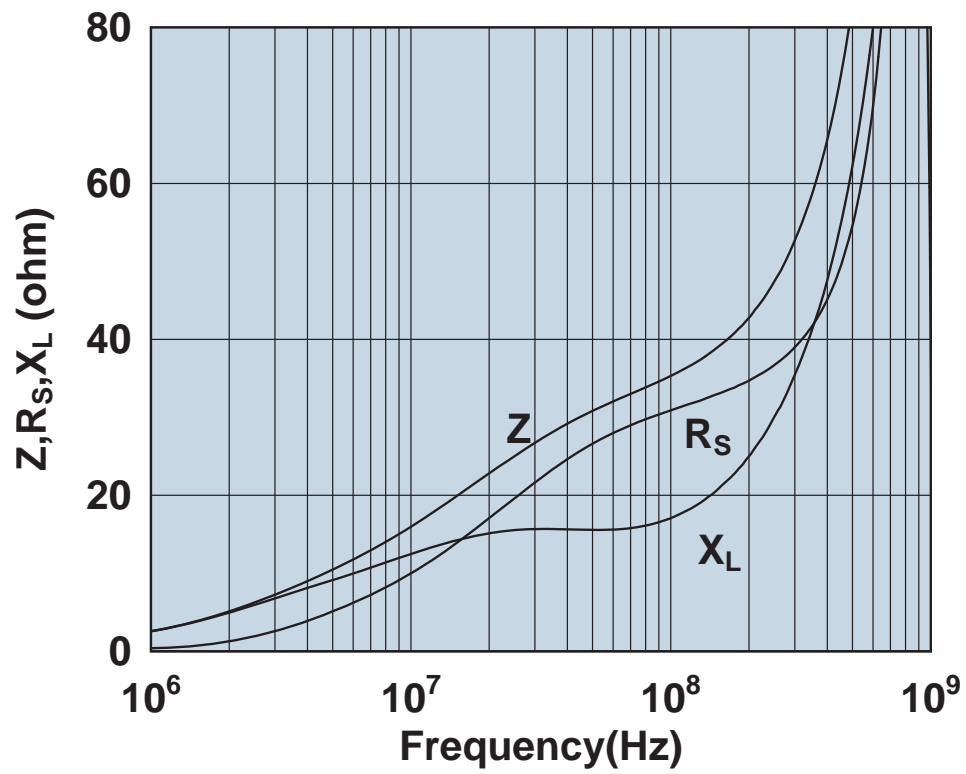
Impedance, reactance, and resistance vs. frequency.

2643006302



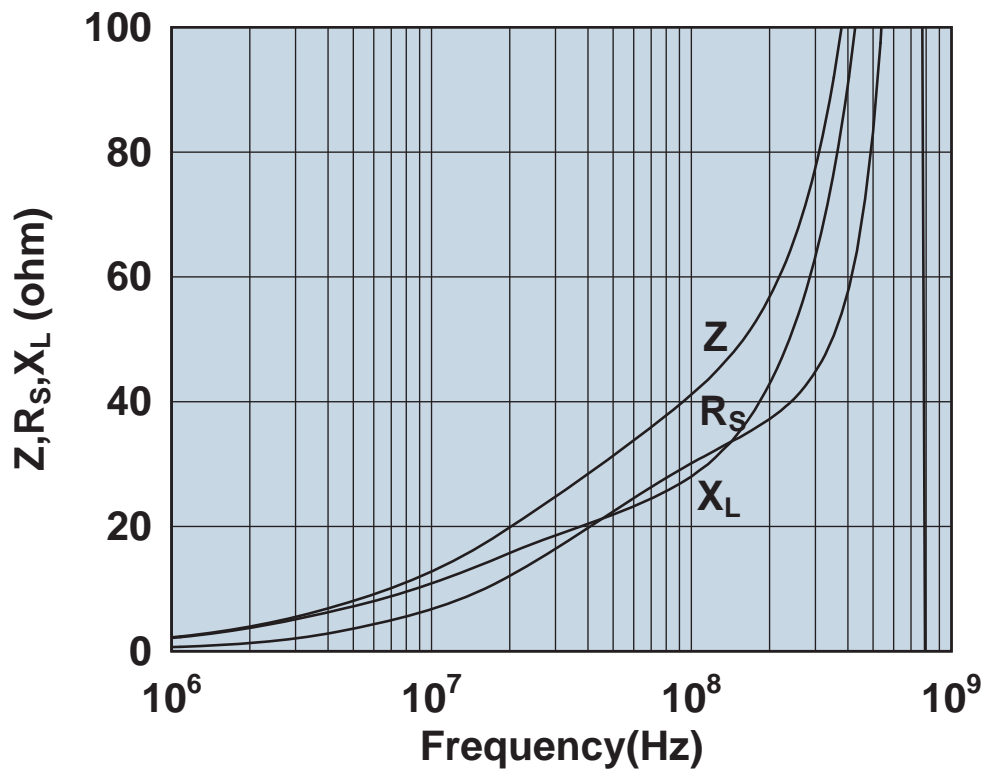
Impedance, reactance, and resistance vs. frequency.

2643012702



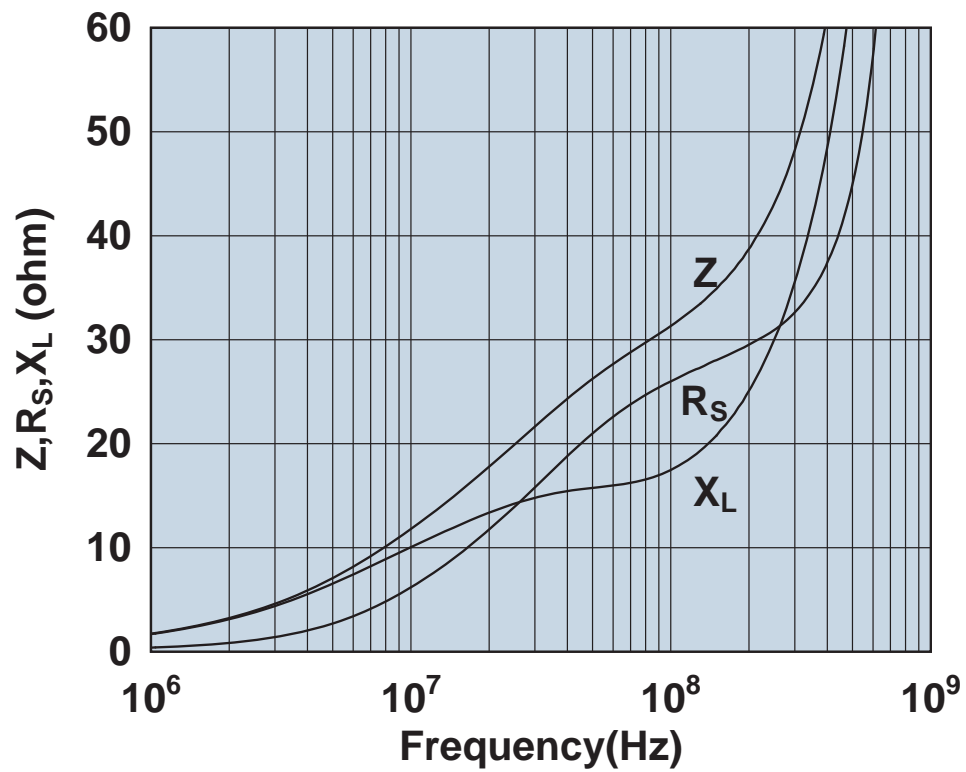
Impedance, reactance, and resistance vs. frequency.

2643013801



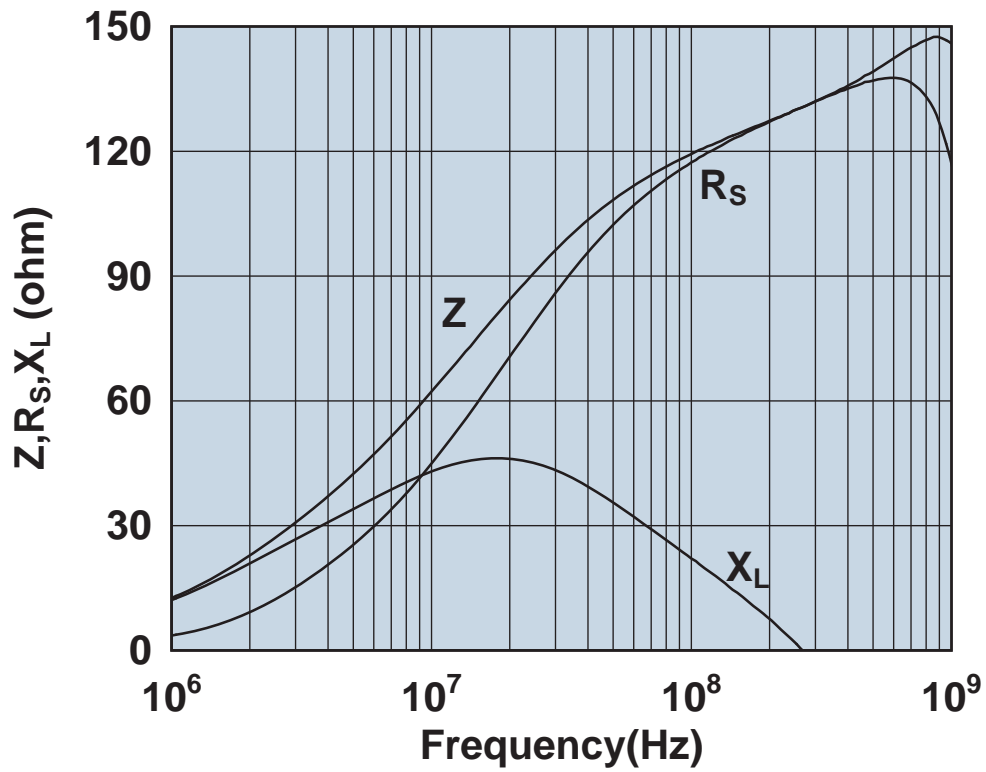
Impedance, reactance, and resistance vs. frequency.

2643020501



Impedance, reactance, and resistance vs. frequency.

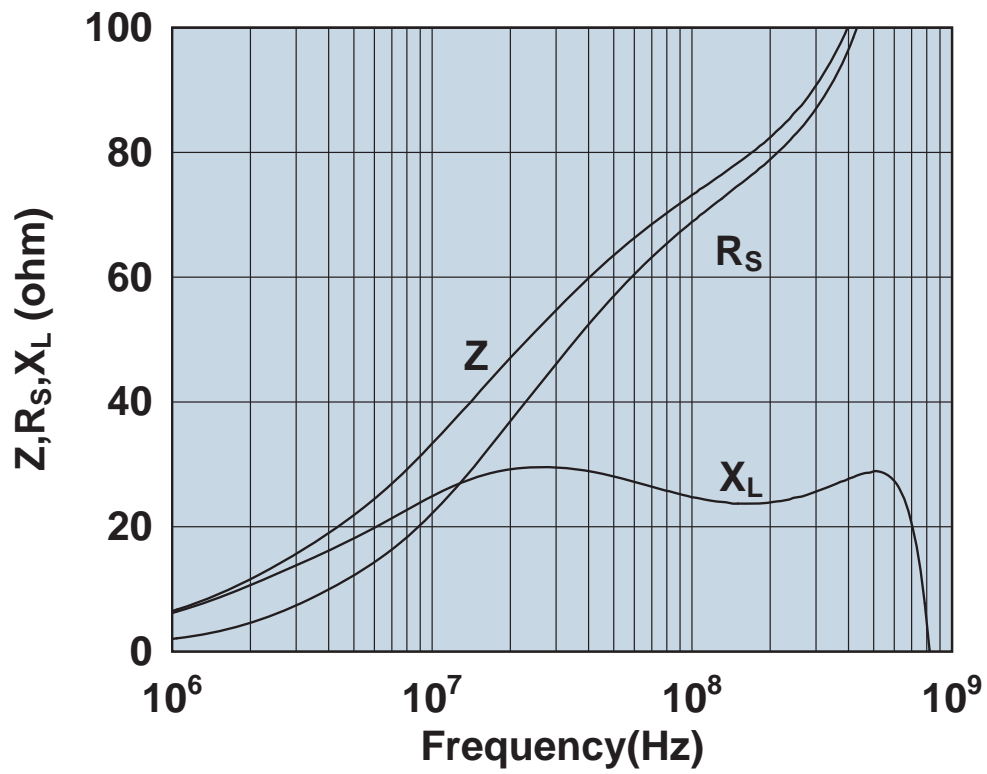
2643021801



Impedance, reactance, and resistance vs. frequency.

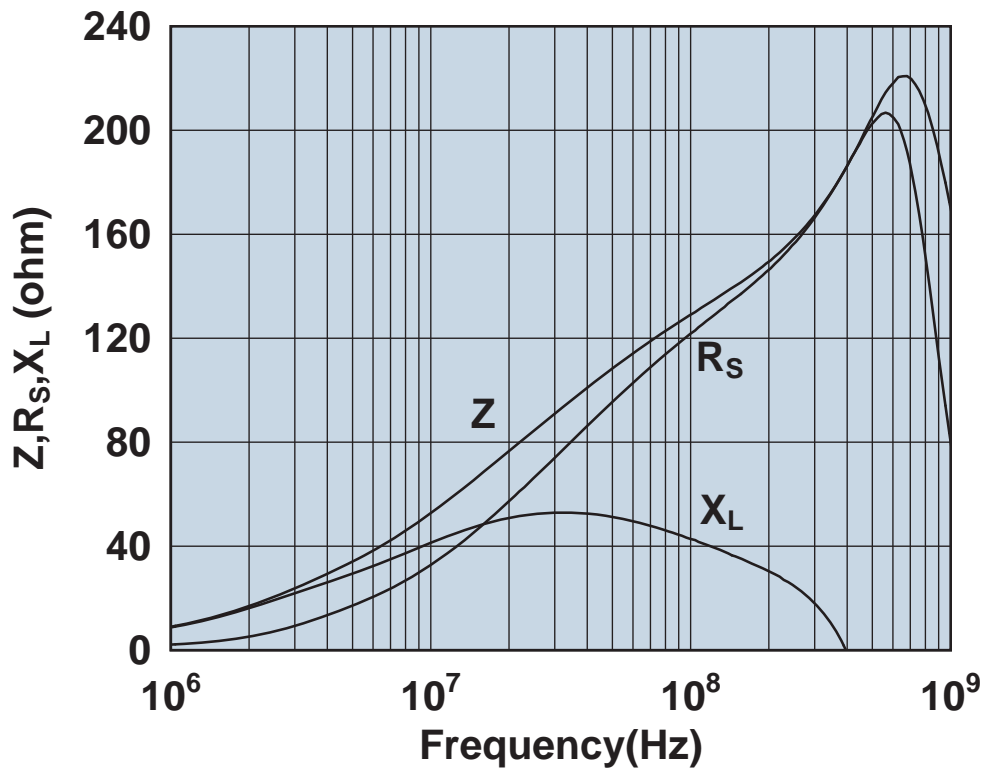


2643022401



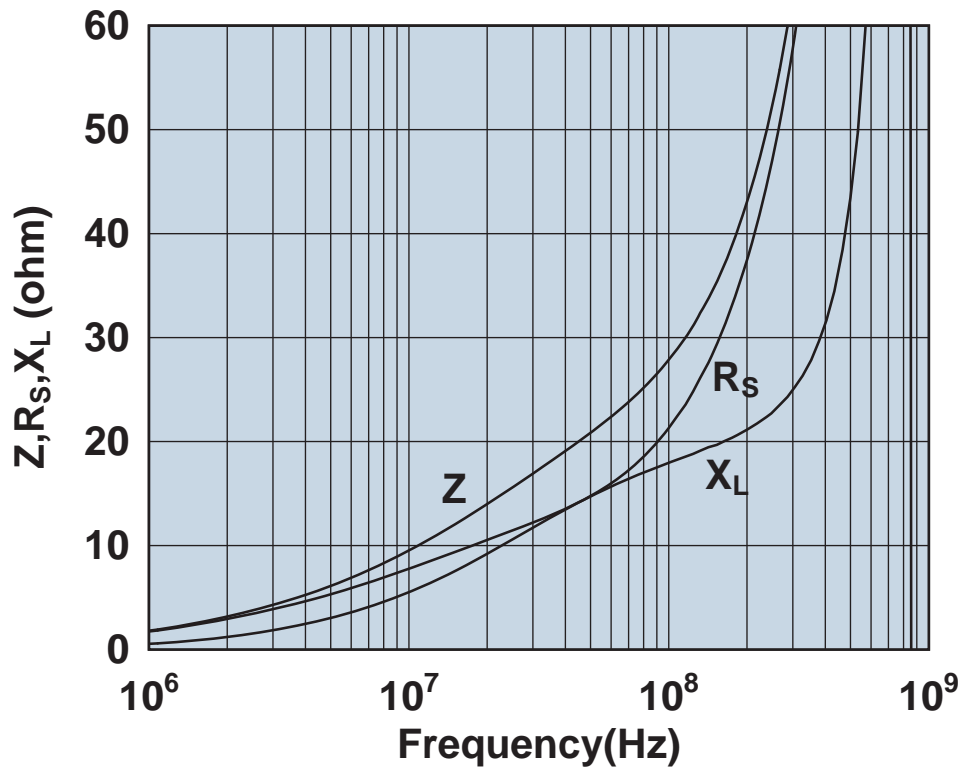
Impedance, reactance, and resistance vs. frequency.

2643023002



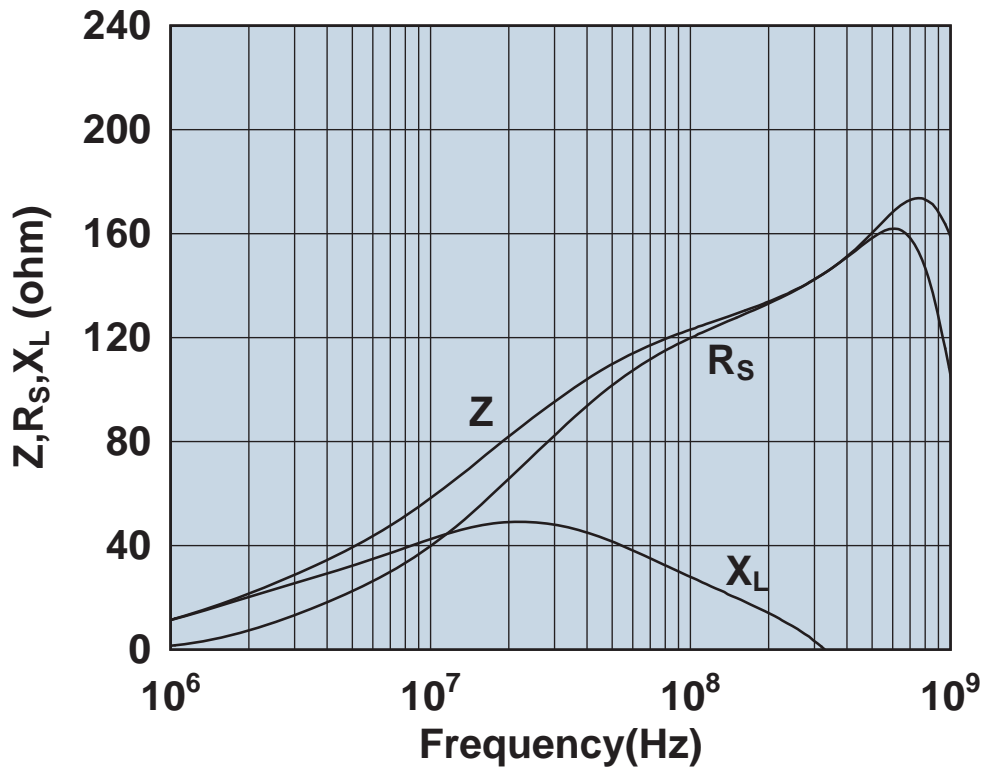
Impedance, reactance, and resistance vs. frequency.

2643023201



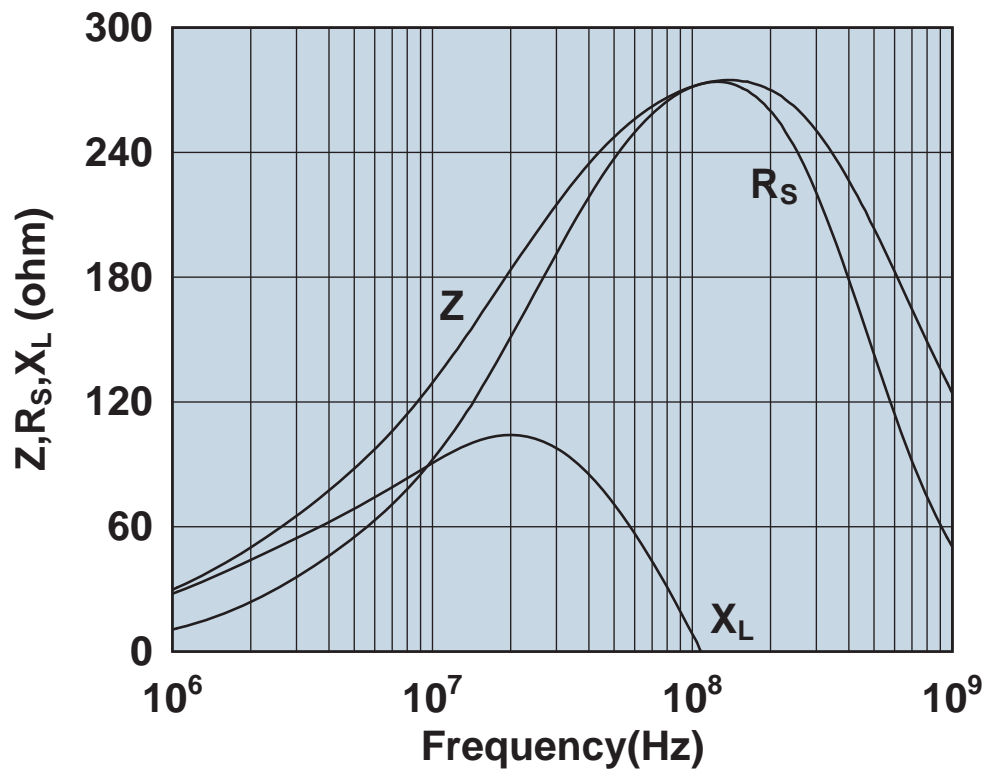
Impedance, reactance, and resistance vs. frequency.

2643023402



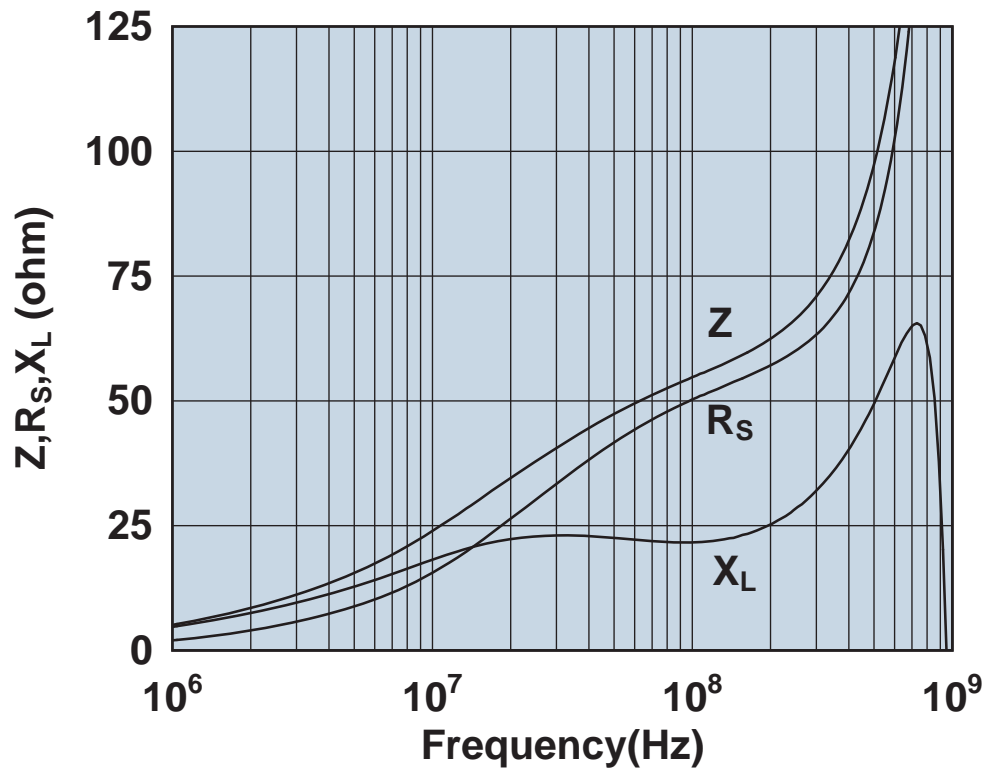
Impedance, reactance, and resistance vs. frequency.

2643023801



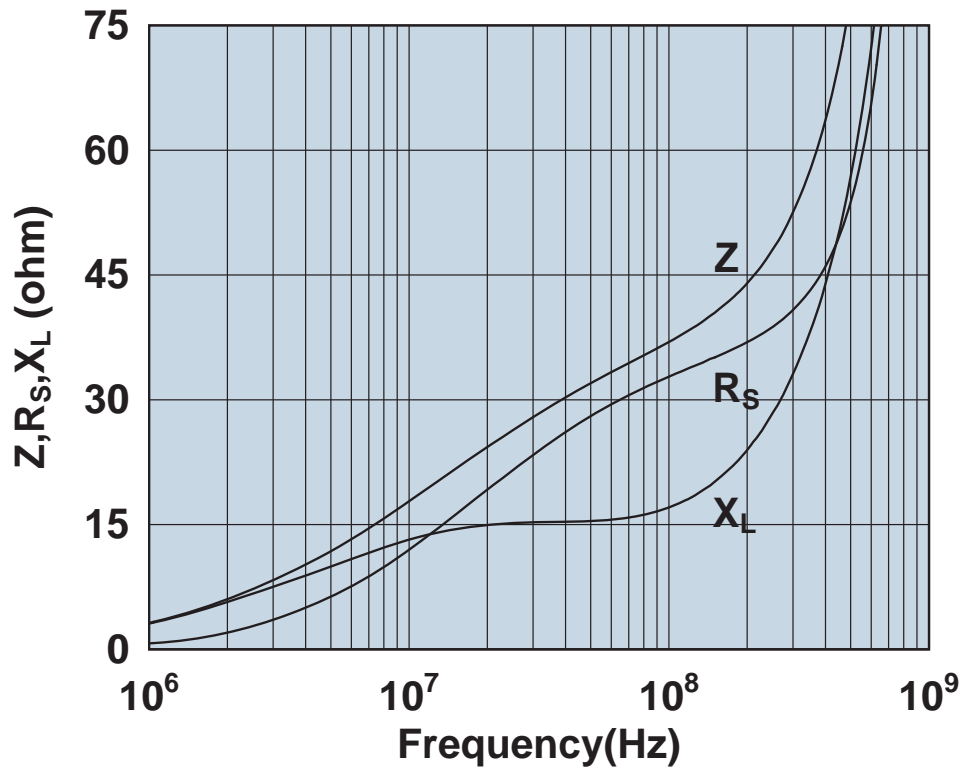
Impedance, reactance, and resistance vs. frequency.

2643025601



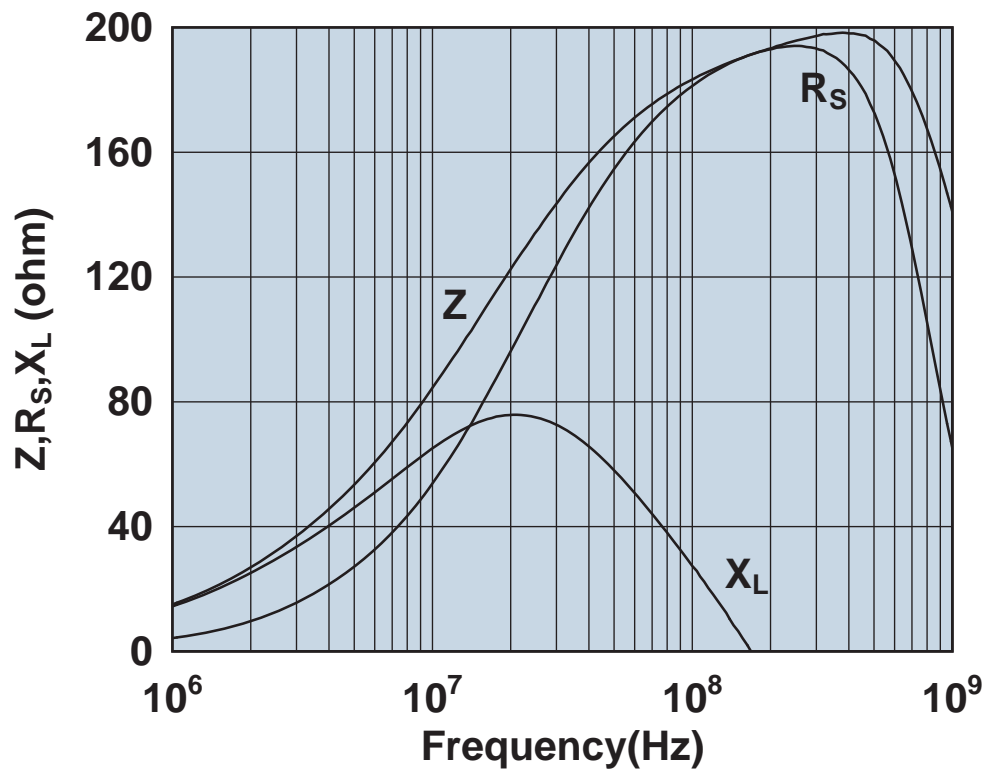
Impedance, reactance, and resistance vs. frequency.

2643200101



Impedance, reactance, and resistance vs. frequency.

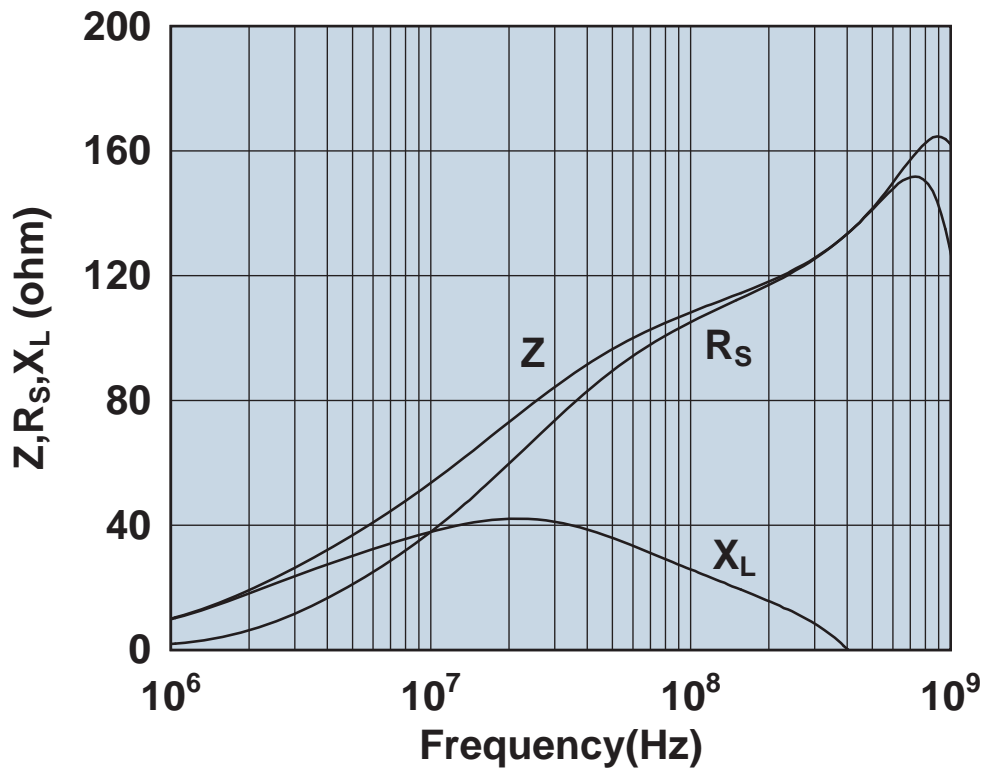
2643250202



Impedance, reactance, and resistance vs. frequency.

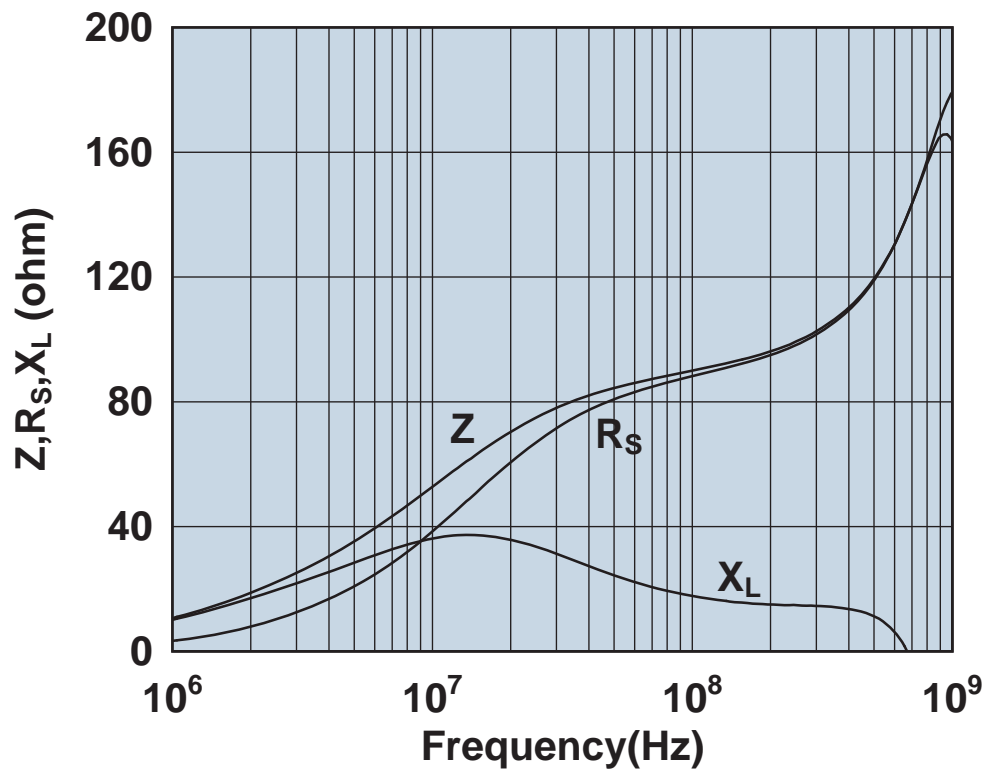


2643250302



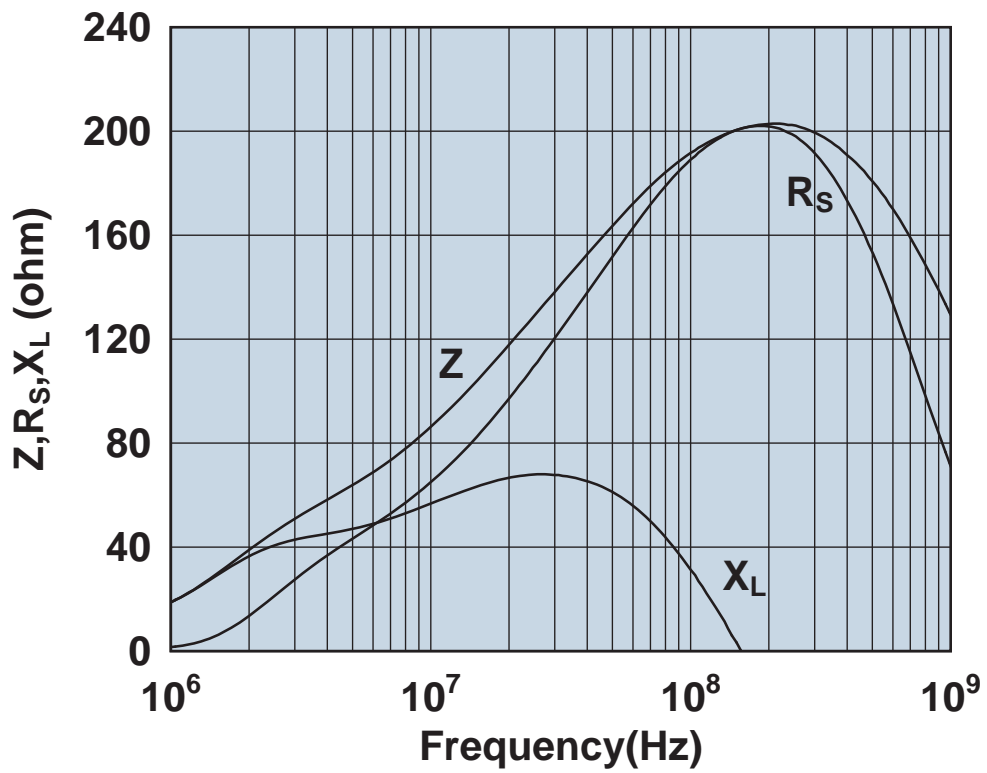
Impedance, reactance, and resistance vs. frequency.

2643250402



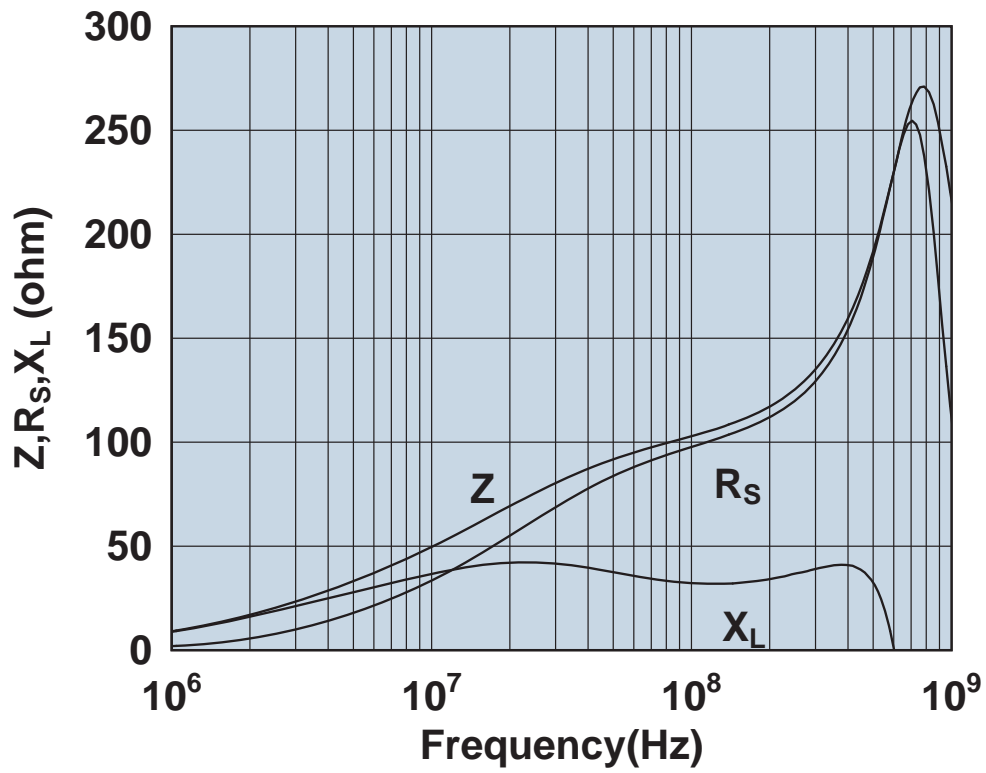
Impedance, reactance, and resistance vs. frequency.

2643300101



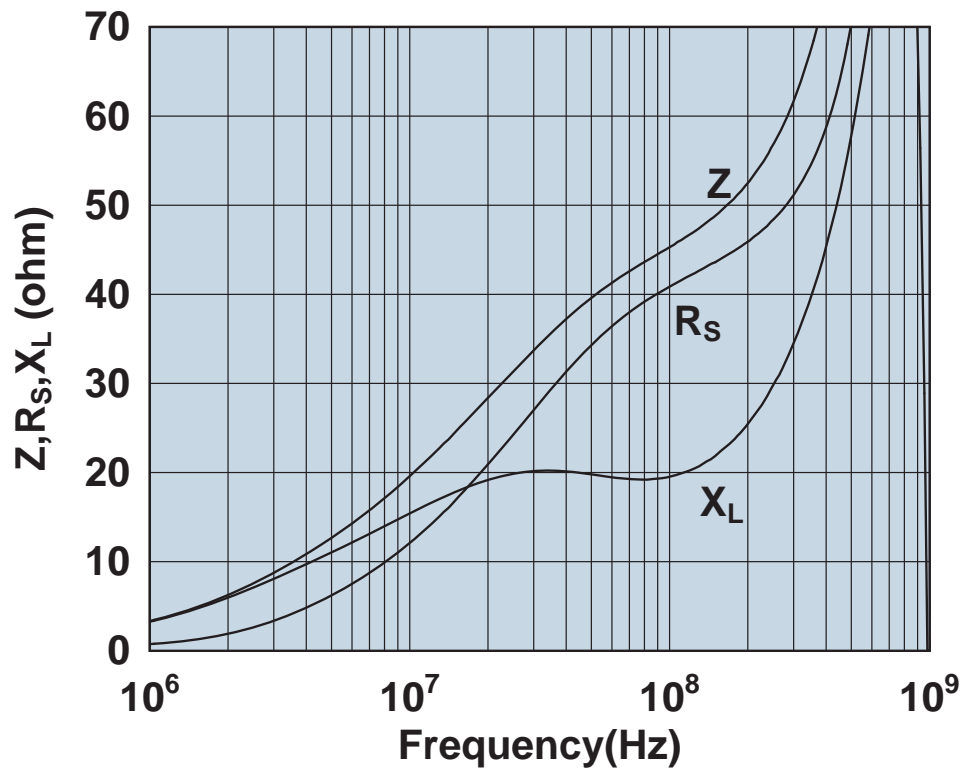
Impedance, reactance, and resistance vs. frequency.

2643375002



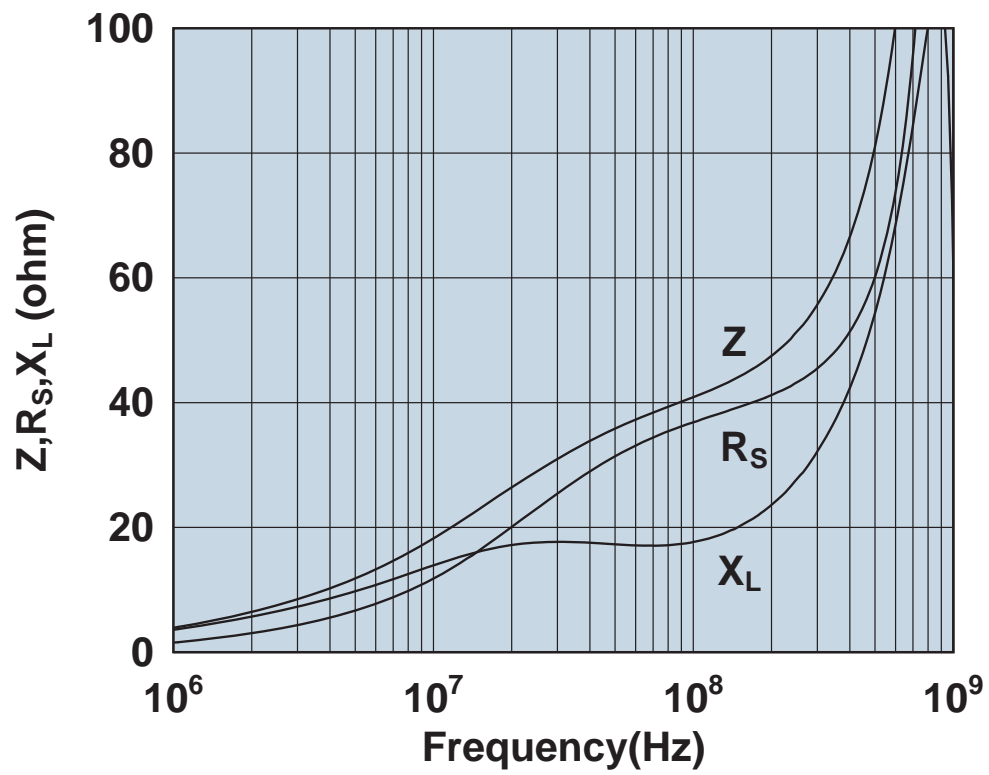
Impedance, reactance, and resistance vs. frequency.

2643375102



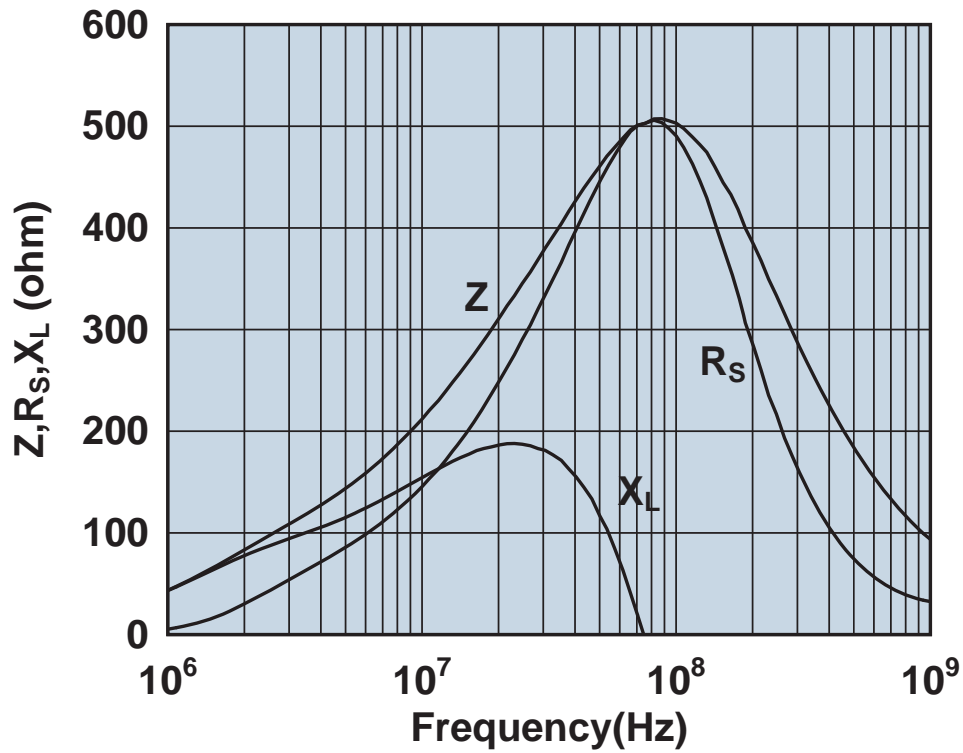
Impedance, reactance, and resistance vs. frequency.

2643706001

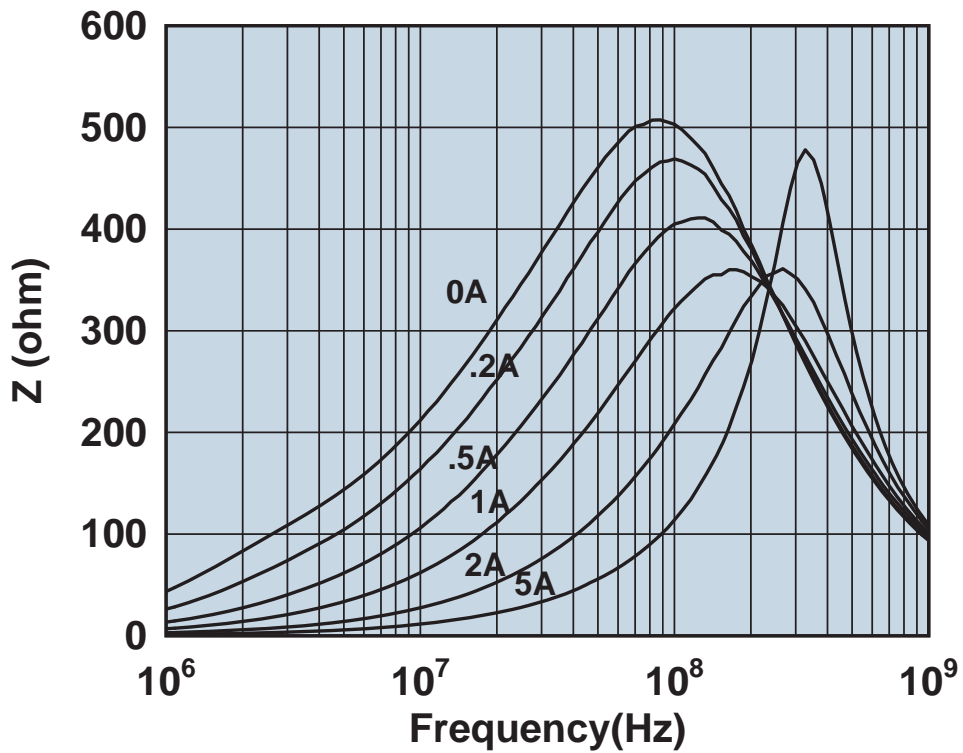


Impedance, reactance, and resistance vs. frequency.

2644666611

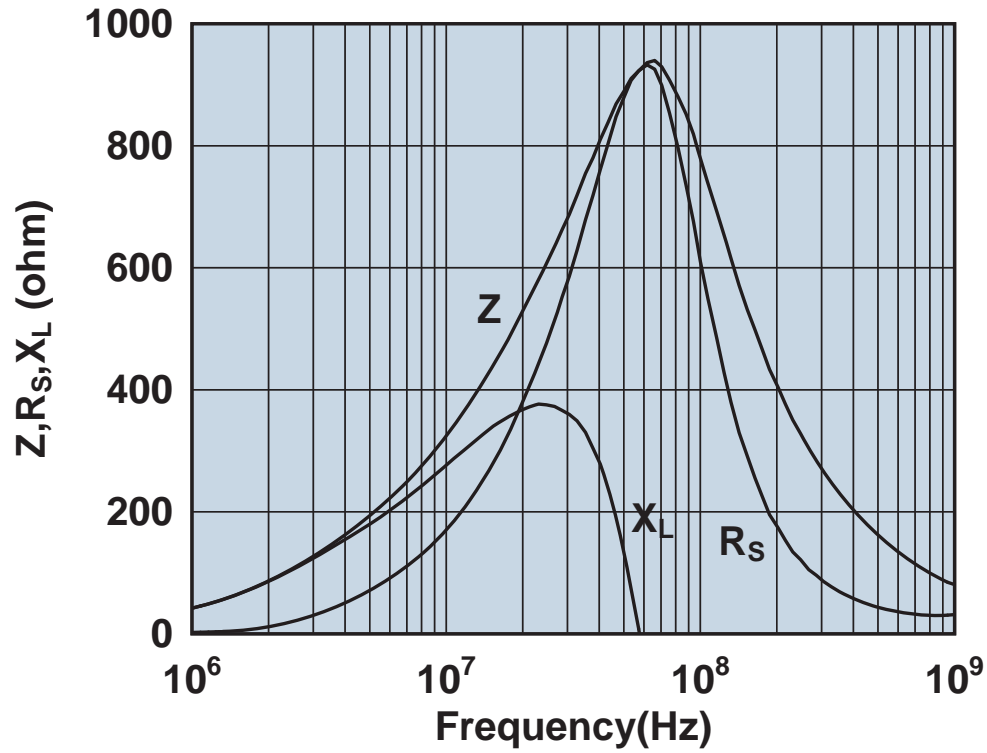


Impedance, reactance, and resistance vs. frequency.

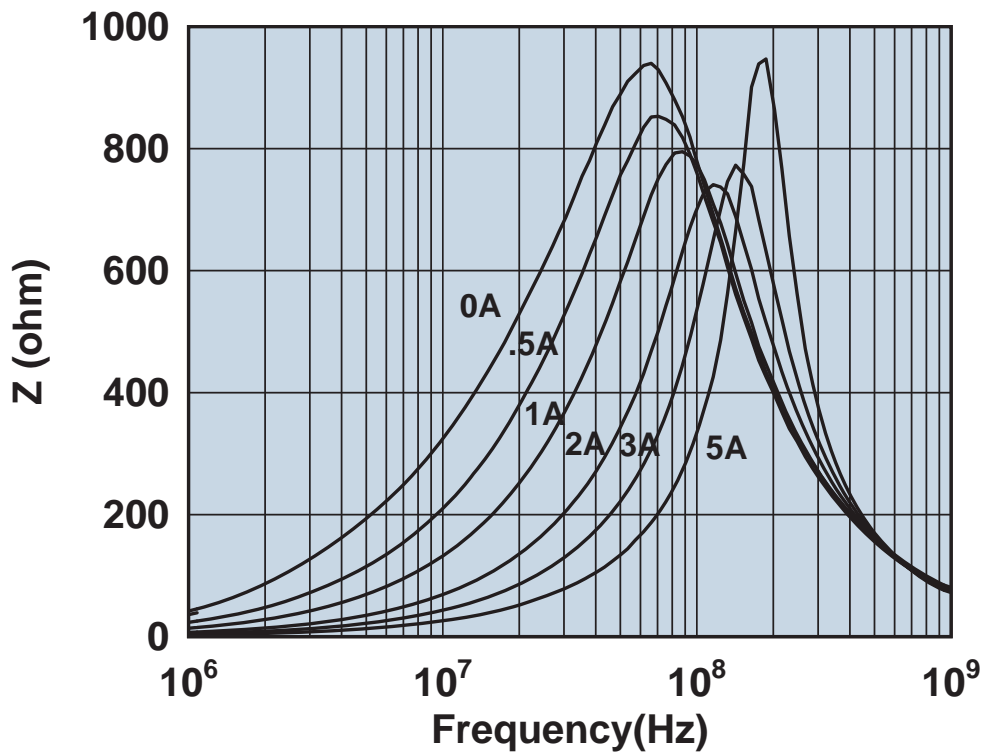


Impedance vs. frequency with dc bias.

2644777711



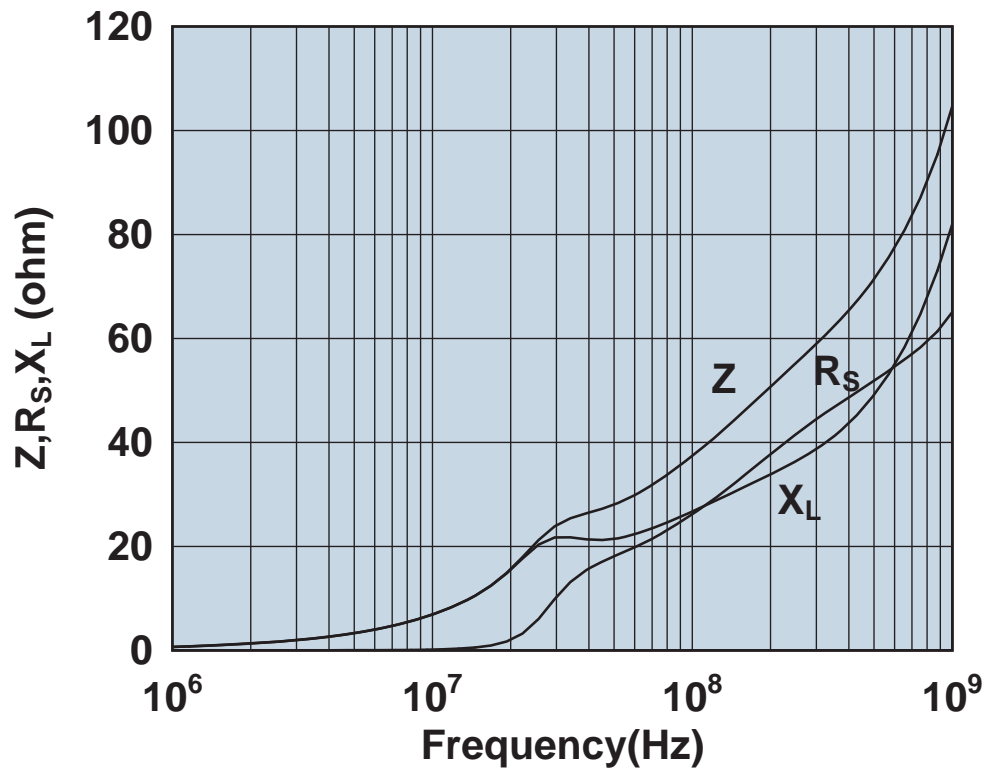
Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with dc bias.

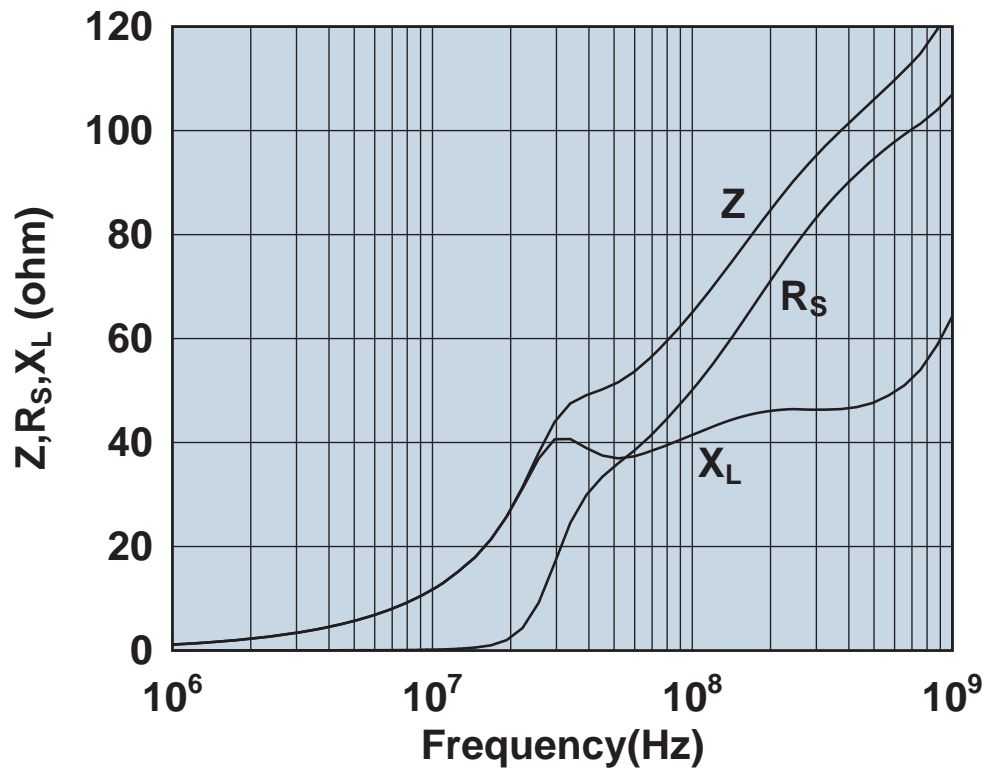


2661000101



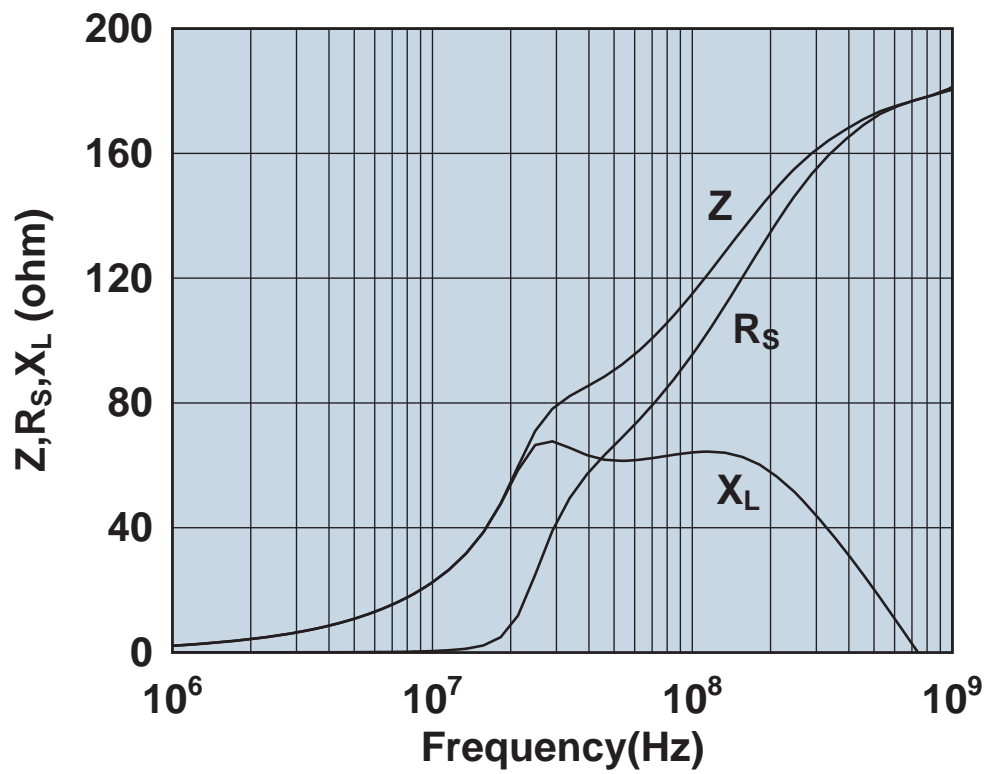
Impedance, reactance, and resistance vs. frequency.

2661000301



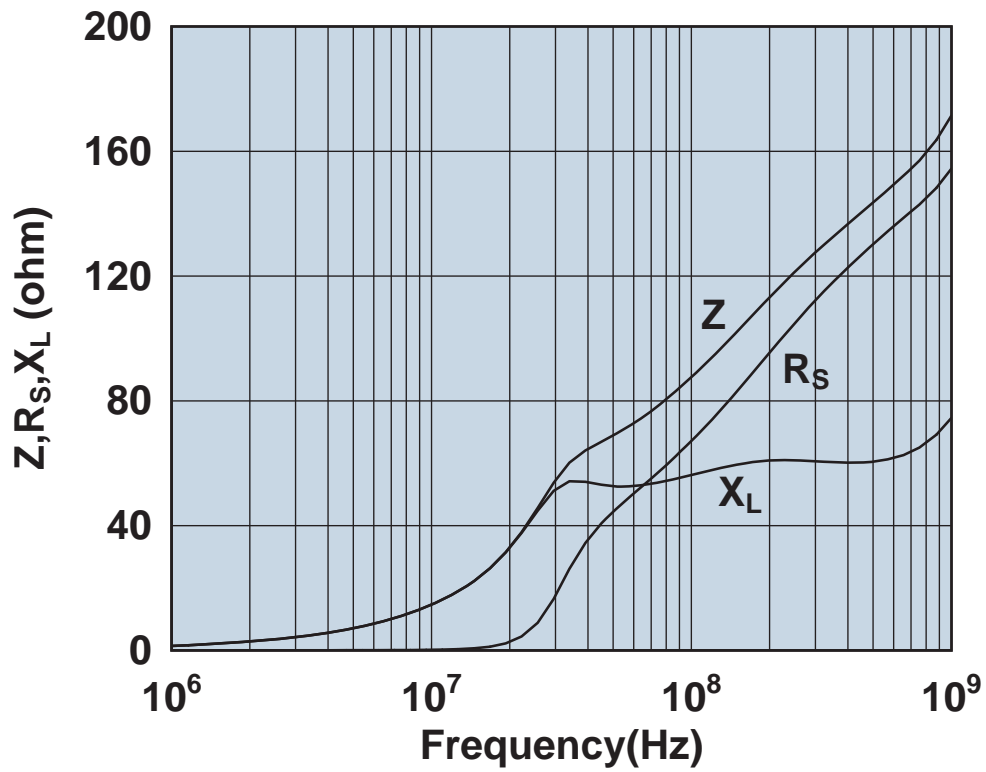
Impedance, reactance, and resistance vs. frequency.

2661000701



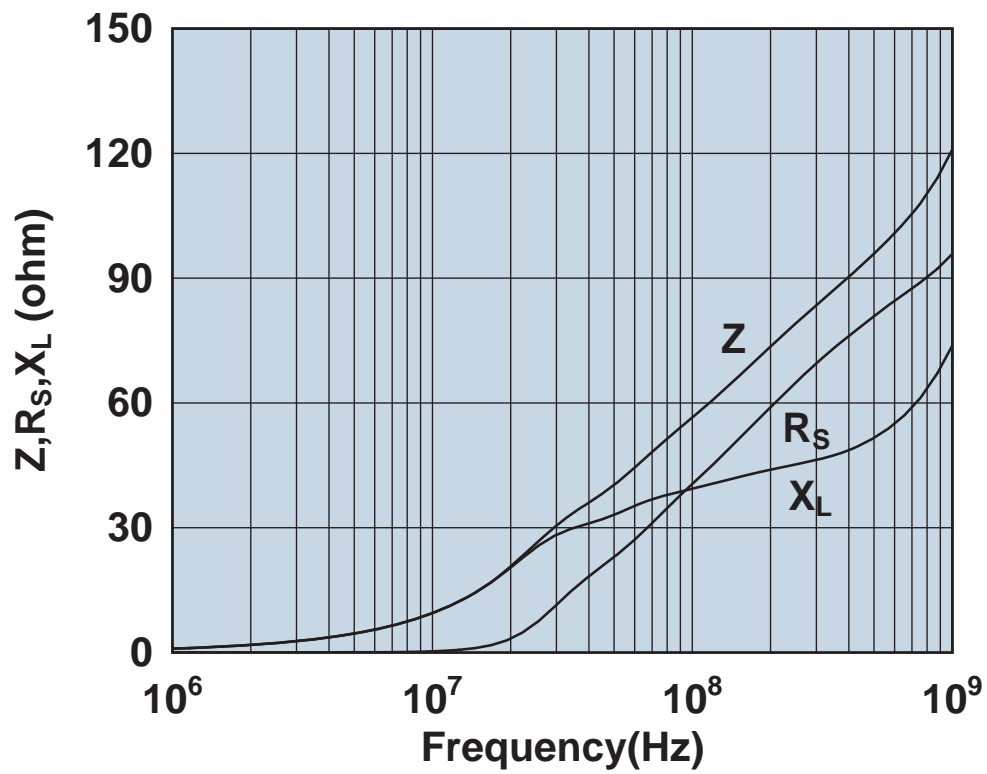
Impedance, reactance, and resistance vs. frequency.

2661000801



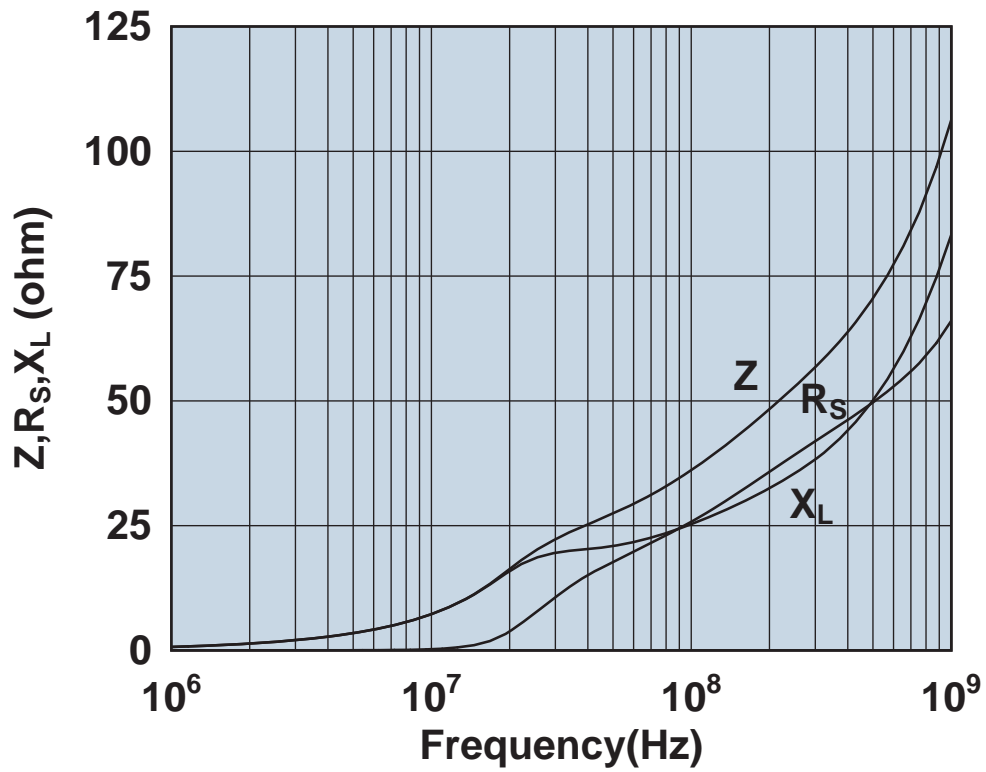
Impedance, reactance, and resistance vs. frequency.

2661002201



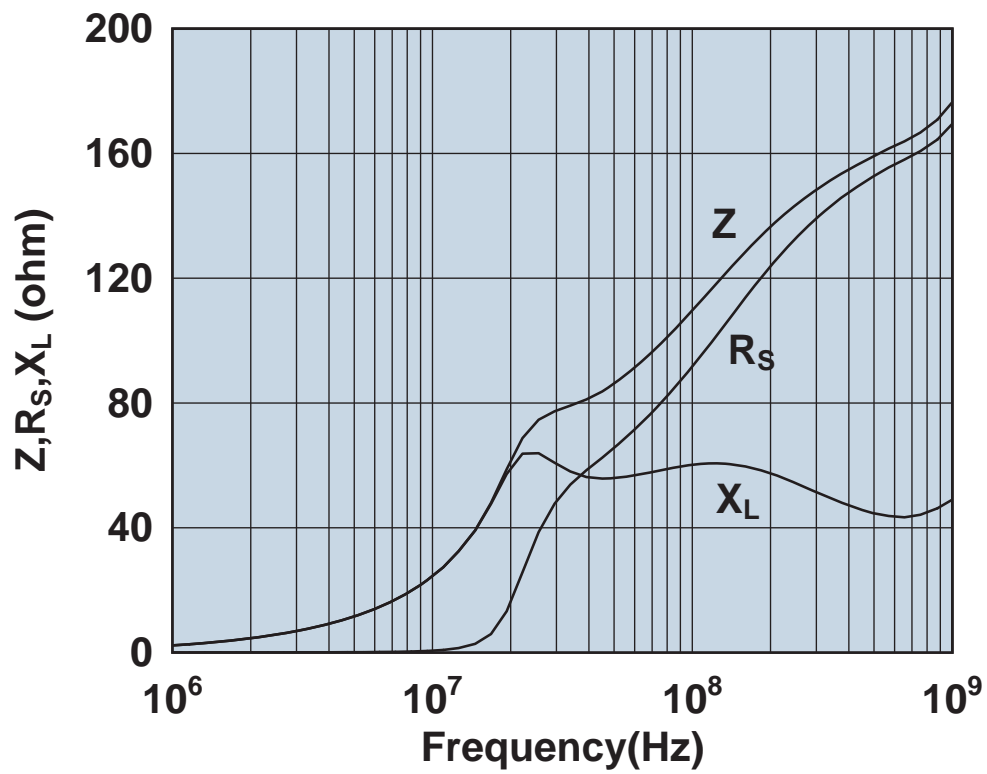
Impedance, reactance, and resistance vs. frequency.

2661002402



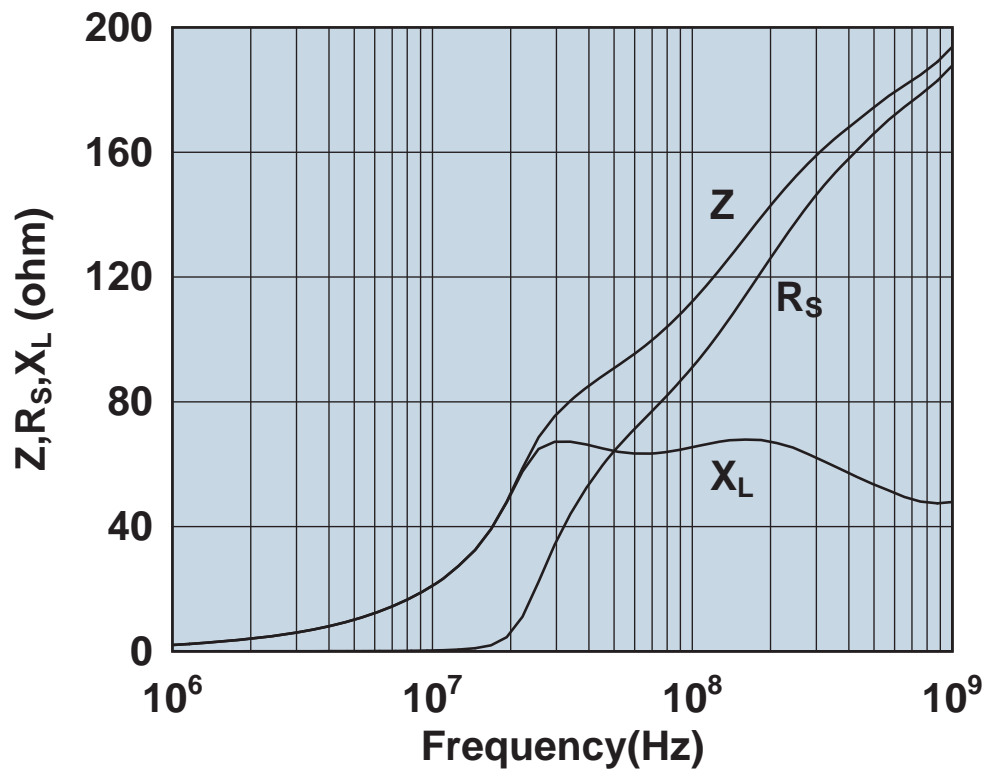
Impedance, reactance, and resistance vs. frequency.

2661005701



Impedance, reactance, and resistance vs. frequency.

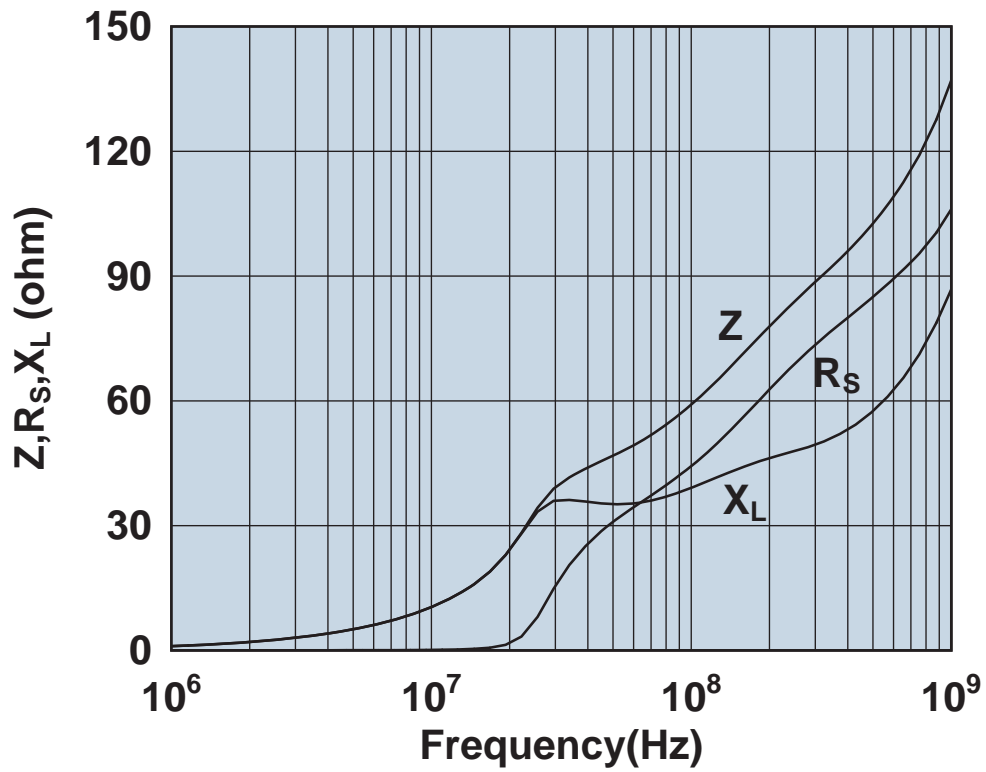
2661021801



Impedance, reactance, and resistance vs. frequency.

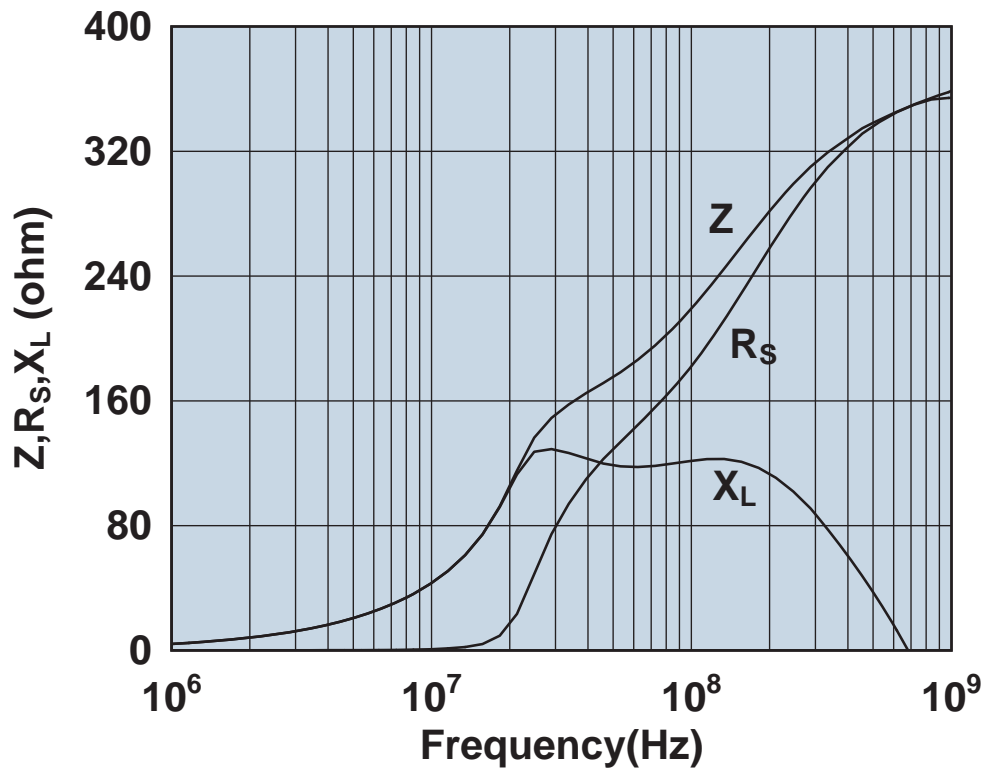


2661022401



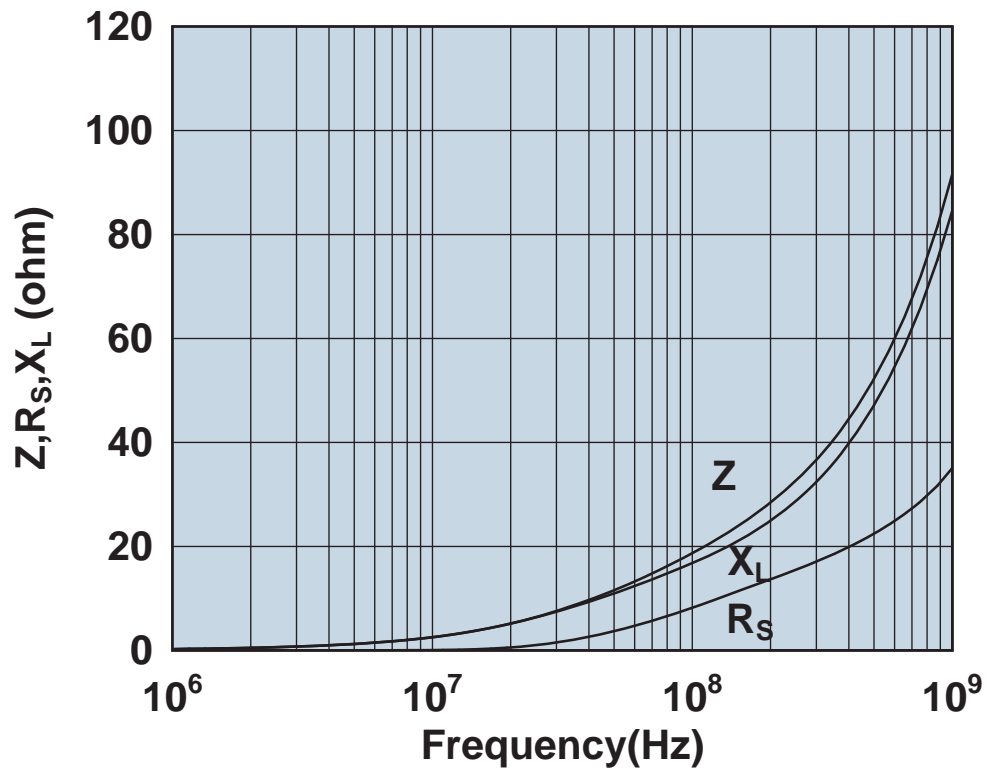
Impedance, reactance, and resistance vs. frequency.

2661023801



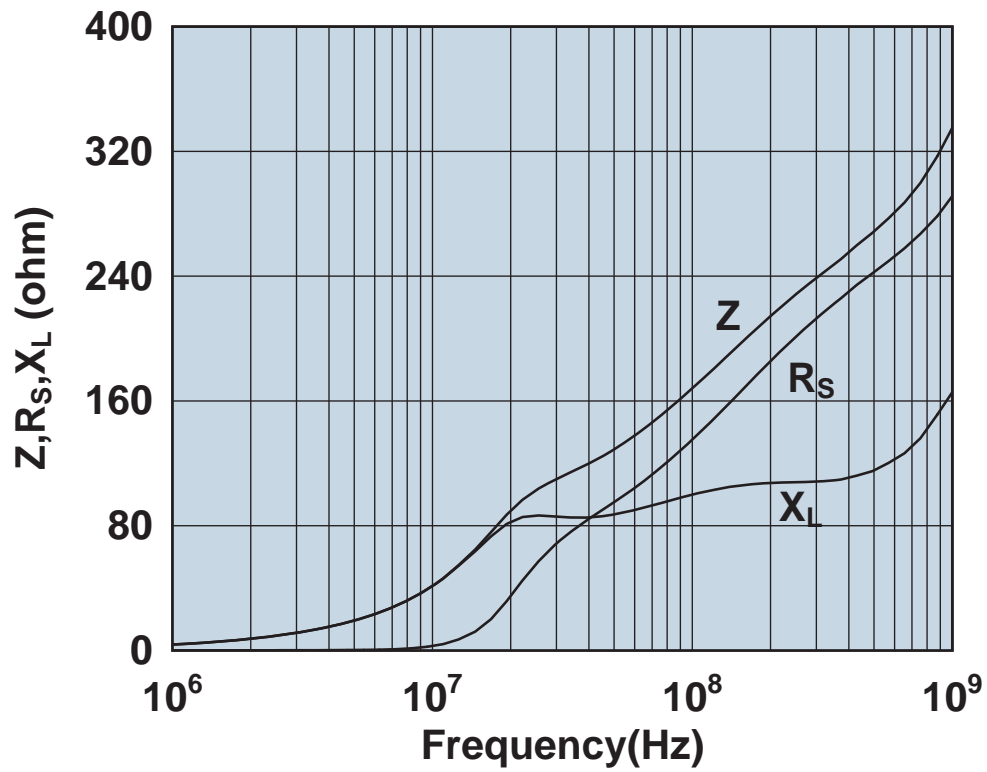
Impedance, reactance, and resistance vs. frequency.

2661030101



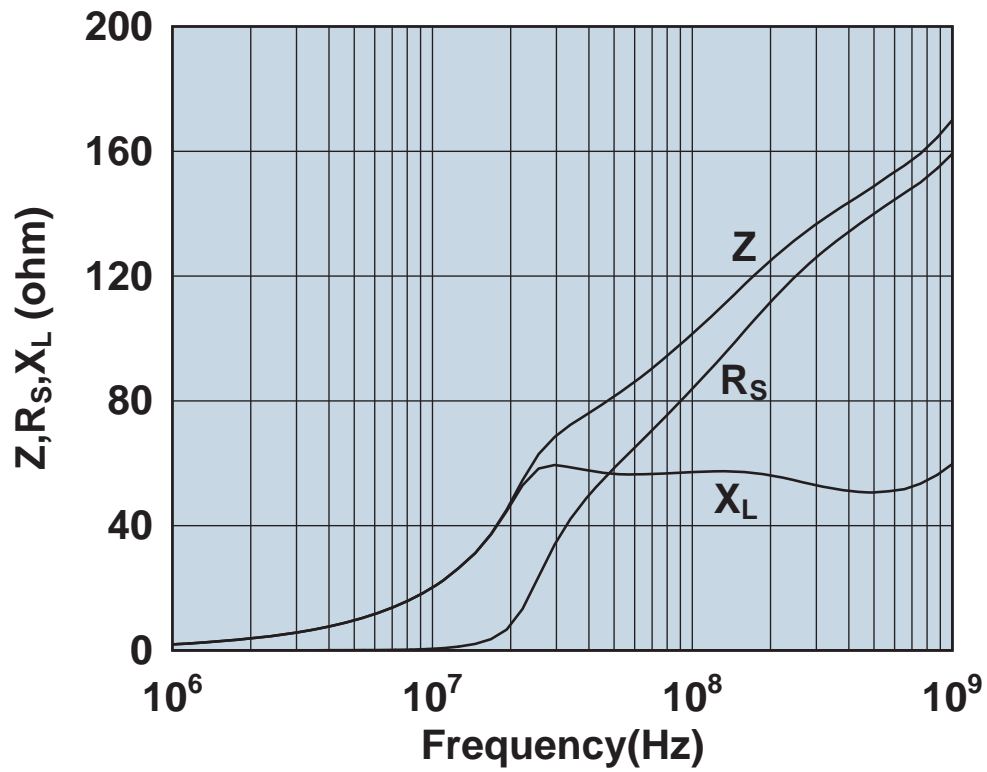
Impedance, reactance, and resistance vs. frequency.

2661250202



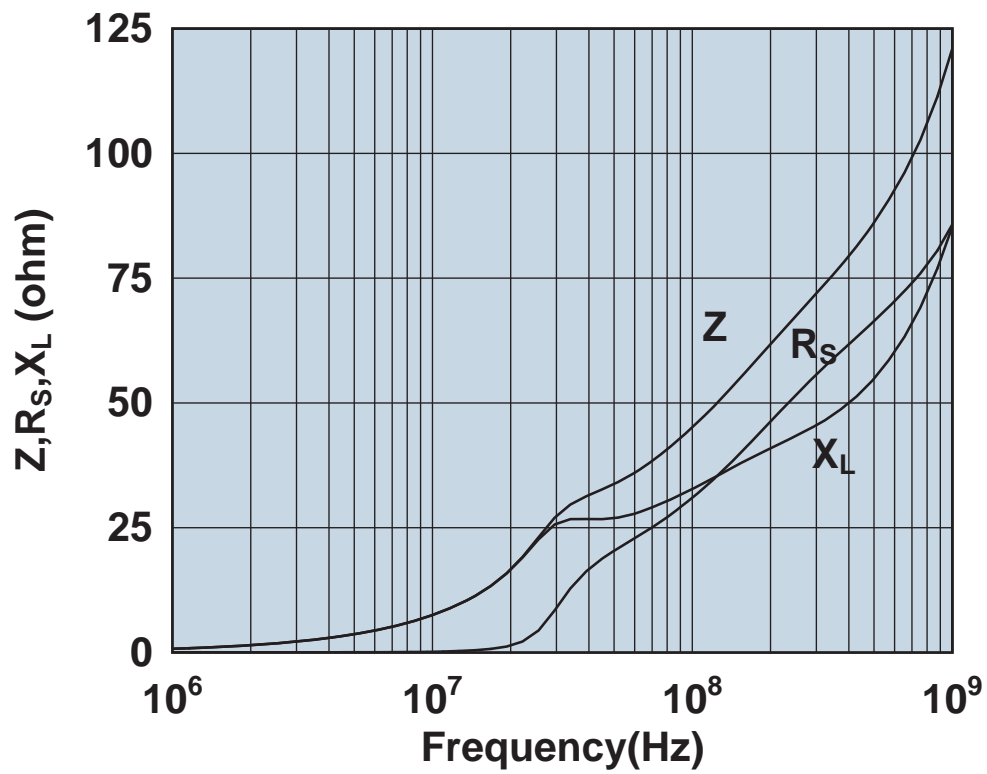
Impedance, reactance, and resistance vs. frequency.

2661250402



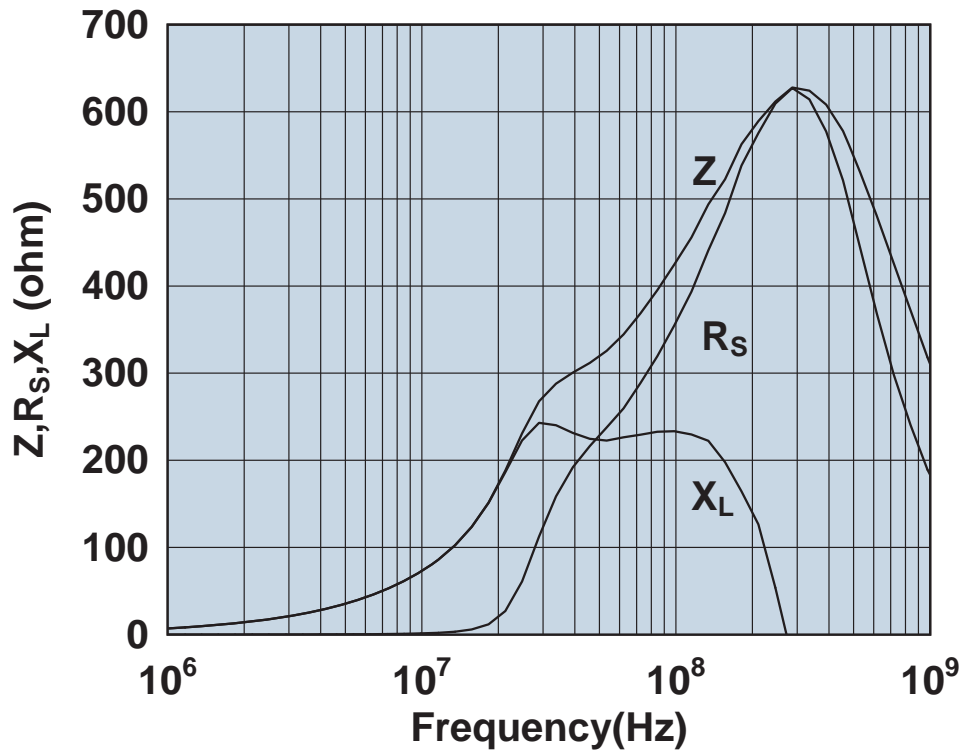
Impedance, reactance, and resistance vs. frequency.

2661375102

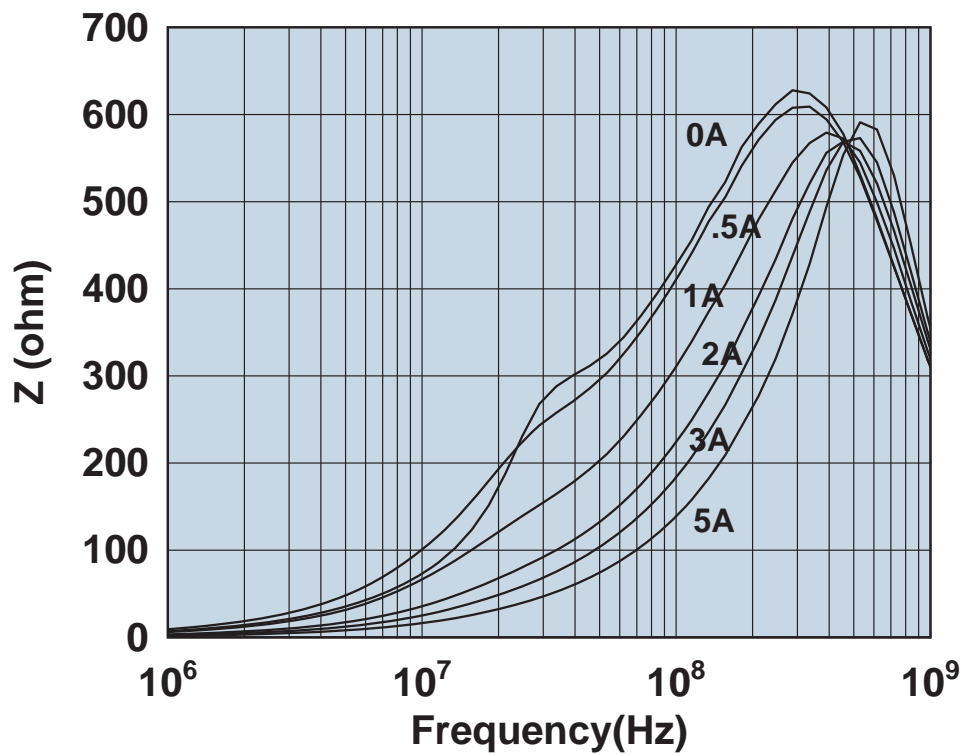


Impedance, reactance, and resistance vs. frequency.

2661666611

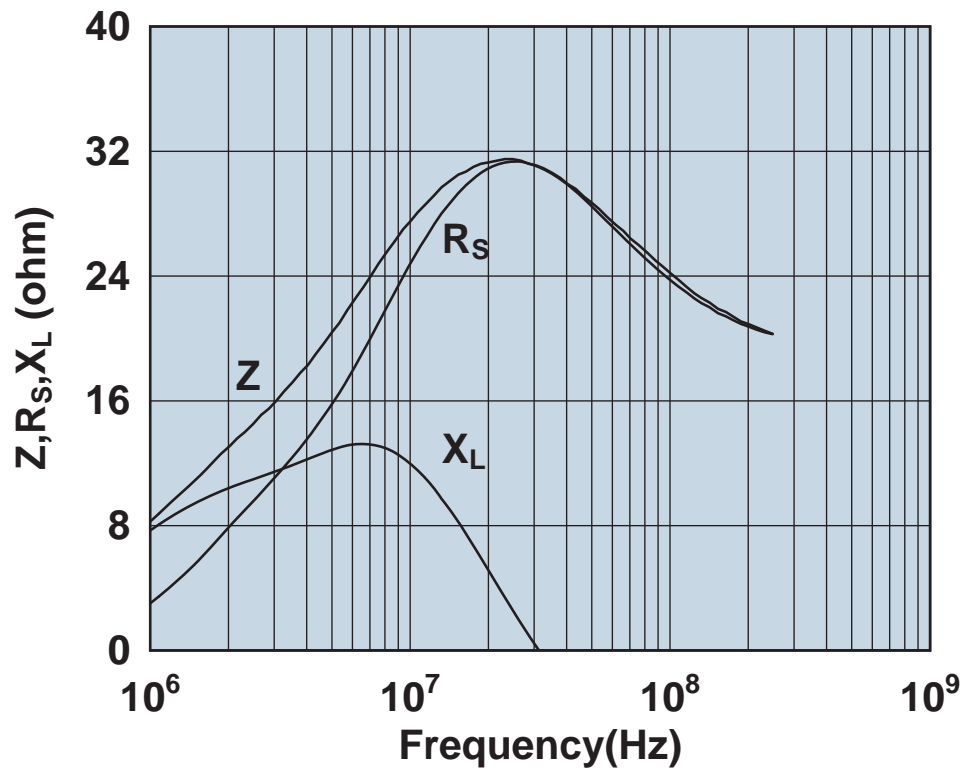


Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with dc bias.

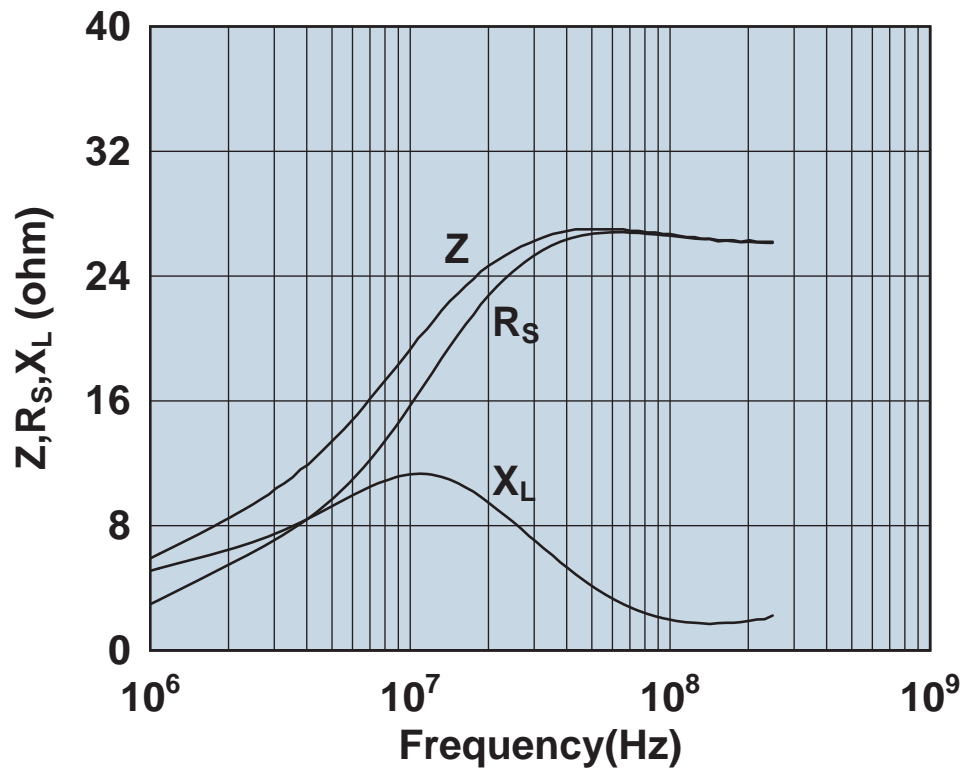
2673000101



Impedance, reactance, and resistance vs. frequency.

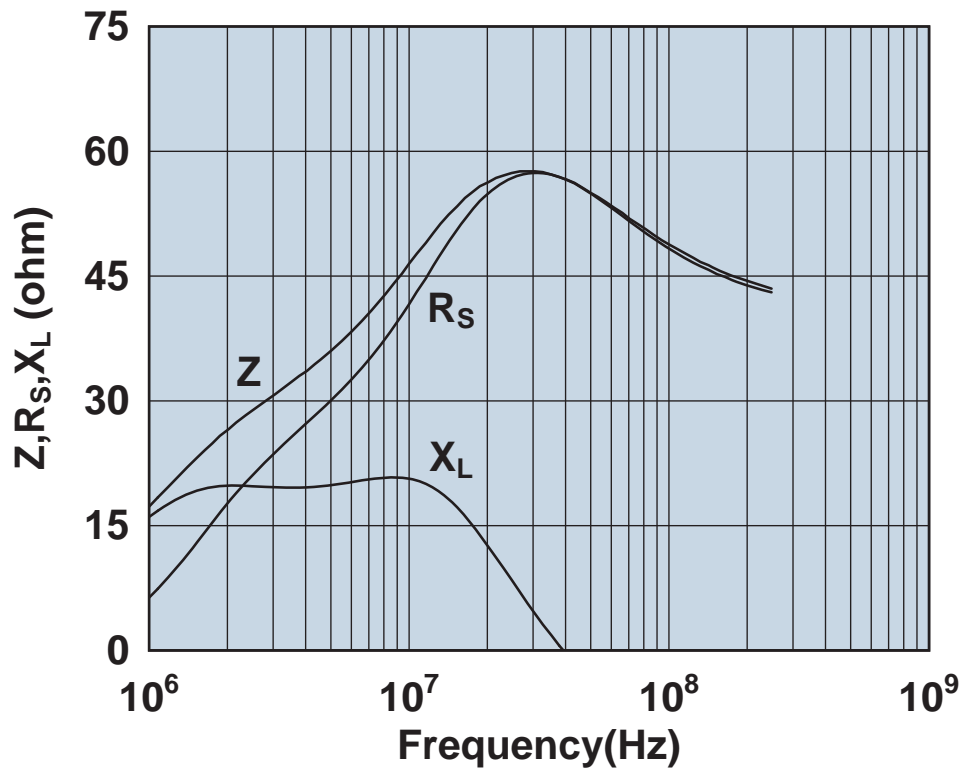


2673000201



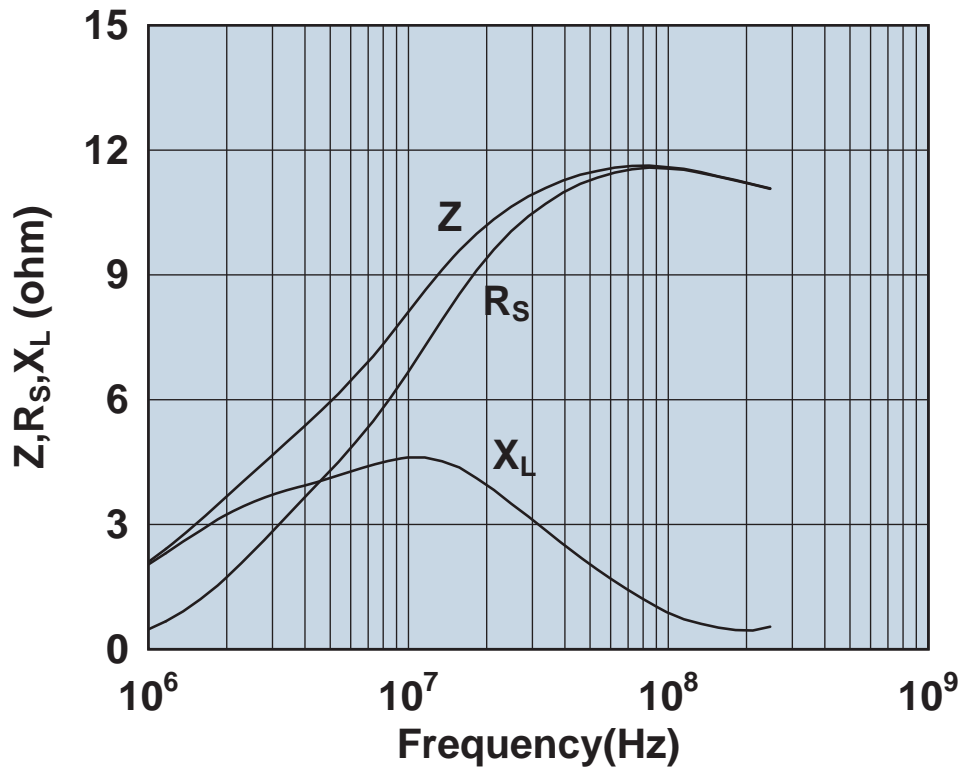
Impedance, reactance, and resistance vs. frequency.

2673000301



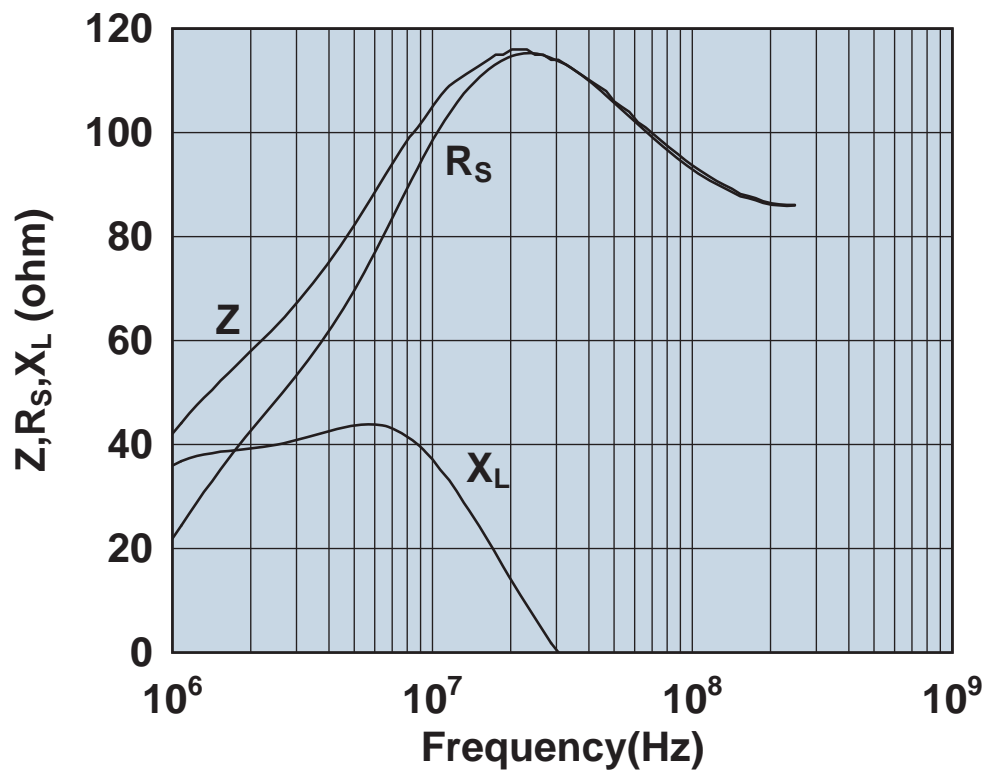
Impedance, reactance, and resistance vs. frequency.

2673000501



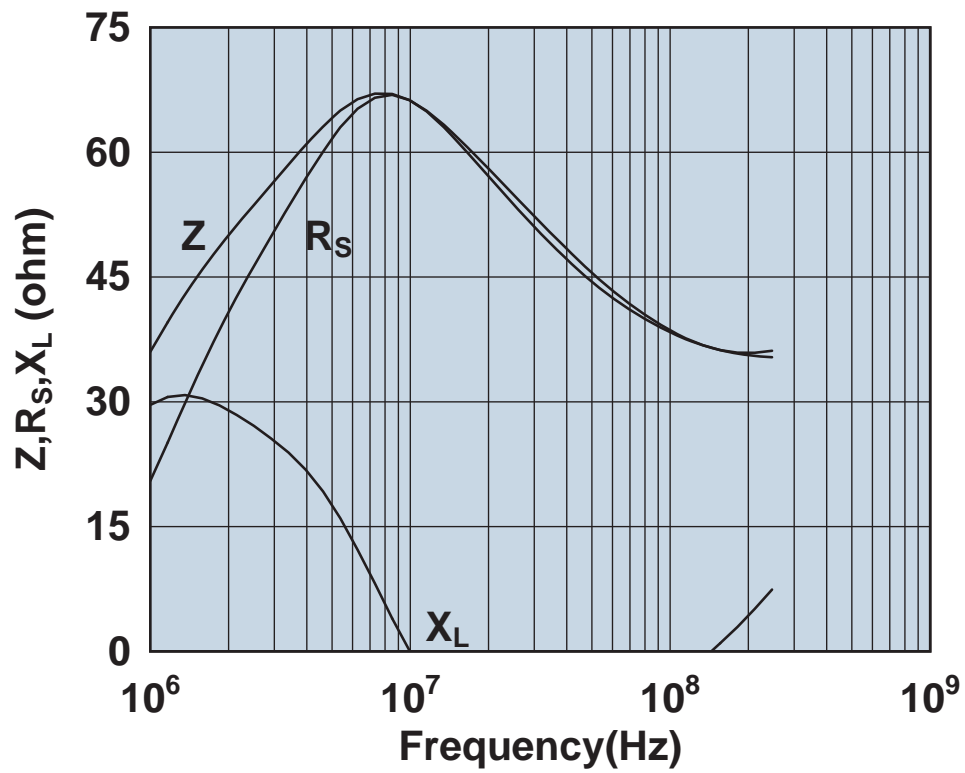
Impedance, reactance, and resistance vs. frequency.

2673000701



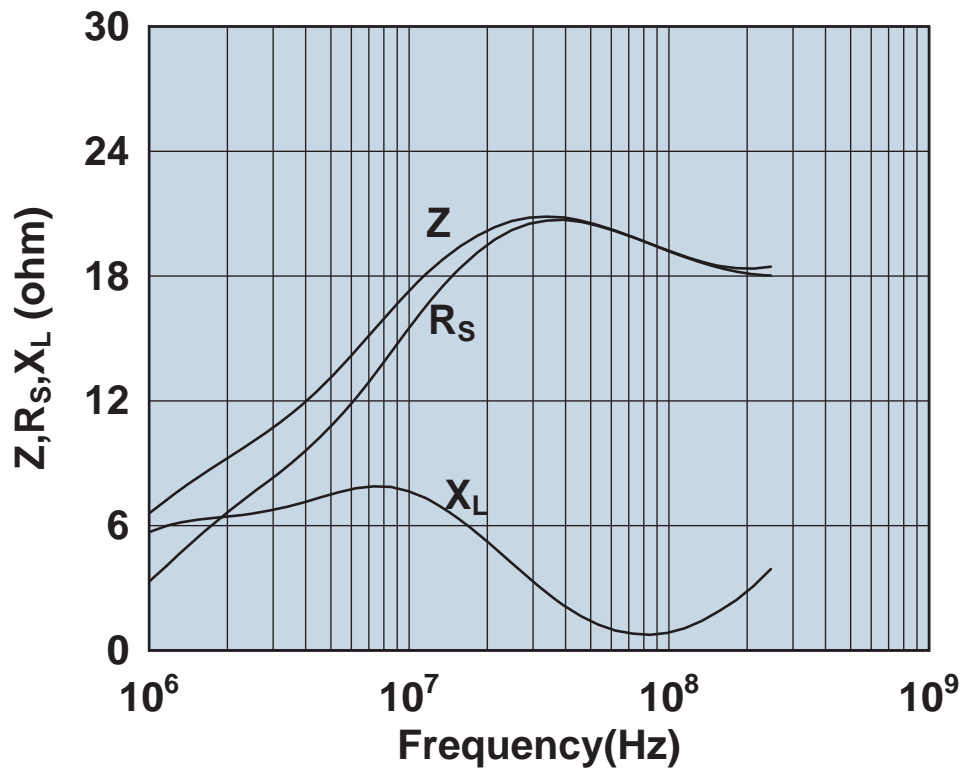
Impedance, reactance, and resistance vs. frequency.

2673000801



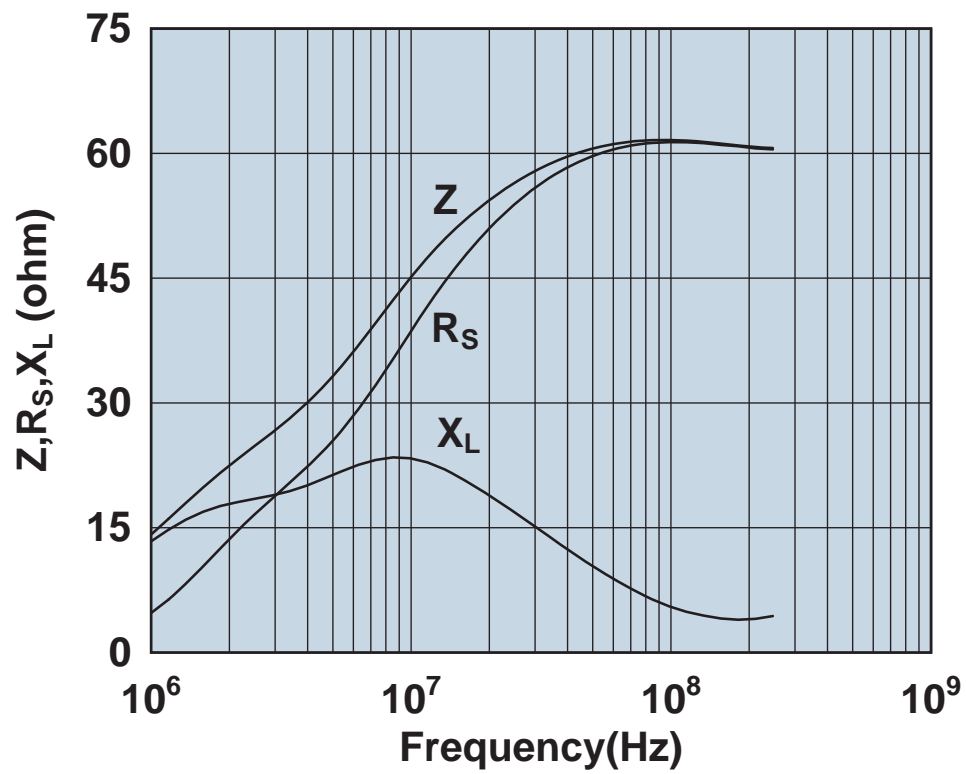
Impedance, reactance, and resistance vs. frequency.

2673001601



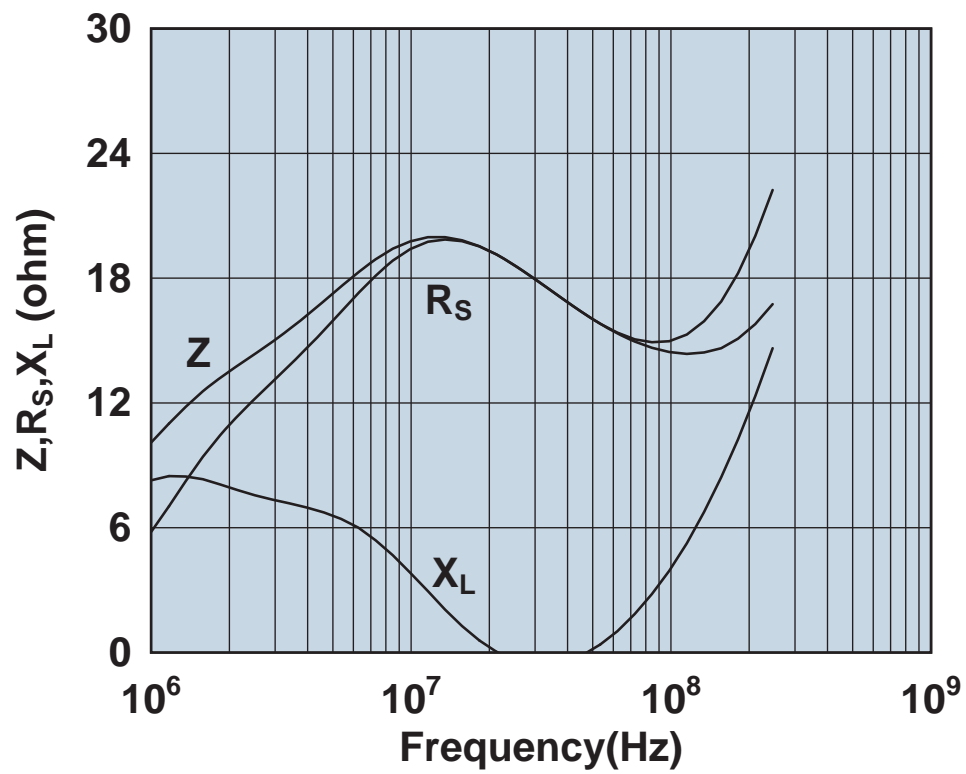
Impedance, reactance, and resistance vs. frequency.

2673002201



Impedance, reactance, and resistance vs. frequency.

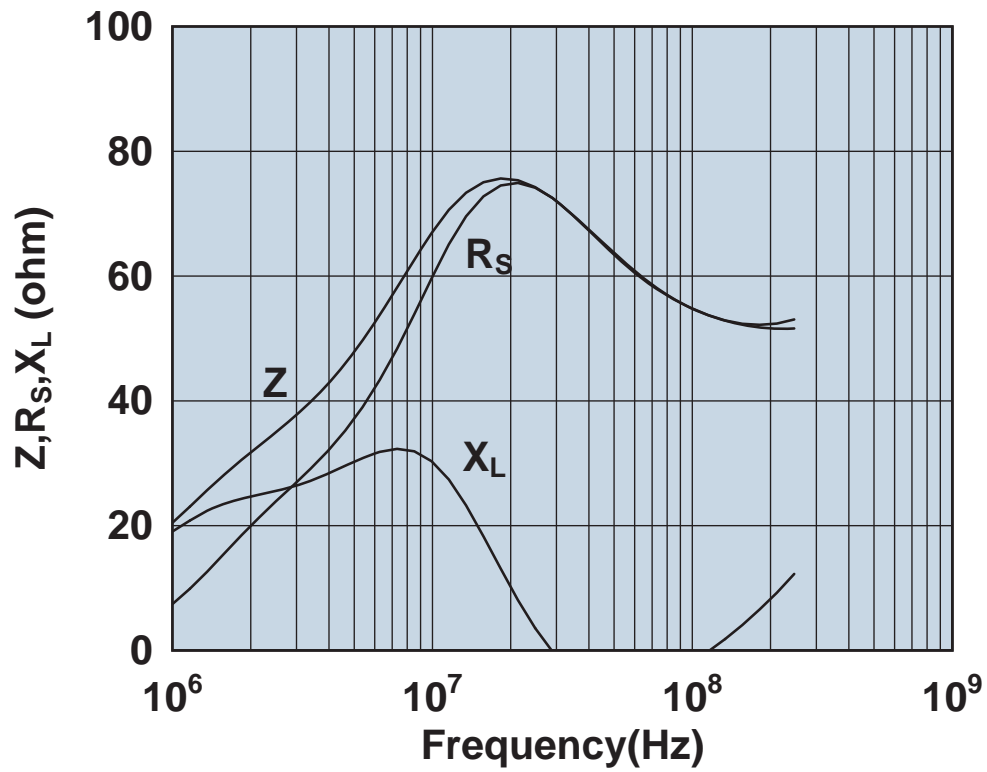
2673002402



Impedance, reactance, and resistance vs. frequency.

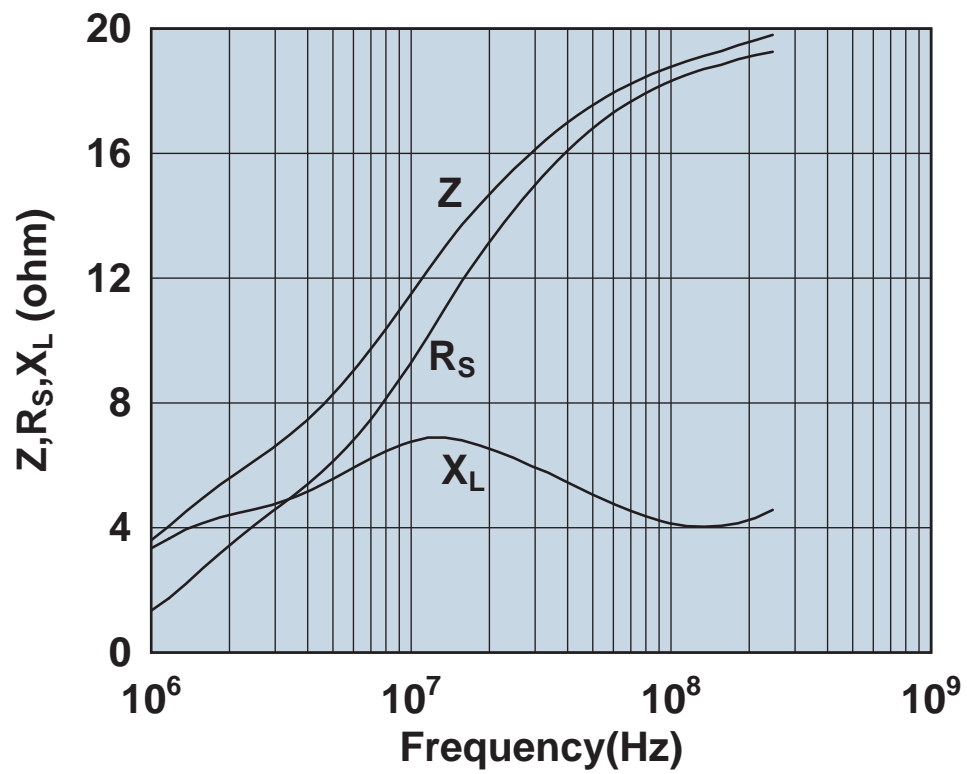


2673003201



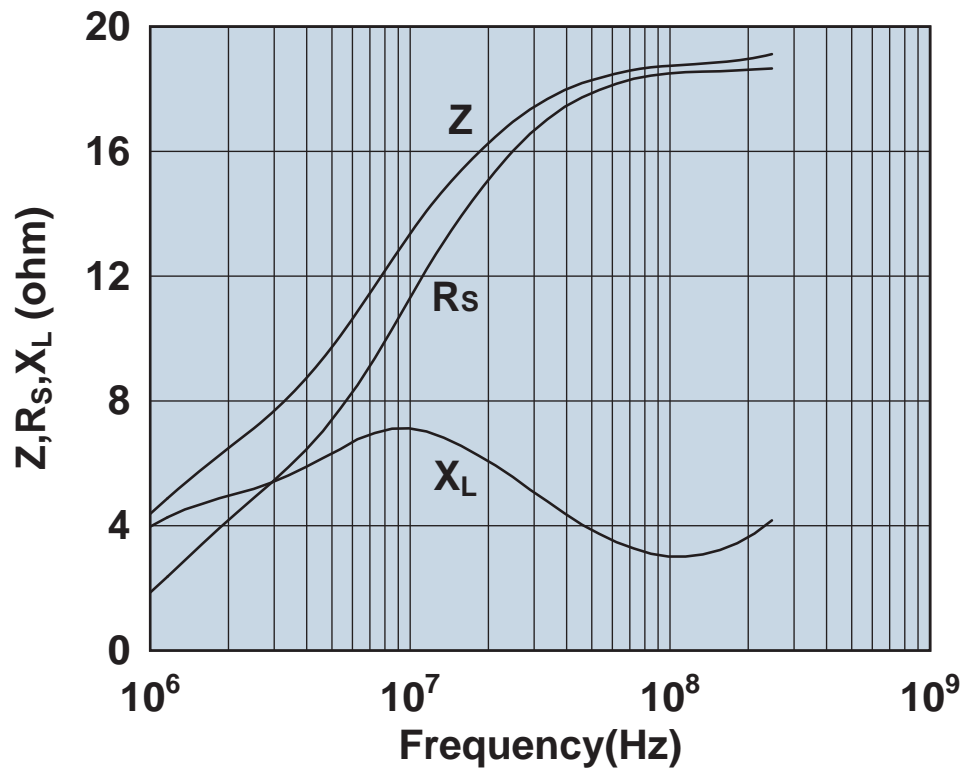
Impedance, reactance, and resistance vs. frequency.

2673004601



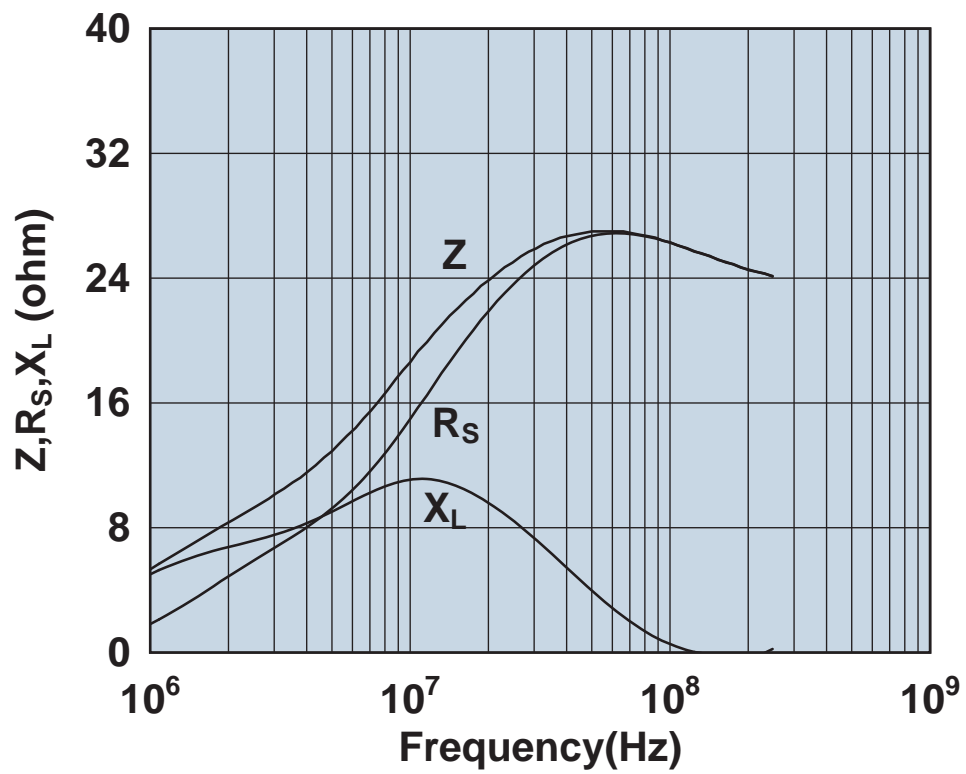
Impedance, reactance, and resistance vs. frequency.

2673004701



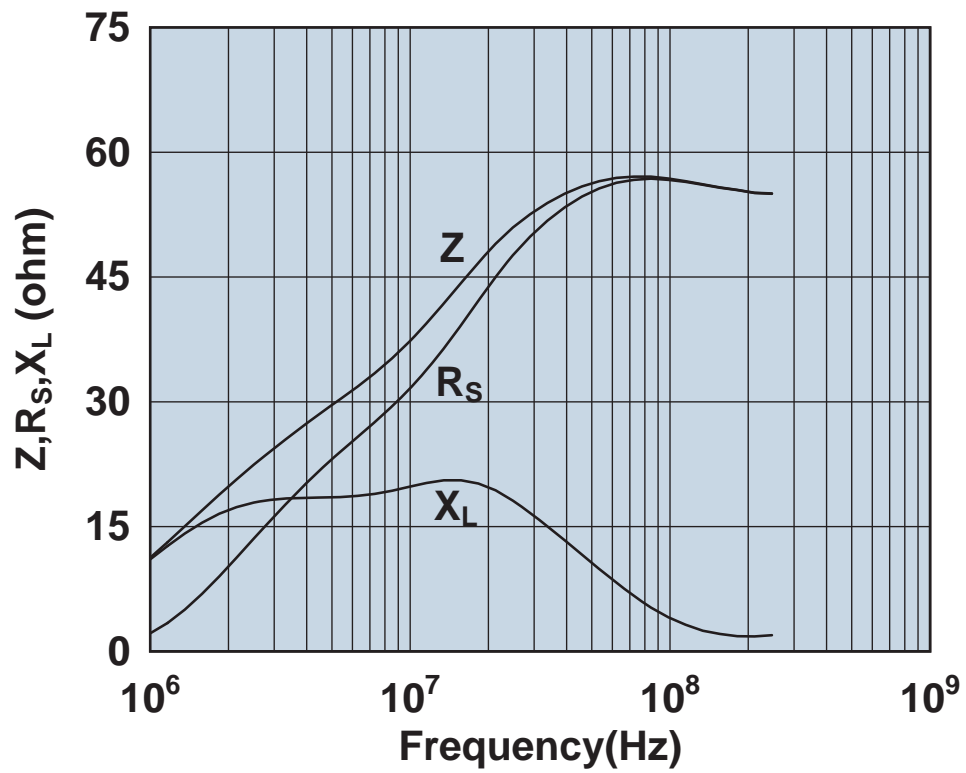
Impedance, reactance, and resistance vs. frequency.

2673004801



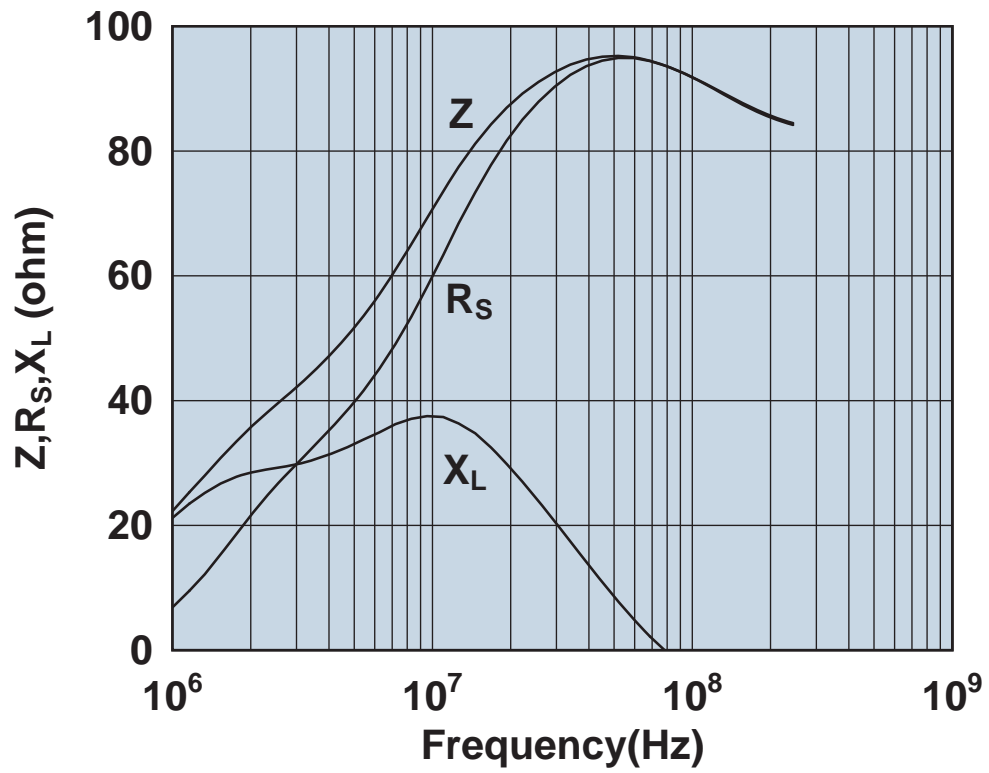
Impedance, reactance, and resistance vs. frequency.

2673004901



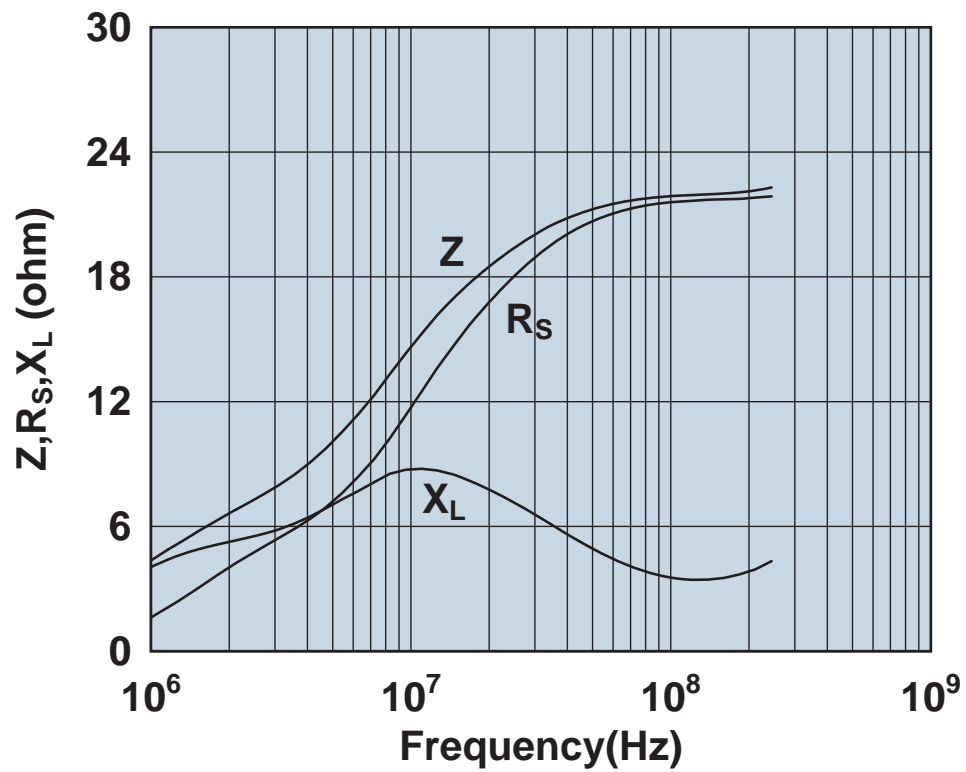
Impedance, reactance, and resistance vs. frequency.

2673010101



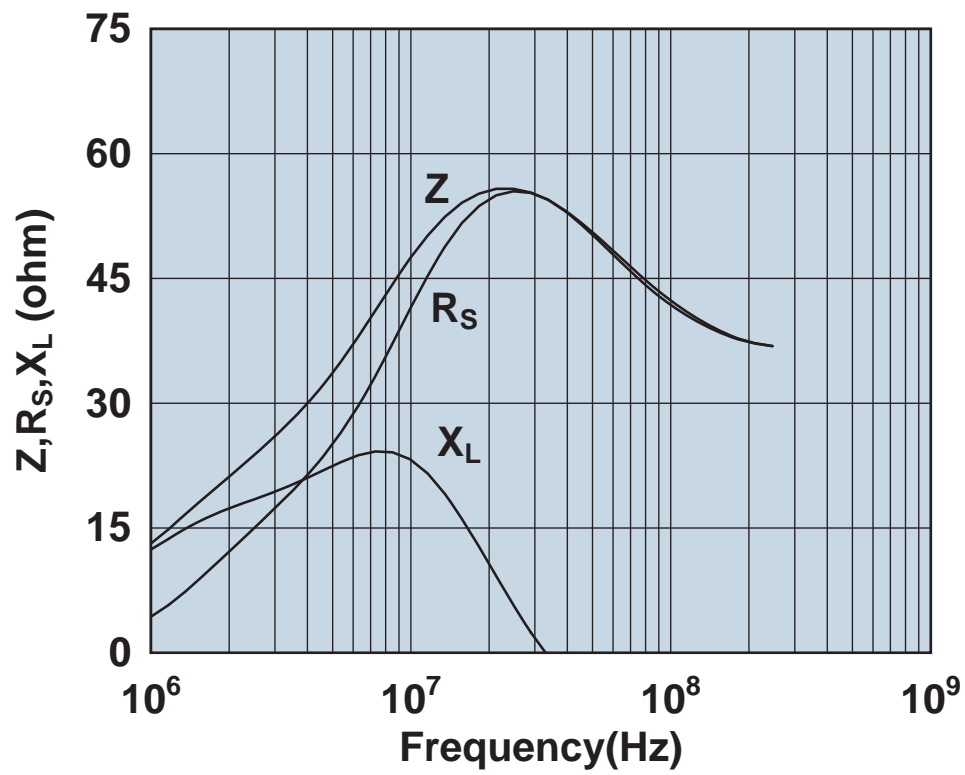
Impedance, reactance, and resistance vs. frequency.

2673012401



Impedance, reactance, and resistance vs. frequency.

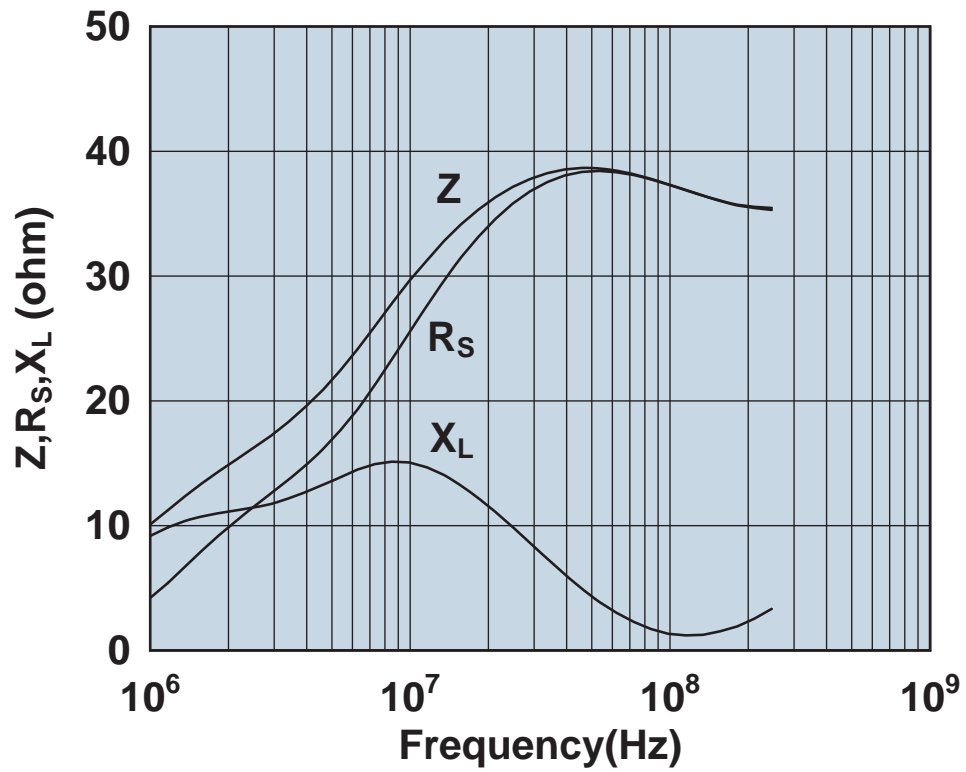
2673015301



Impedance, reactance, and resistance vs. frequency.

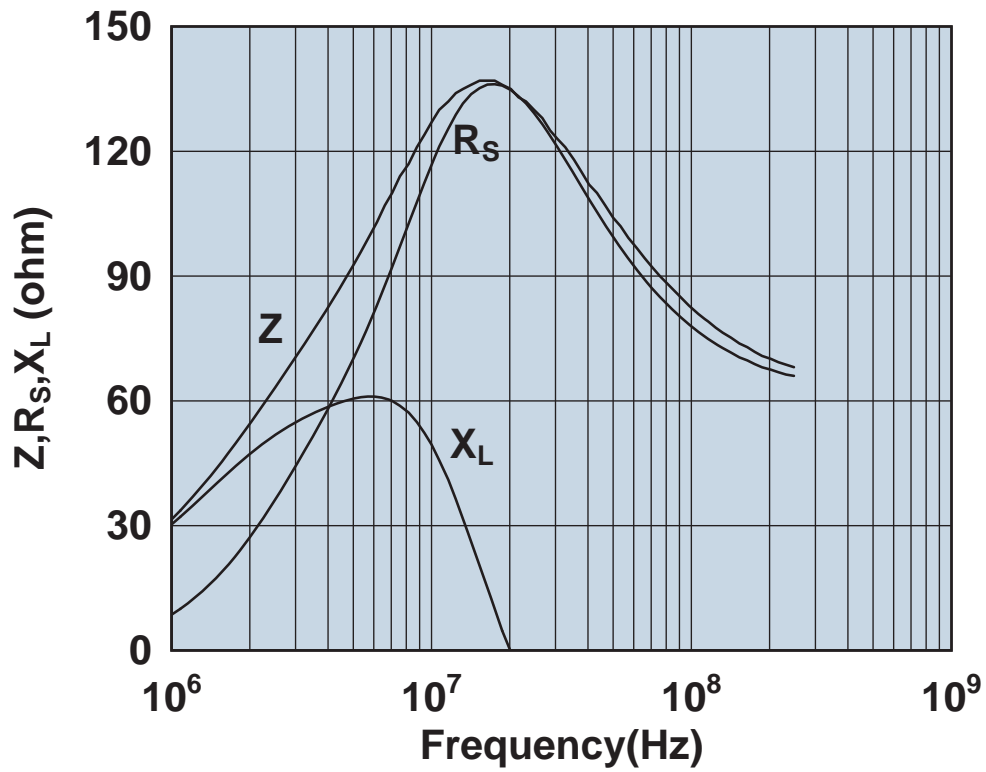


2673018001



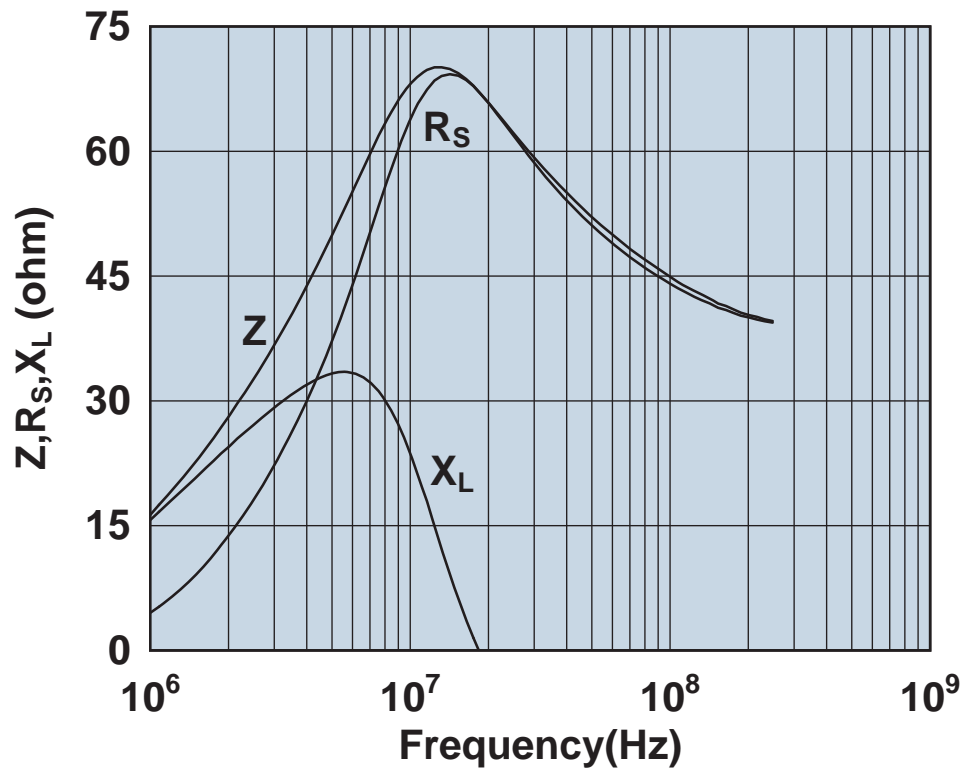
Impedance, reactance, and resistance vs. frequency.

2673021801



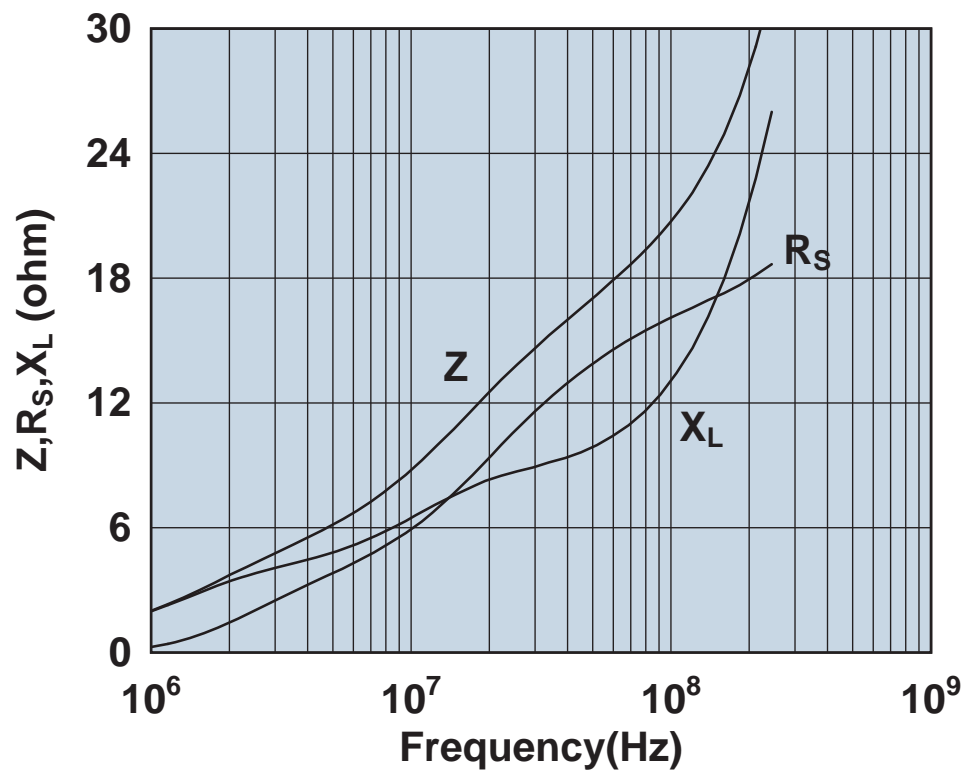
Impedance, reactance, and resistance vs. frequency.

2673022401



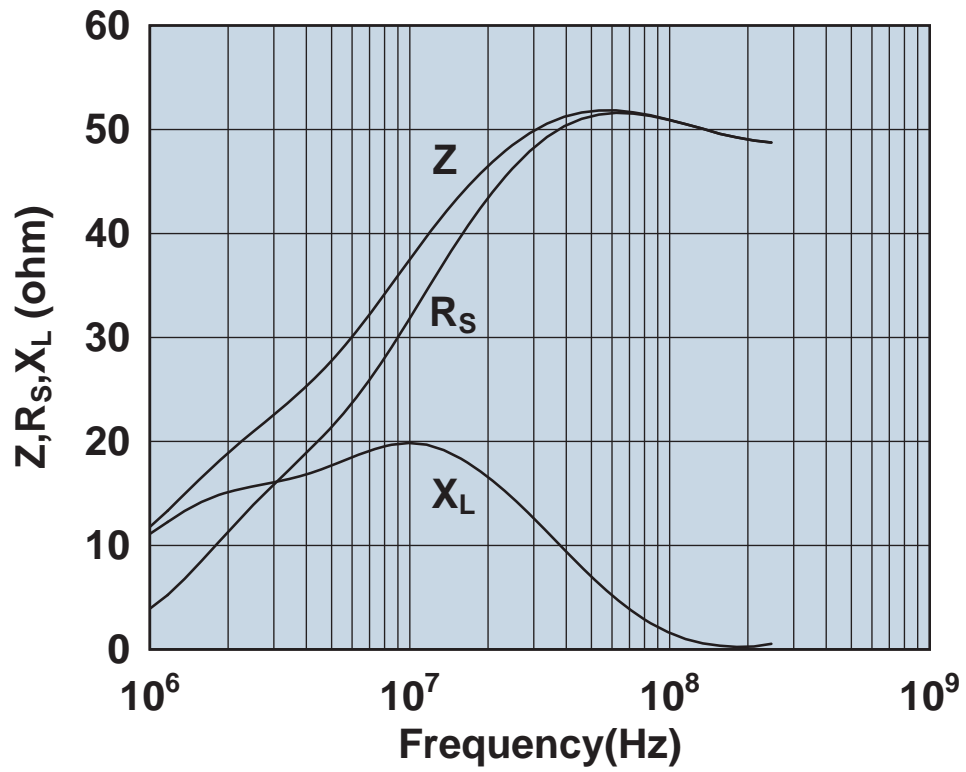
Impedance, reactance, and resistance vs. frequency.

2673025301



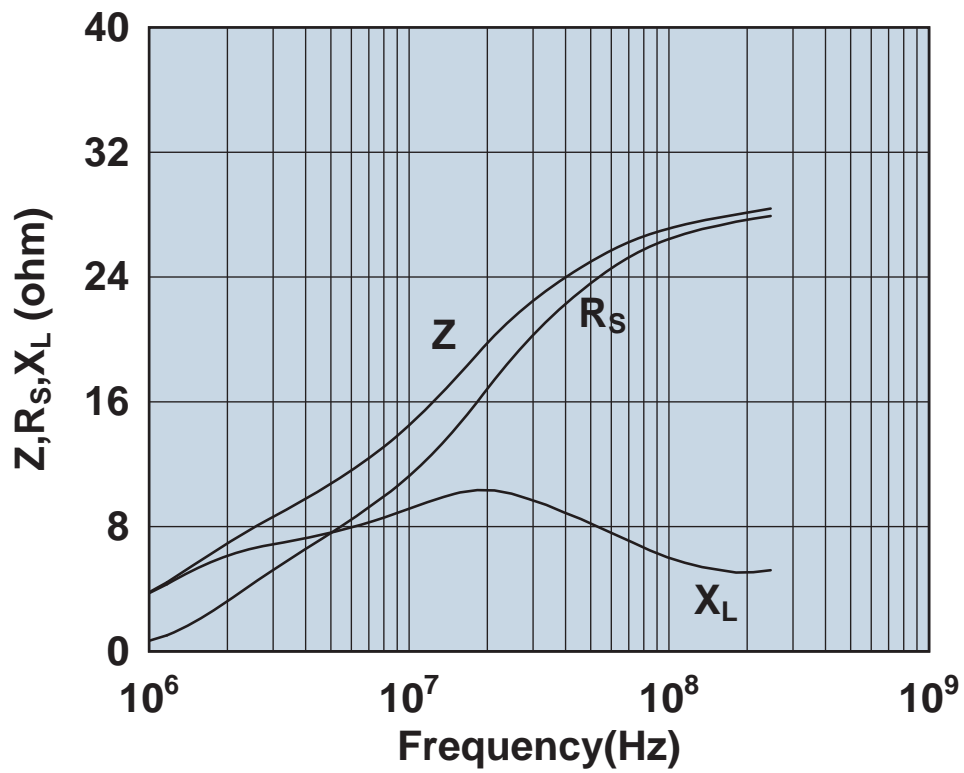
Impedance, reactance, and resistance vs. frequency.

2673028602



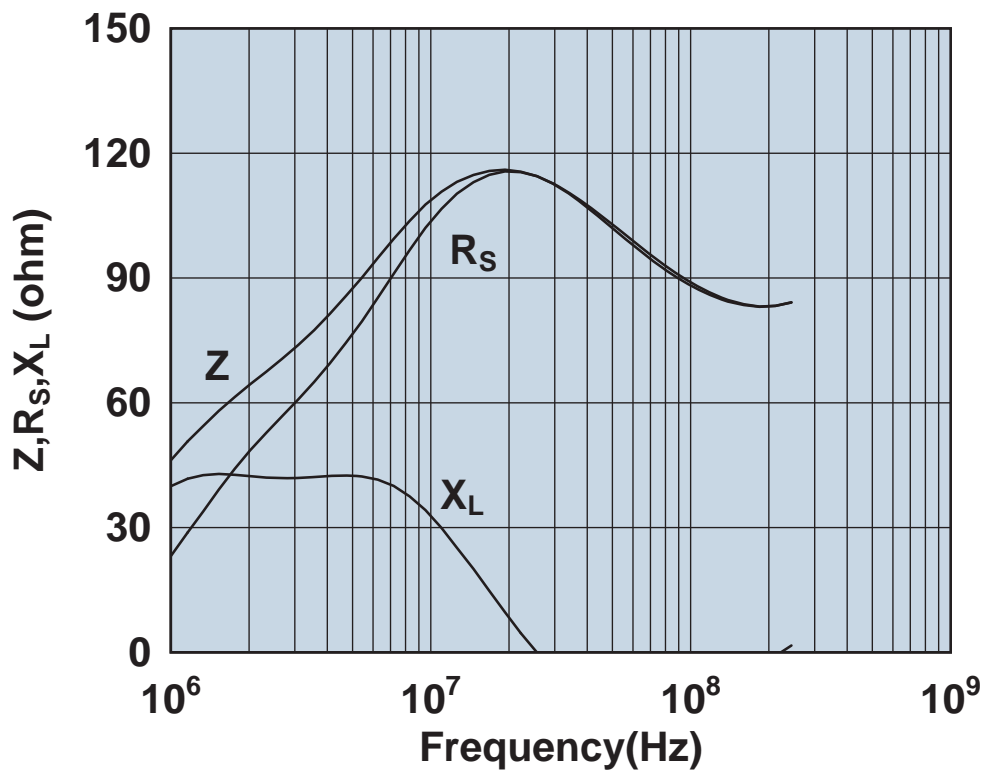
Impedance, reactance, and resistance vs. frequency.

2673030101



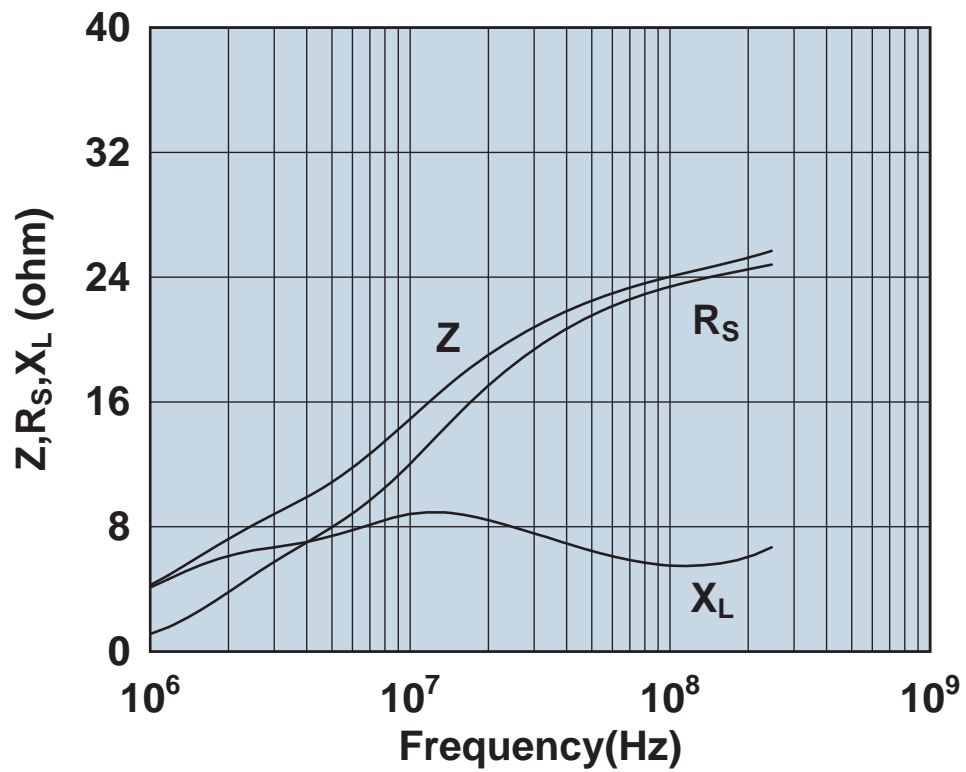
Impedance, reactance, and resistance vs. frequency.

2673200201



Impedance, reactance, and resistance vs. frequency.

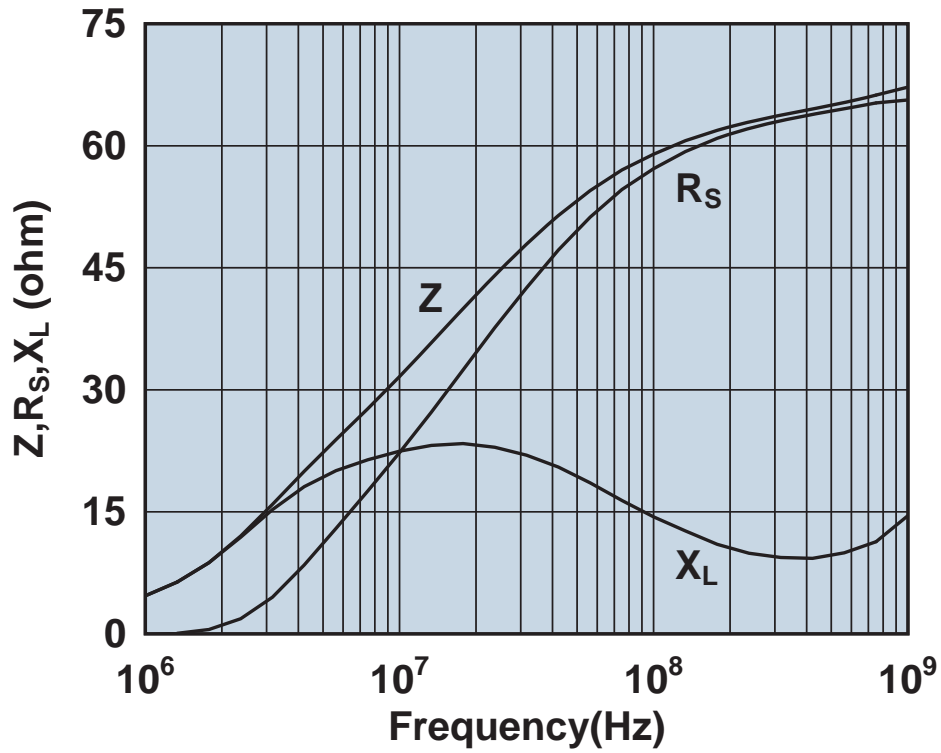
2673901301



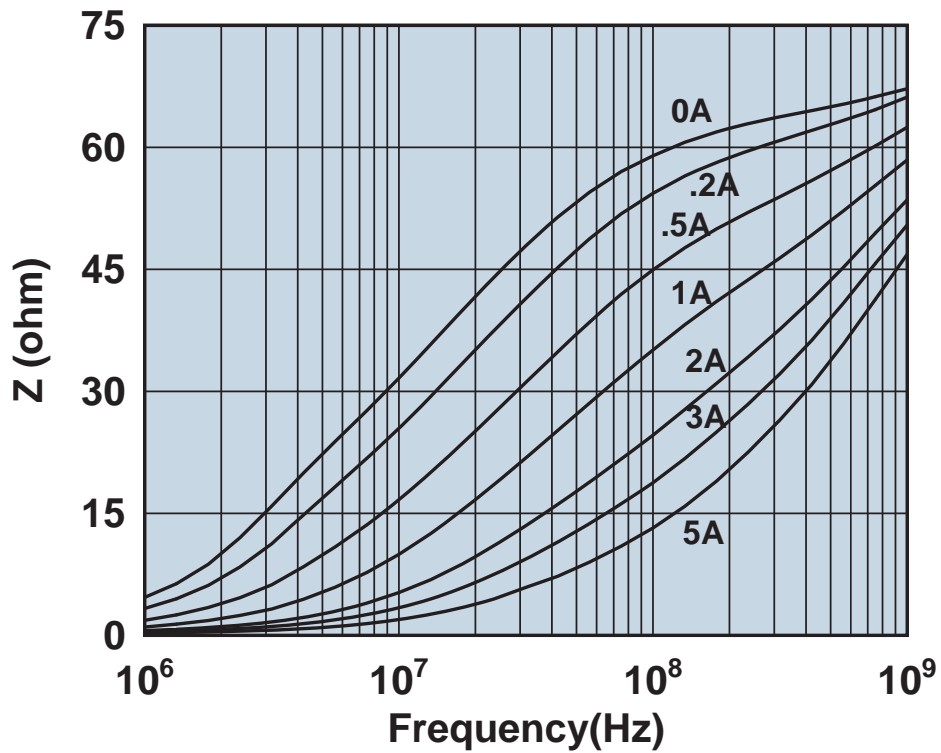
Impedance, reactance, and resistance vs. frequency.



2743001112

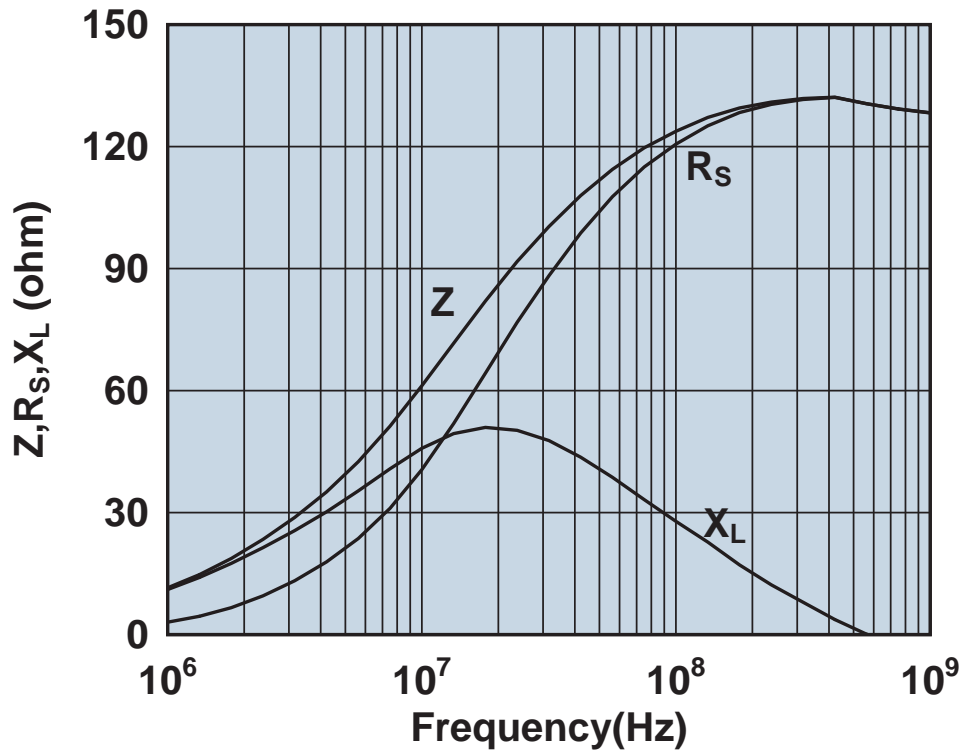


Impedance, reactance, and resistance vs. frequency.

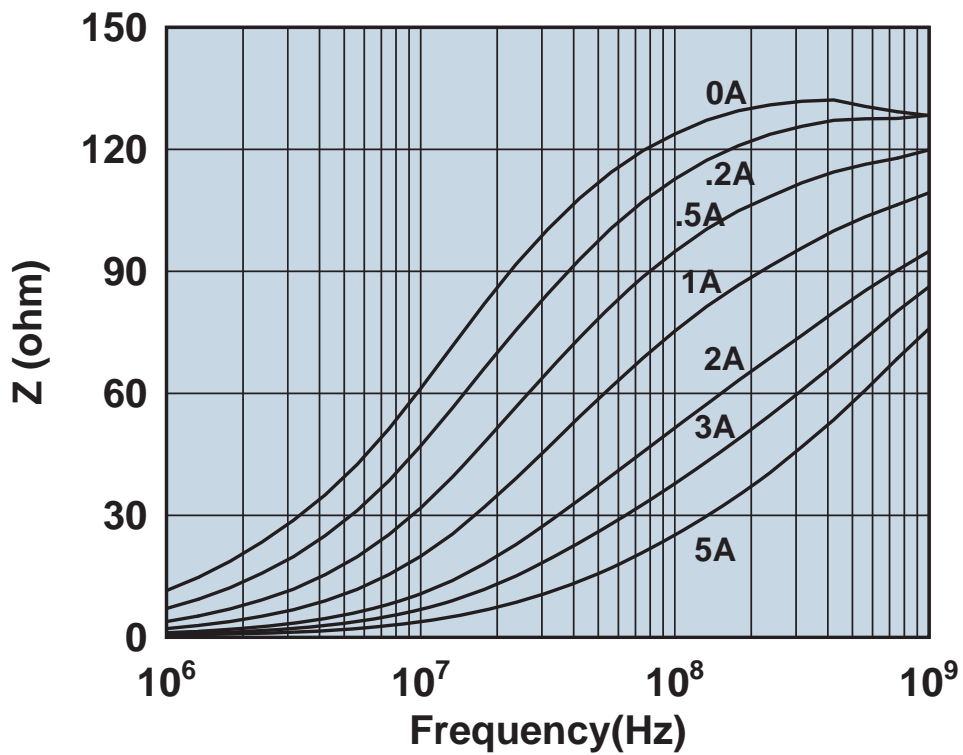


Impedance vs. frequency with dc bias.

2743002112

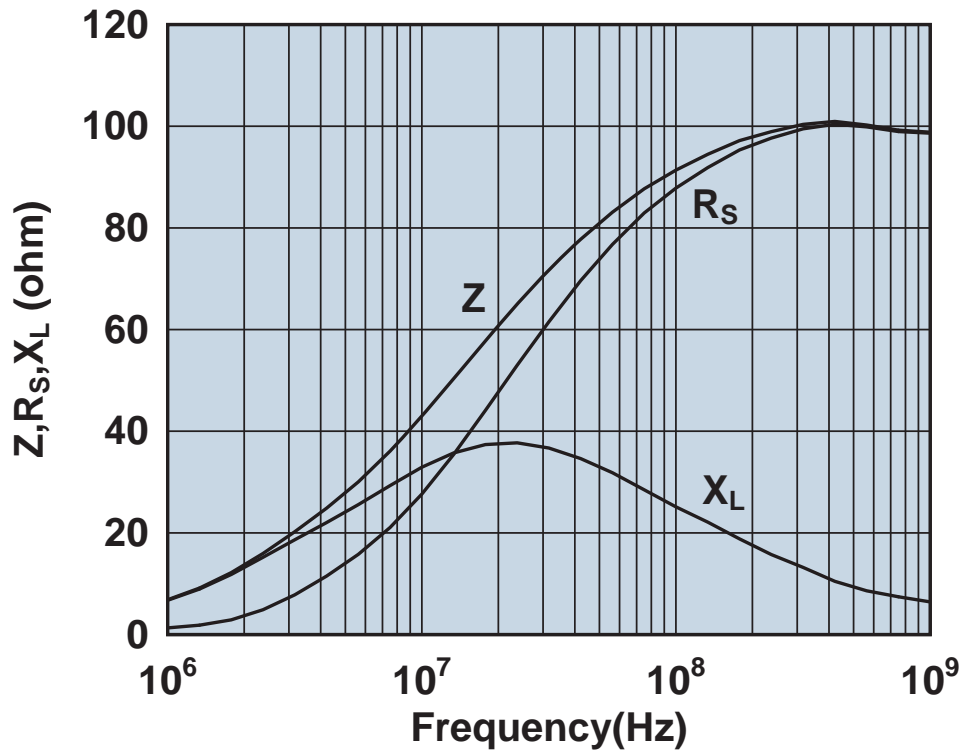


Impedance, reactance, and resistance vs. frequency.

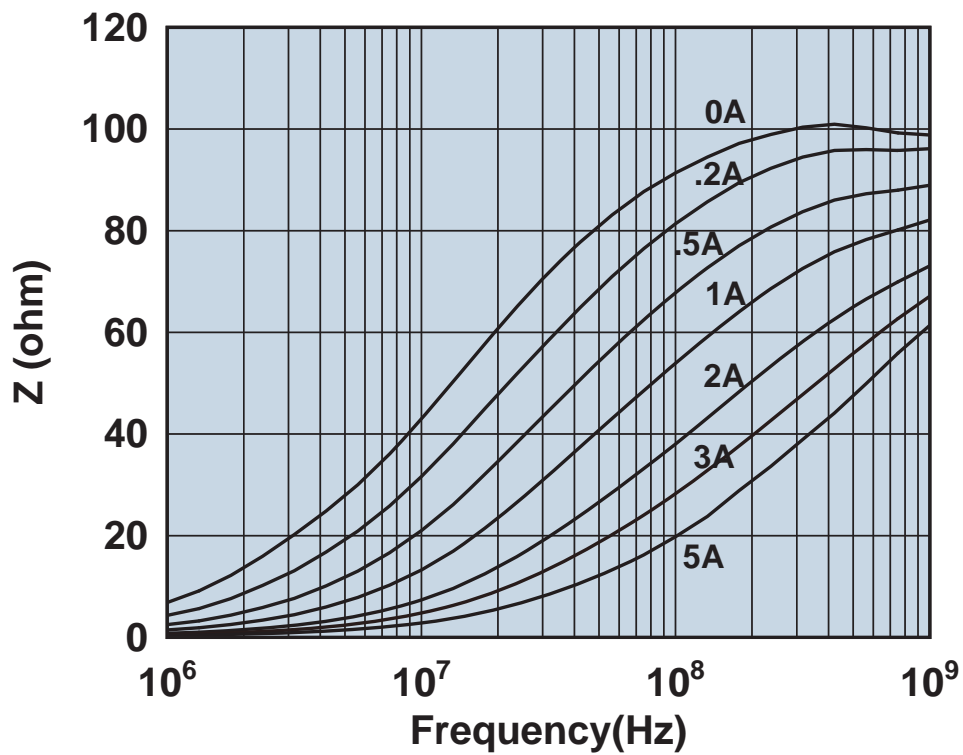


Impedance vs. frequency with dc bias.

2743003112

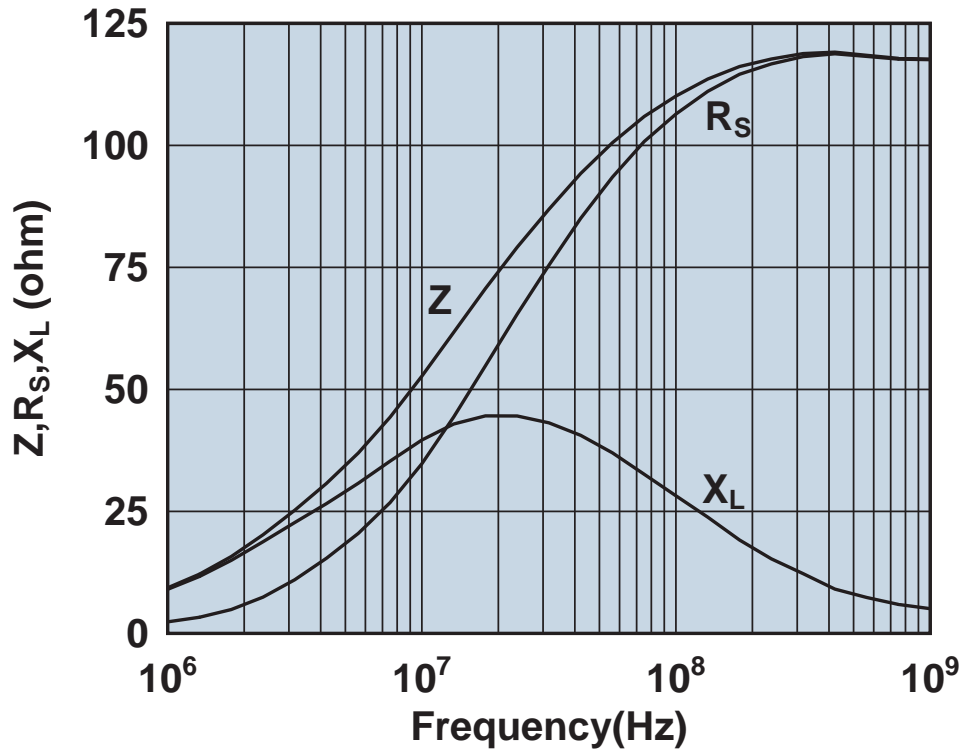


Impedance, reactance, and resistance vs. frequency.

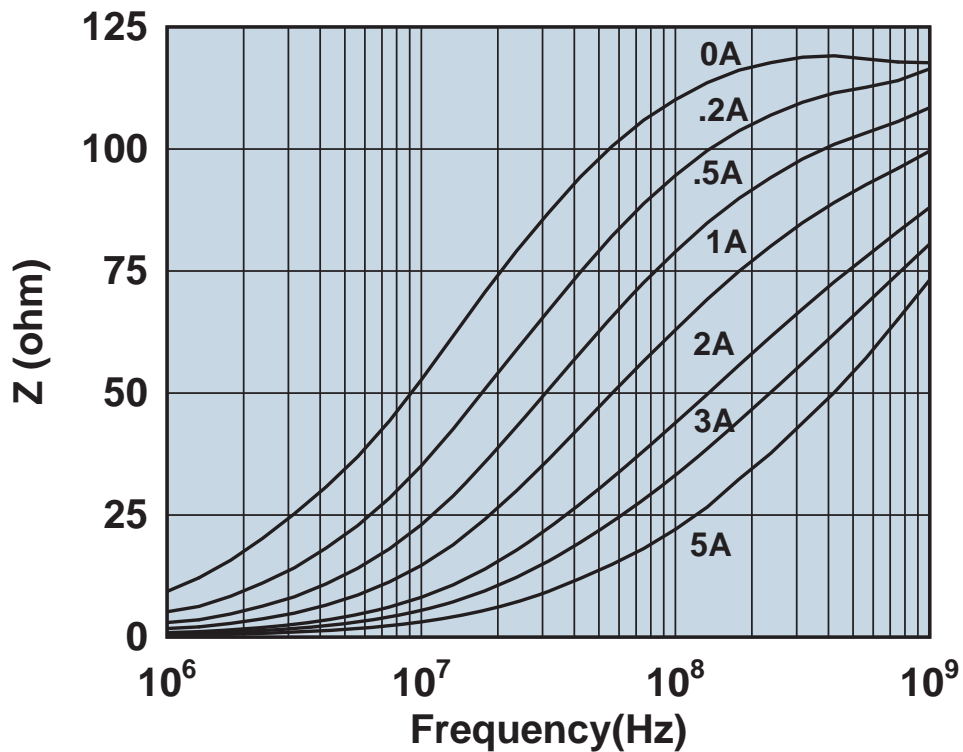


Impedance vs. frequency with dc bias.

2743004112

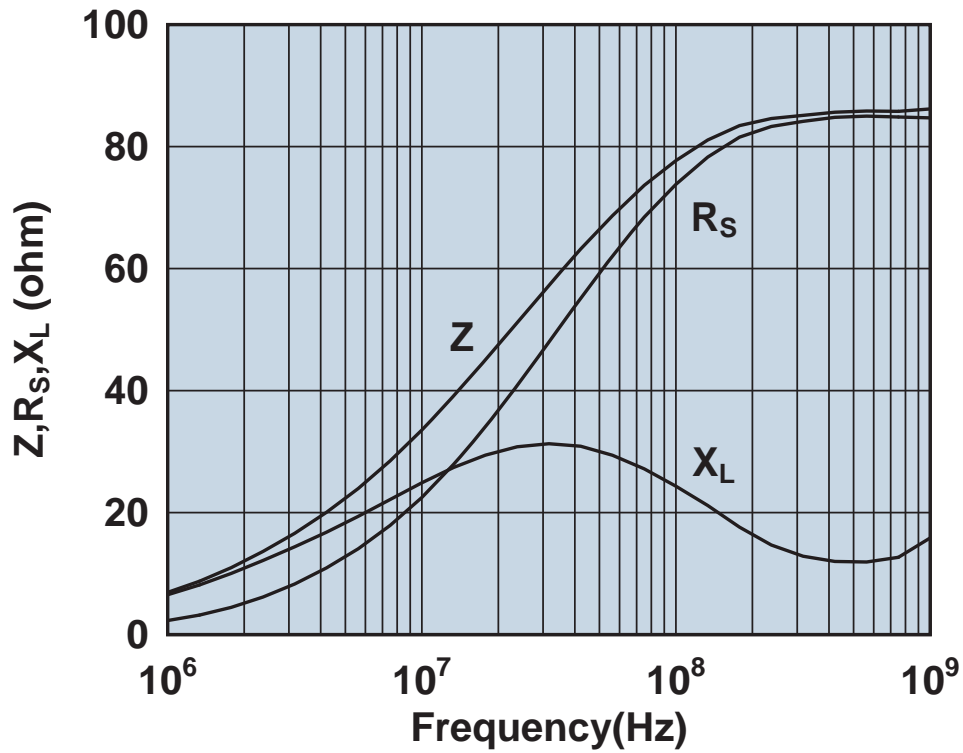


Impedance, reactance, and resistance vs. frequency.

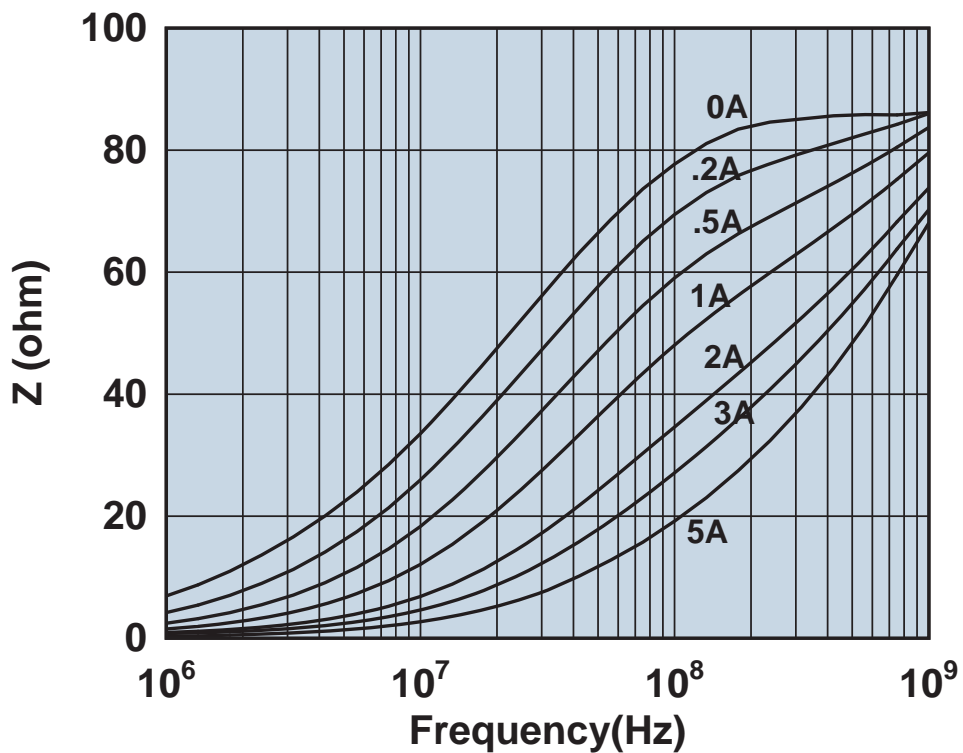


Impedance vs. frequency with dc bias.

2743005112

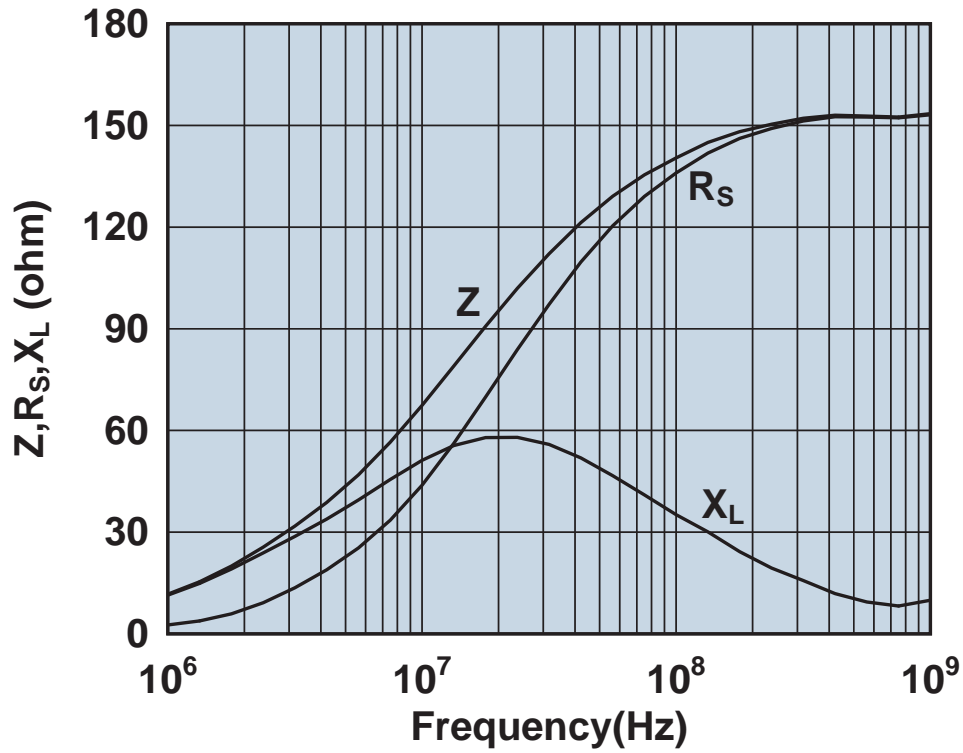


Impedance, reactance, and resistance vs. frequency.

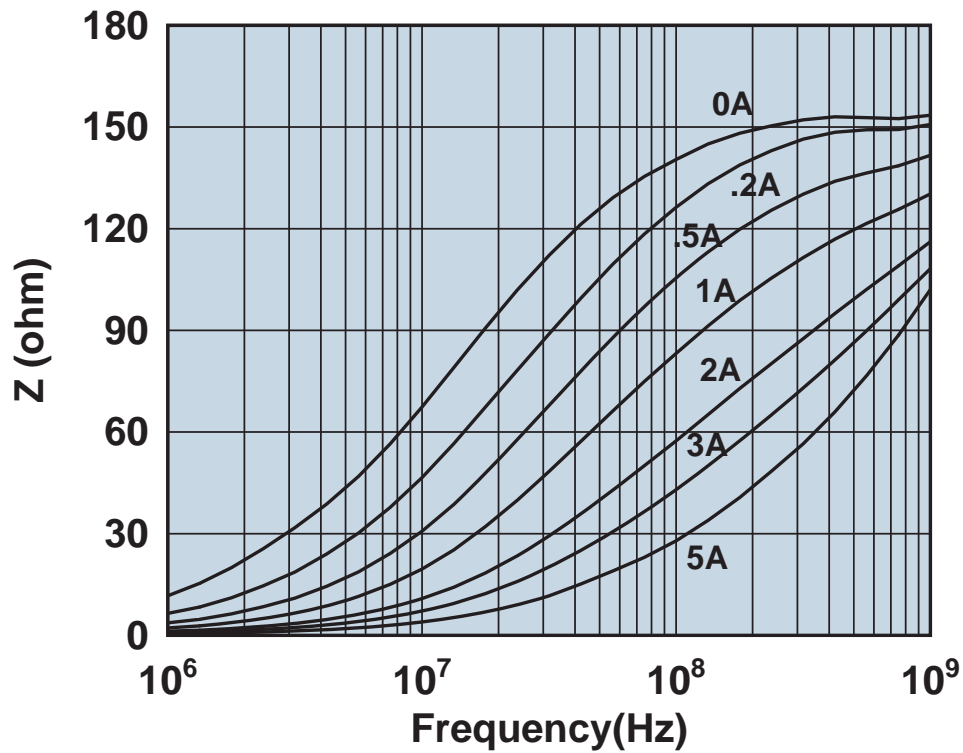


Impedance vs. frequency with dc bias.

2743007112

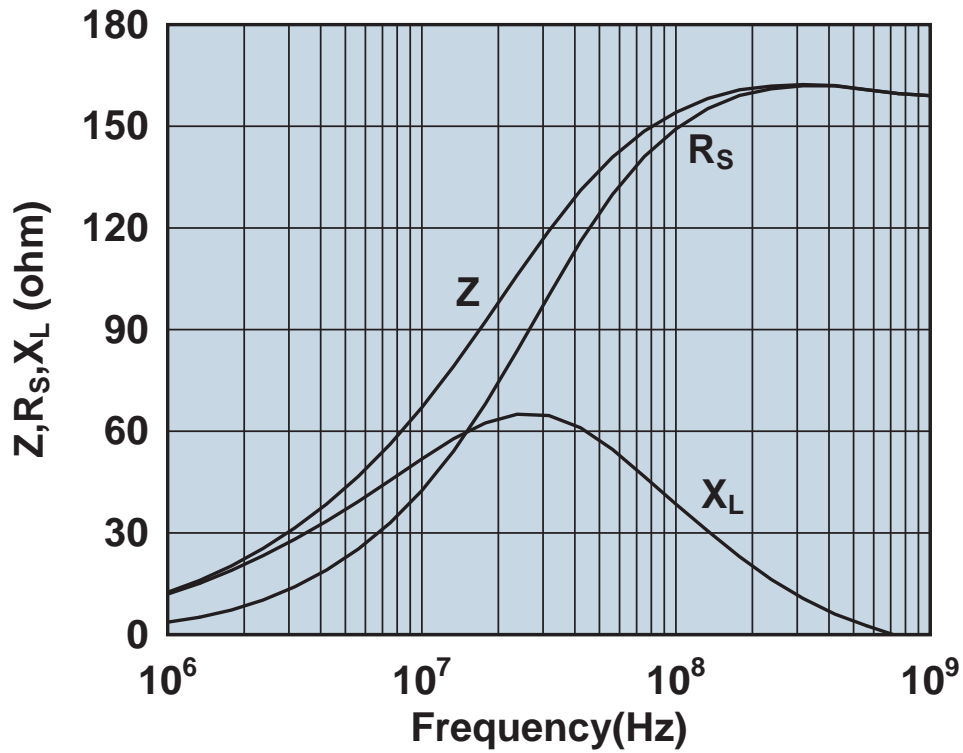


Impedance, reactance, and resistance vs. frequency.

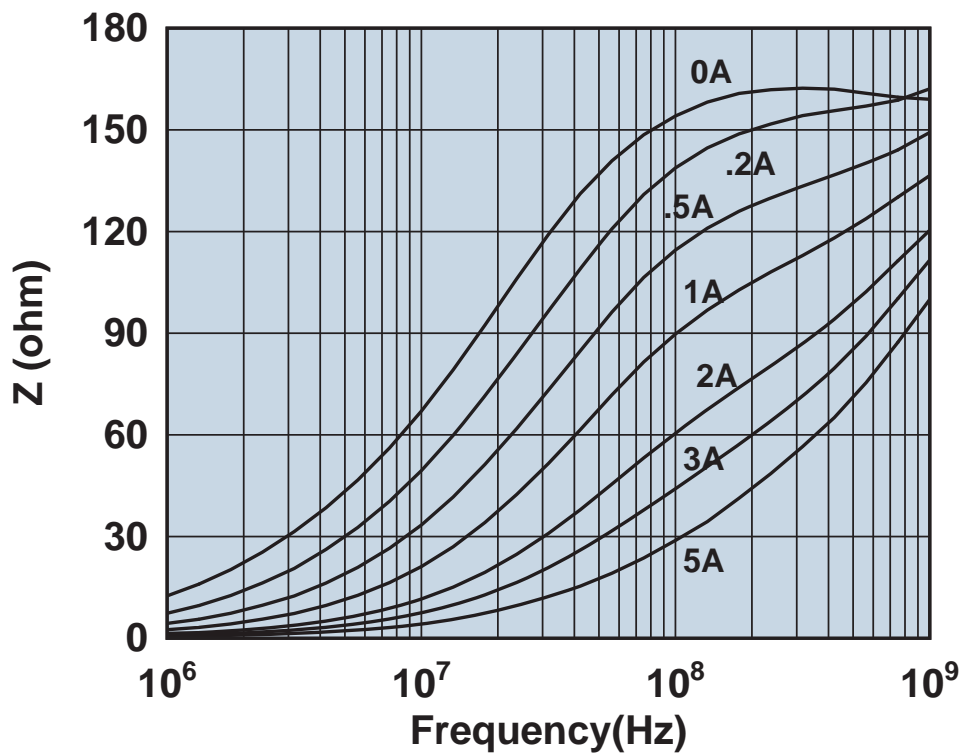


Impedance vs. frequency with dc bias.

2743008112

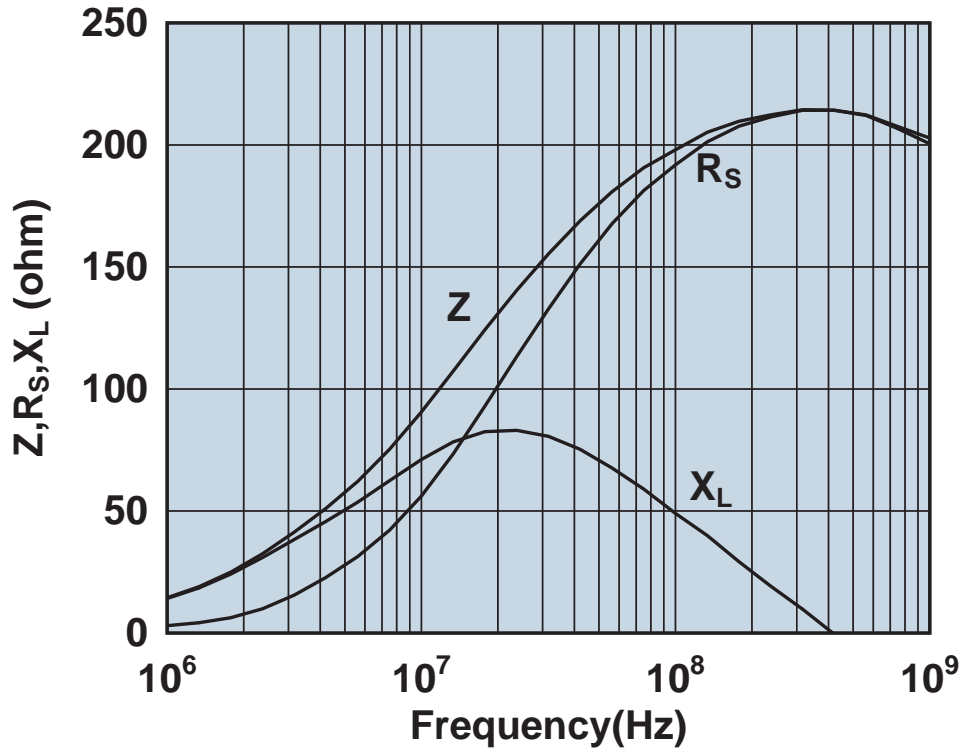


Impedance, reactance, and resistance vs. frequency.

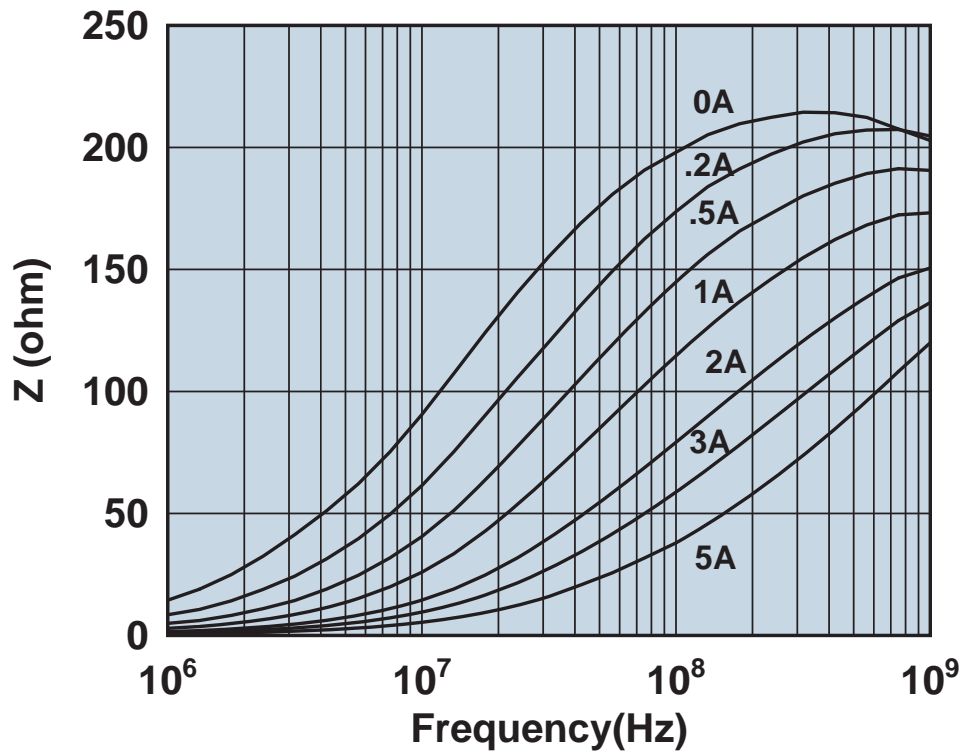


Impedance vs. frequency with dc bias.

2743009112



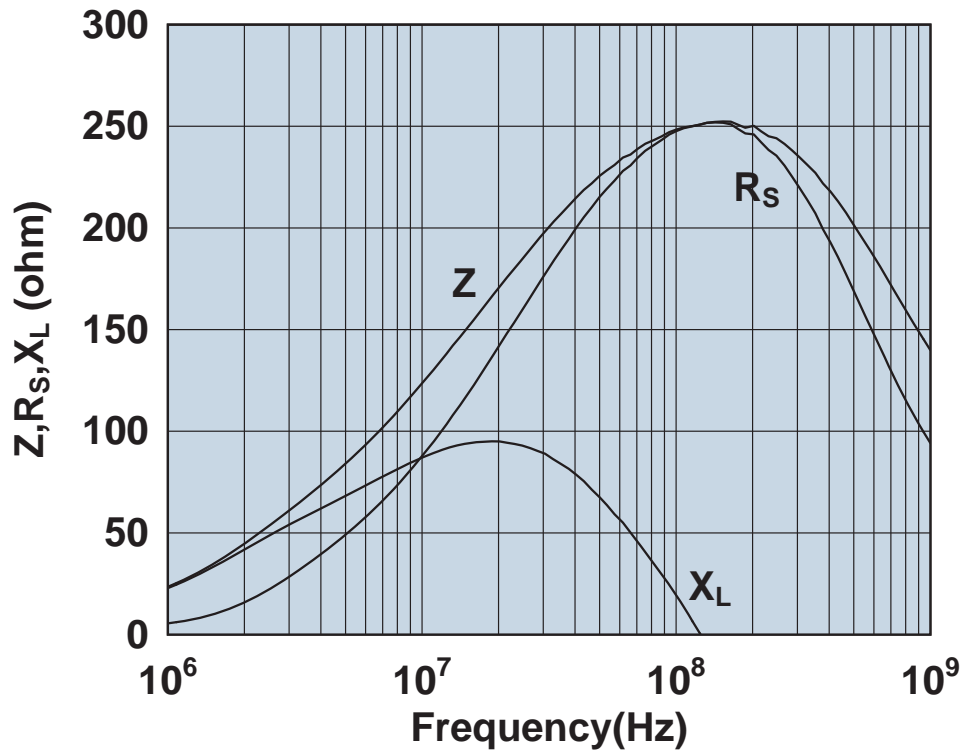
Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with dc bias.

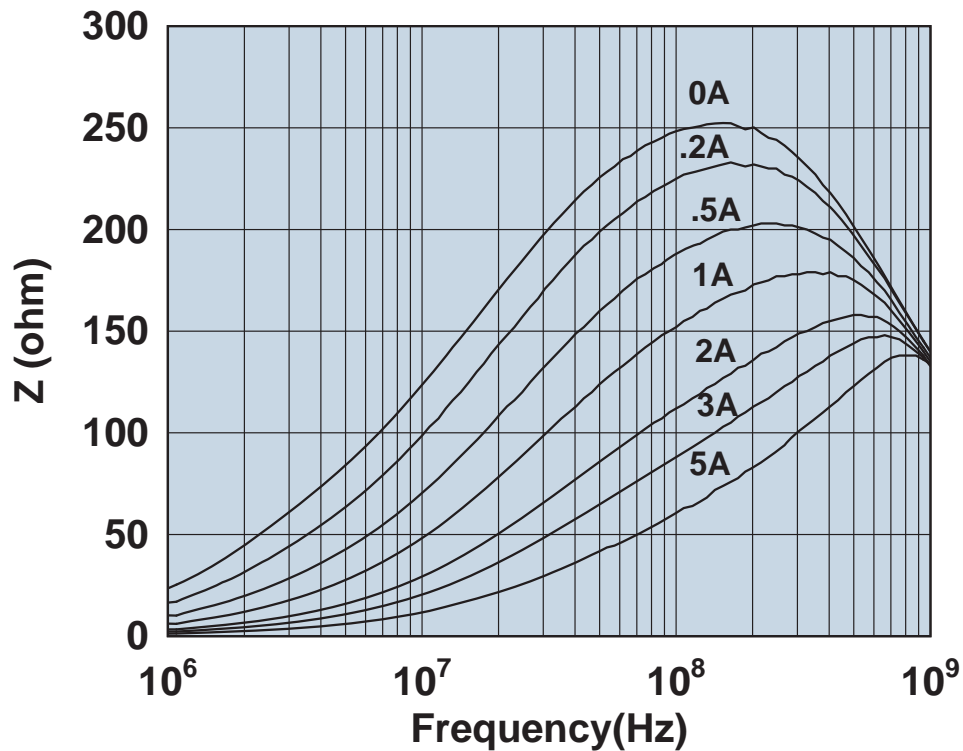


2743012201



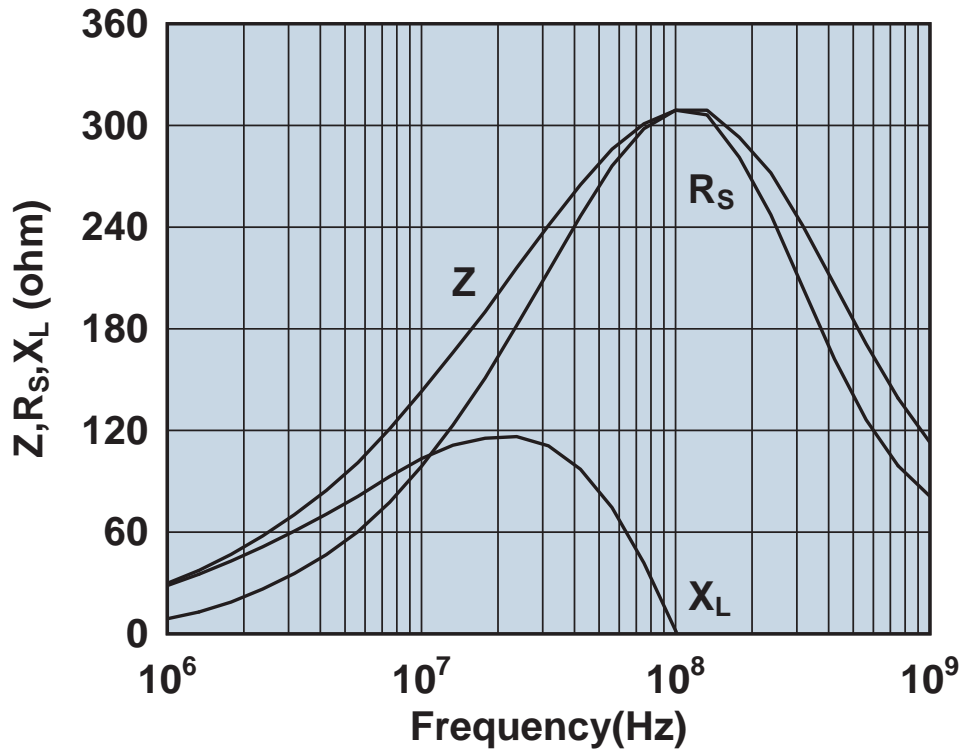
Impedance, reactance, and resistance vs. frequency.

2743012201

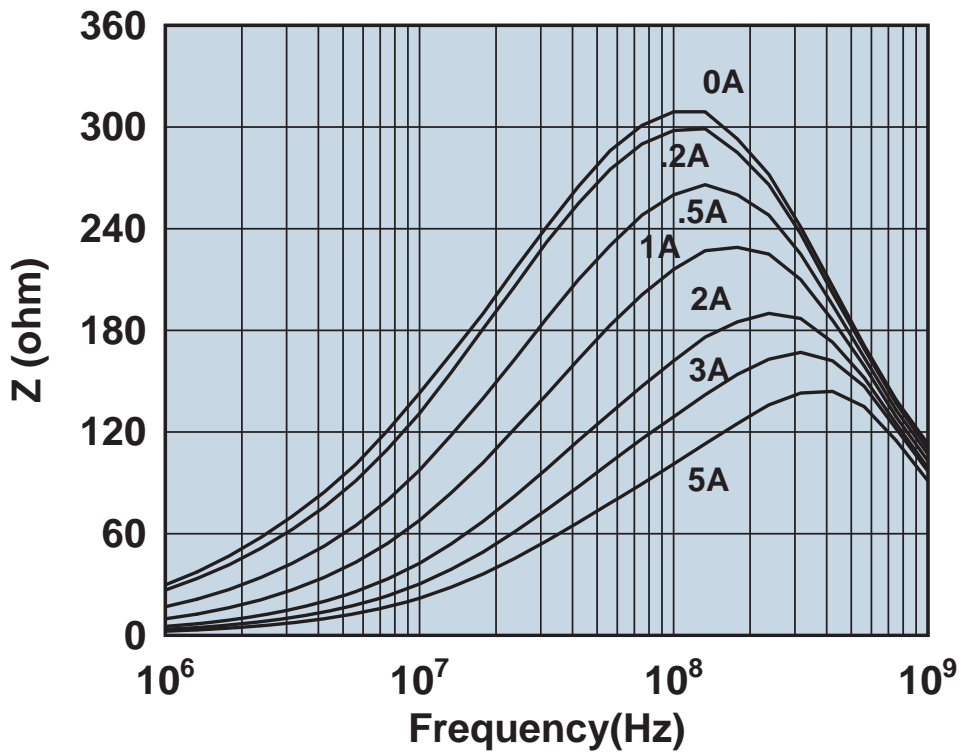


Impedance vs. frequency with dc bias.

2743013211

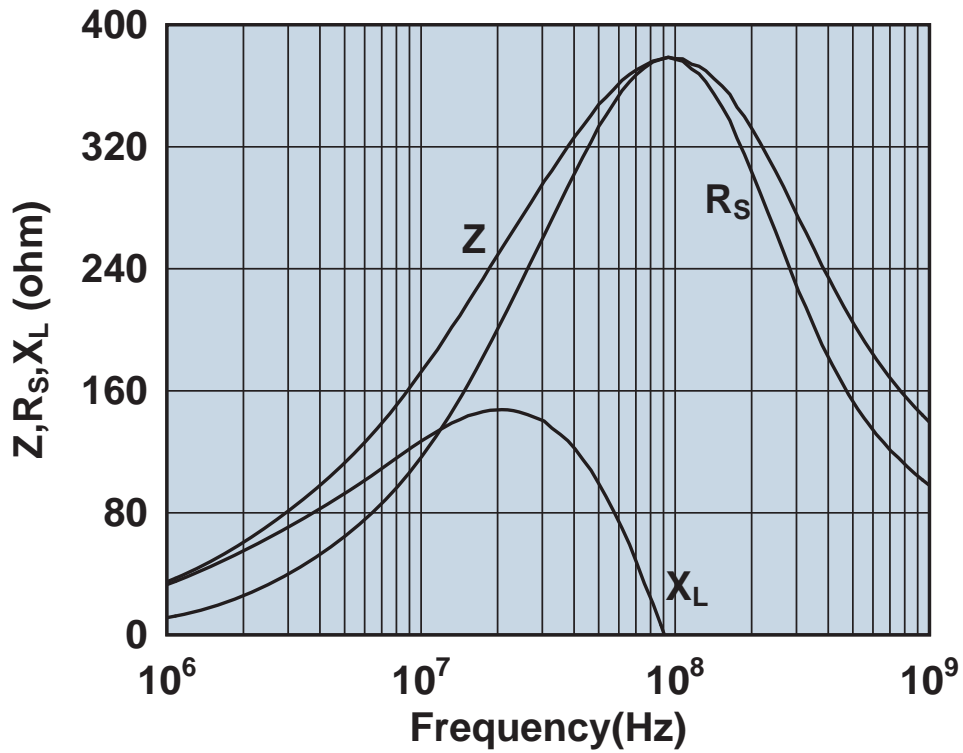


Impedance, reactance, and resistance vs. frequency.

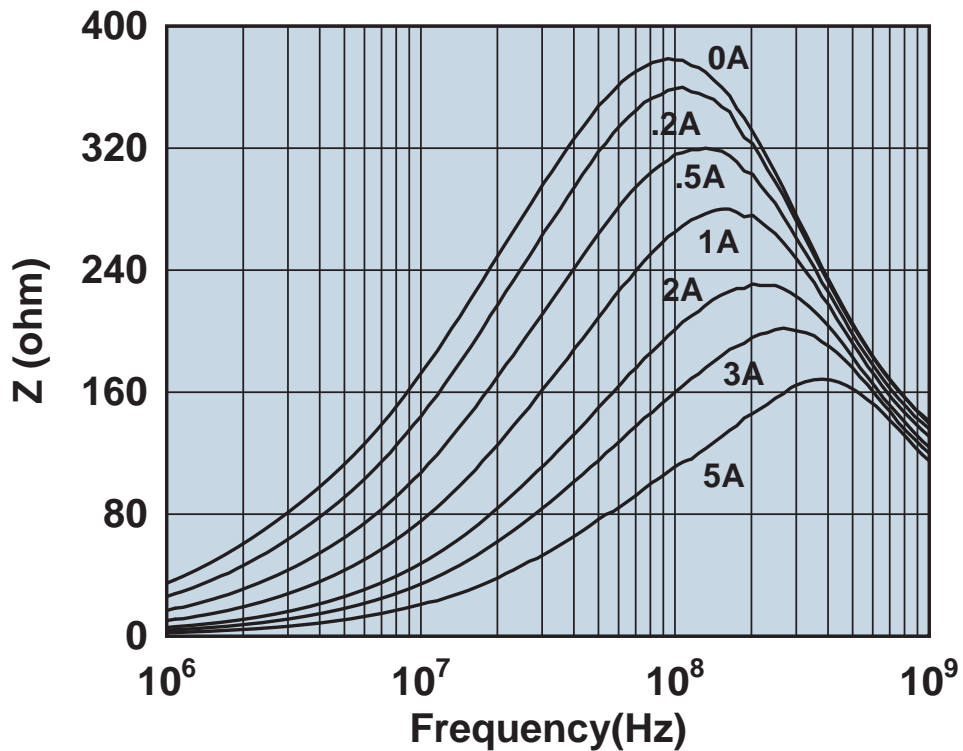


Impedance vs. frequency with dc bias.

2743014221

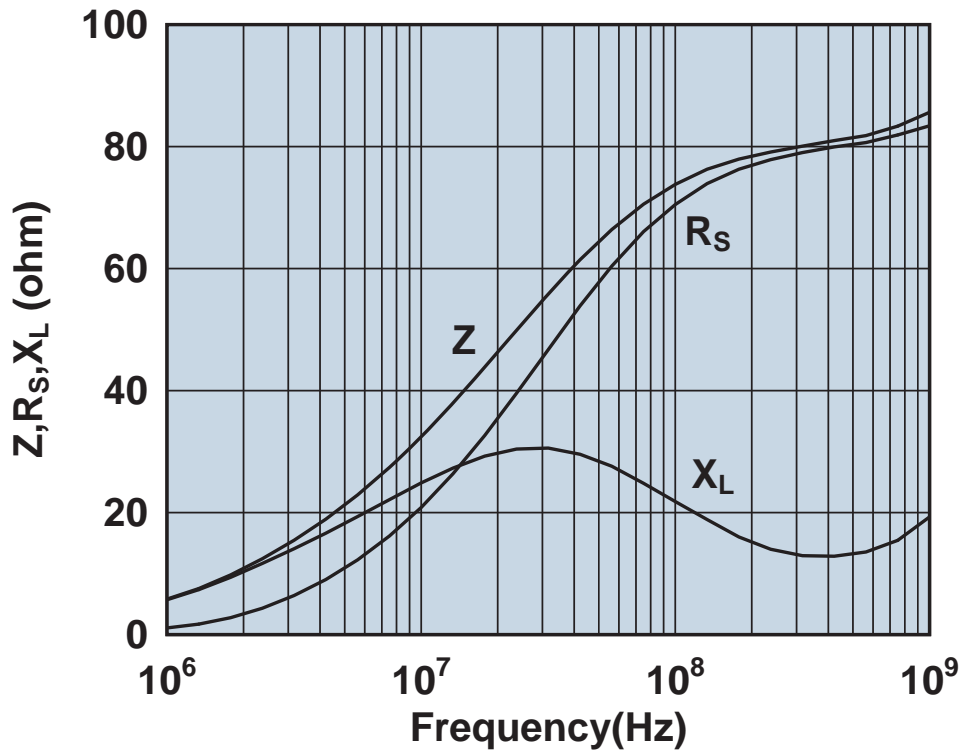


Impedance, reactance, and resistance vs. frequency.

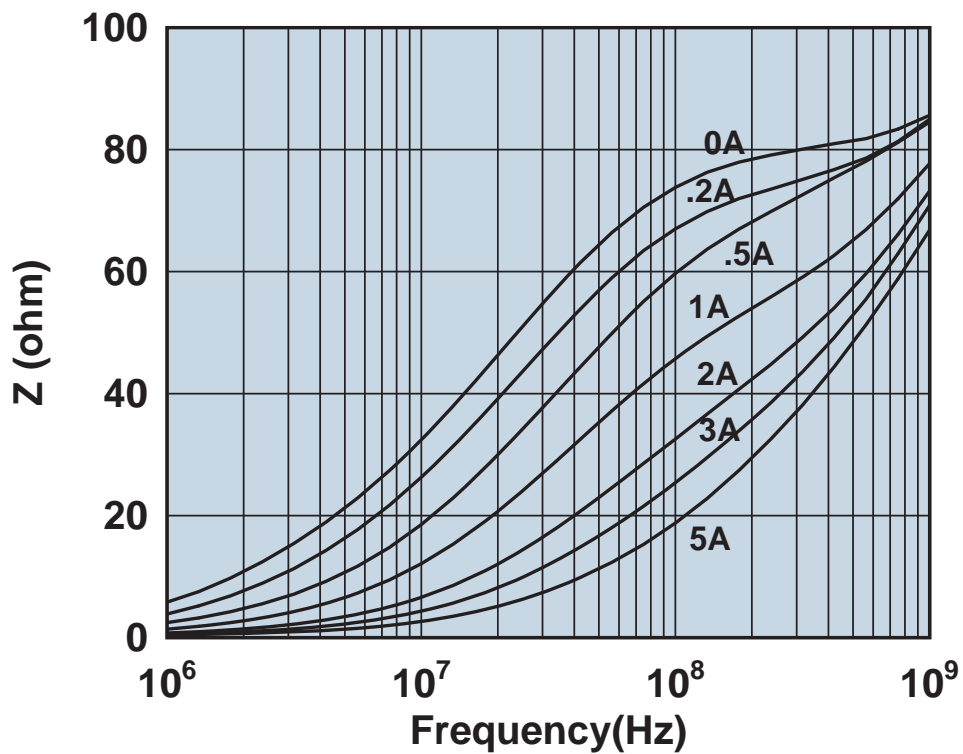


Impedance vs. frequency with dc bias.

2743015112

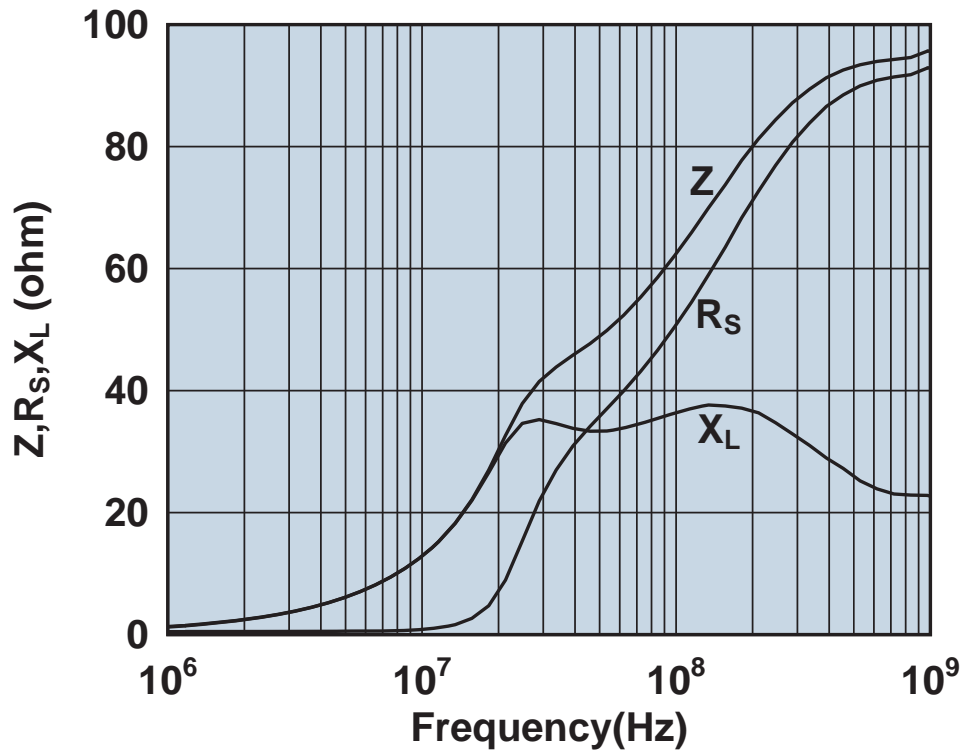


Impedance, reactance, and resistance vs. frequency.

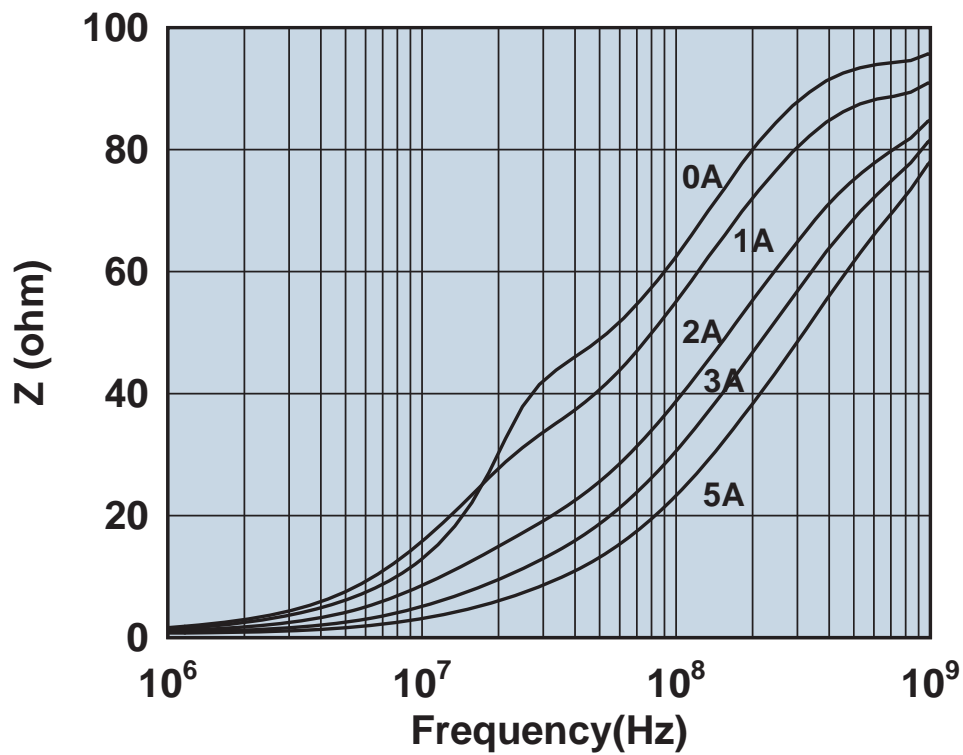


Impedance vs. frequency with dc bias.

2761001112

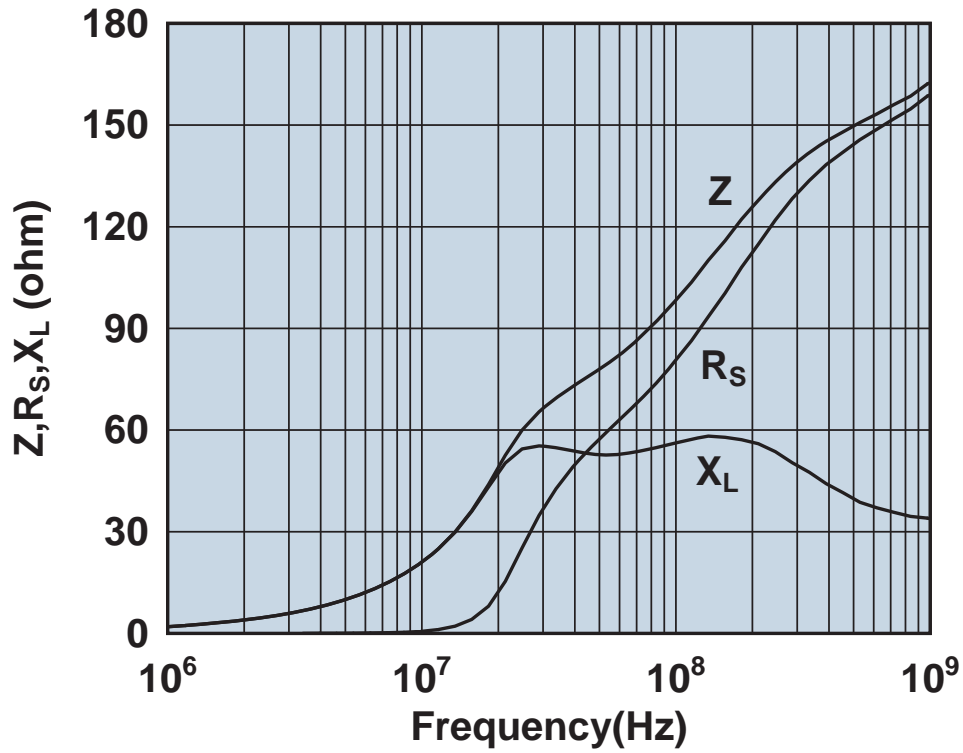


Impedance, reactance, and resistance vs. frequency.

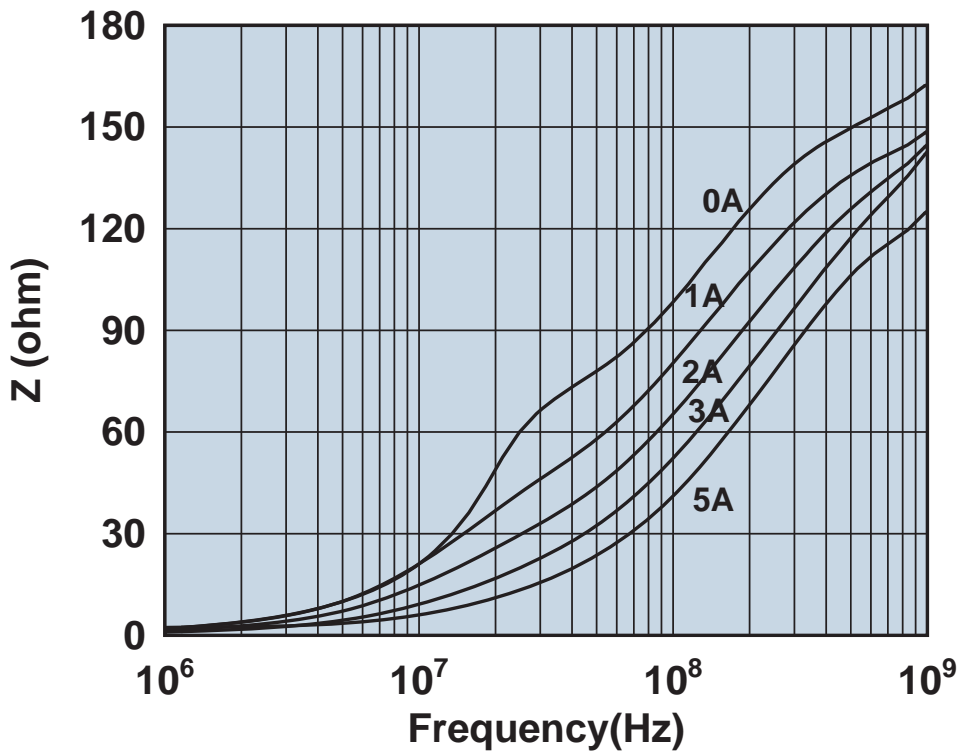


Impedance vs. frequency with dc bias.

2761002112

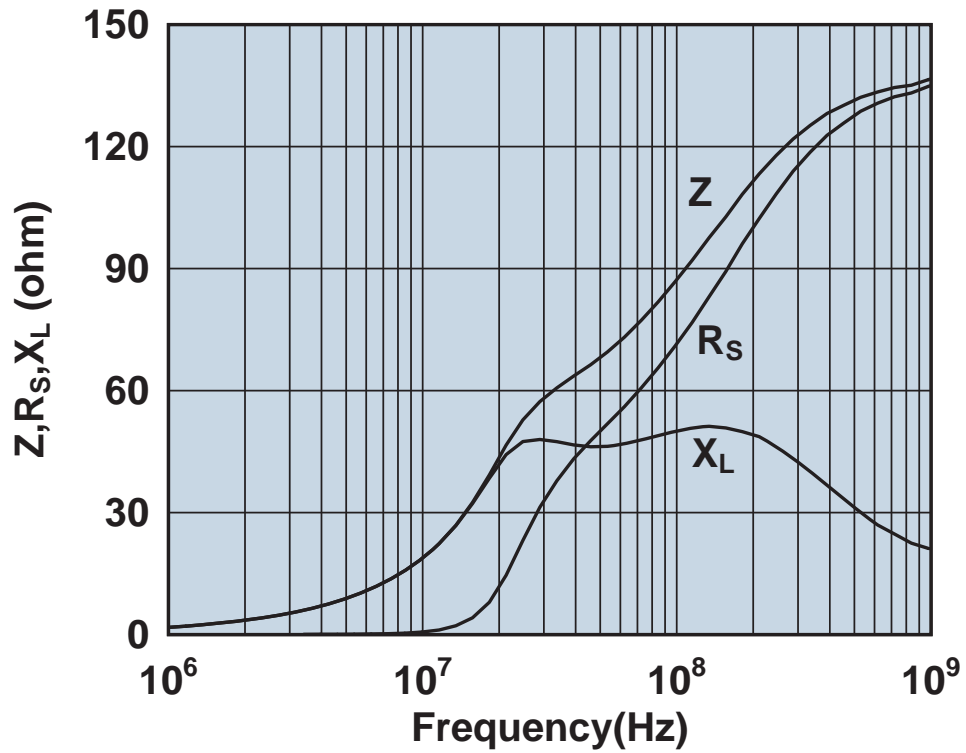


Impedance, reactance, and resistance vs. frequency.

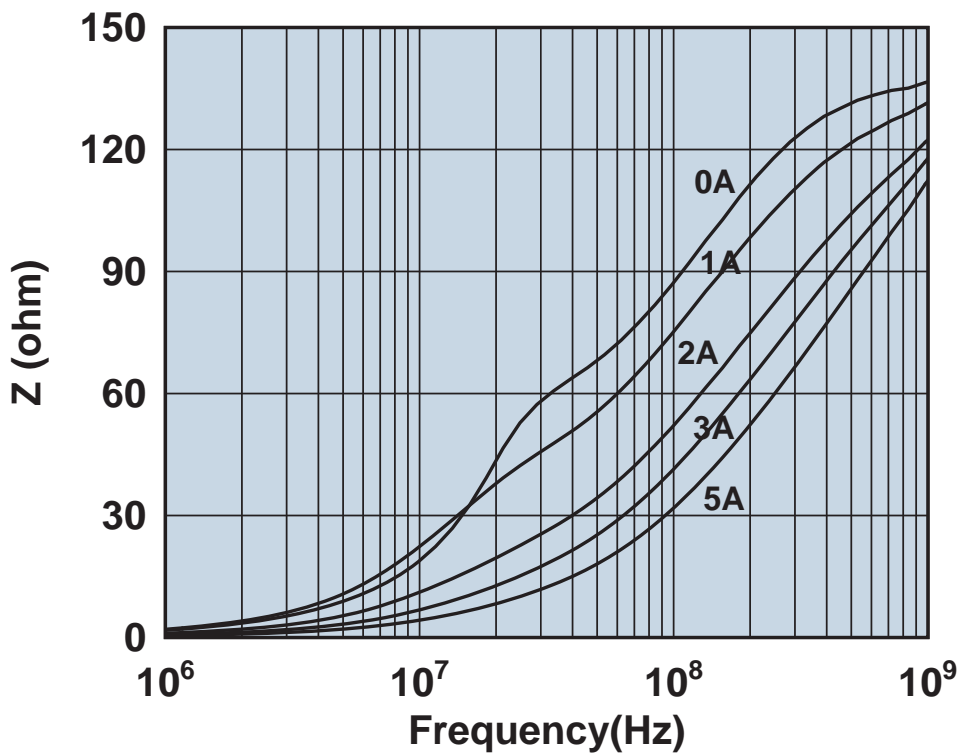


Impedance vs. frequency with dc bias.

2761003112

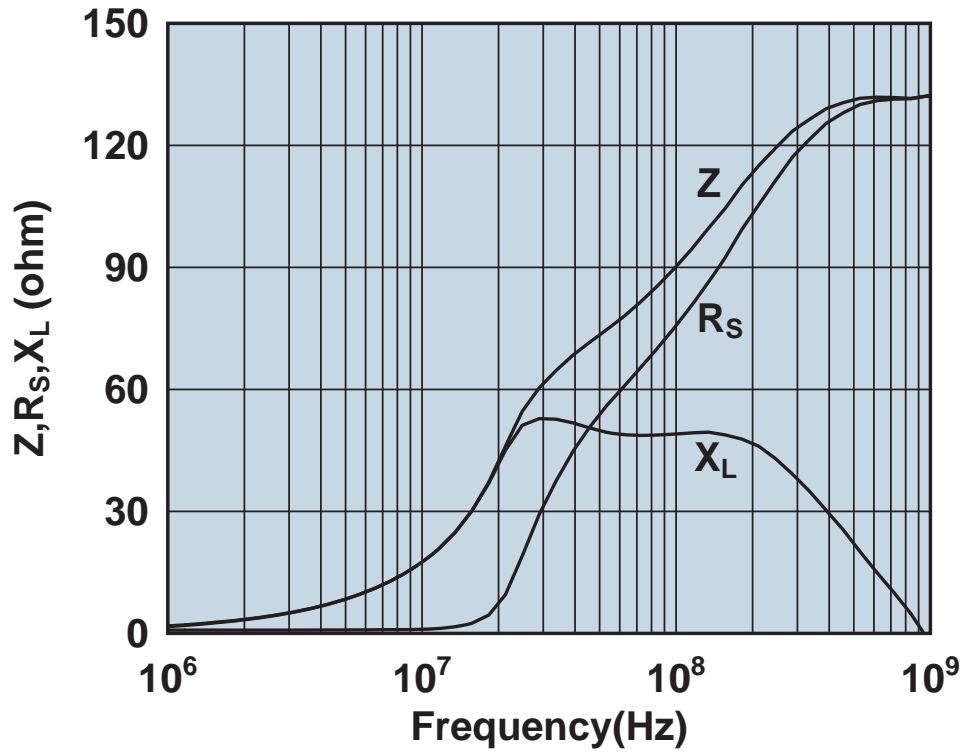


Impedance, reactance, and resistance vs. frequency.



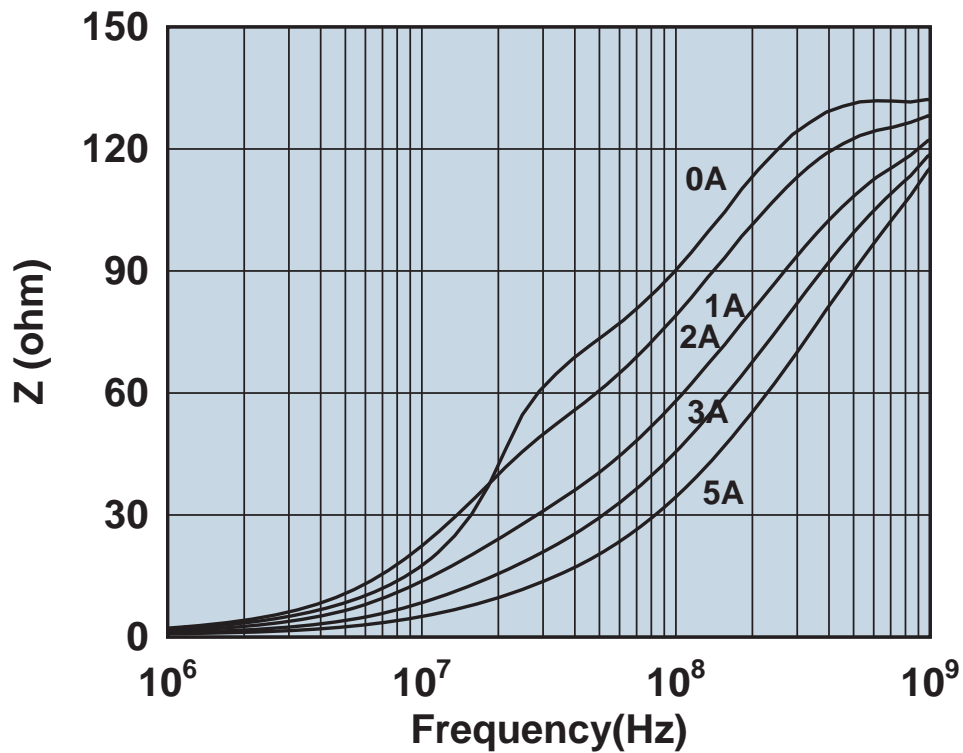
Impedance vs. frequency with dc bias.

2761004112



Impedance, reactance, and resistance vs. frequency.

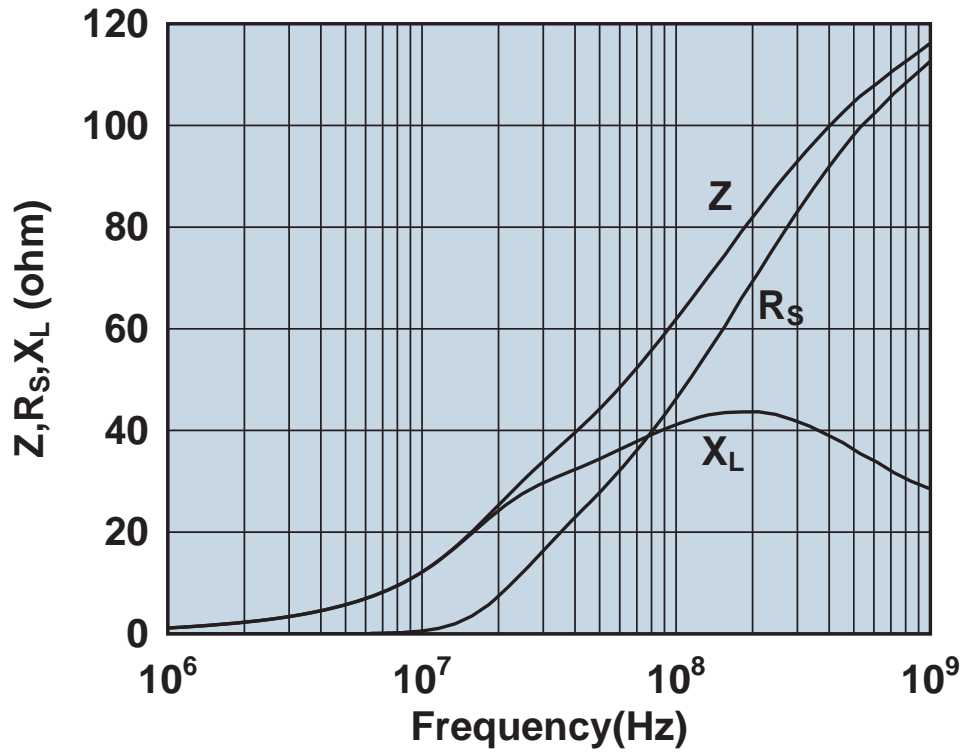
2761004112



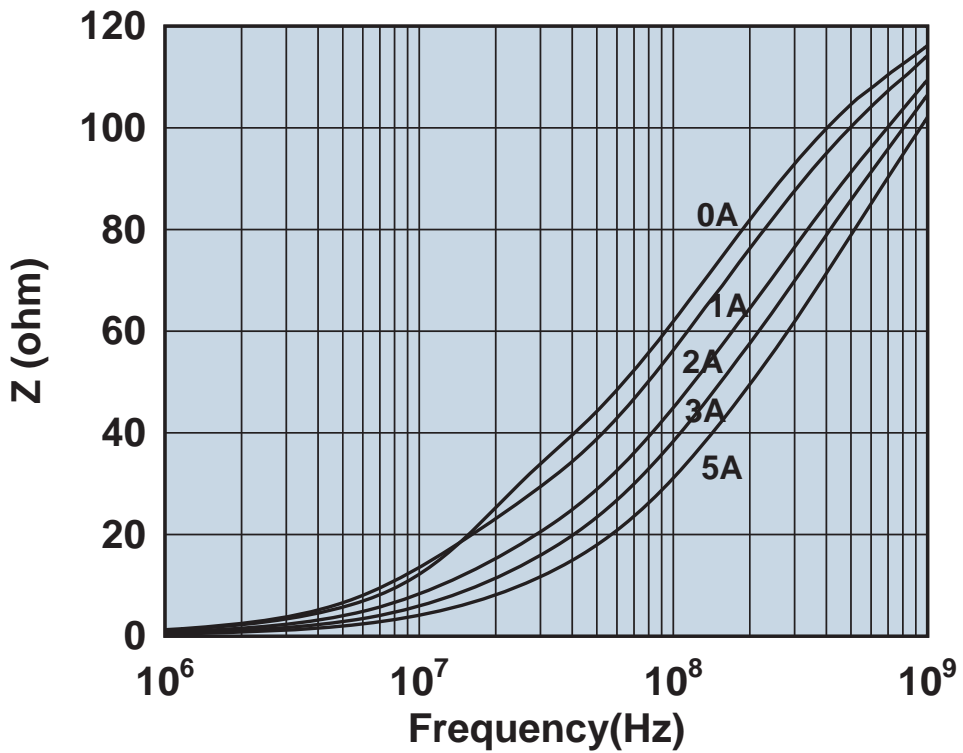
Impedance vs. frequency with dc bias.



2761005112

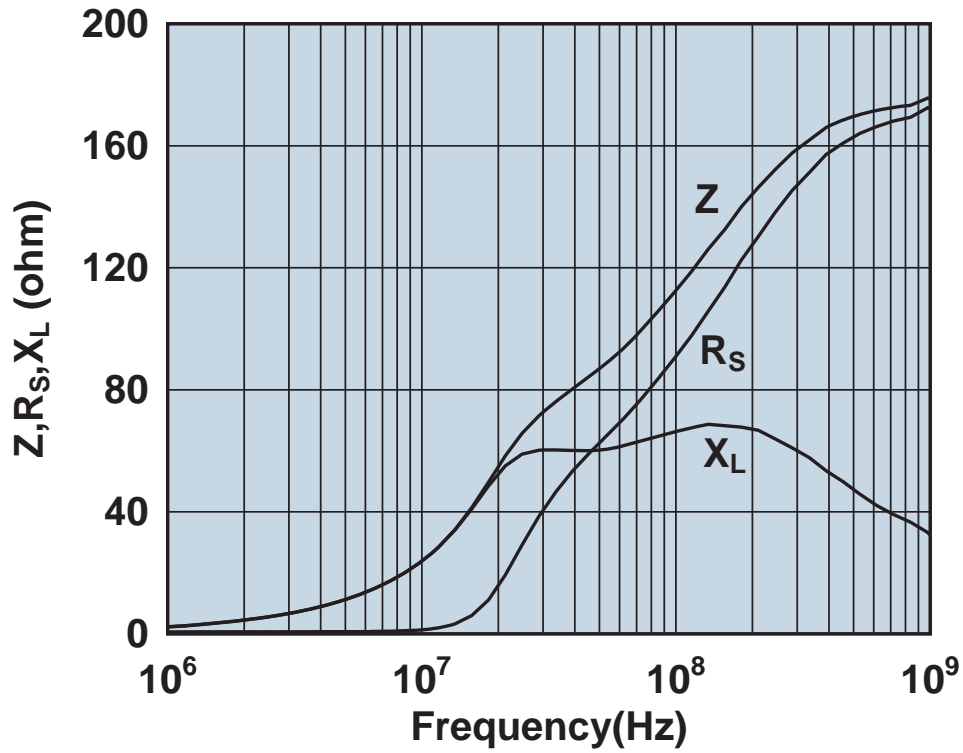


Impedance, reactance, and resistance vs. frequency.

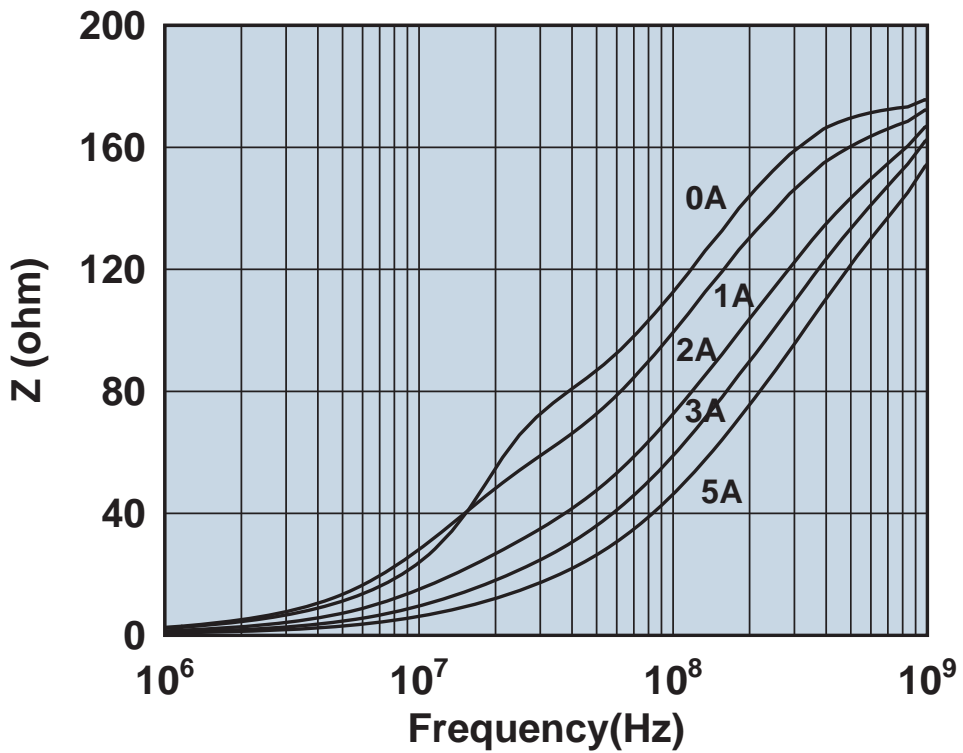


Impedance vs. frequency with dc bias.

2761007112

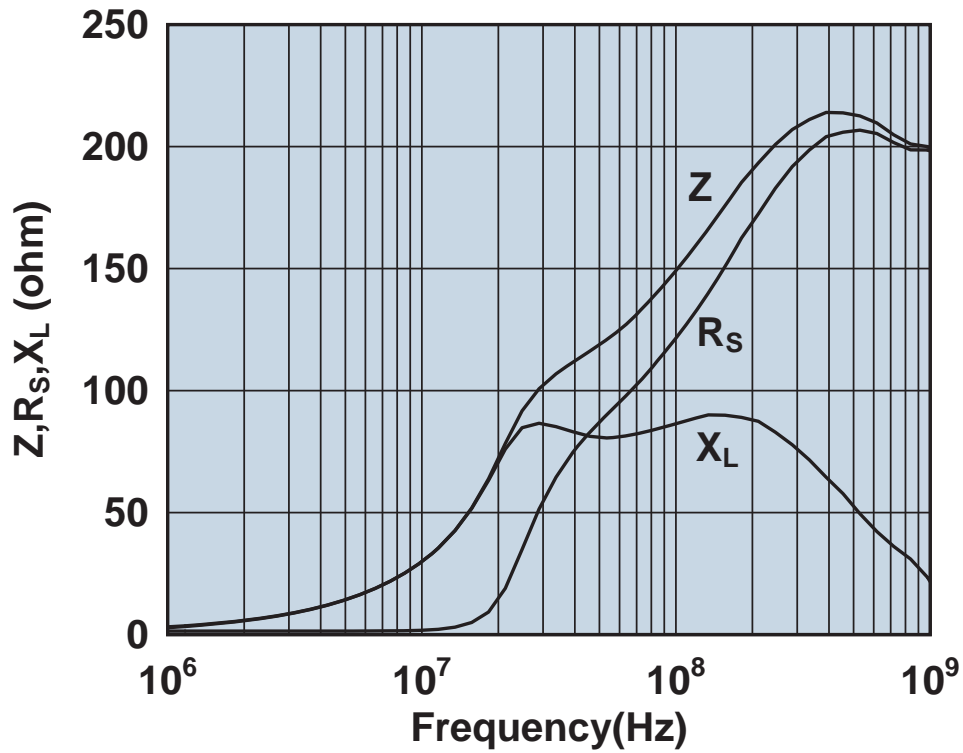


Impedance, reactance, and resistance vs. frequency.

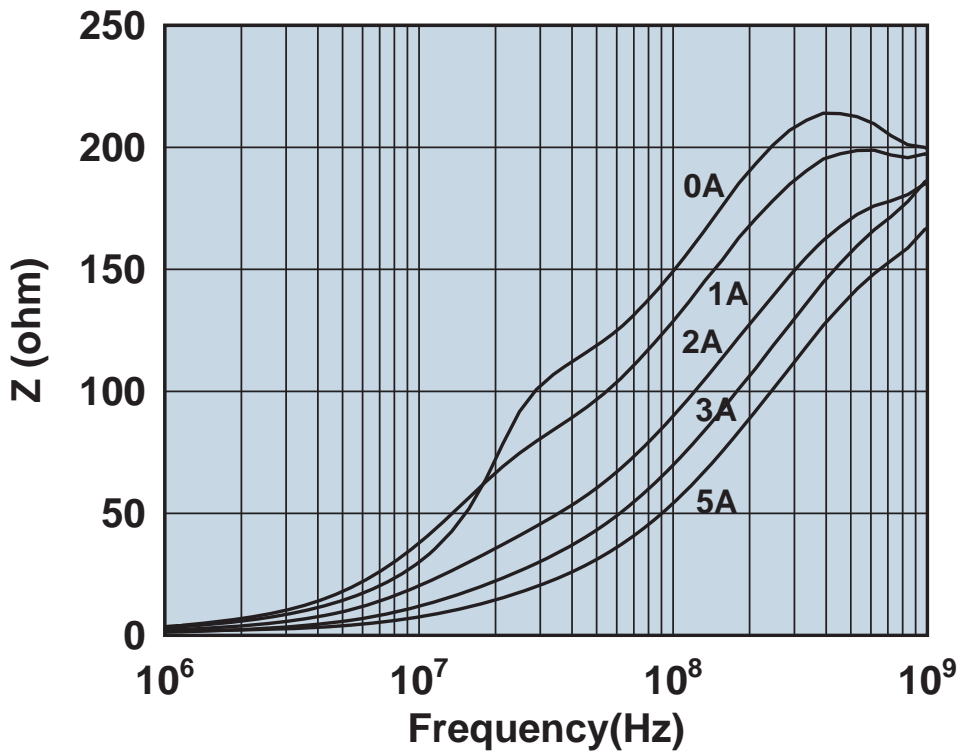


Impedance vs. frequency with dc bias.

2761008112

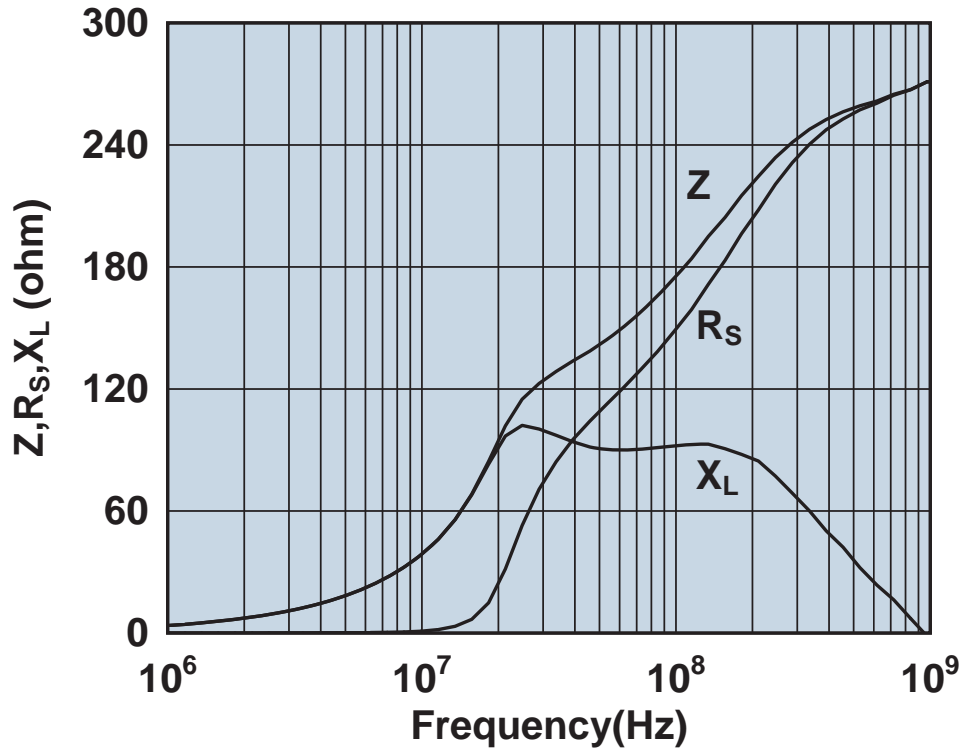


Impedance, reactance, and resistance vs. frequency.

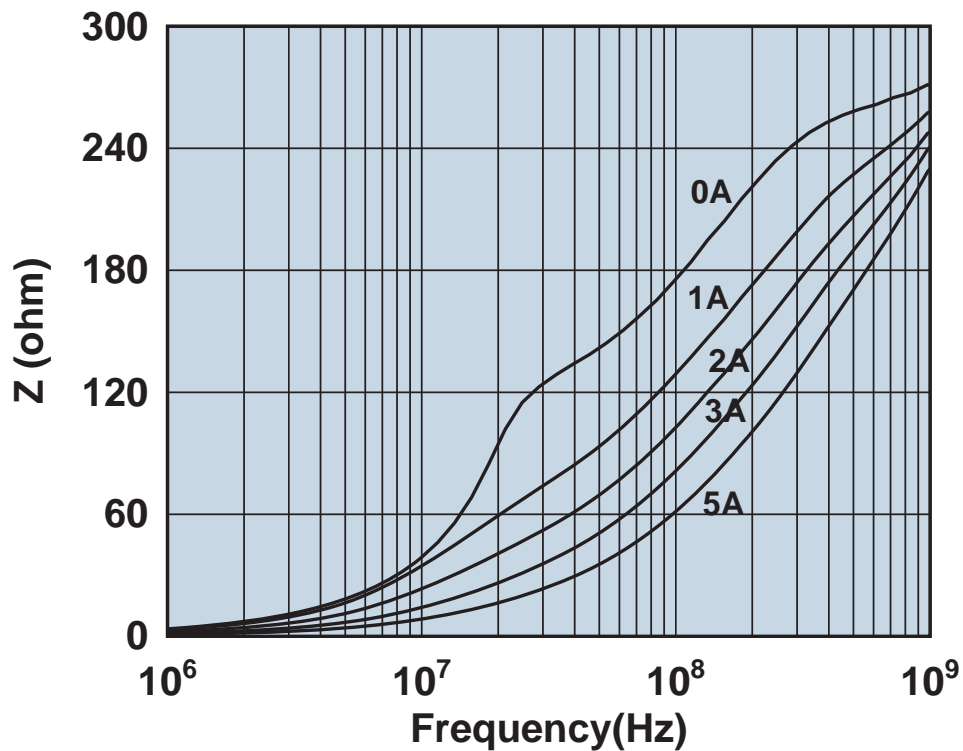


Impedance vs. frequency with dc bias.

2761009112

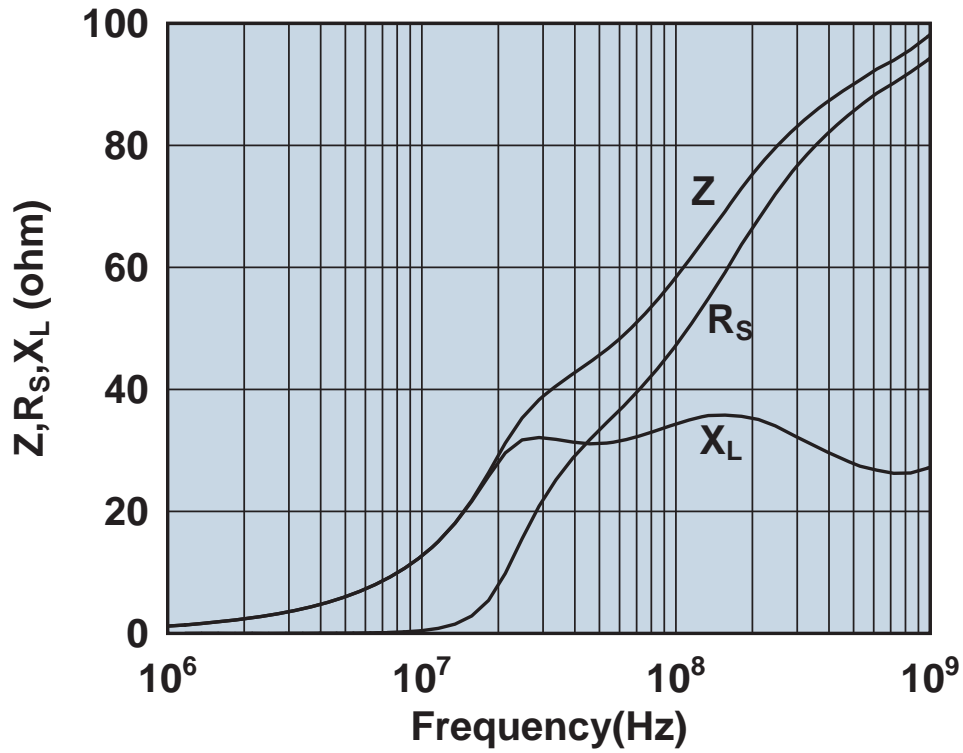


Impedance, reactance, and resistance vs. frequency.

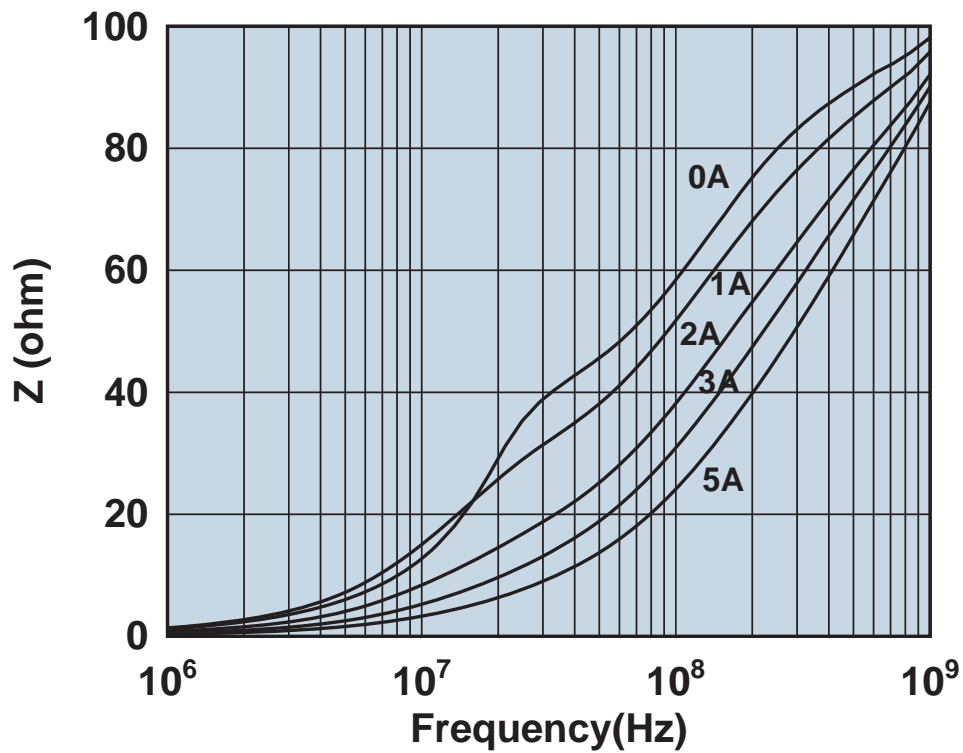


Impedance vs. frequency with dc bias.

2761015112

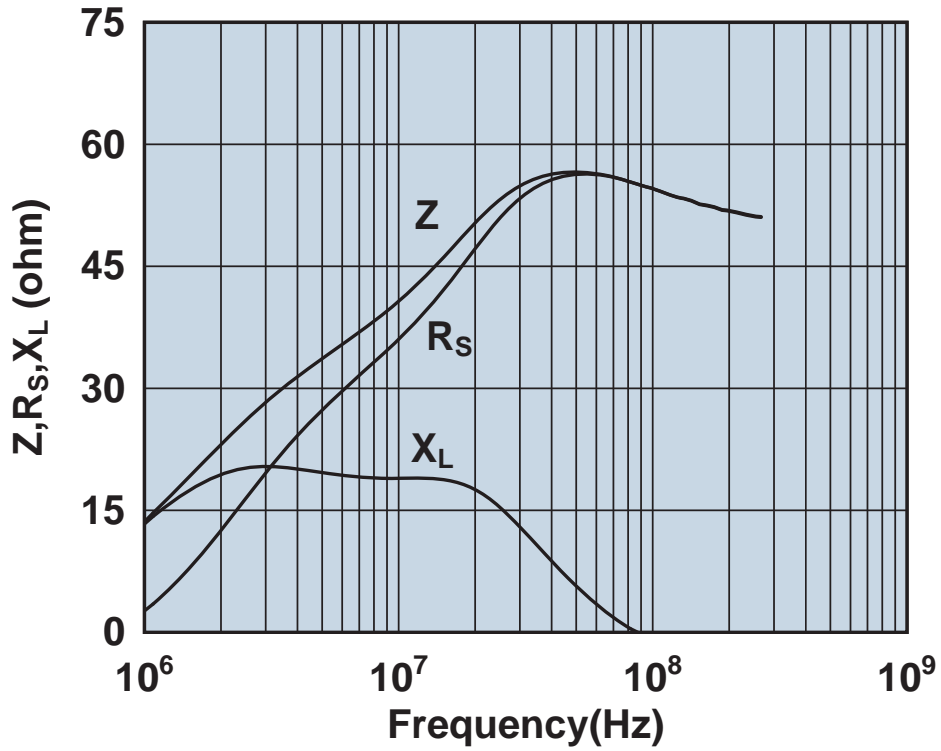


Impedance, reactance, and resistance vs. frequency.

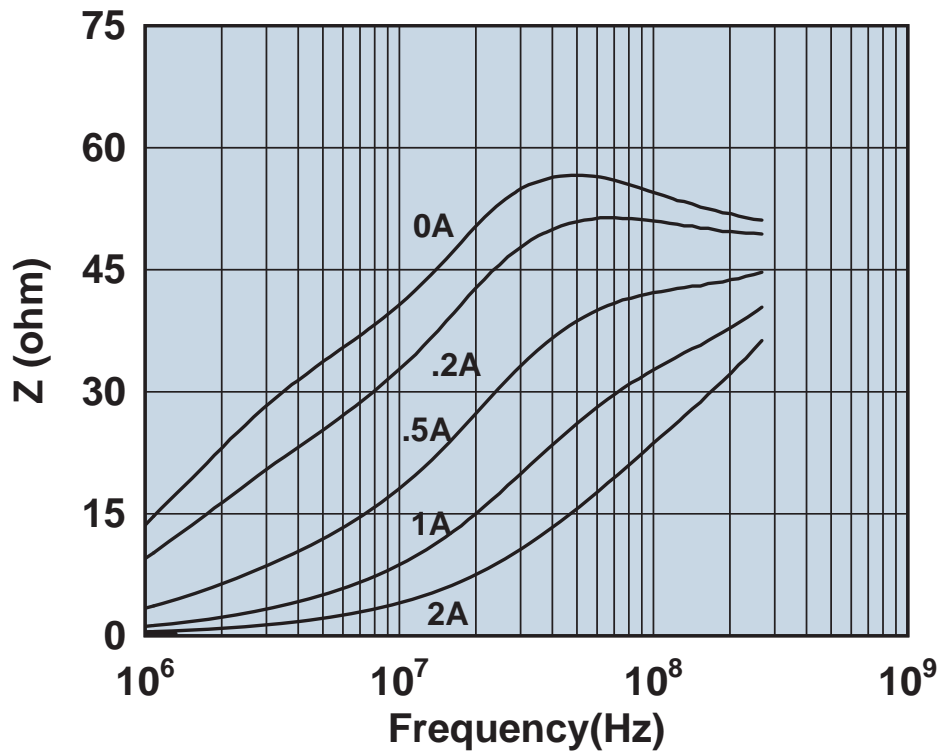


Impedance vs. frequency with dc bias.

2773001112

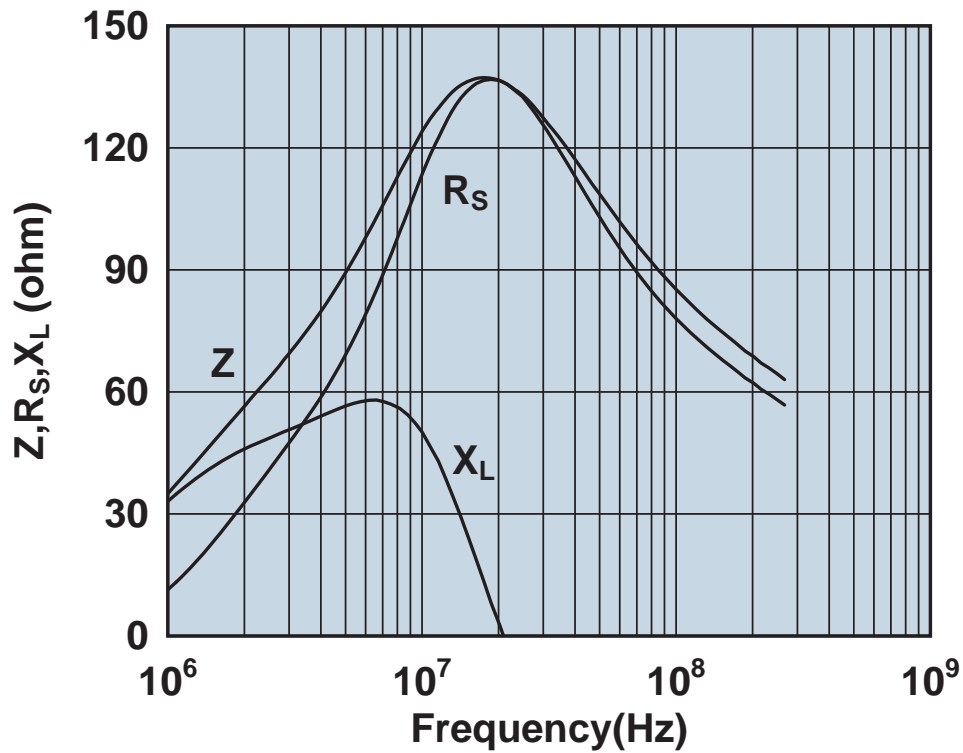


Impedance, reactance, and resistance vs. frequency.

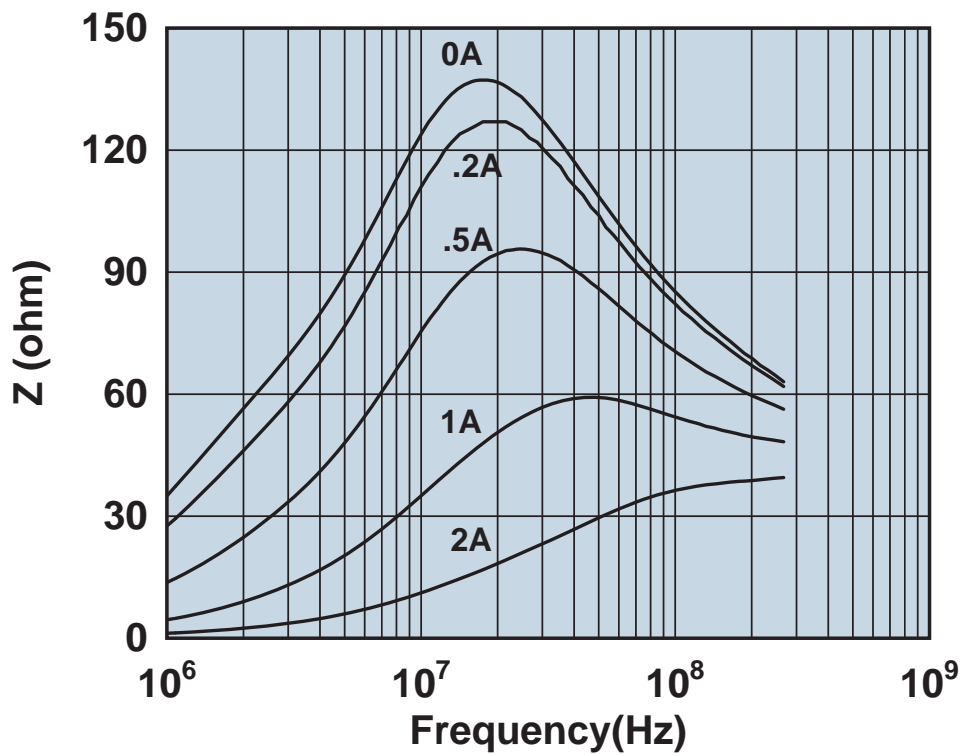


Impedance vs. frequency with dc bias.

2773002112

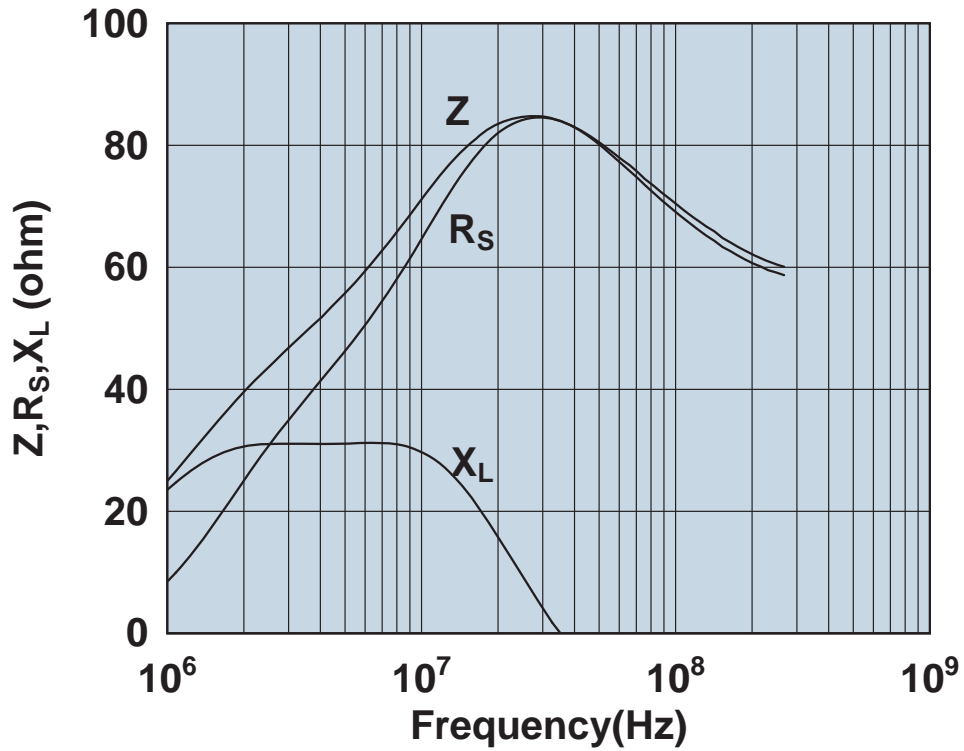


Impedance, reactance, and resistance vs. frequency.

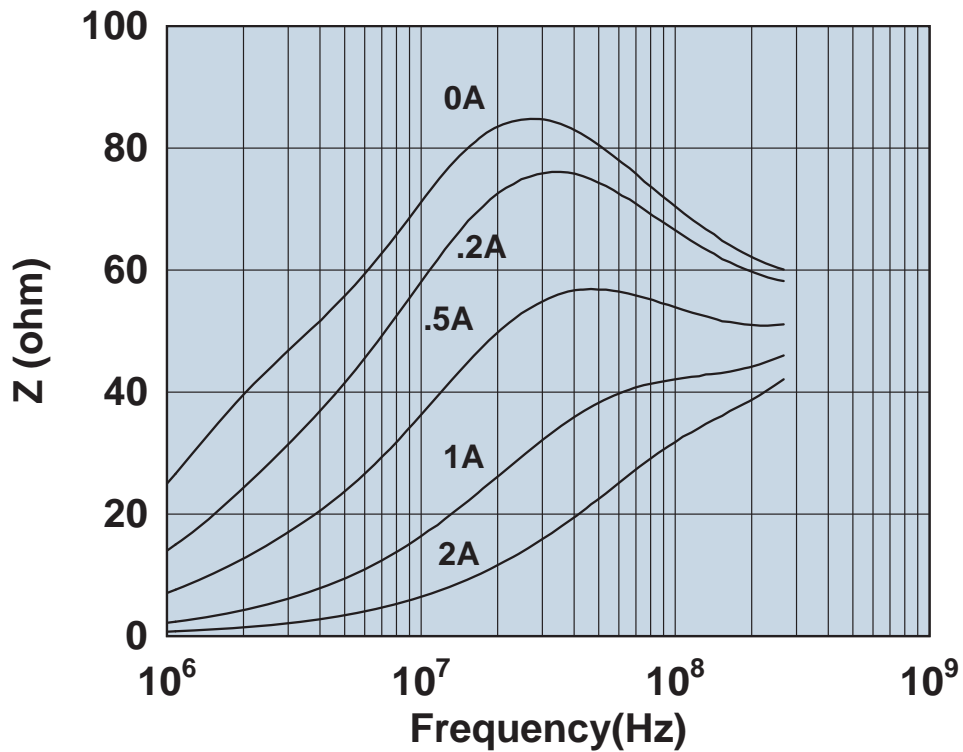


Impedance vs. frequency with dc bias.

2773003112



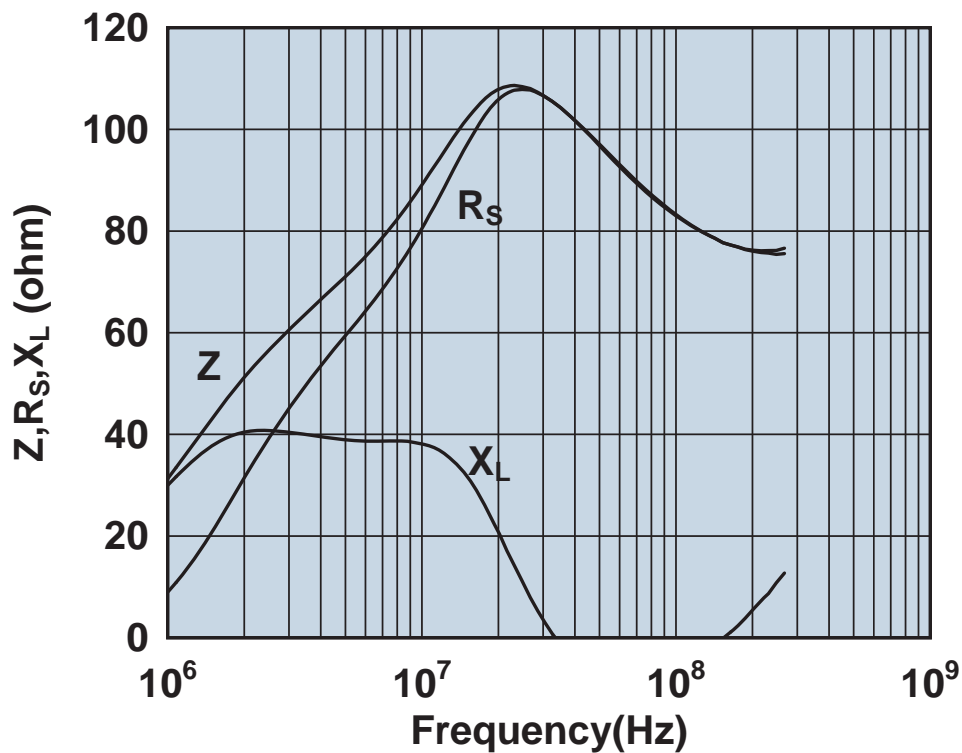
Impedance, reactance, and resistance vs. frequency.



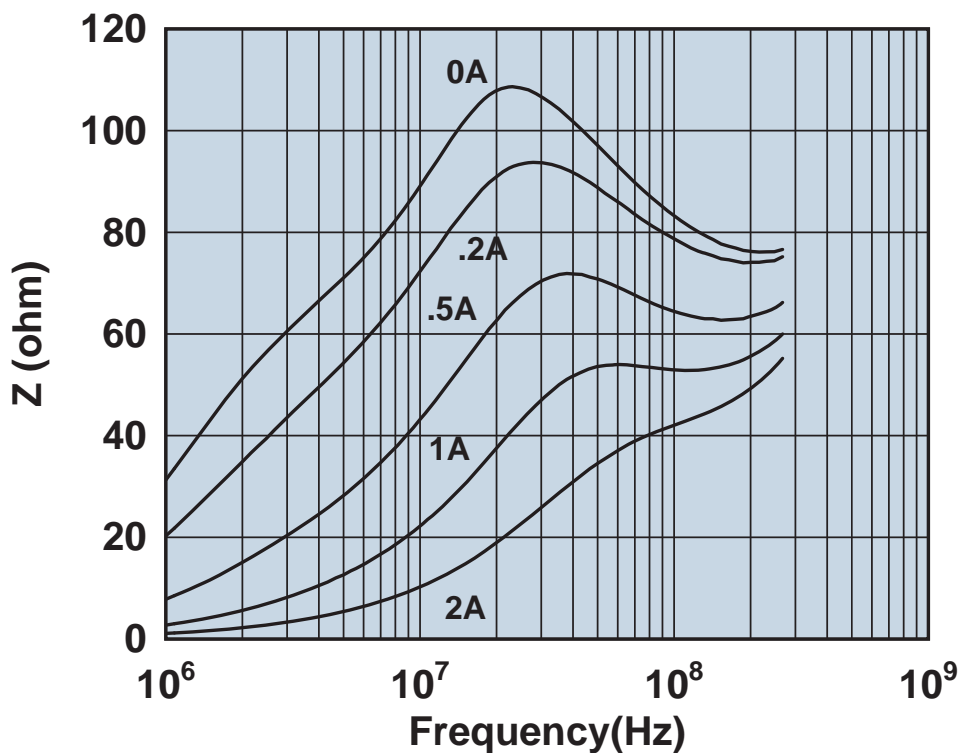
Impedance vs. frequency with dc bias.



2773004112

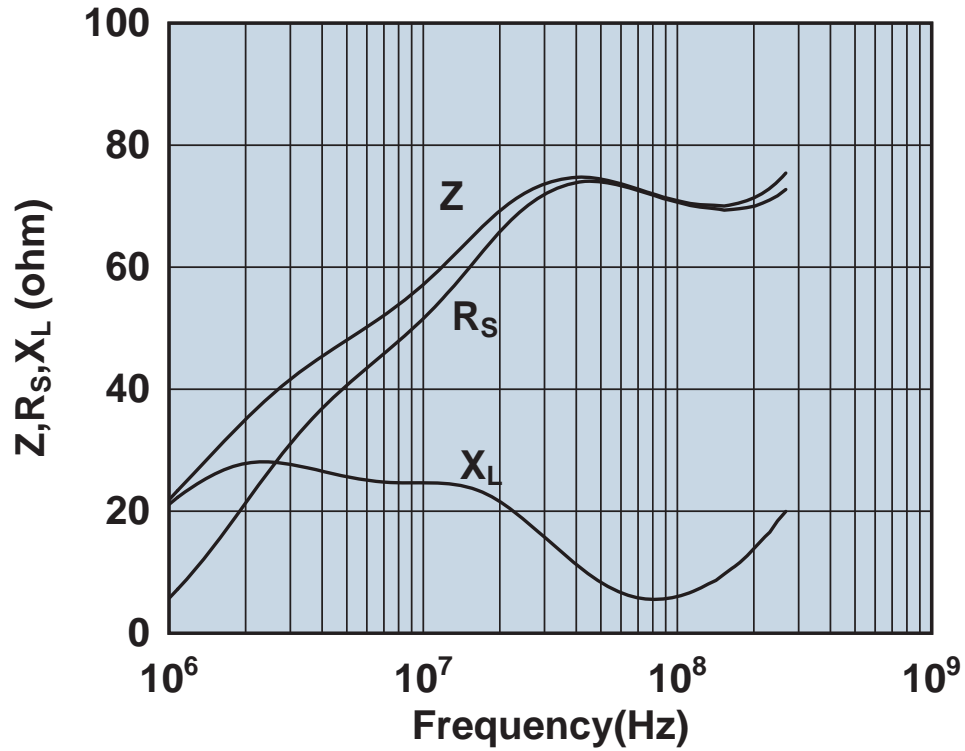


Impedance, reactance, and resistance vs. frequency.

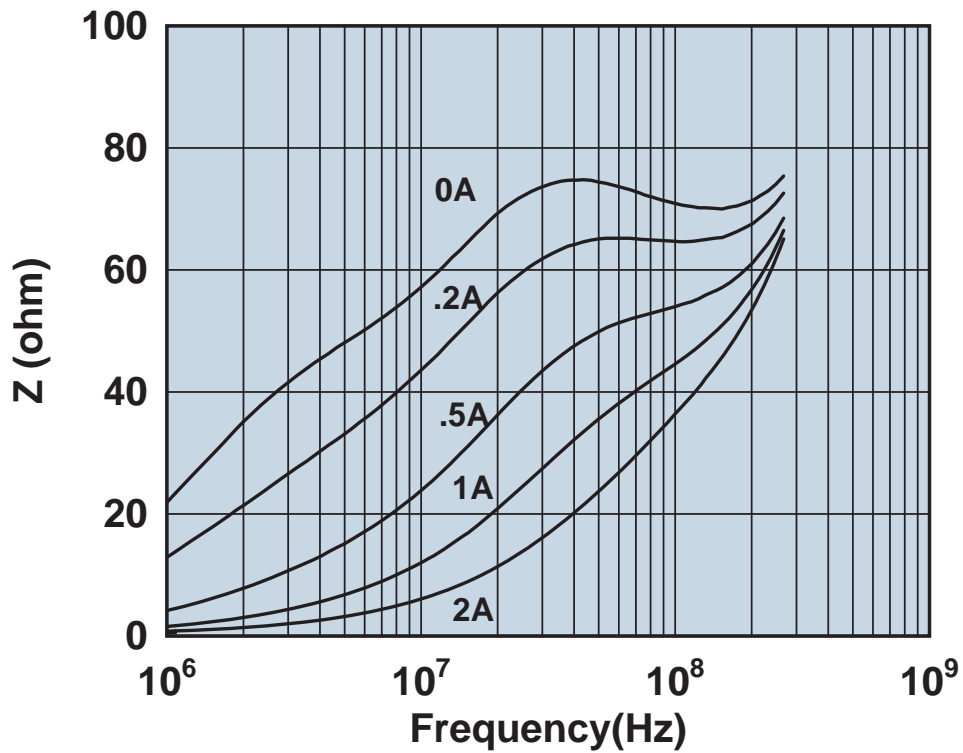


Impedance vs. frequency with dc bias.

2773005112

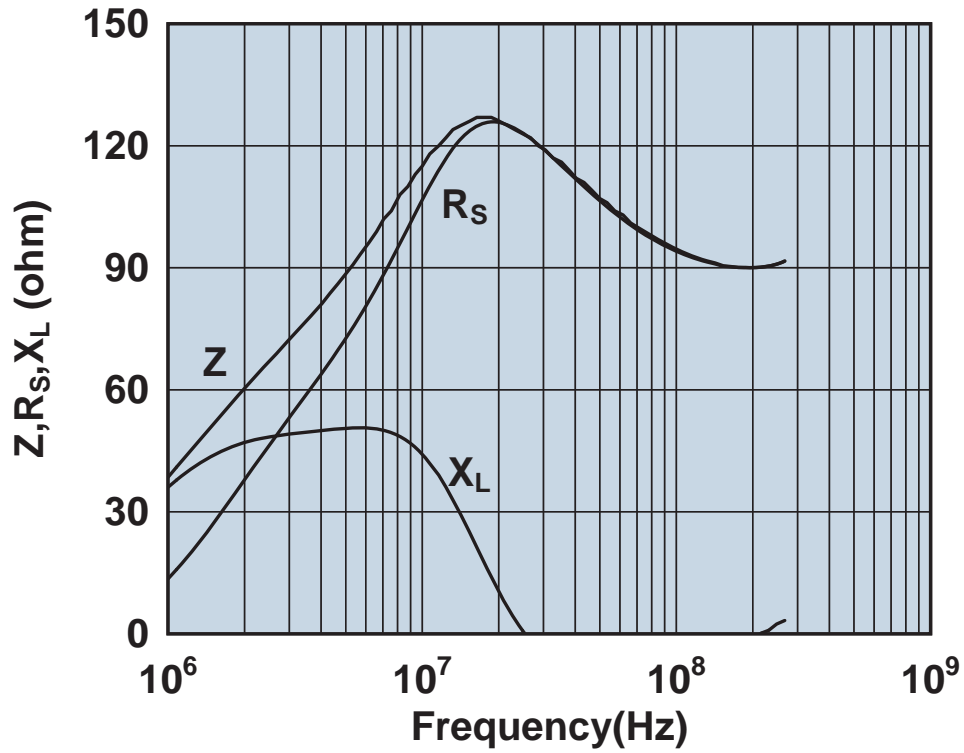


Impedance, reactance, and resistance vs. frequency.

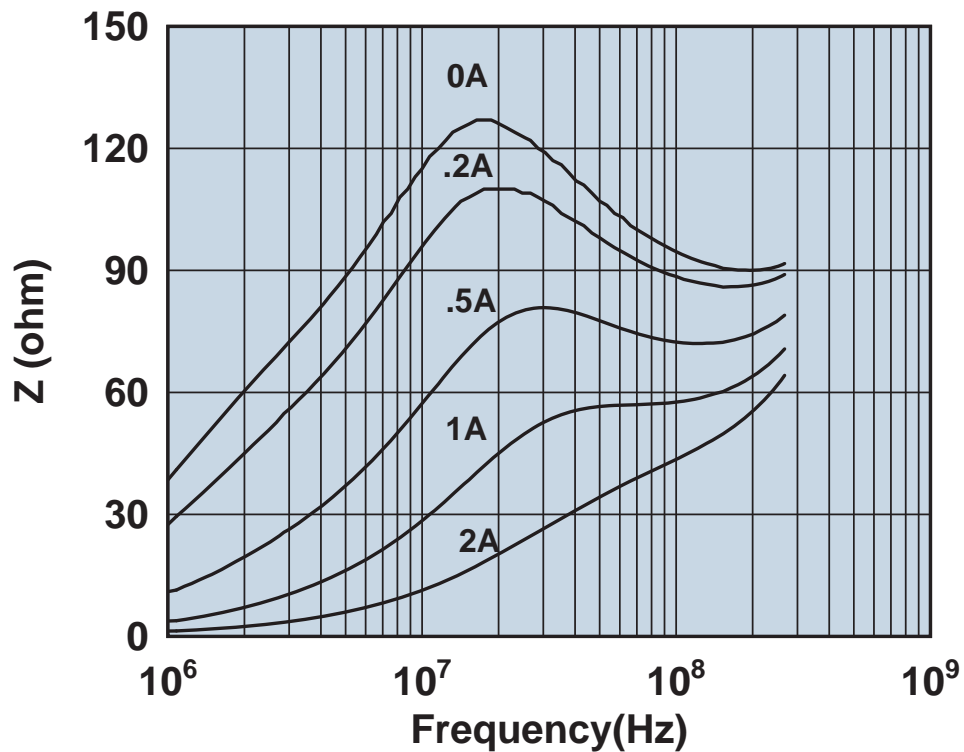


Impedance vs. frequency with dc bias.

2773007112

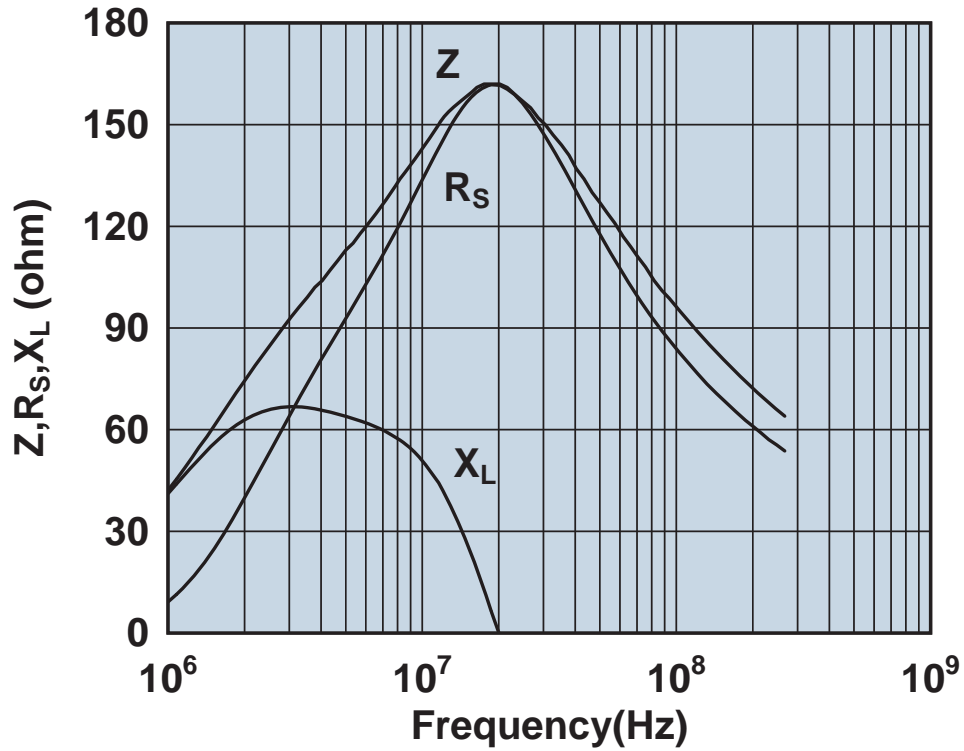


Impedance, reactance, and resistance vs. frequency.

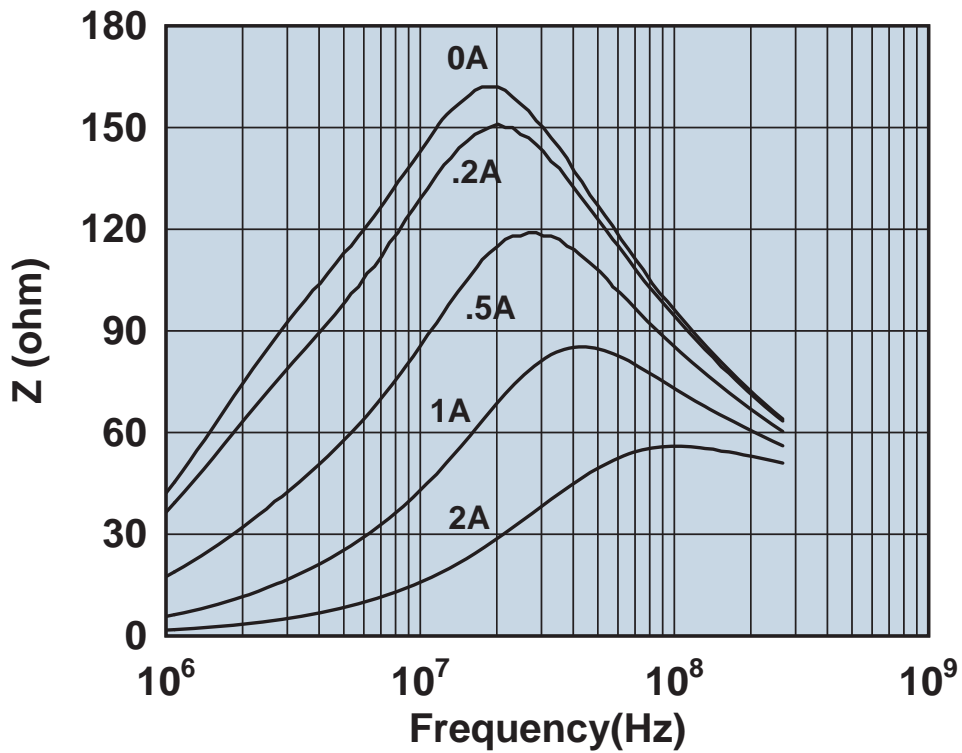


Impedance vs. frequency with dc bias.

2773008112

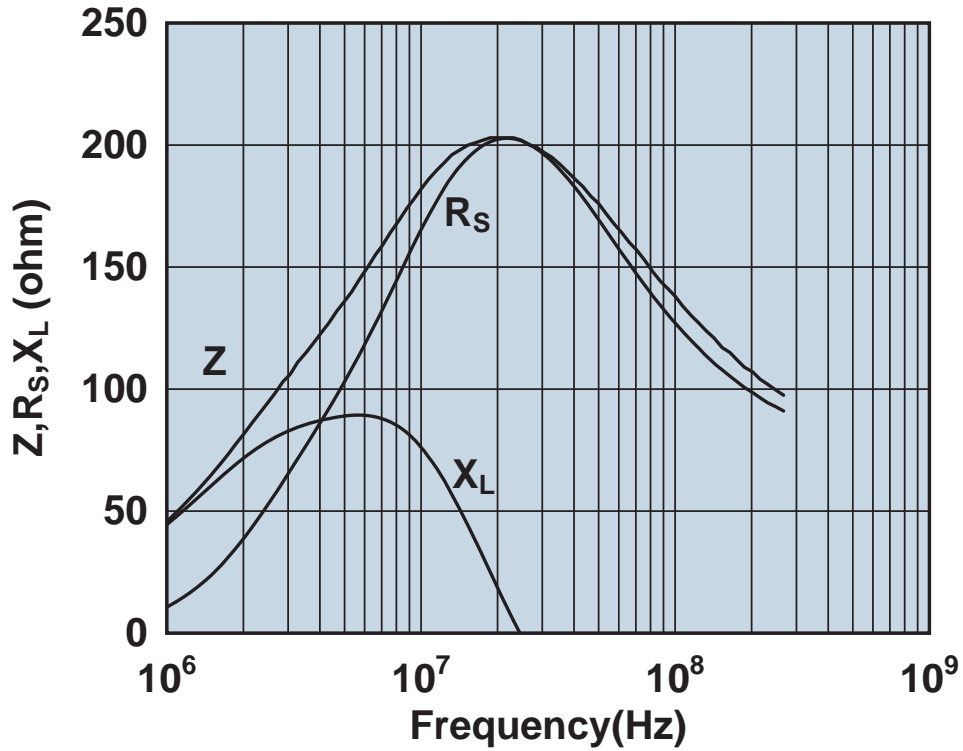


Impedance, reactance, and resistance vs. frequency.

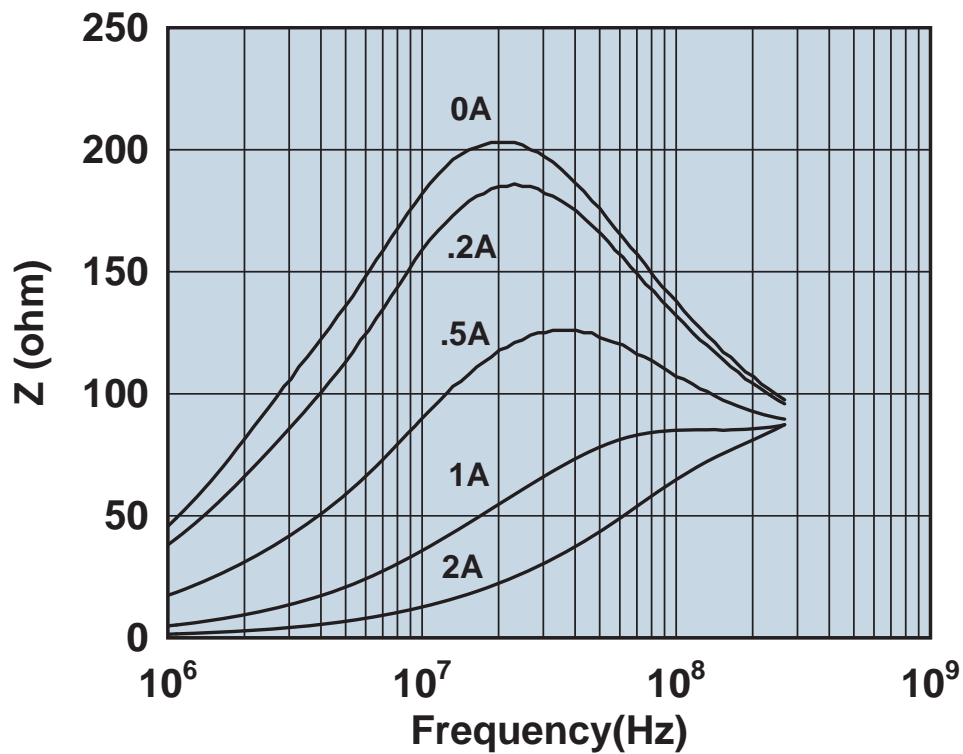


Impedance vs. frequency with dc bias.

2773009112

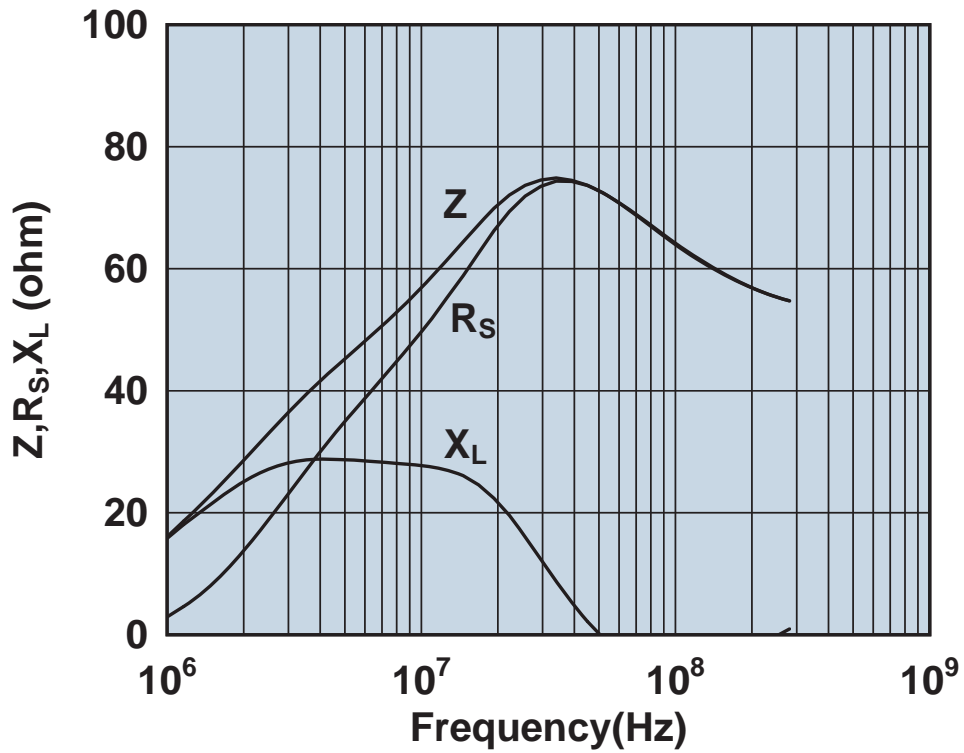


Impedance, reactance, and resistance vs. frequency.

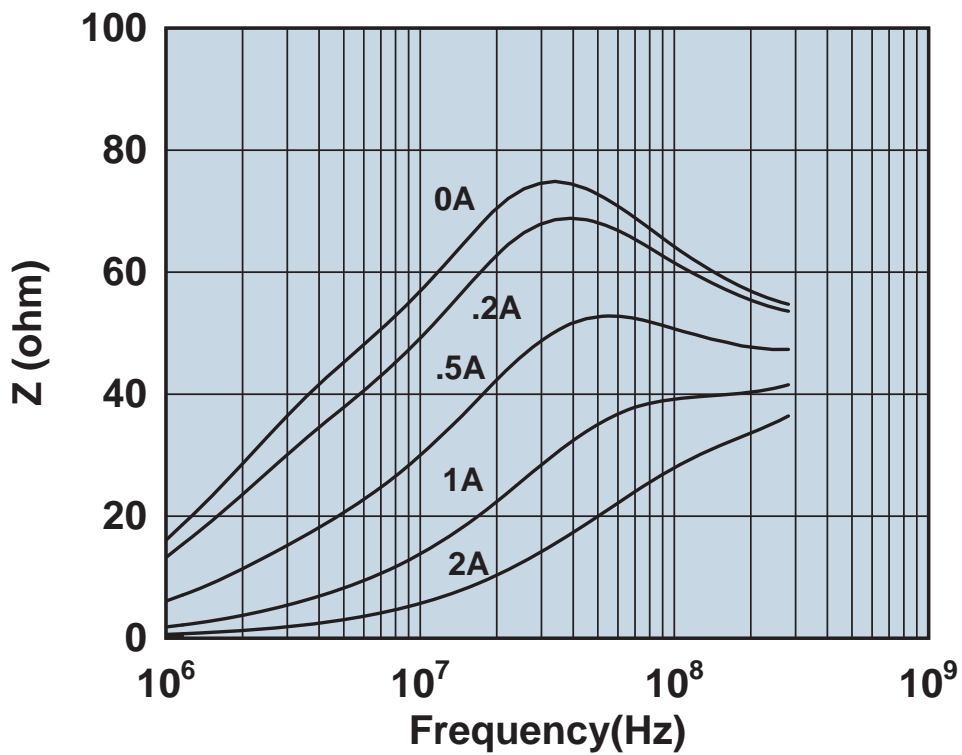


Impedance vs. frequency with dc bias.

2773015112

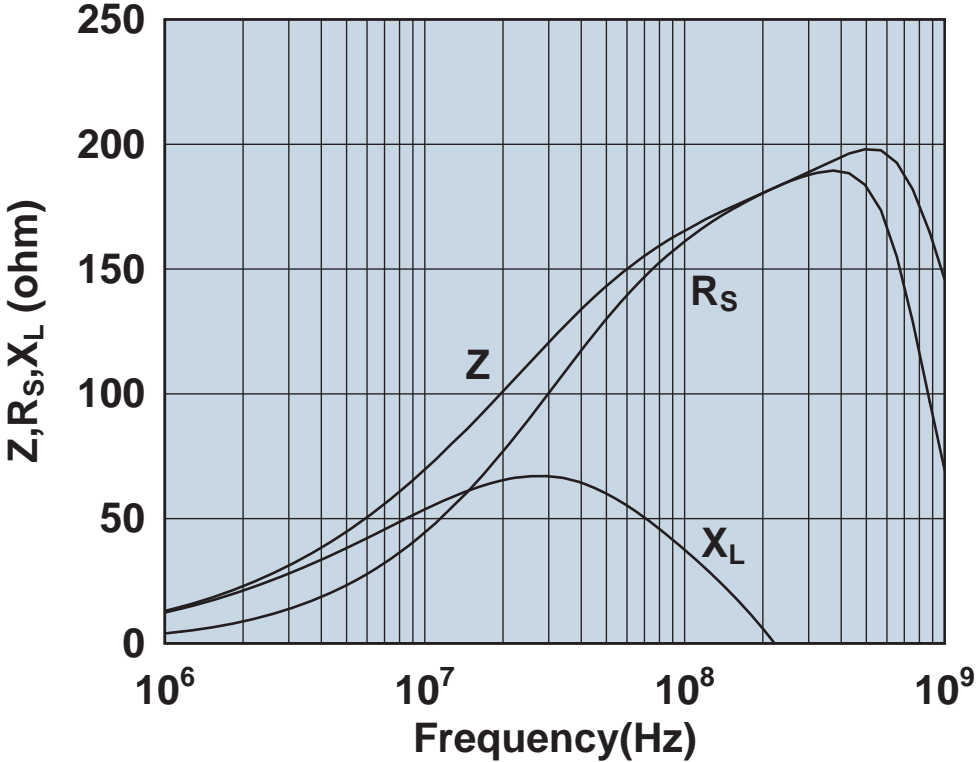


Impedance, reactance, and resistance vs. frequency.



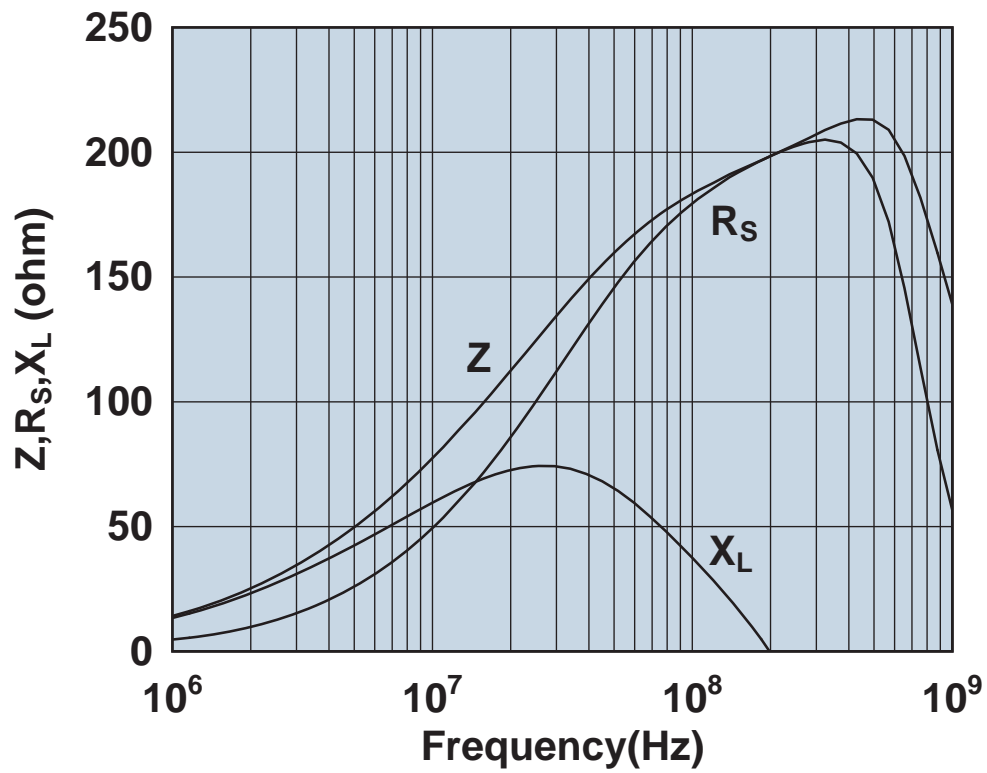
Impedance vs. frequency with dc bias.

2843000102



Impedance, reactance, and resistance vs. frequency.

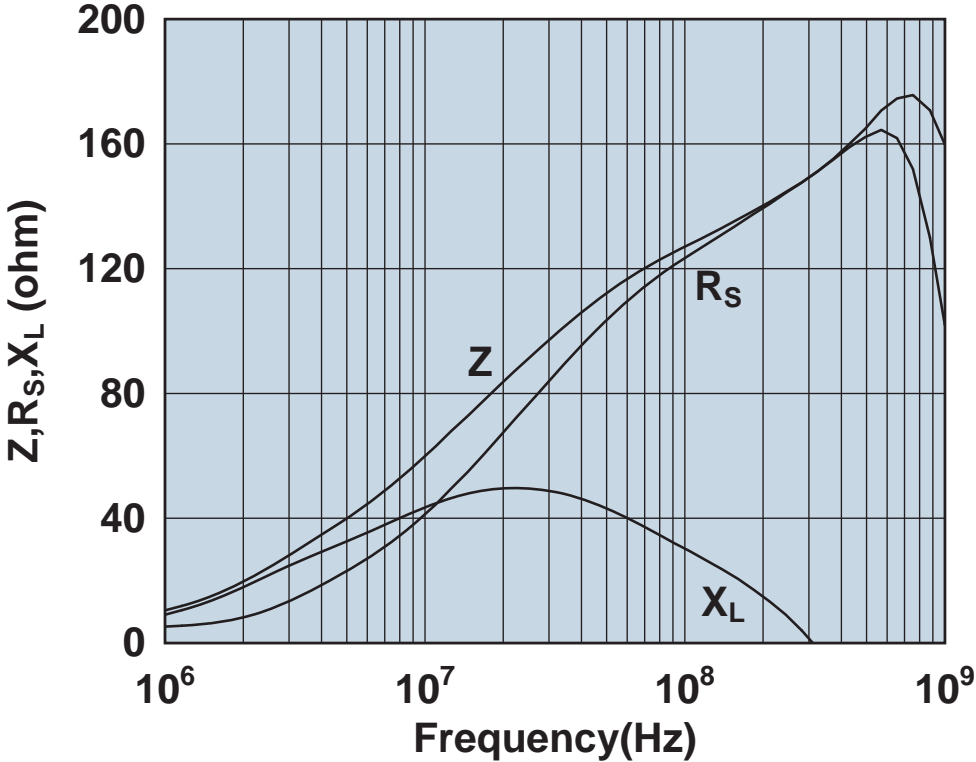
2843000202



Impedance, reactance, and resistance vs. frequency.

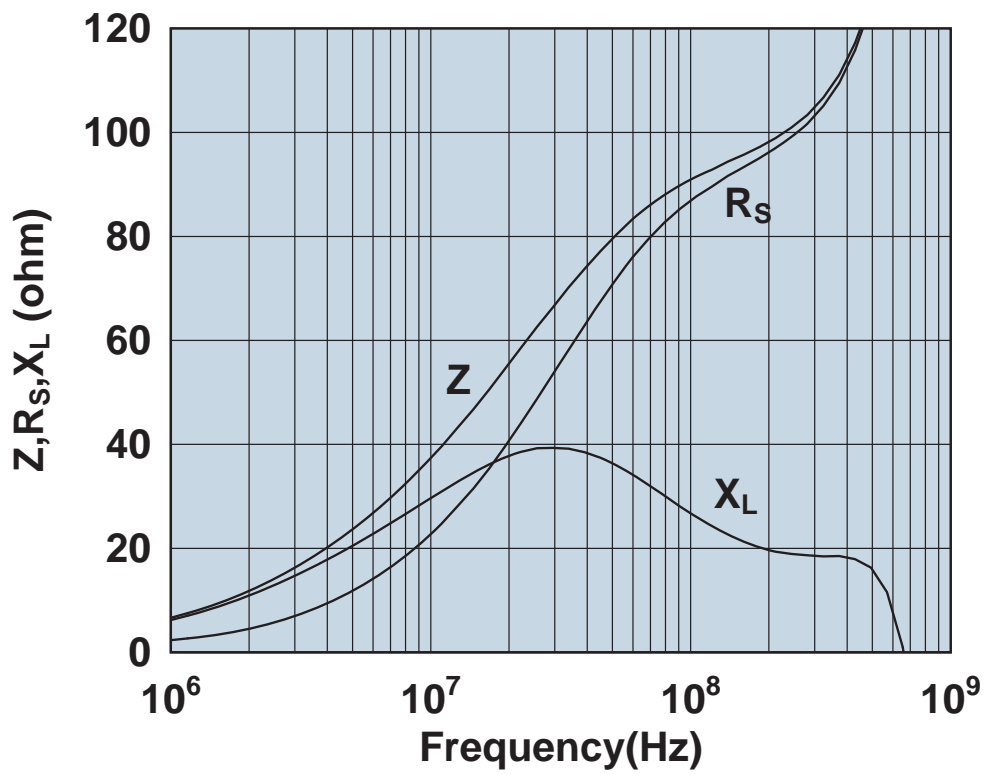


2843000302



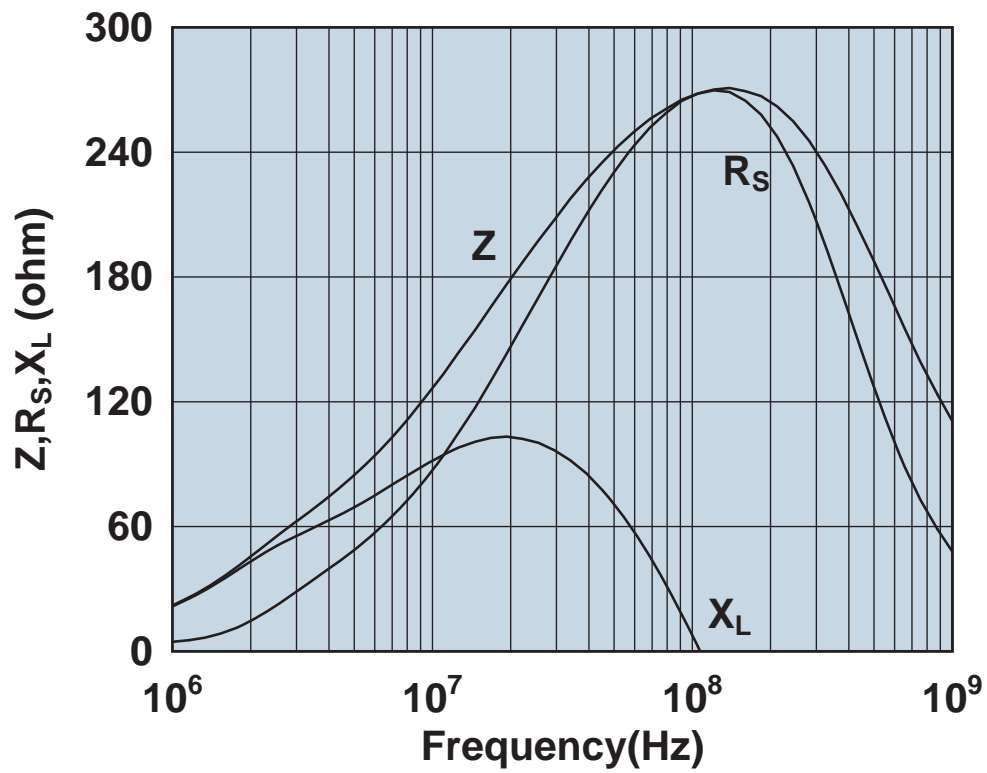
Impedance, reactance, and resistance vs. frequency.

2843001502



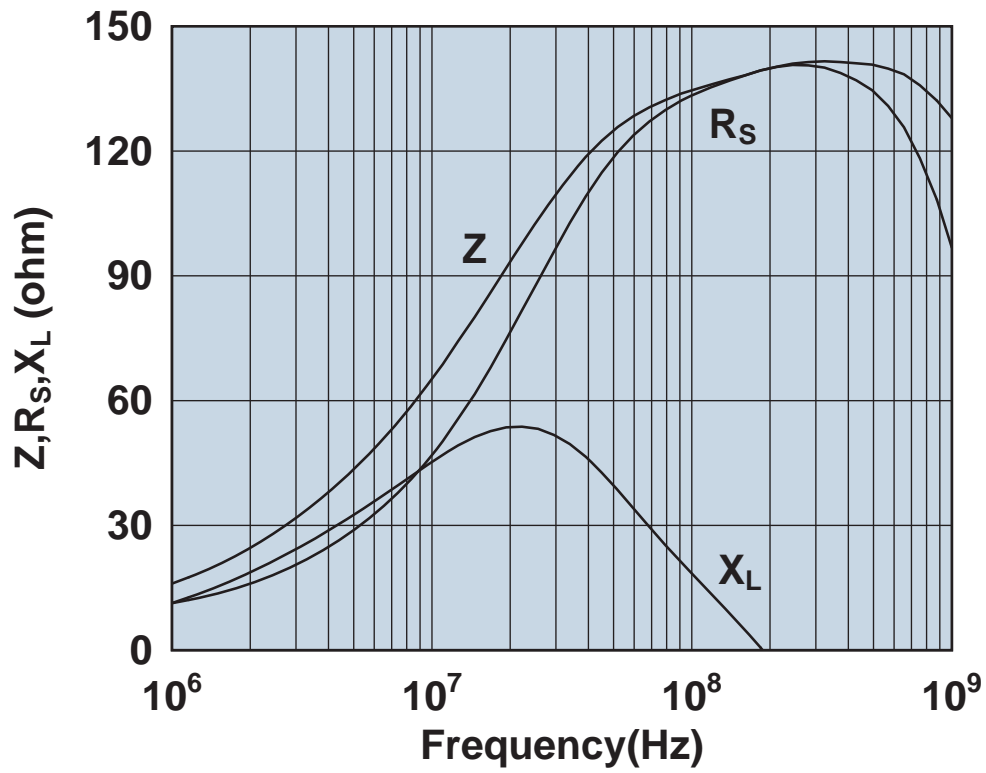
Impedance, reactance, and resistance vs. frequency.

2843001702



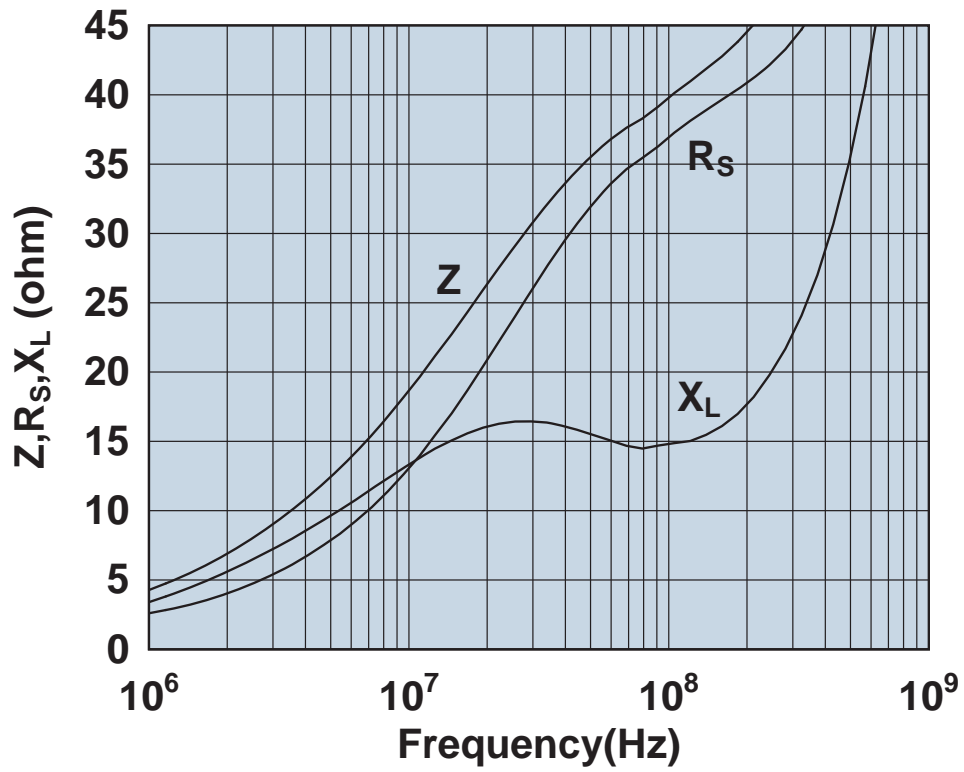
Impedance, reactance, and resistance vs. frequency.

2843001802



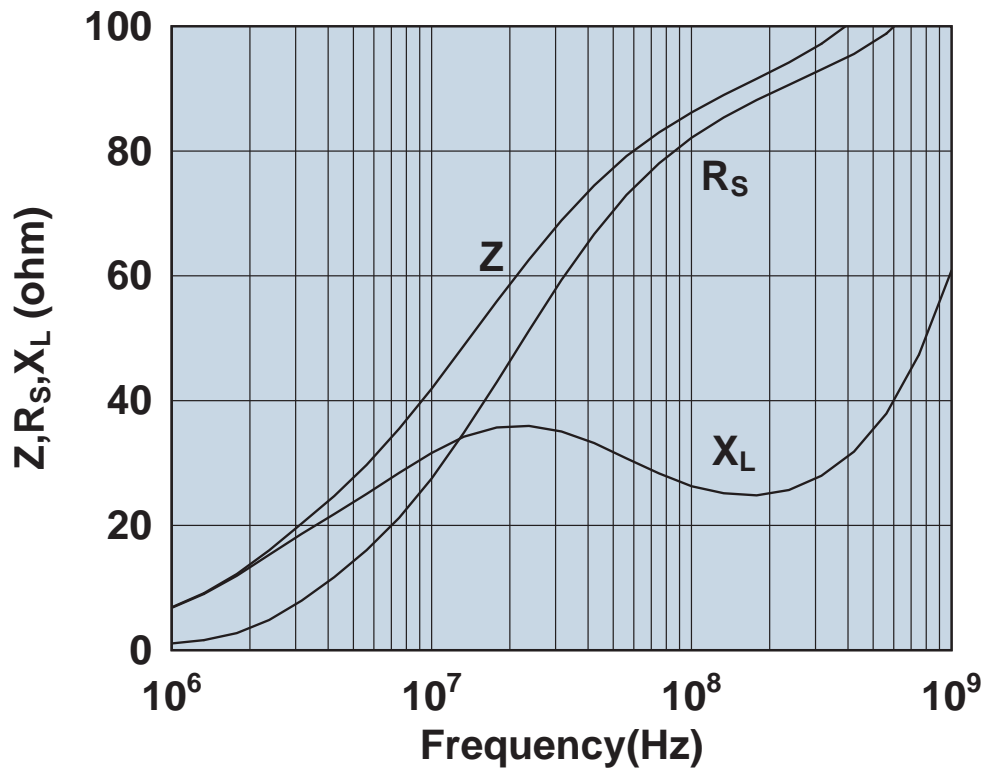
Impedance, reactance, and resistance vs. frequency.

2843002302



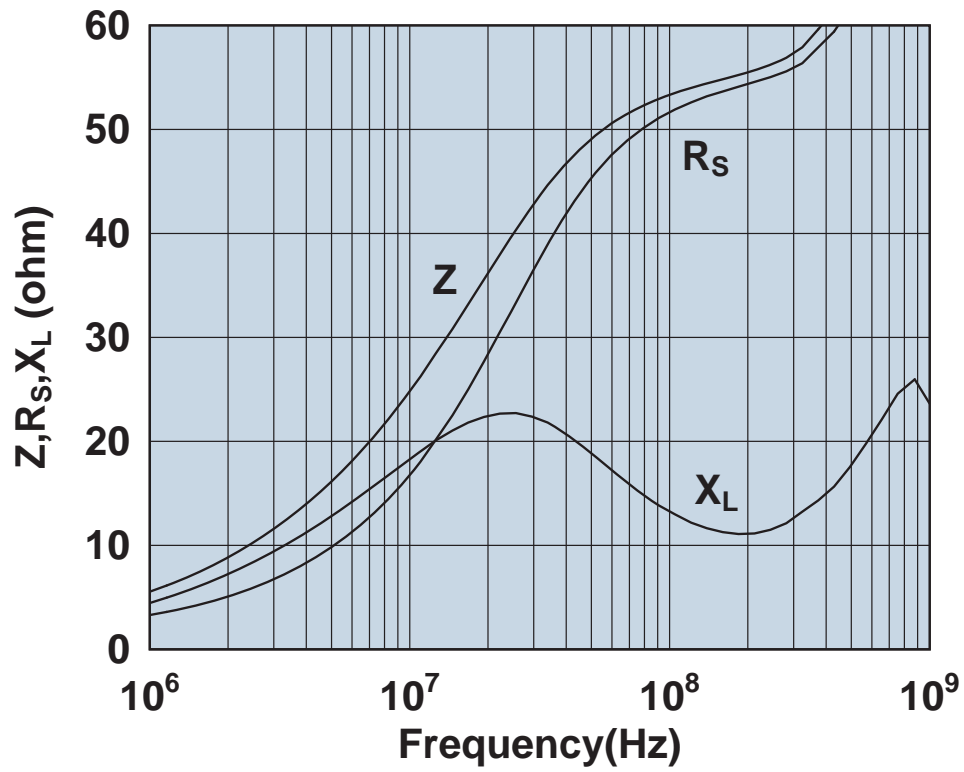
Impedance, reactance, and resistance vs. frequency.

2843002402



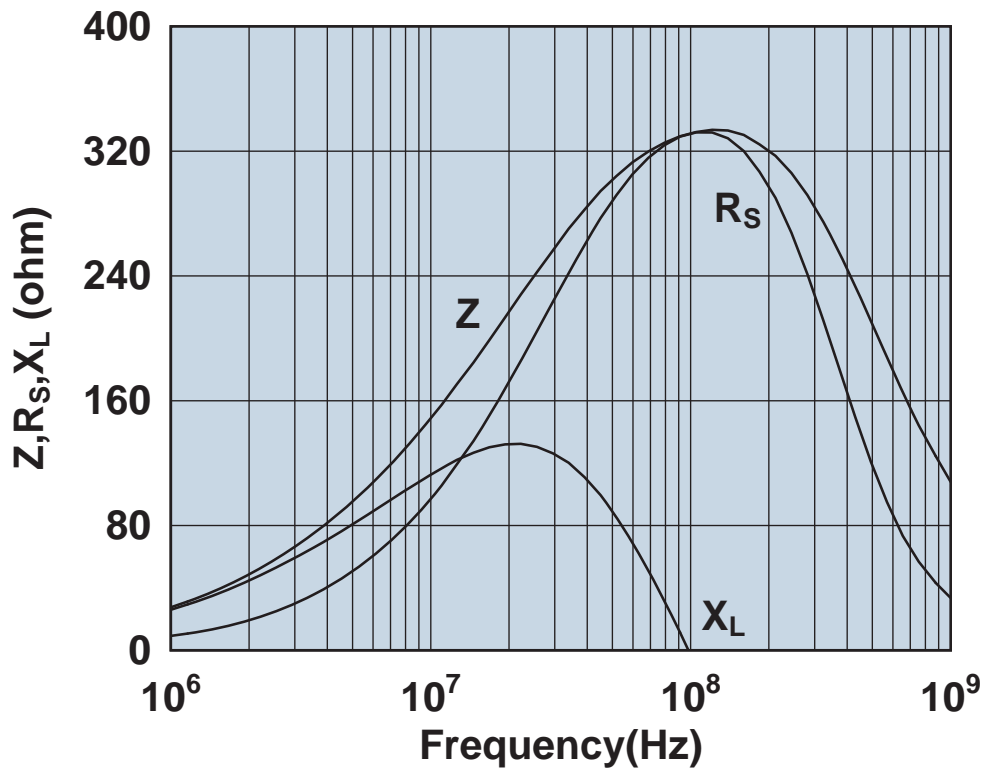
Impedance, reactance, and resistance vs. frequency.

2843002702



Impedance, reactance, and resistance vs. frequency.

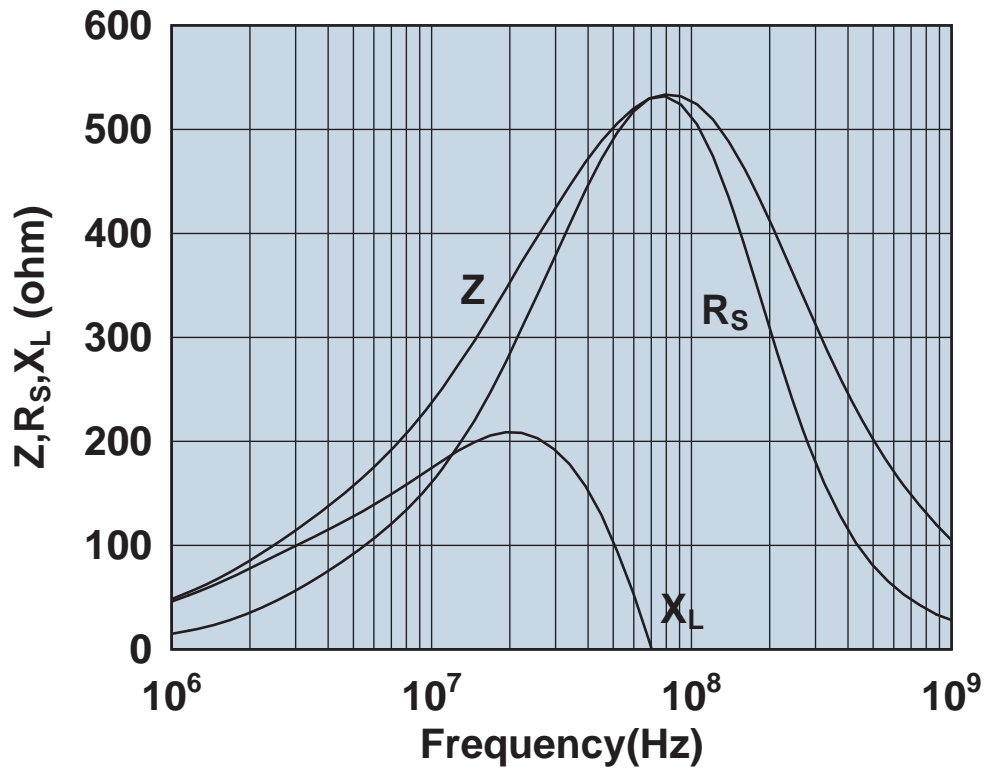
2843006802



Impedance, reactance, and resistance vs. frequency.

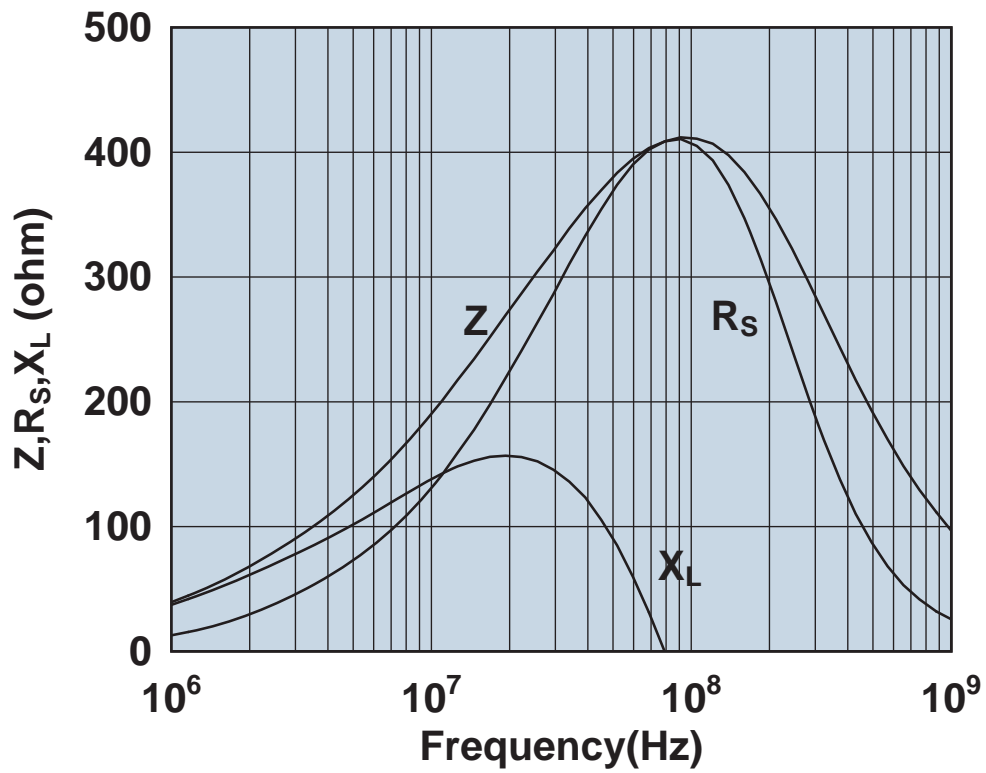


2843009902



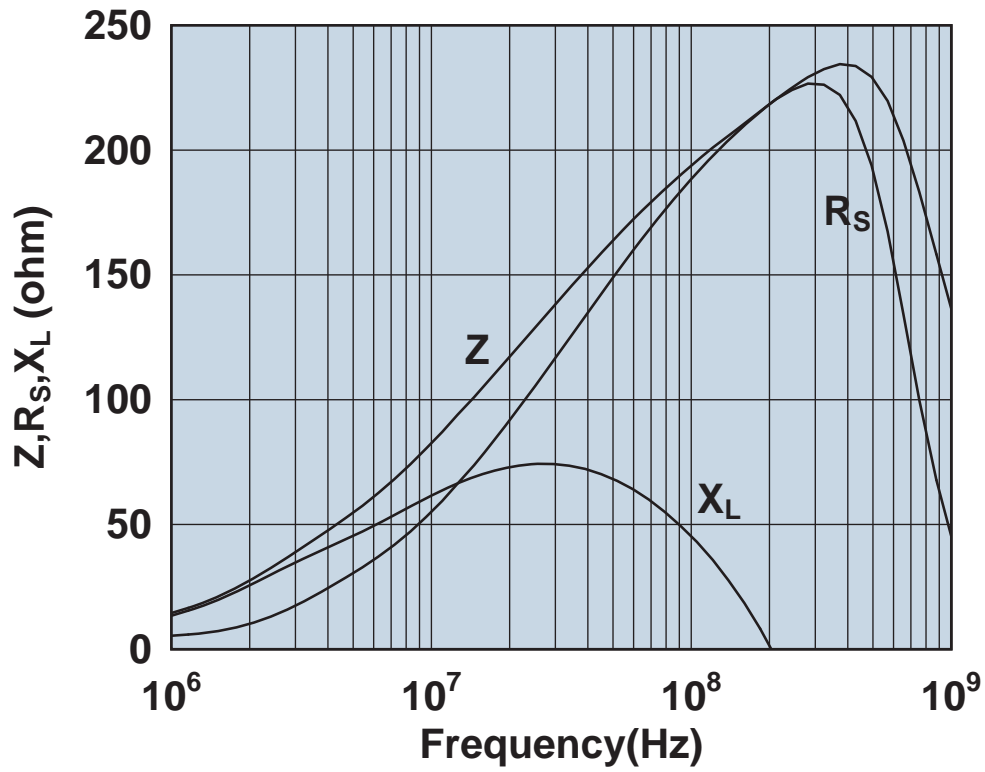
Impedance, reactance, and resistance vs. frequency.

2843010302



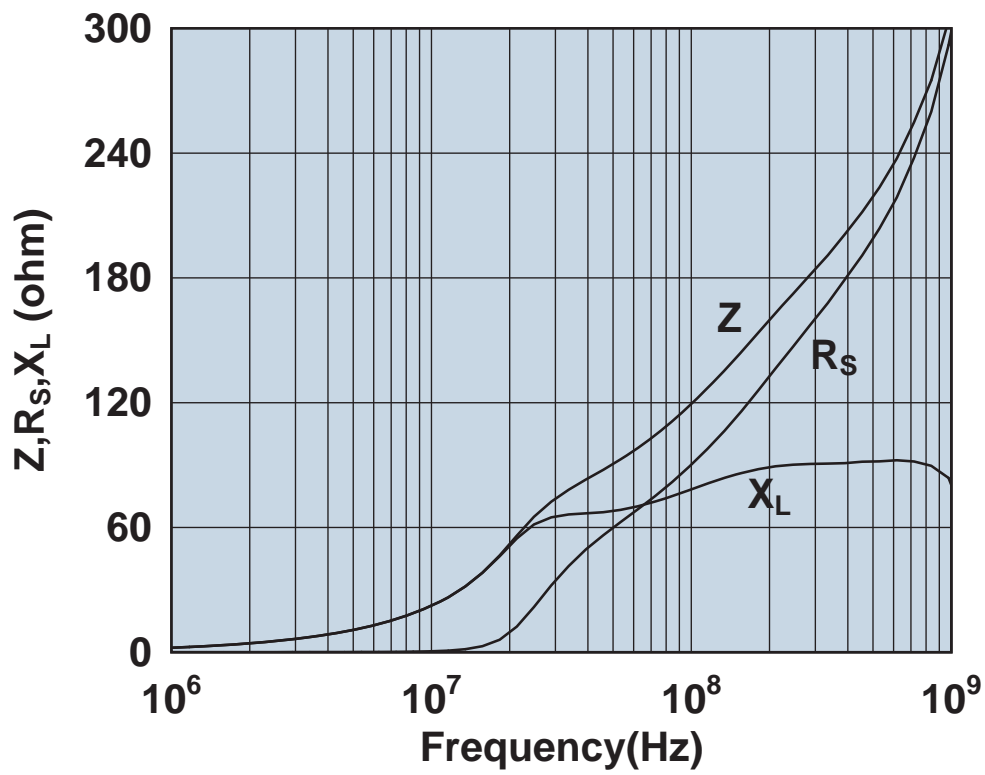
Impedance, reactance, and resistance vs. frequency.

2843010402



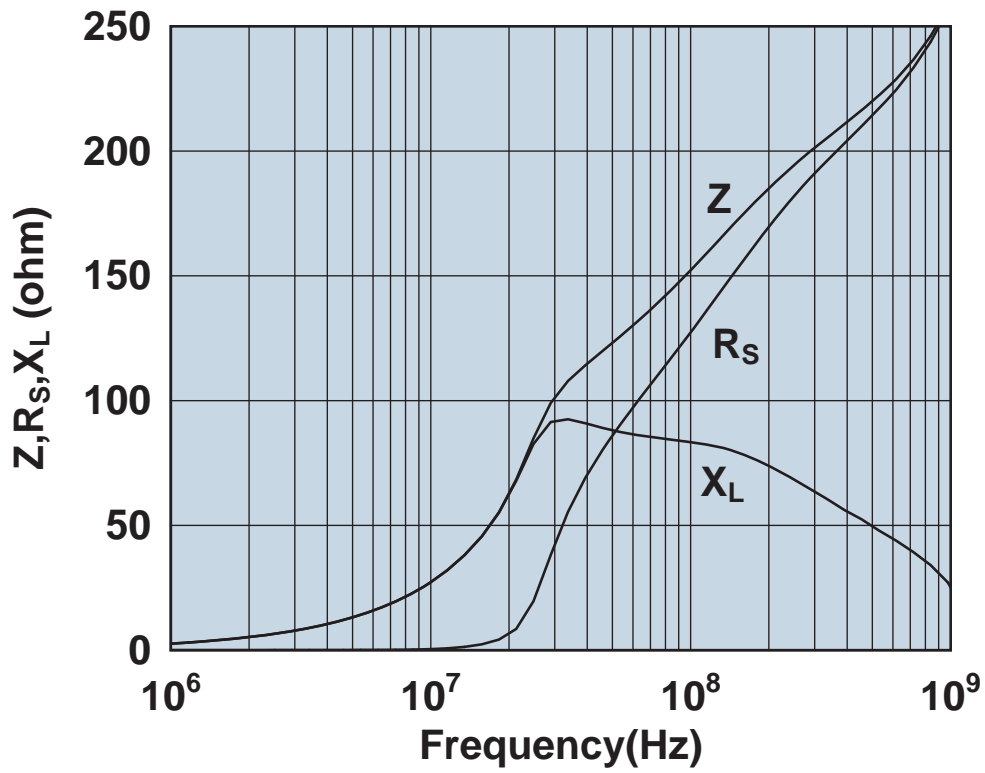
Impedance, reactance, and resistance vs. frequency.

2861000102



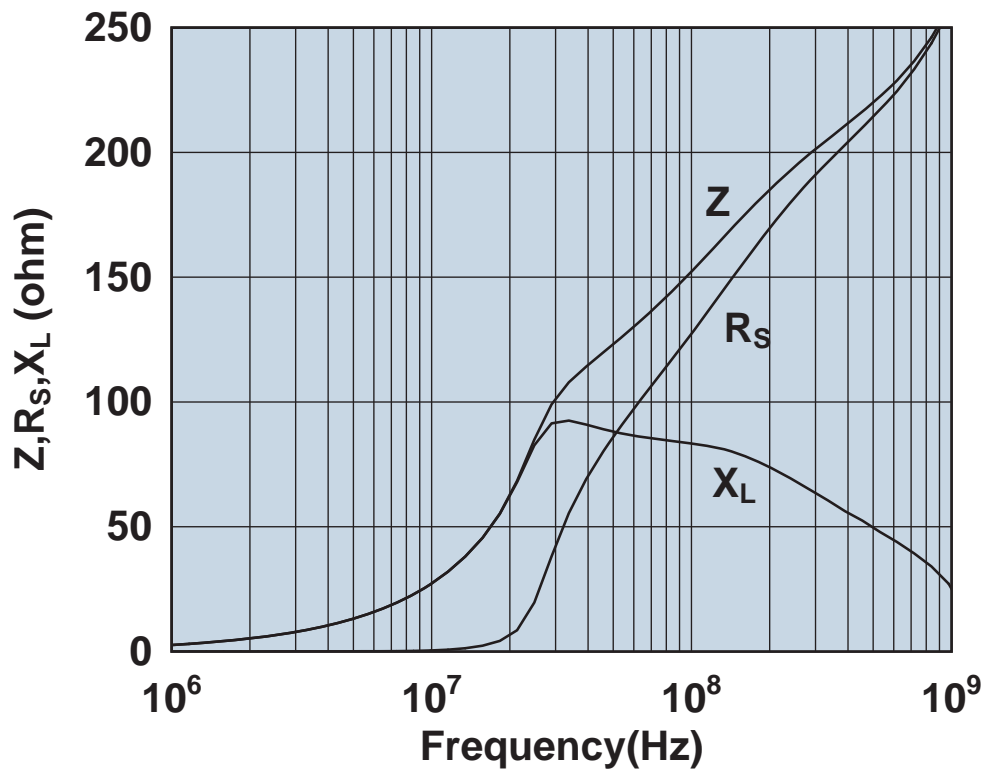
Impedance, reactance, and resistance vs. frequency.

2861000202



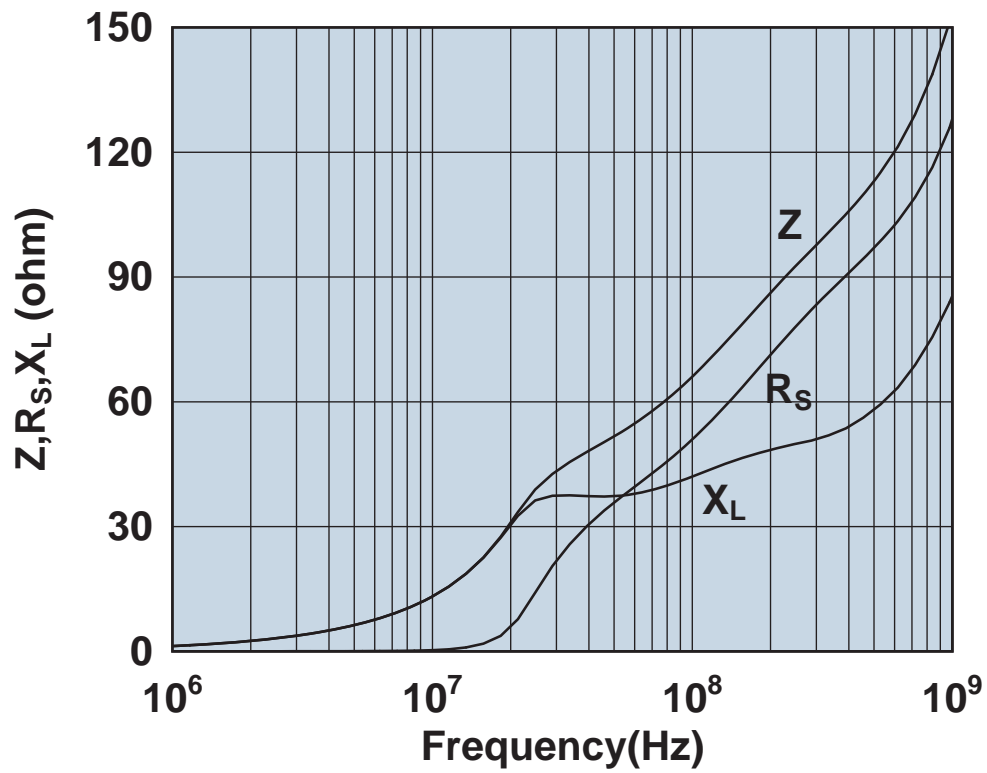
Impedance, reactance, and resistance vs. frequency.

2861000302



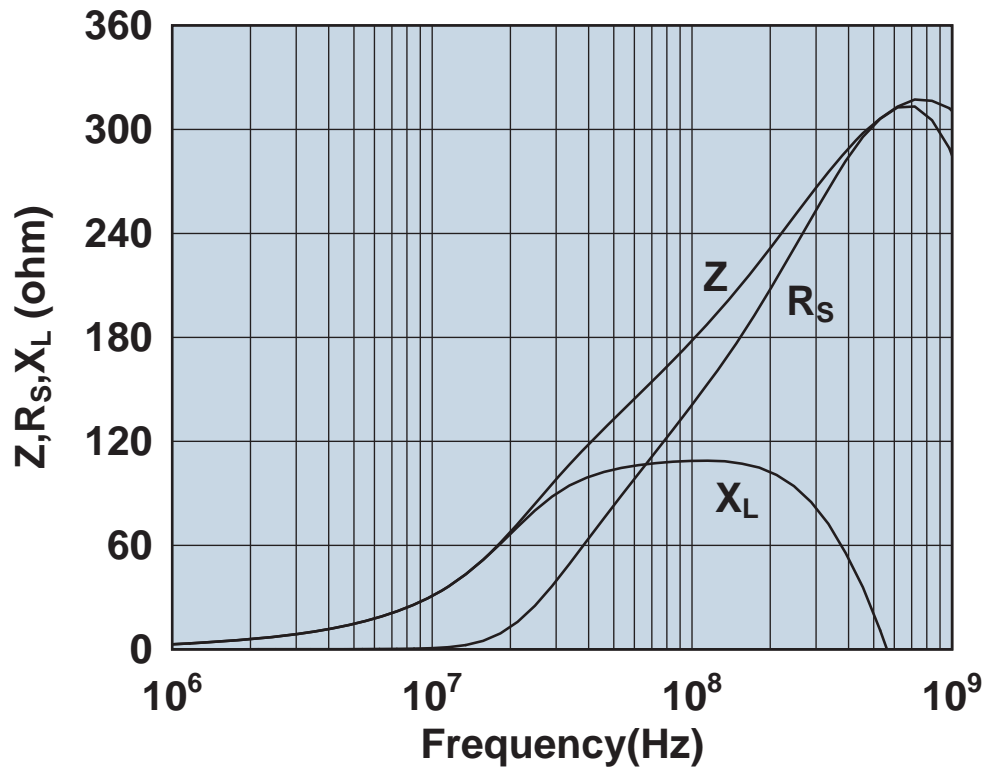
Impedance, reactance, and resistance vs. frequency.

2861001502



Impedance, reactance, and resistance vs. frequency.

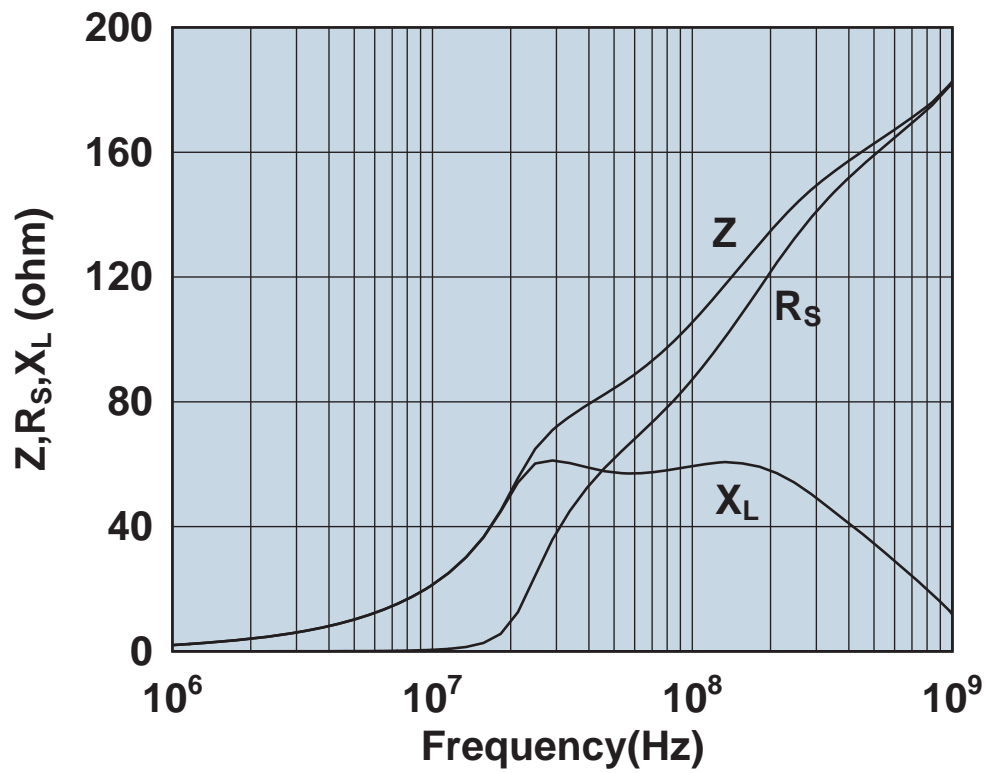
2861001702



Impedance, reactance, and resistance vs. frequency.

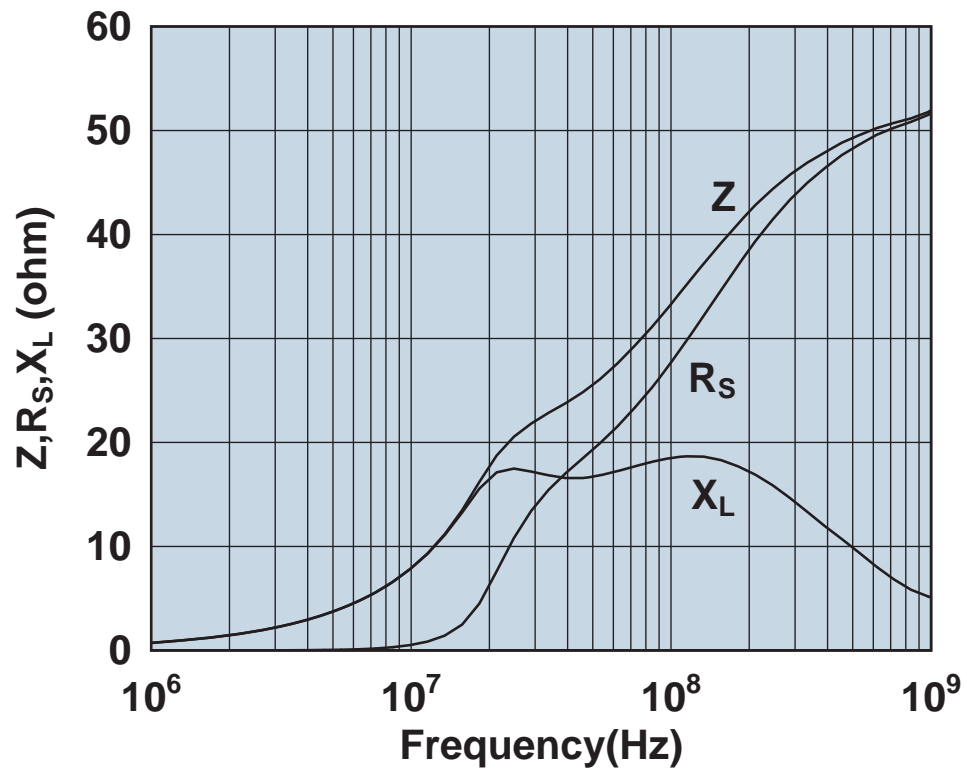


2861001802



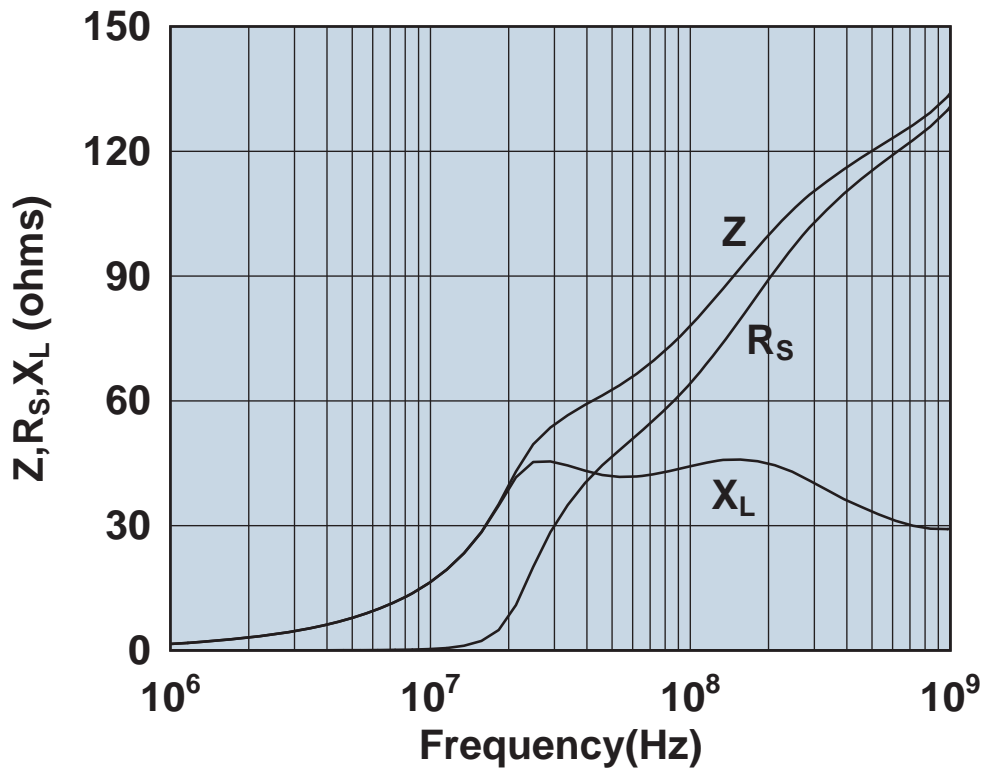
Impedance, reactance, and resistance vs. frequency.

2861002302



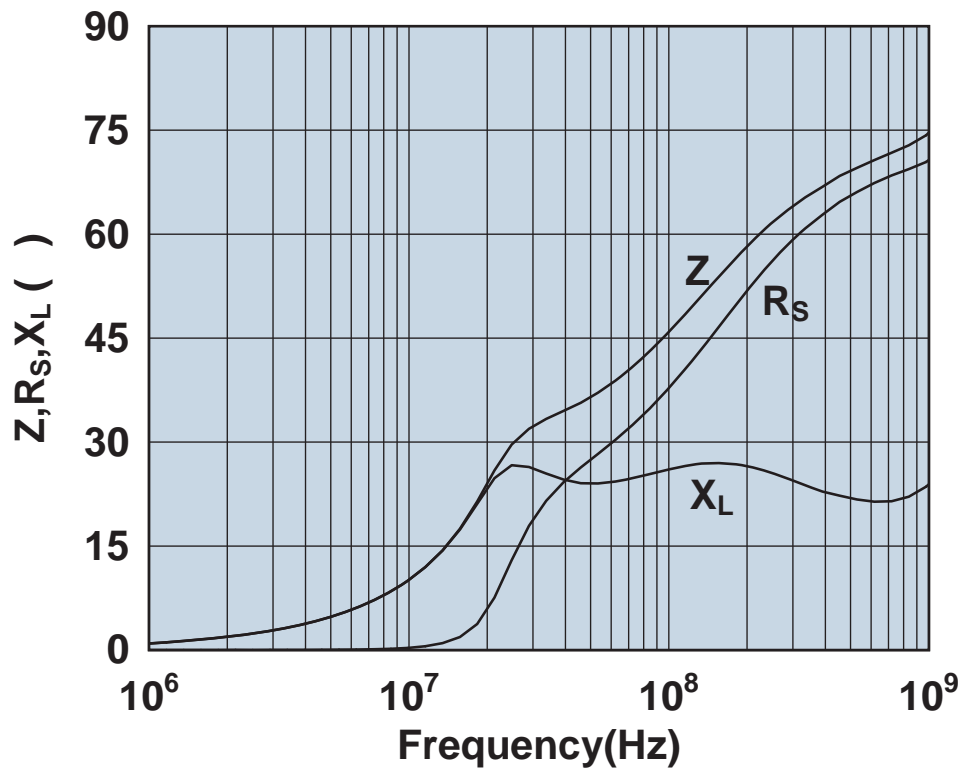
Impedance, reactance, and resistance vs. frequency.

2861002402



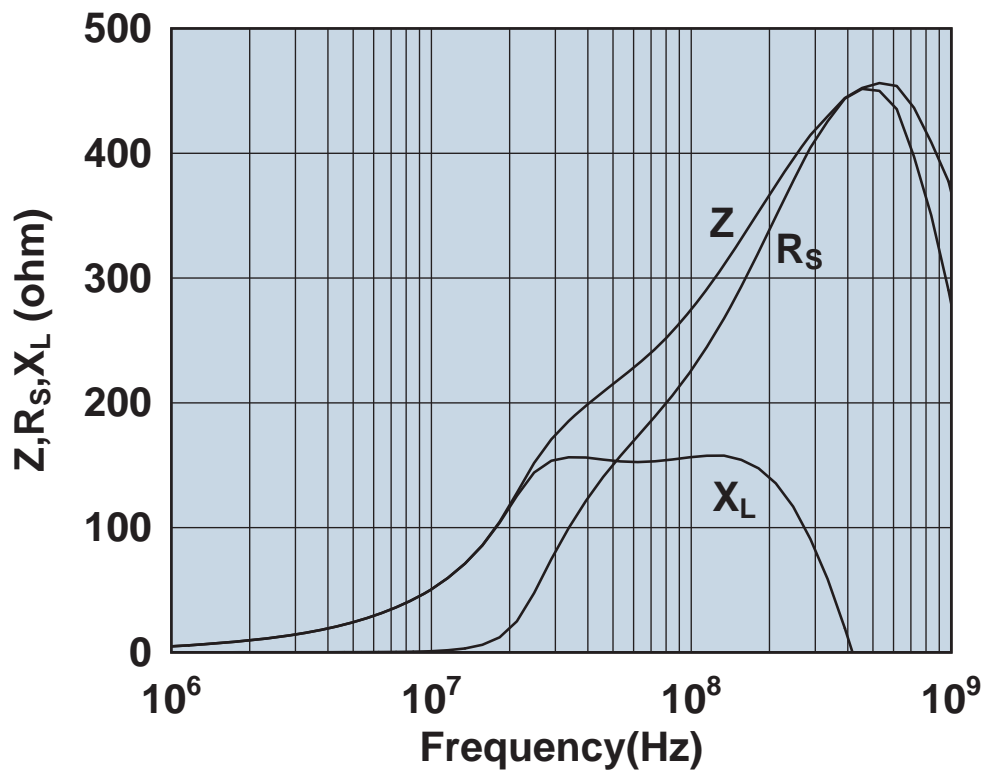
Impedance, reactance, and resistance vs. frequency.

2861002702



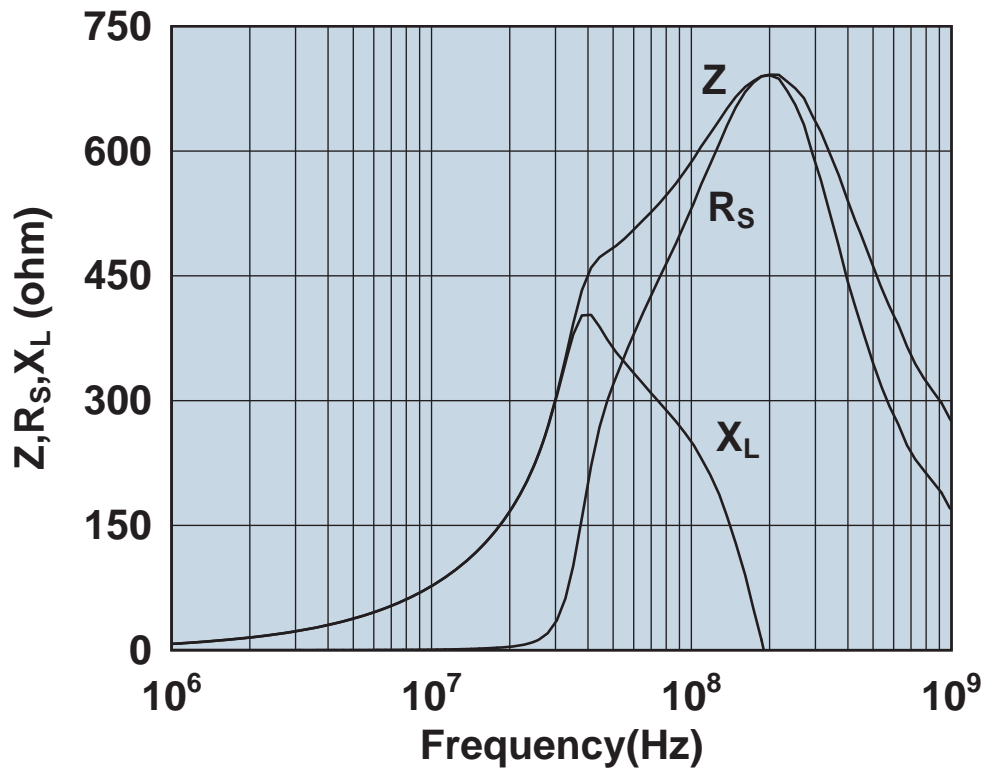
Impedance, reactance, and resistance vs. frequency.

2861006802



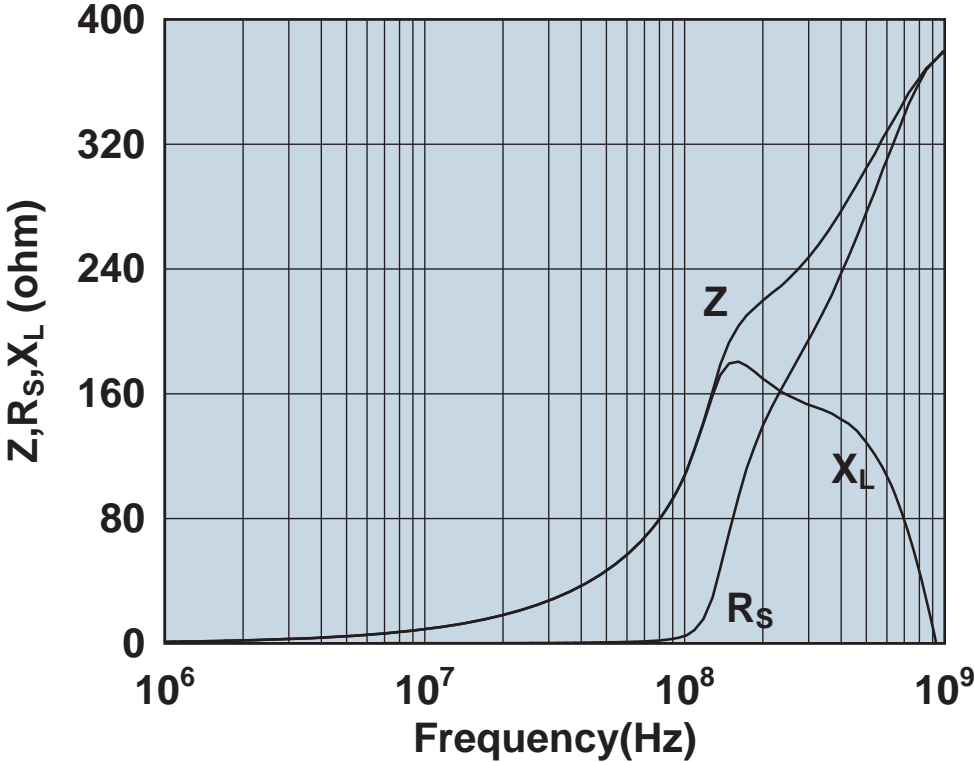
Impedance, reactance, and resistance vs. frequency.

2861010002



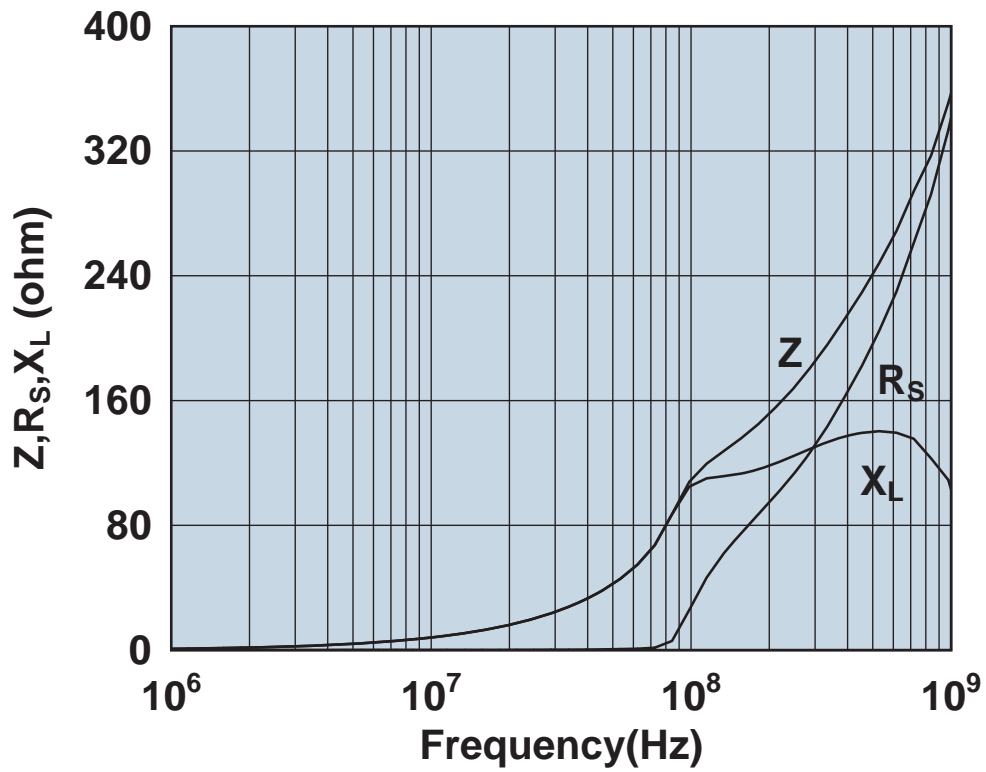
Impedance, reactance, and resistance vs. frequency.

2867000102



Impedance, reactance, and resistance vs. frequency.

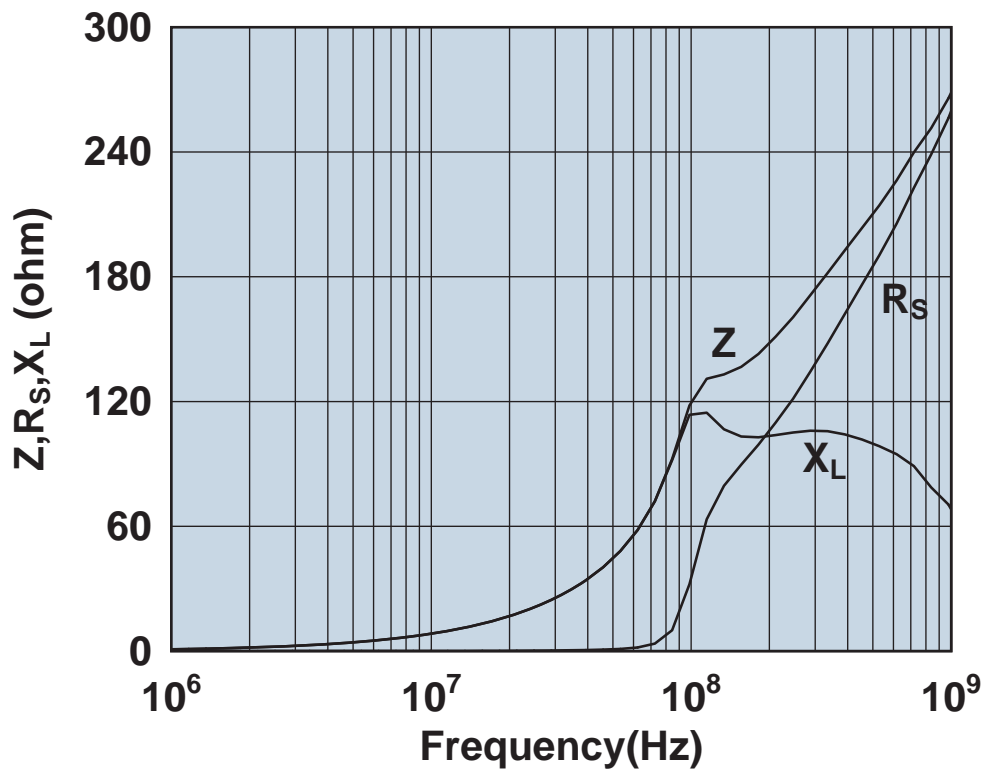
2867000202



Impedance, reactance, and resistance vs. frequency.

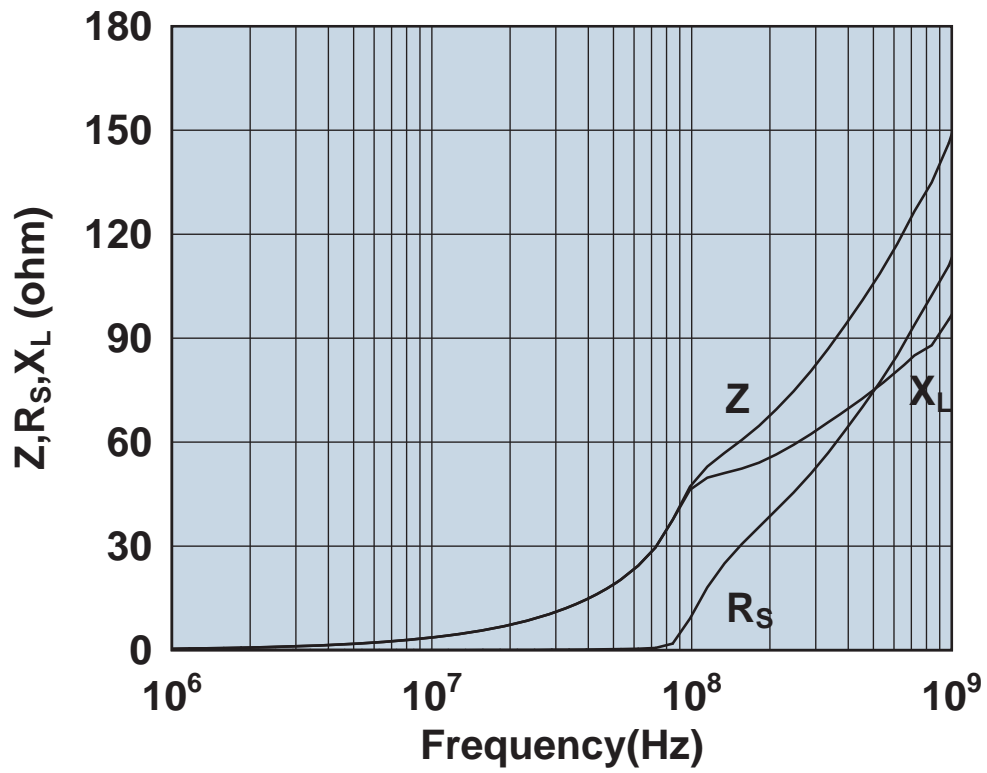


2867000302



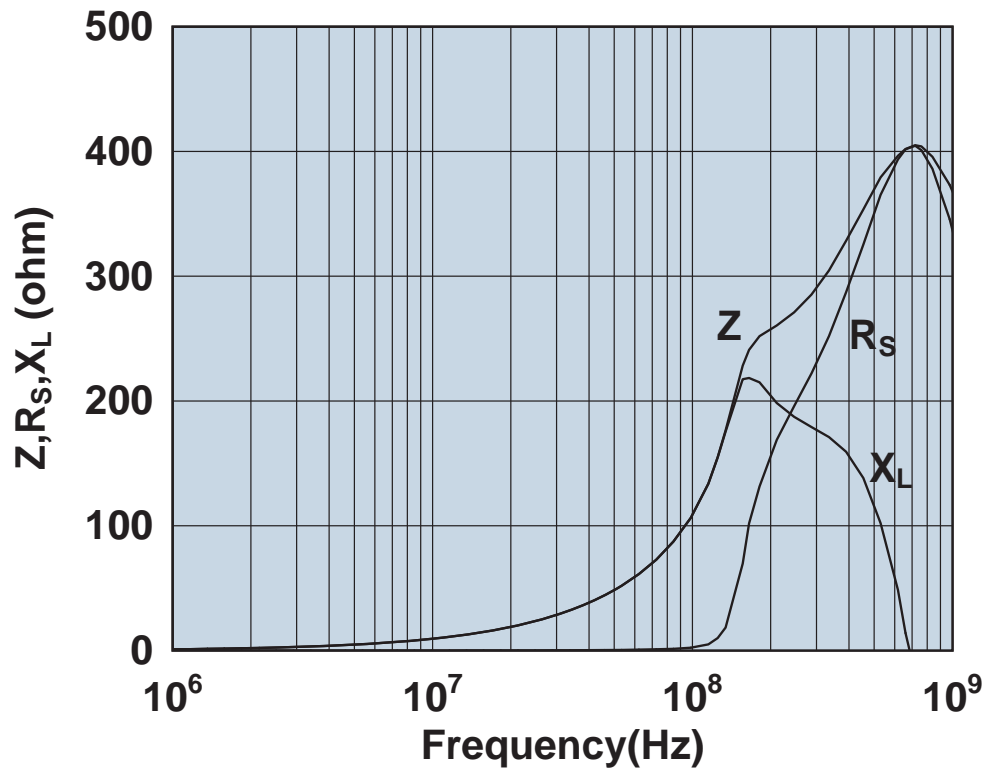
Impedance, reactance, and resistance vs. frequency.

2867001502



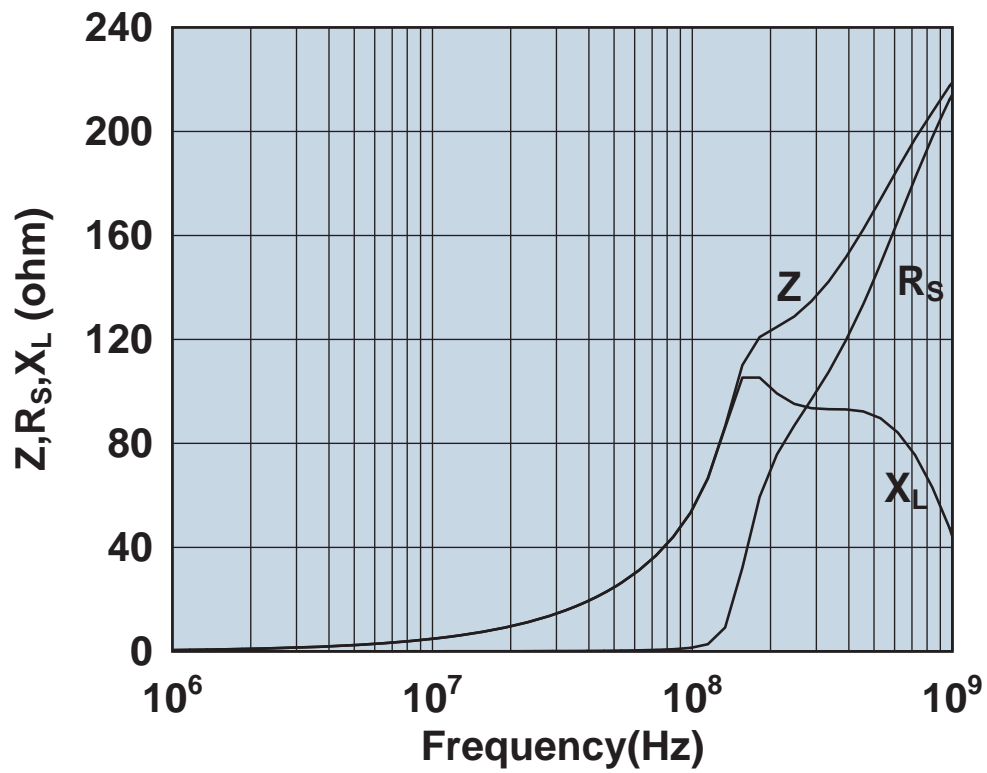
Impedance, reactance, and resistance vs. frequency.

2867001702



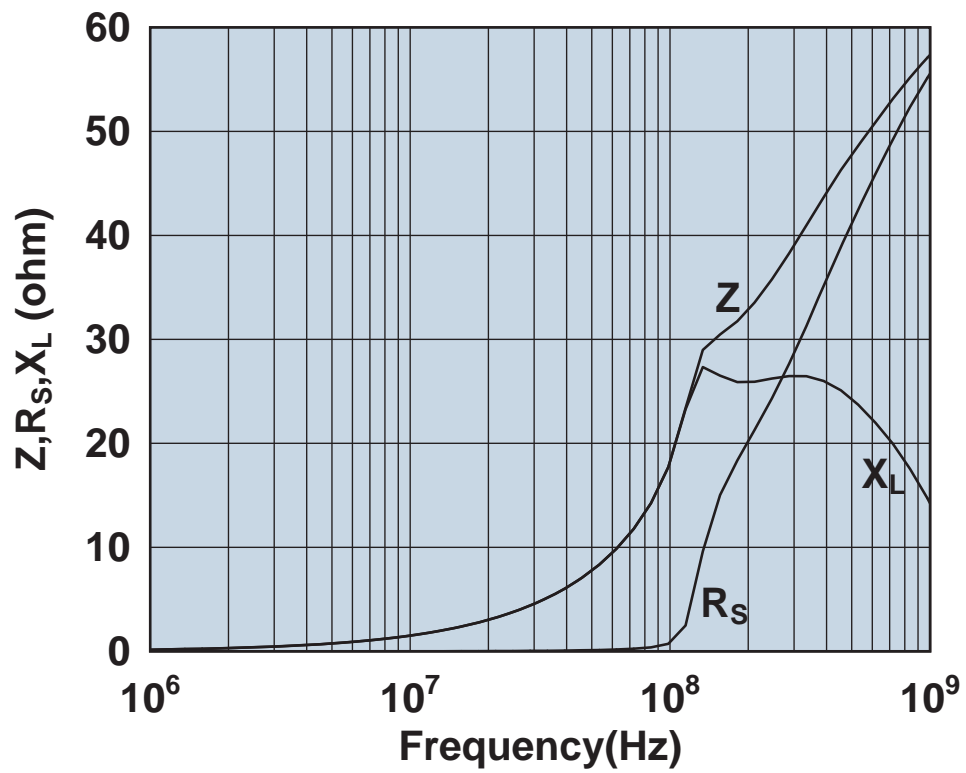
Impedance, reactance, and resistance vs. frequency.

2867001802



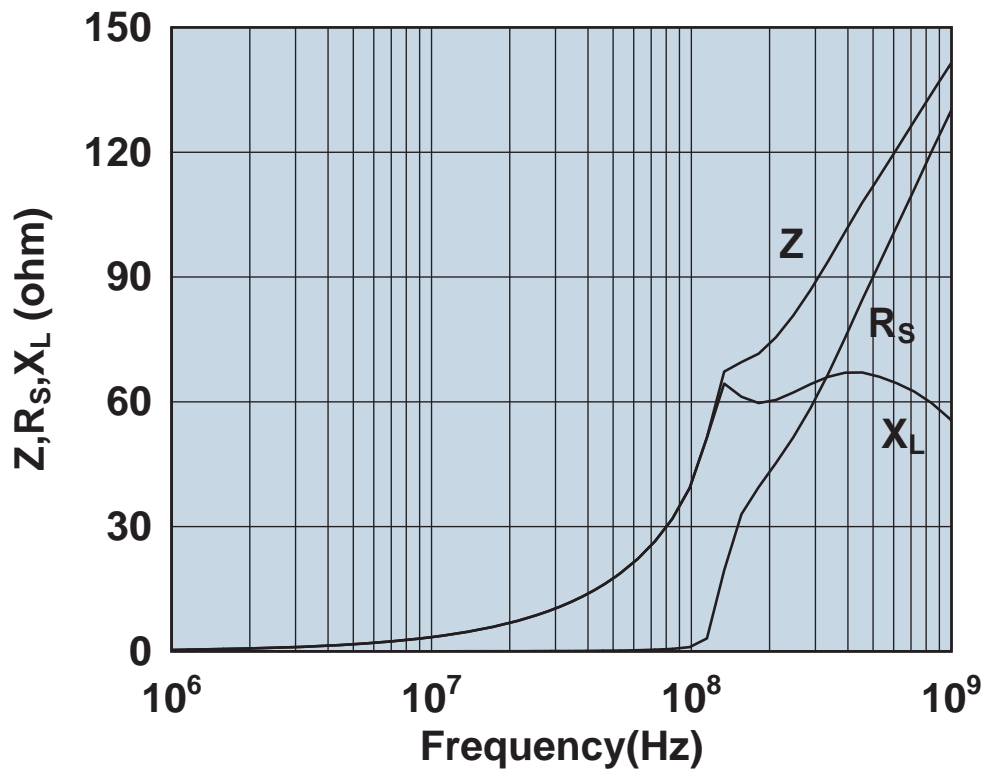
Impedance, reactance, and resistance vs. frequency.

2867002302



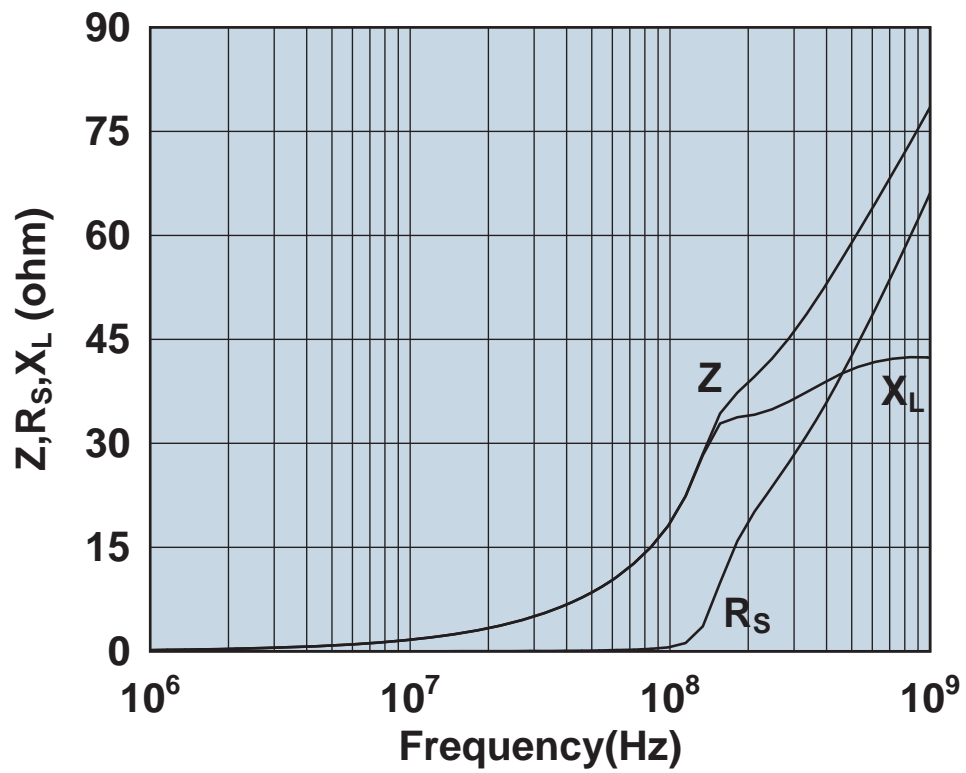
Impedance, reactance, and resistance vs. frequency.

2867002402



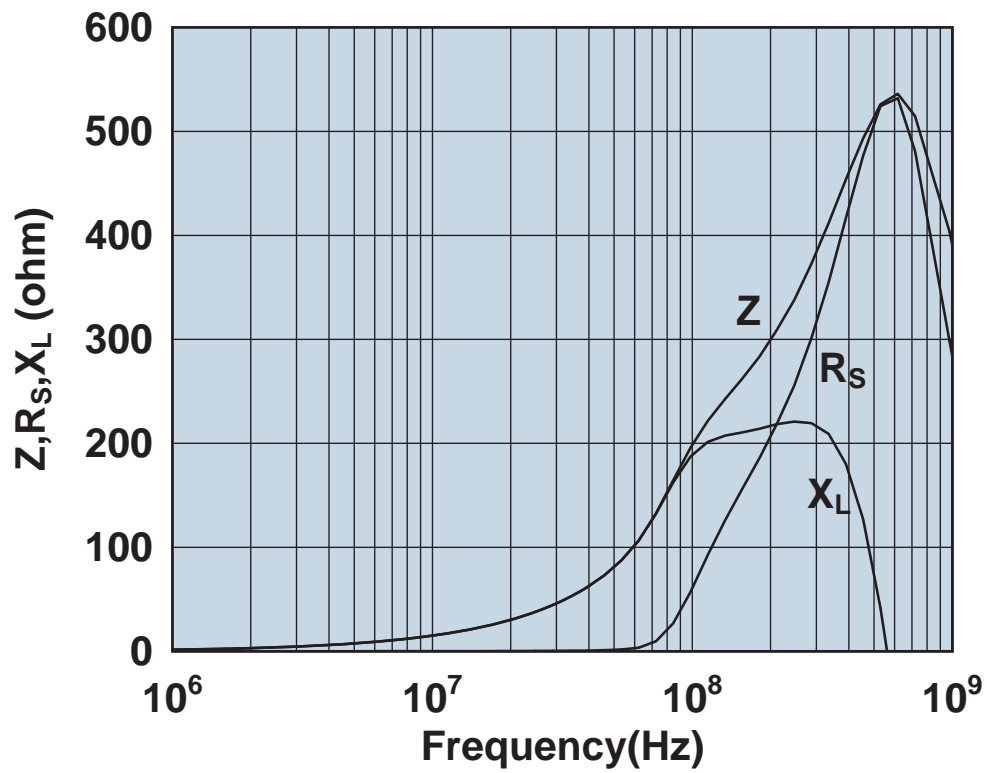
Impedance, reactance, and resistance vs. frequency.

2867002702



Impedance, reactance, and resistance vs. frequency.

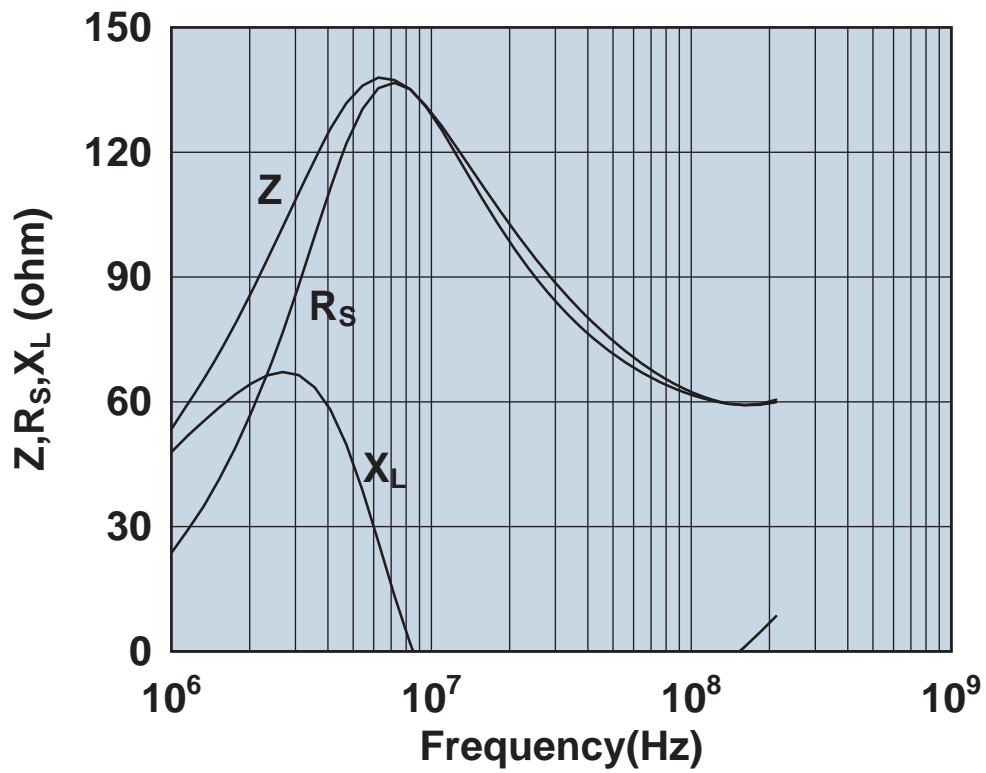
2867006802



Impedance, reactance, and resistance vs. frequency.

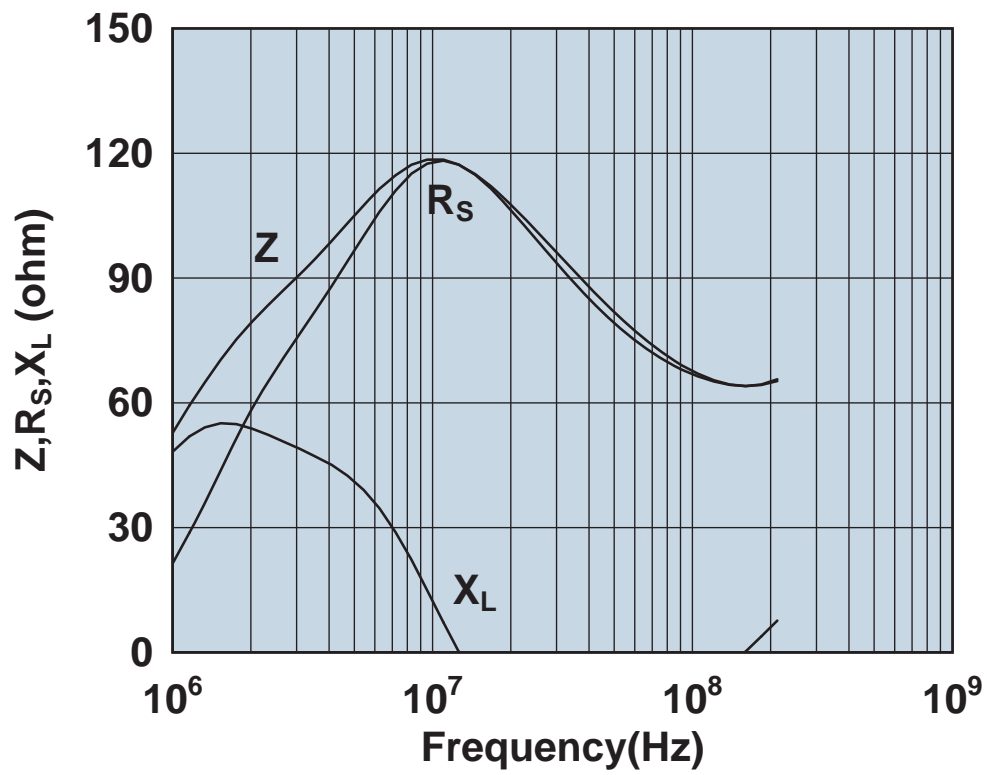


2873000102



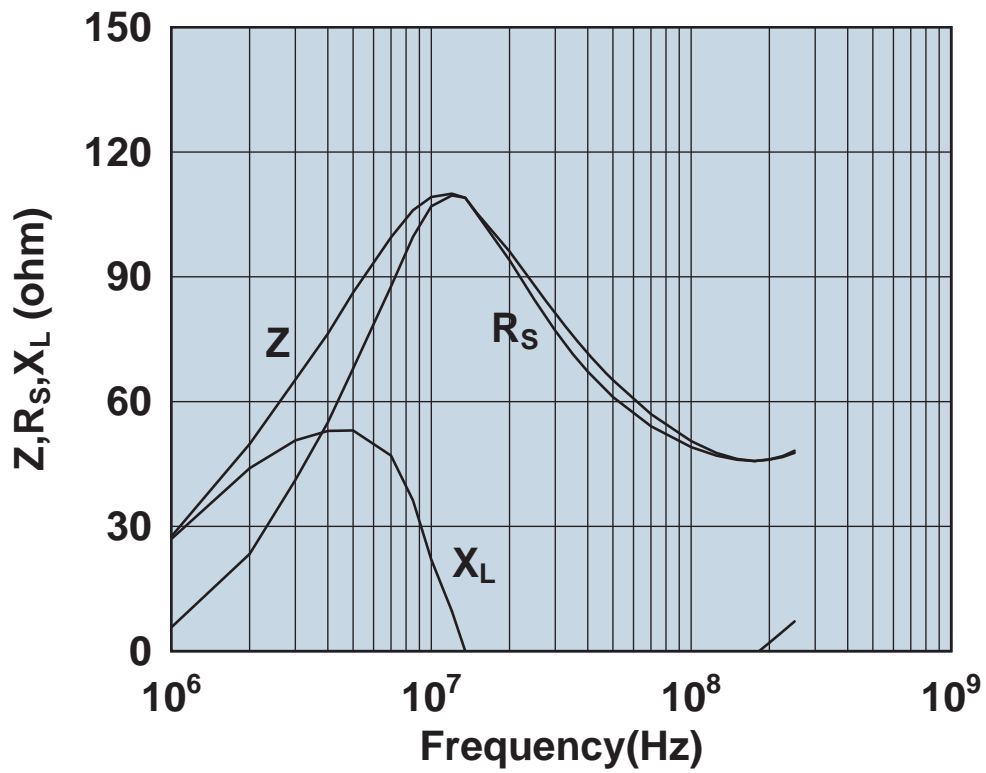
Impedance, reactance, and resistance vs. frequency.

2873000202



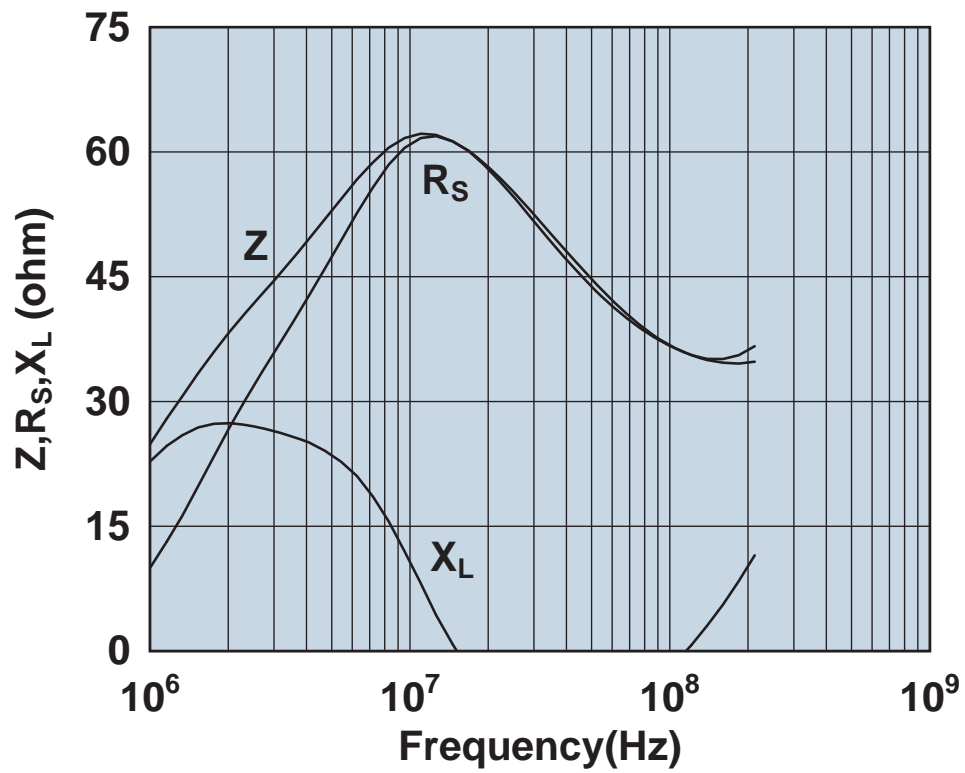
Impedance, reactance, and resistance vs. frequency.

2873000302



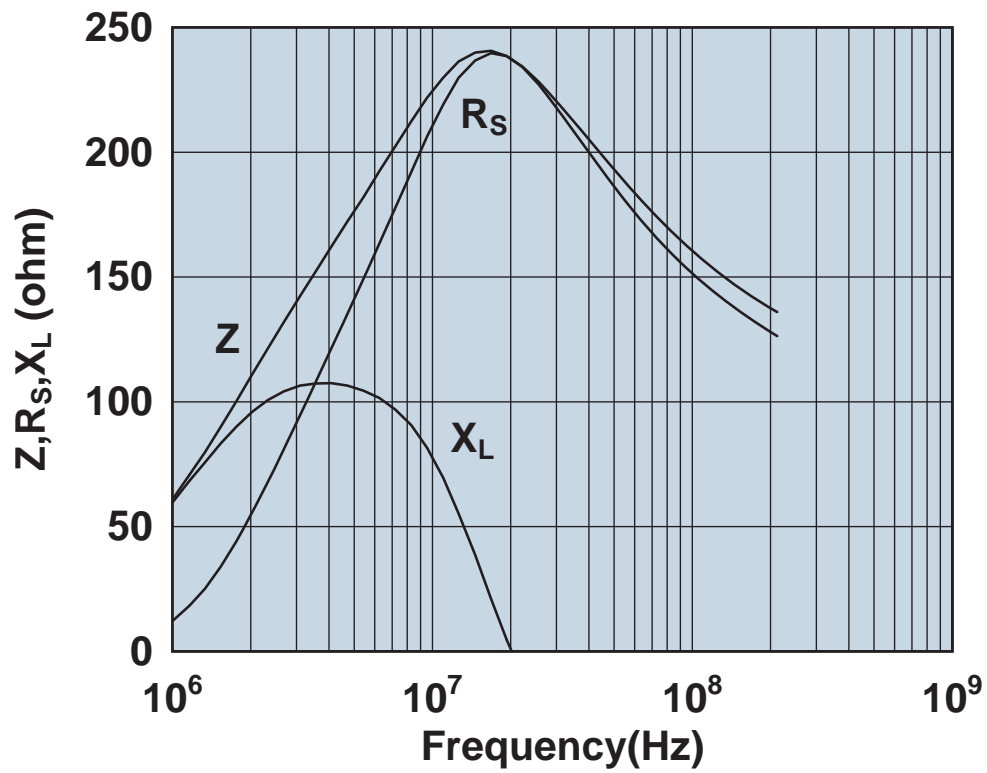
Impedance, reactance, and resistance vs. frequency.

2873001502



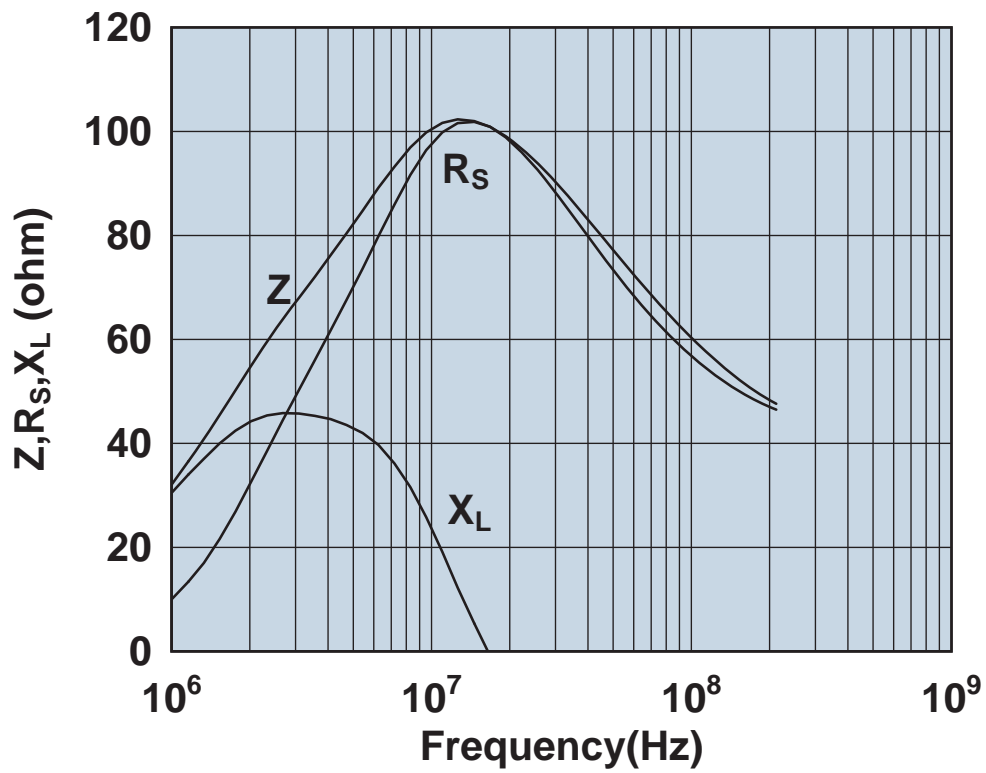
Impedance, reactance, and resistance vs. frequency.

2873001702



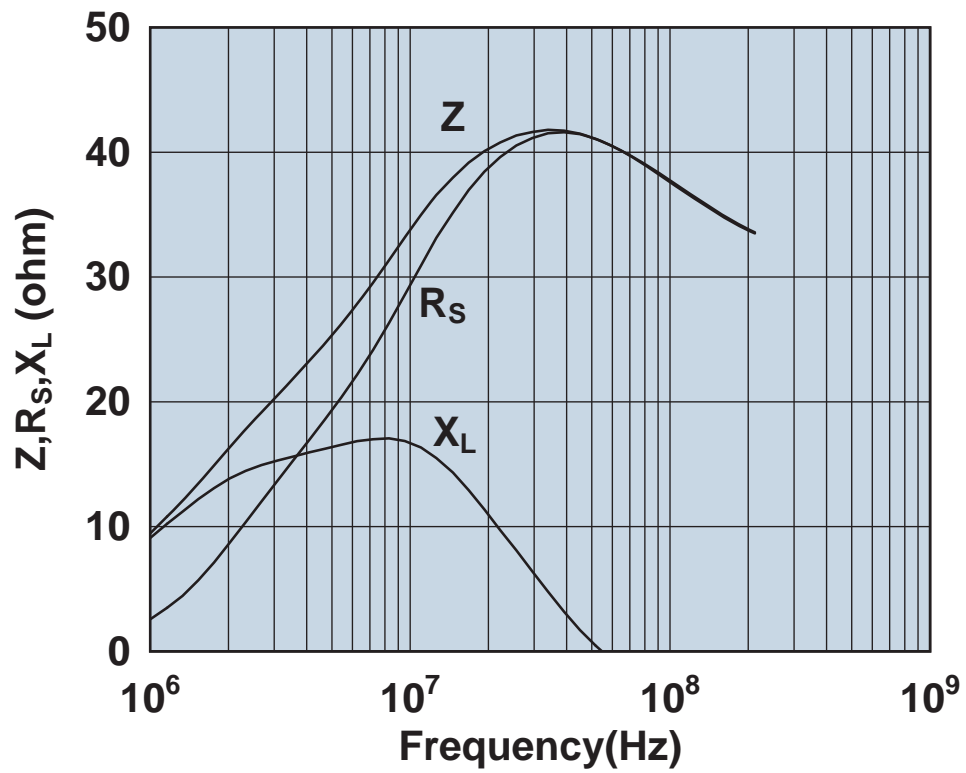
Impedance, reactance, and resistance vs. frequency.

2873001802



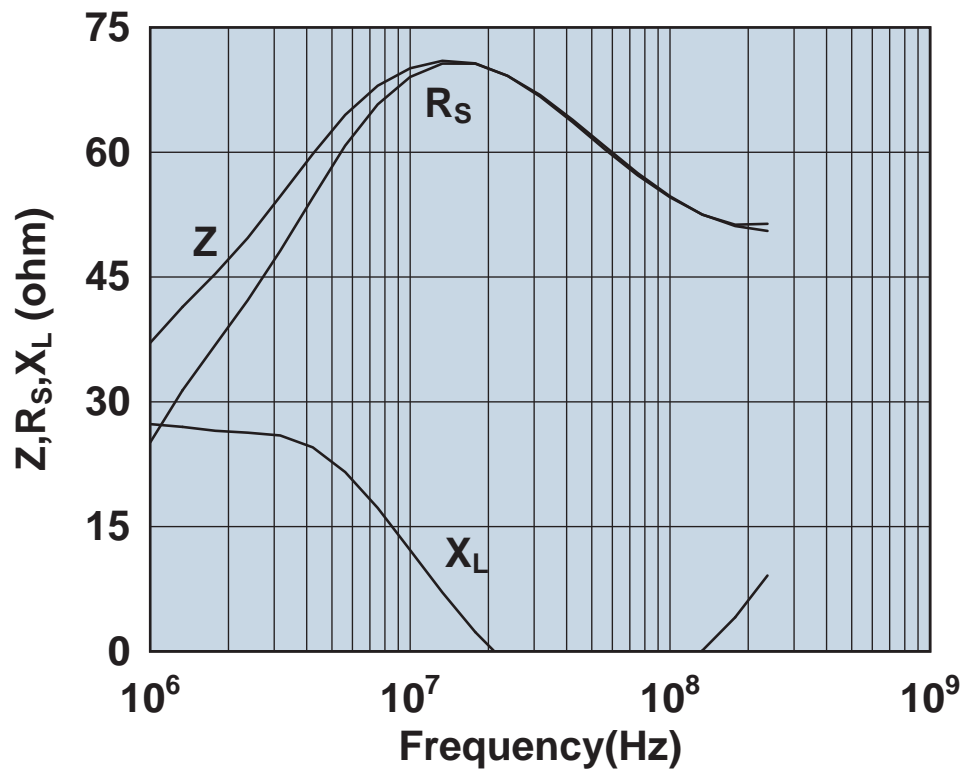
Impedance, reactance, and resistance vs. frequency.

2873002302



Impedance, reactance, and resistance vs. frequency.

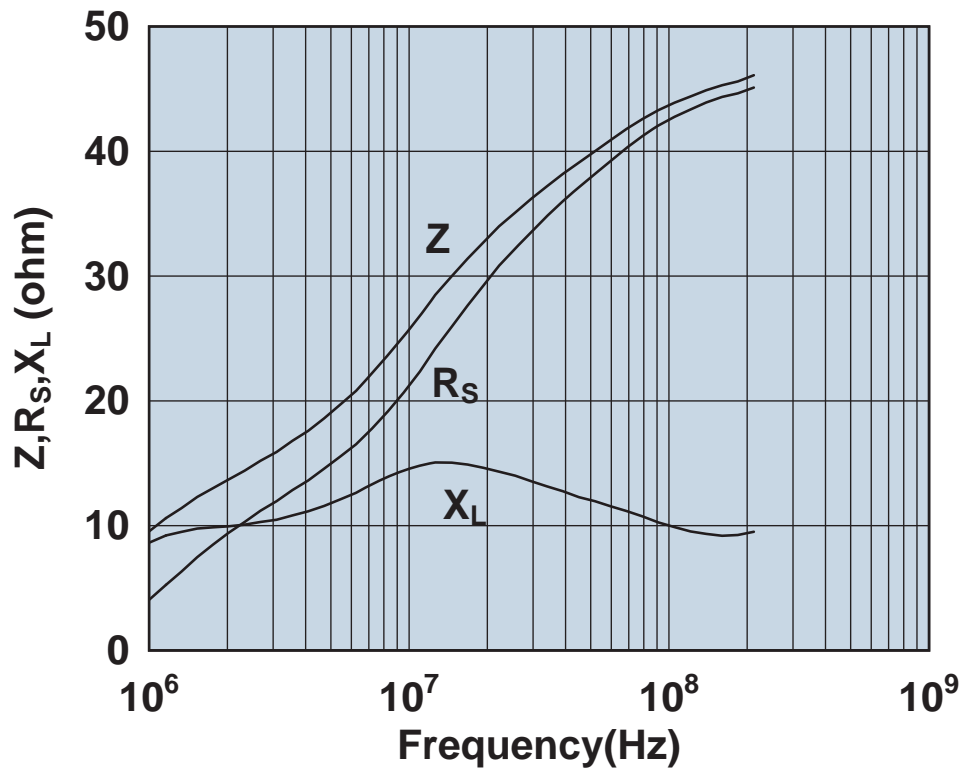
2873002402



Impedance, reactance, and resistance vs. frequency.

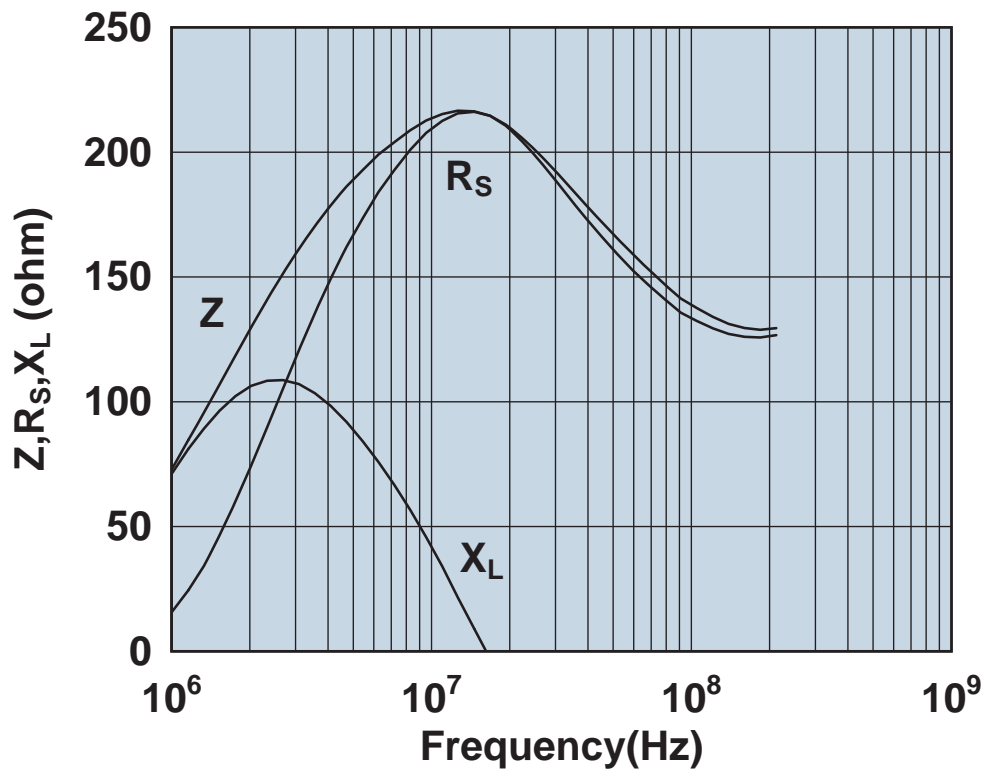


2873002702



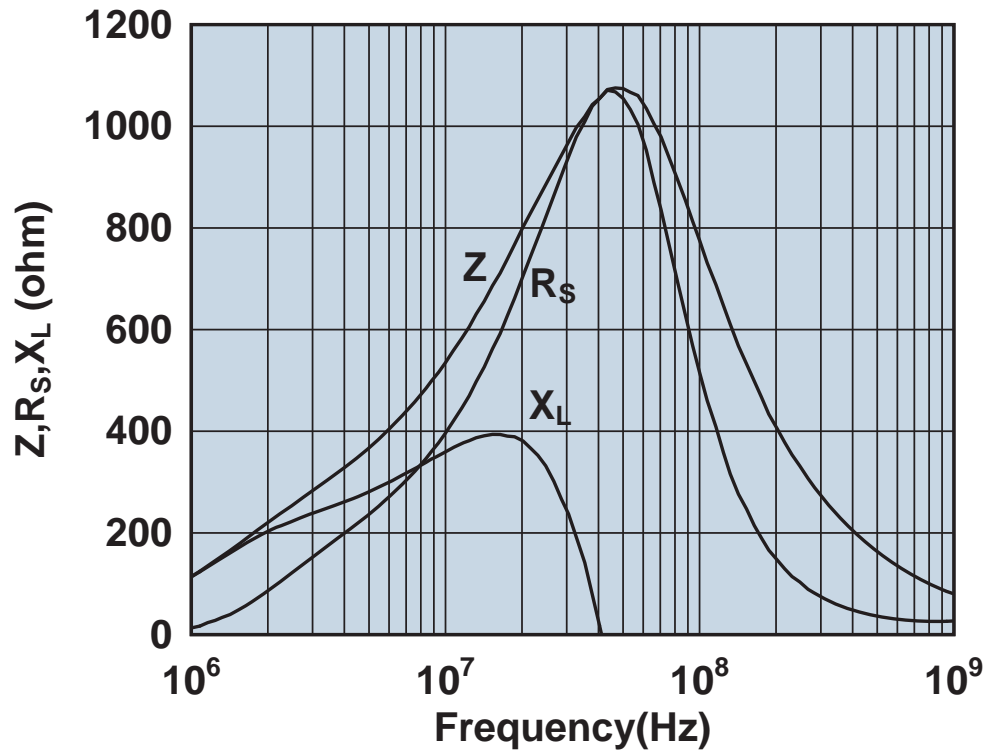
Impedance, reactance, and resistance vs. frequency.

2873006802

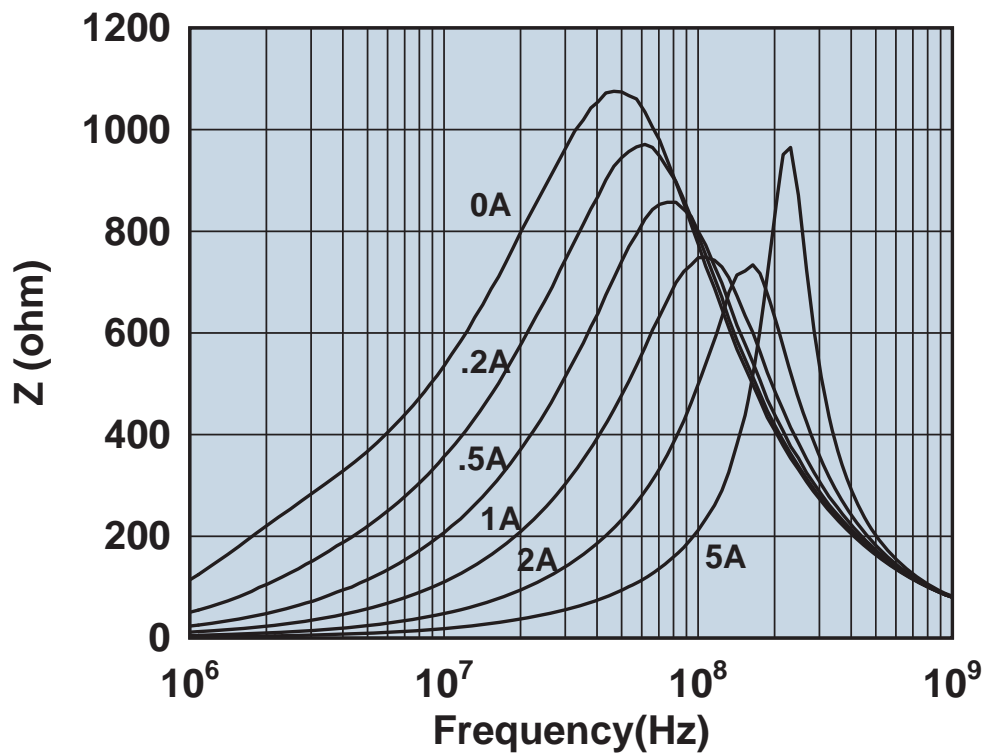


Impedance, reactance, and resistance vs. frequency.

2944666631

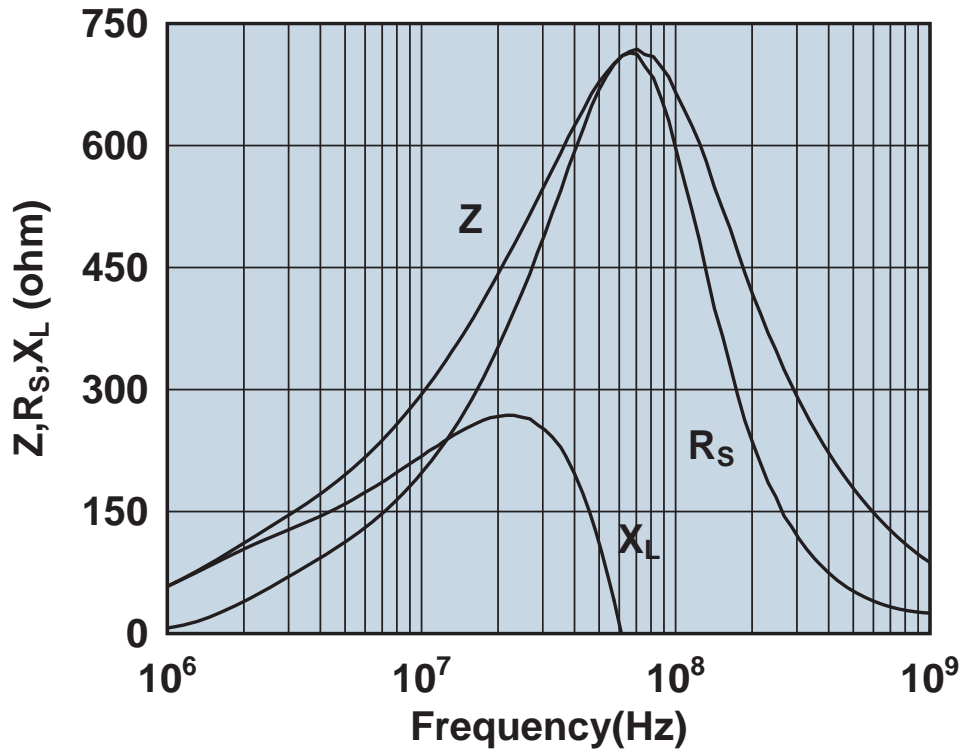


Impedance, reactance, and resistance vs. frequency.

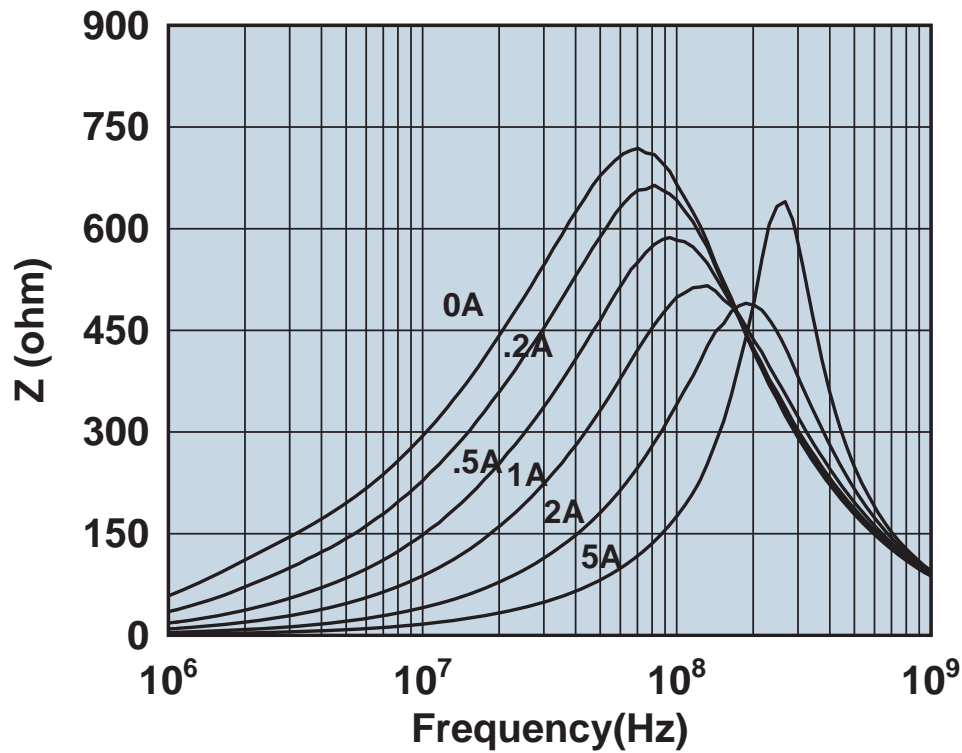


Impedance vs. frequency with dc bias.

2944666651

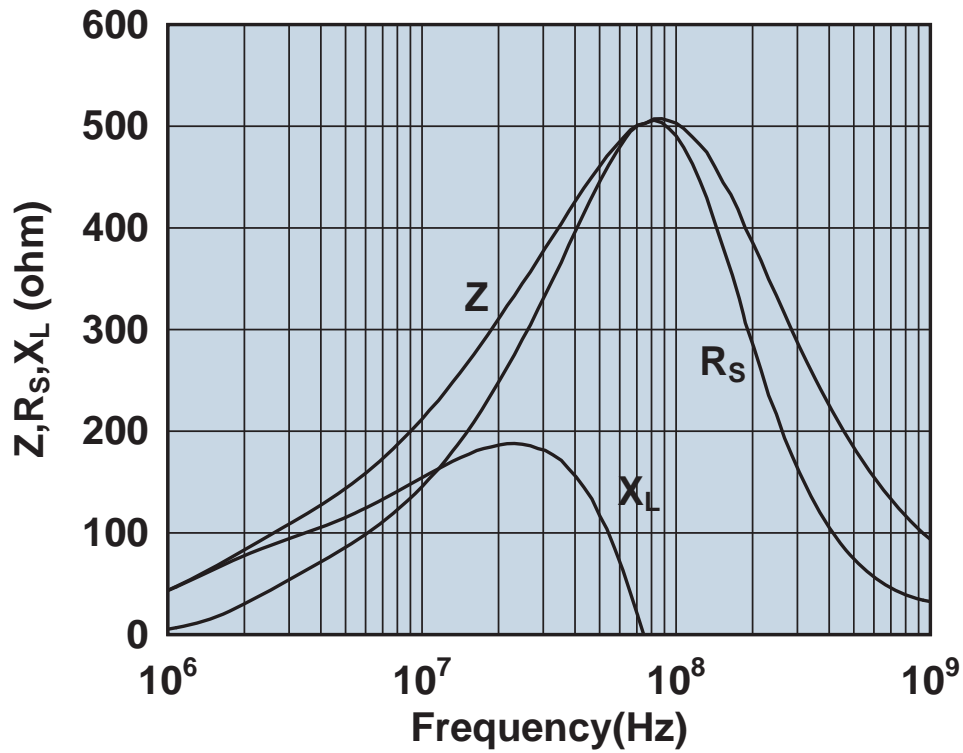


Impedance, reactance, and resistance vs. frequency.

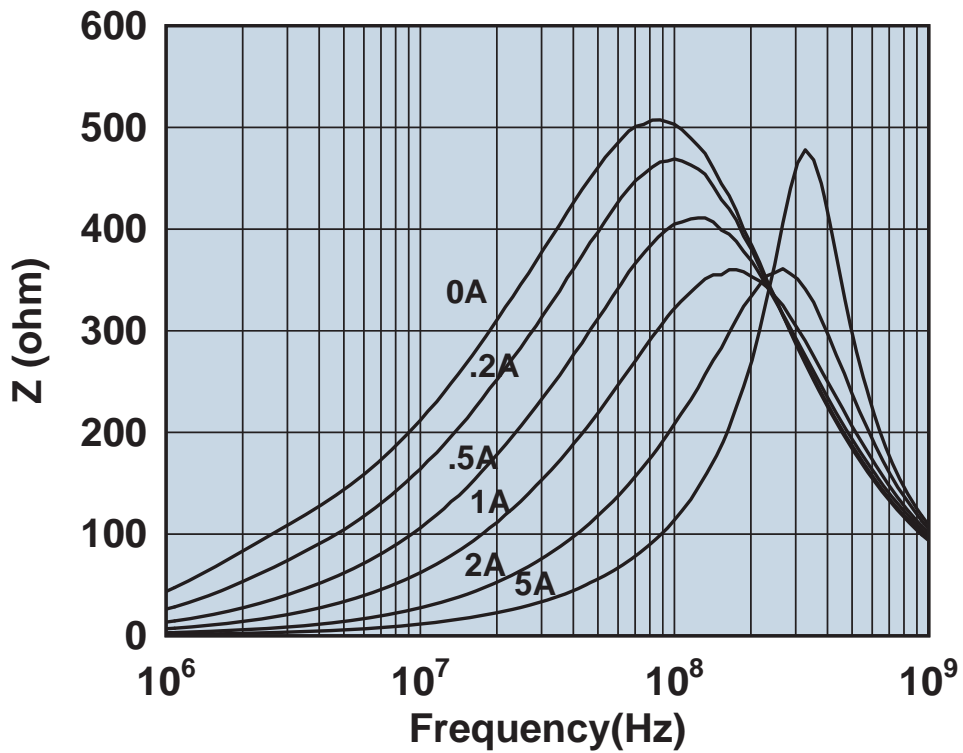


Impedance vs. frequency with dc bias.

2944666661

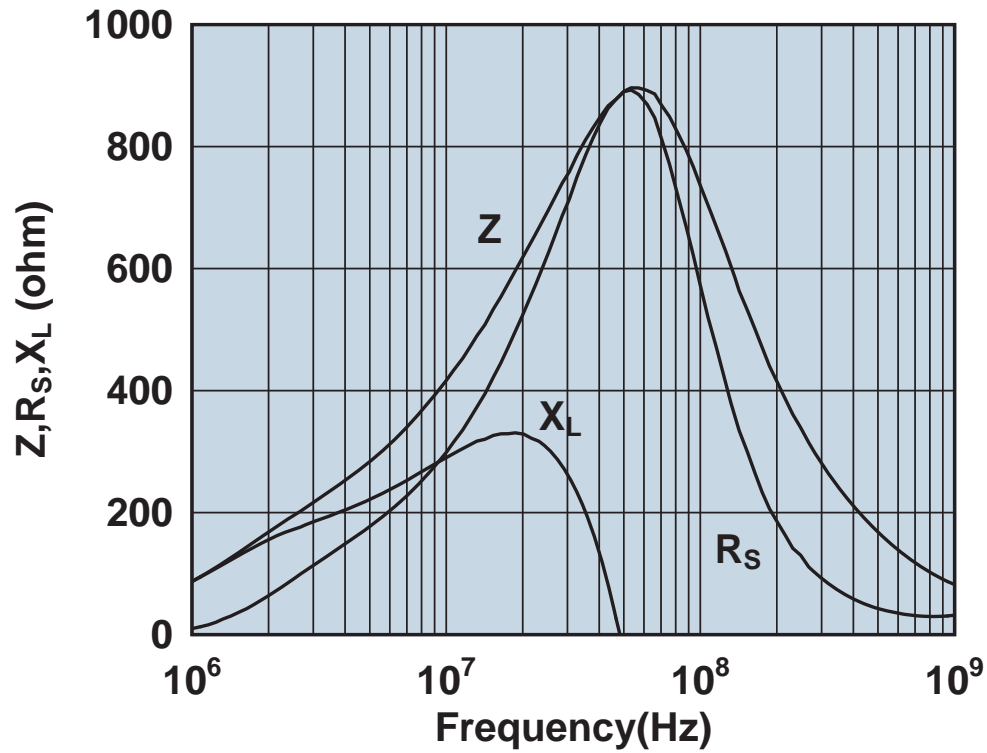


Impedance, reactance, and resistance vs. frequency.

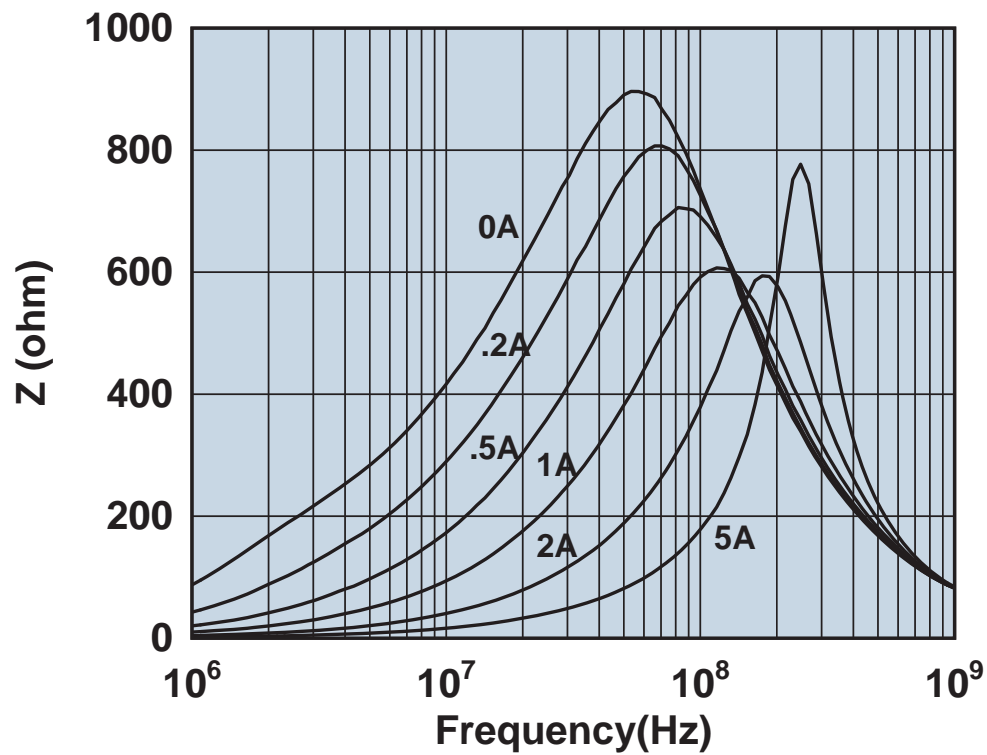


Impedance vs. frequency with dc bias.

2944666671

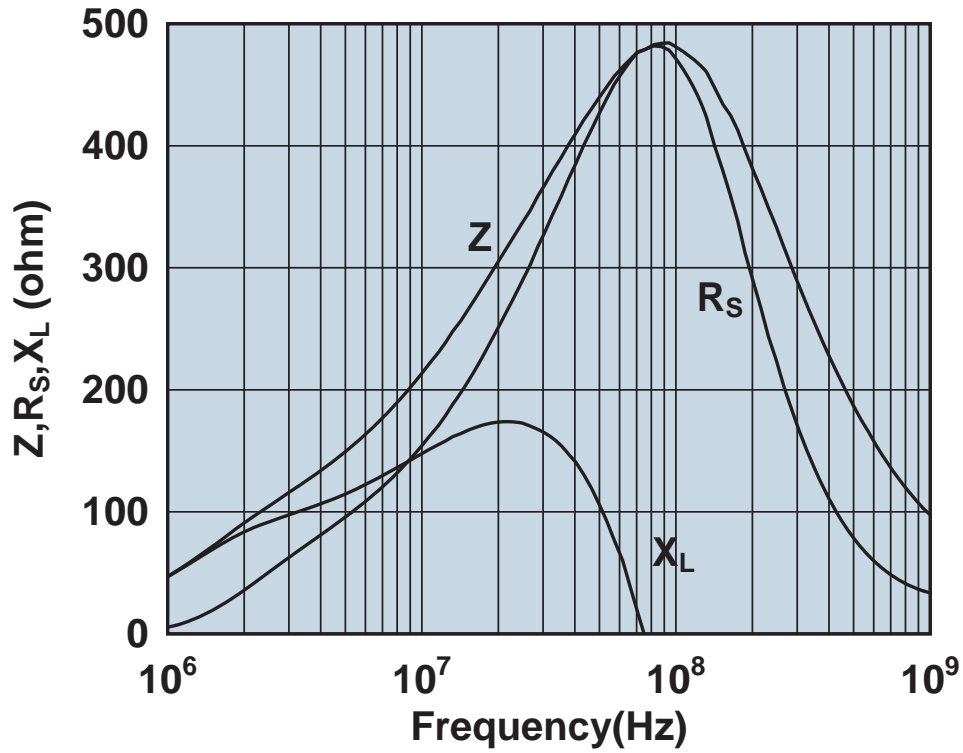


Impedance, reactance, and resistance vs. frequency.

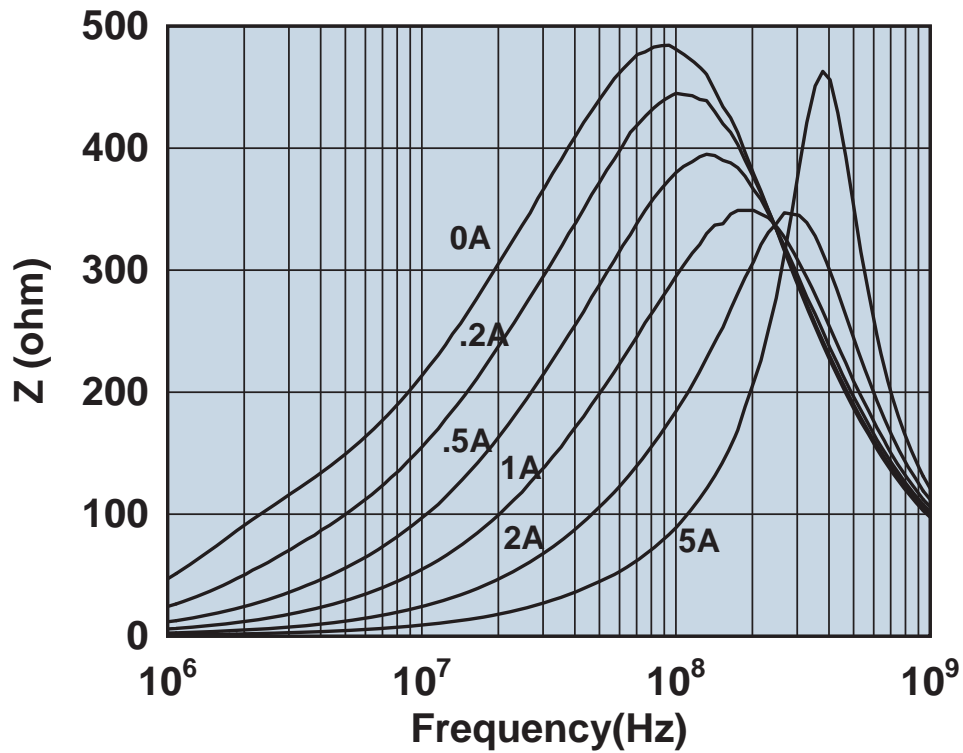


Impedance vs. frequency with dc bias.

294466681

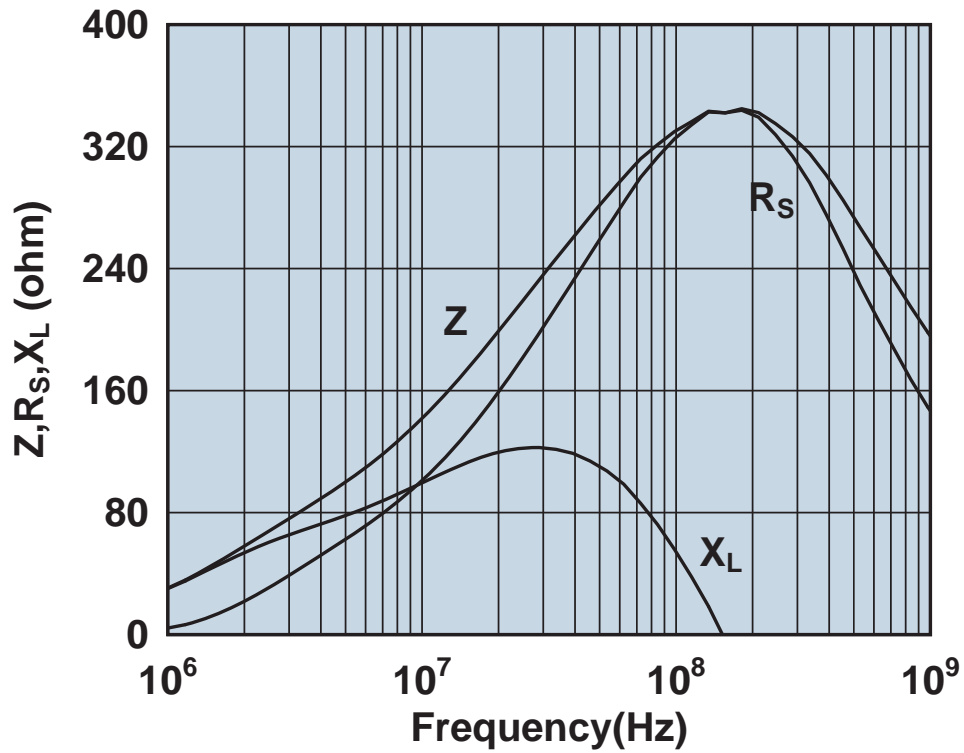


Impedance, reactance, and resistance vs. frequency.

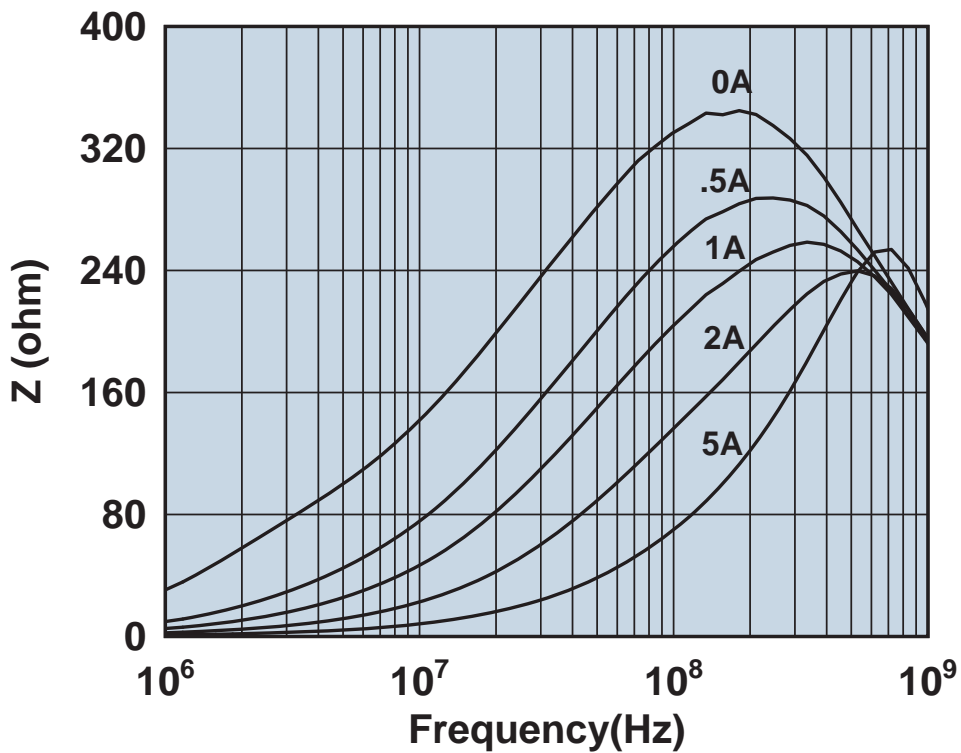


Impedance vs. frequency with dc bias.

2944770301



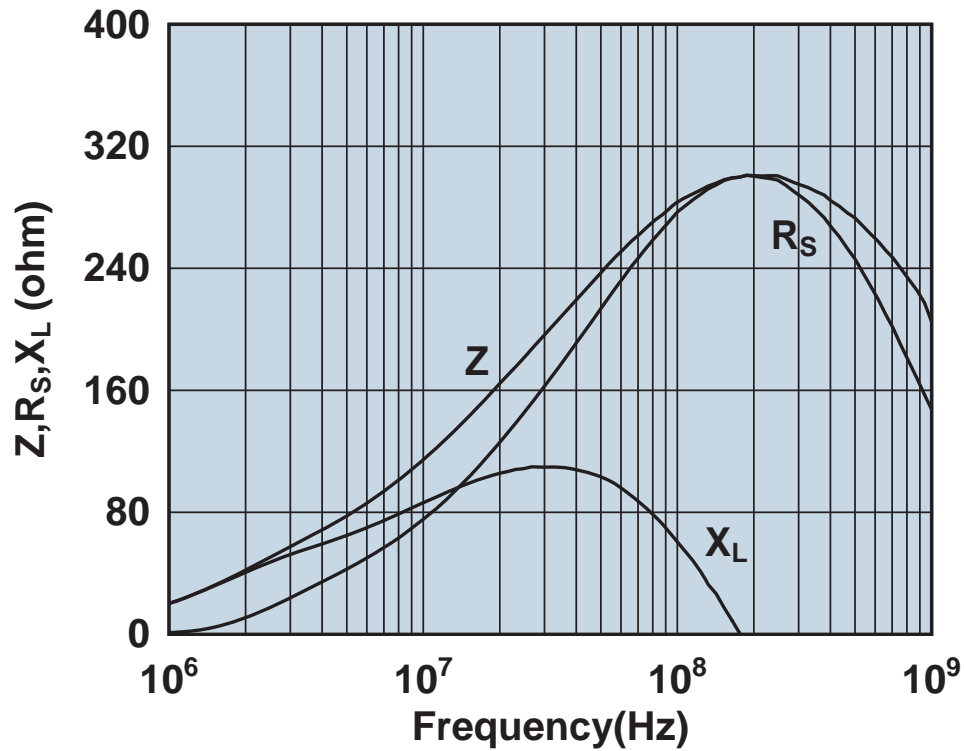
Impedance, reactance, and resistance vs. frequency.



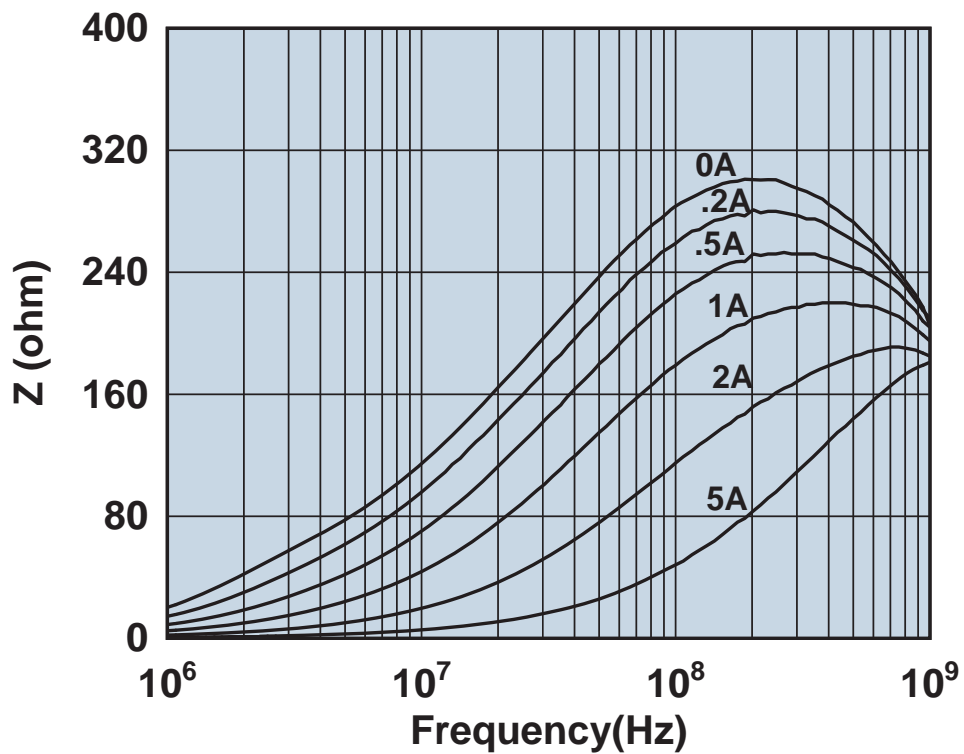
Impedance vs. frequency with dc bias.



2944776101

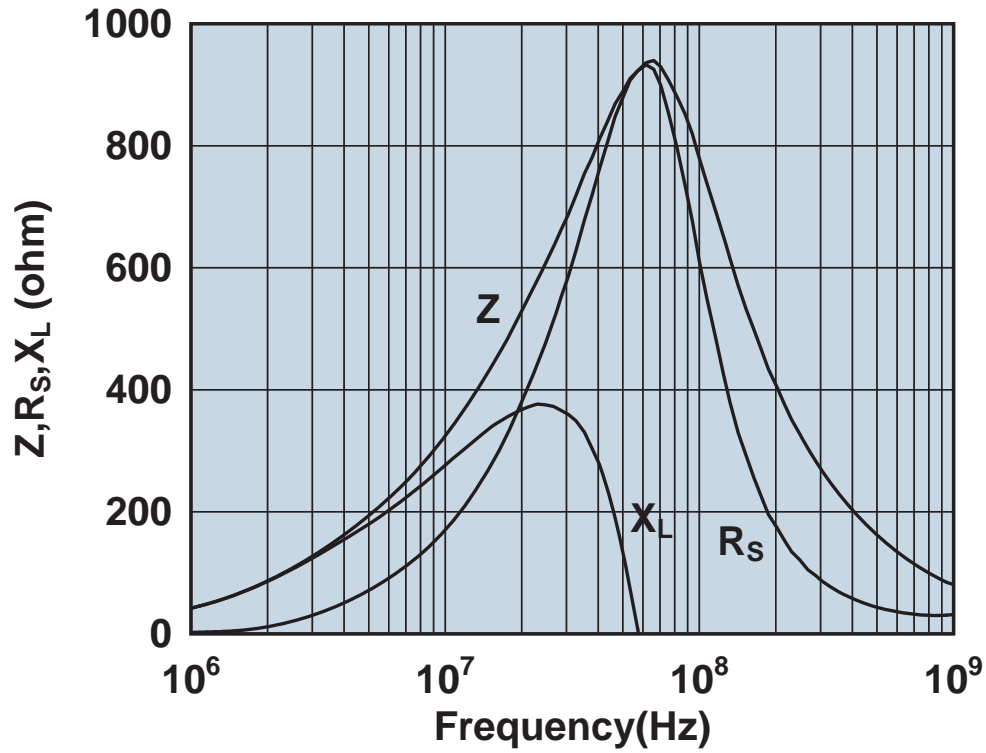


Impedance, reactance, and resistance vs. frequency.

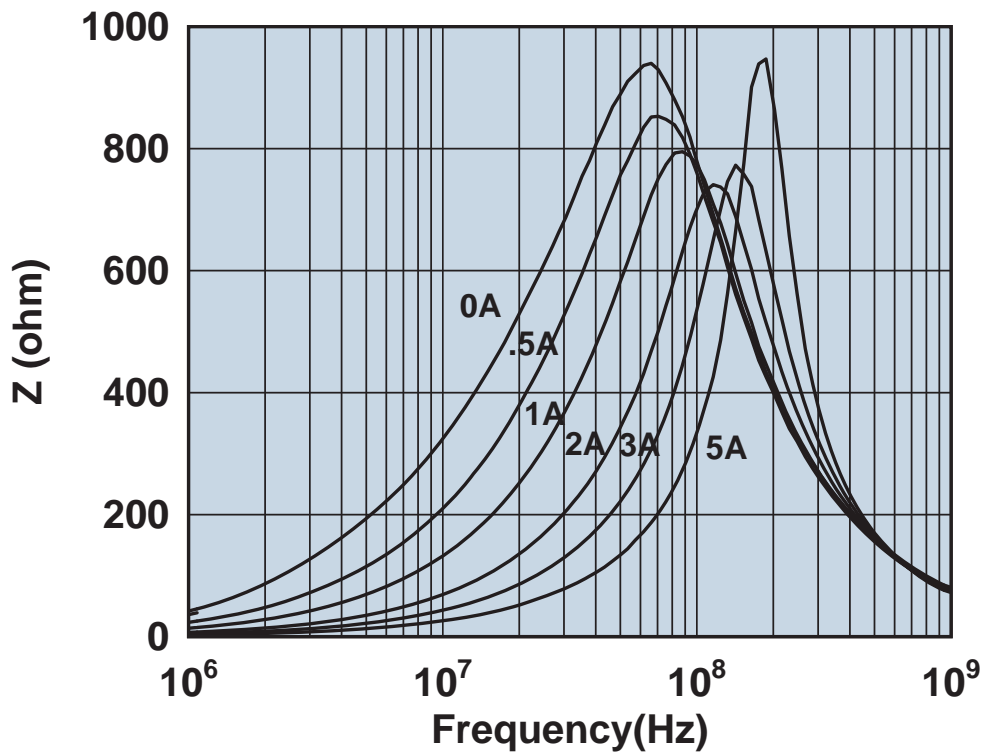


Impedance vs. frequency with dc bias.

2944777721

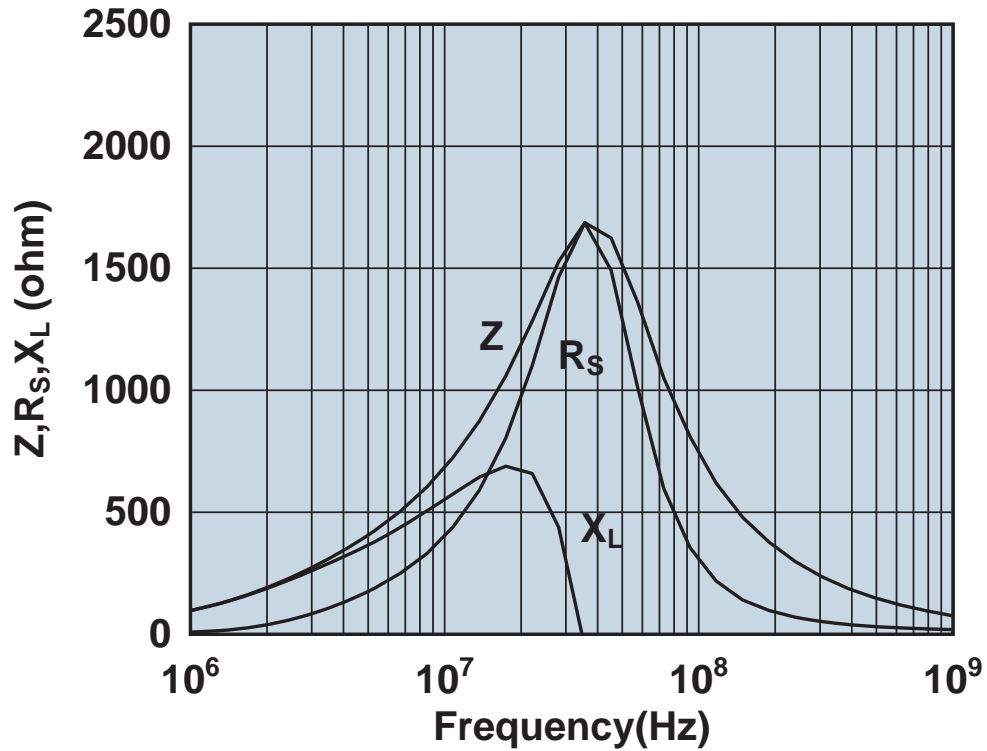


Impedance, reactance, and resistance vs. frequency.

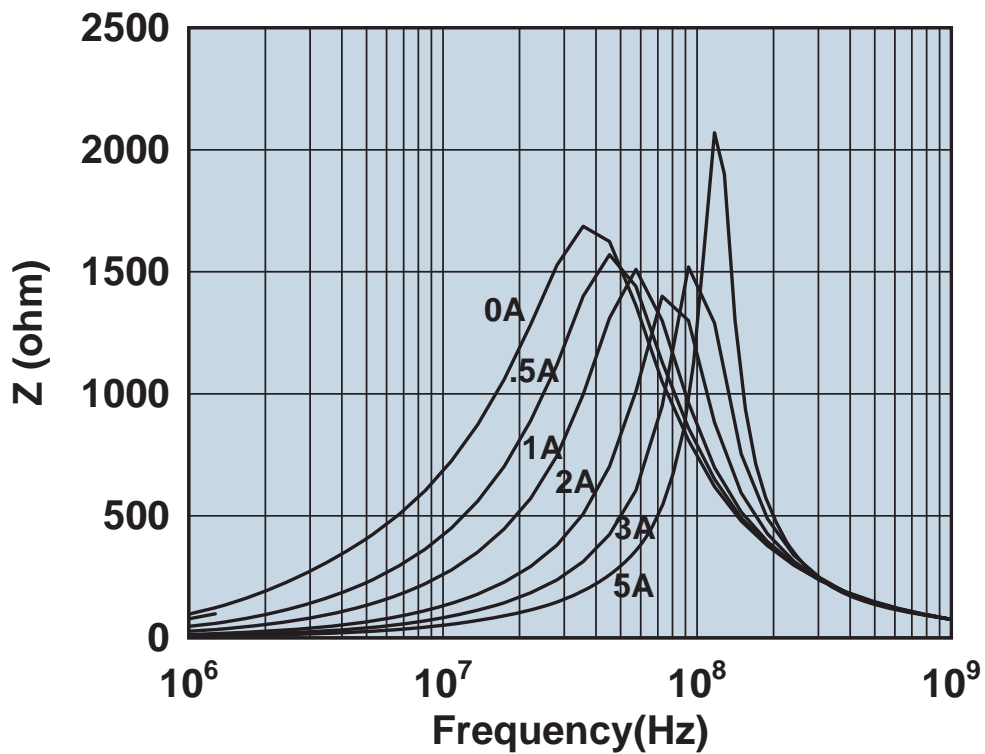


Impedance vs. frequency with dc bias.

2944777741

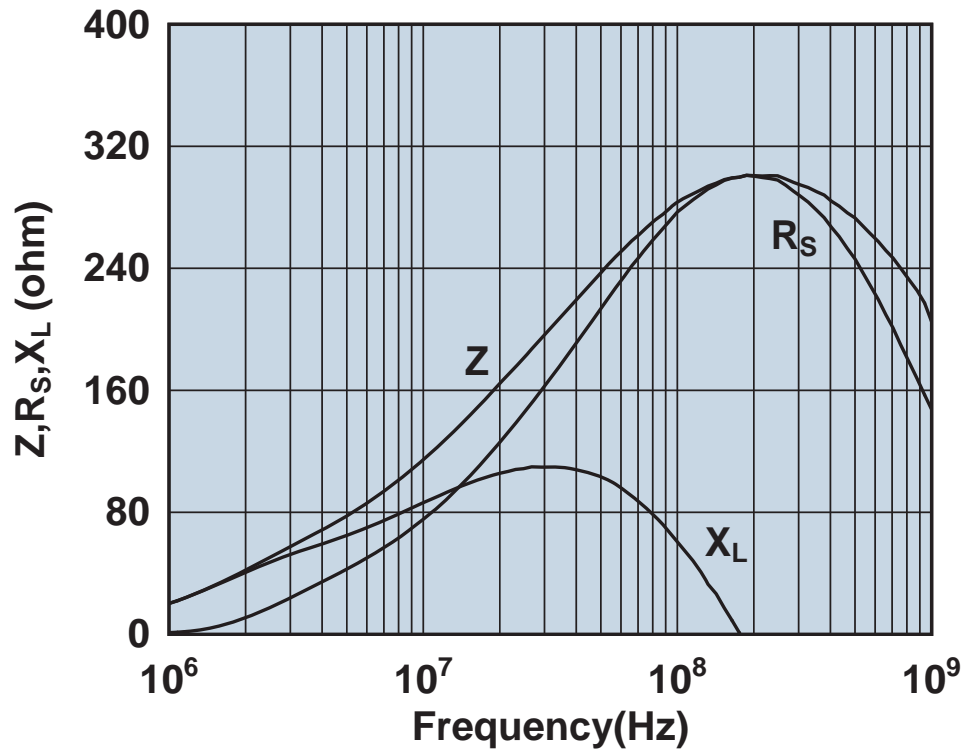


Impedance, reactance, and resistance vs. frequency.

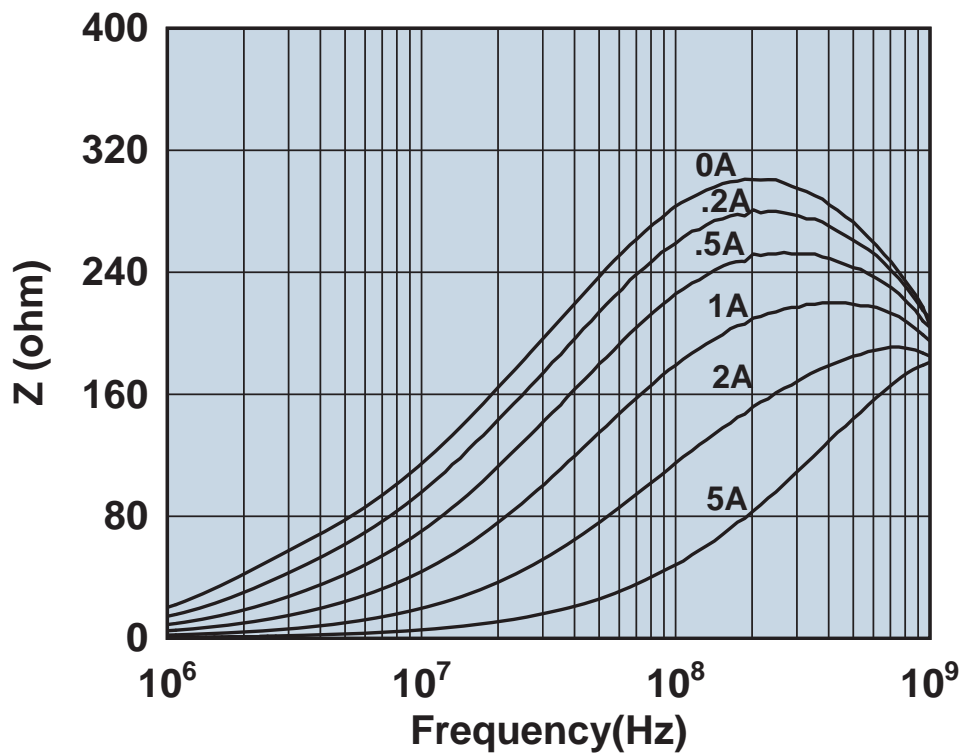


Impedance vs. frequency with dc bias.

2944778101

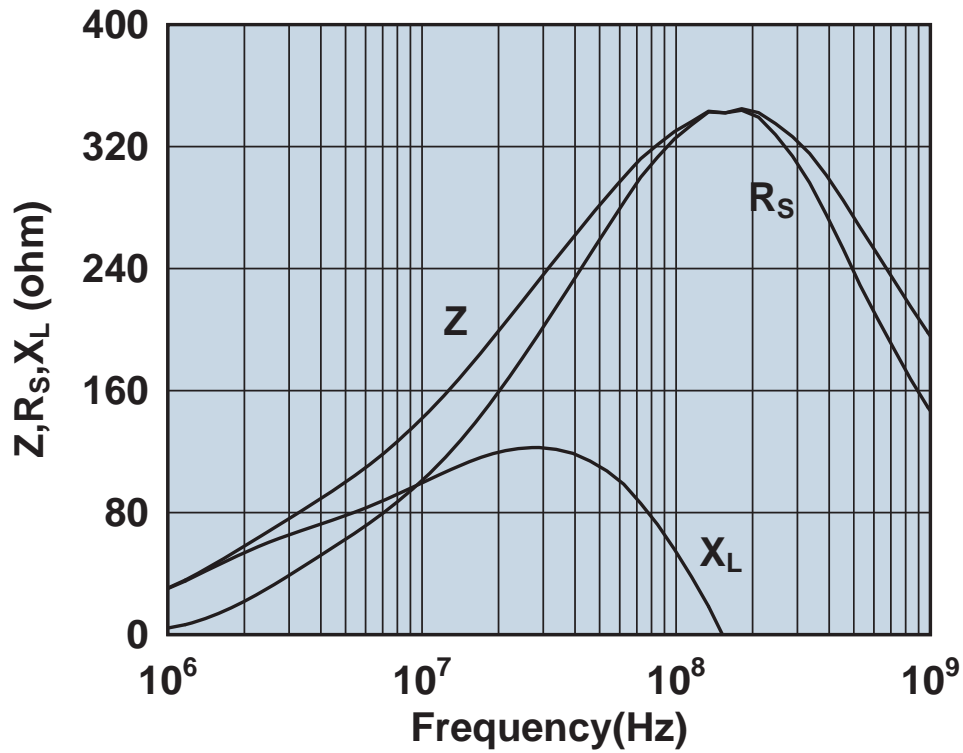


Impedance, reactance, and resistance vs. frequency.

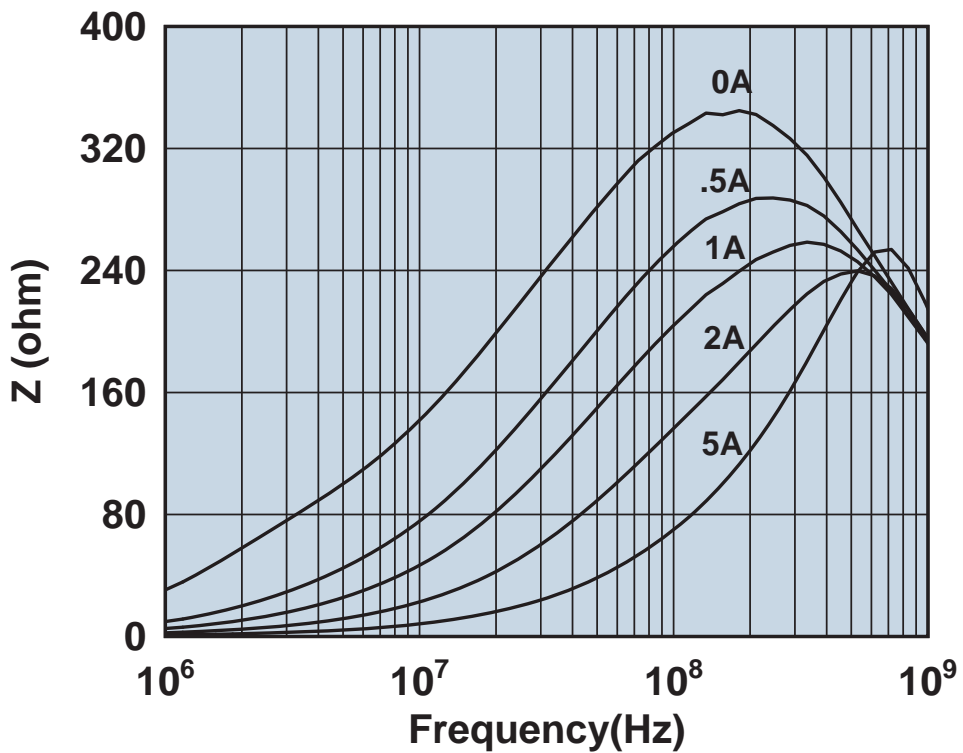


Impedance vs. frequency with dc bias.

2944778301

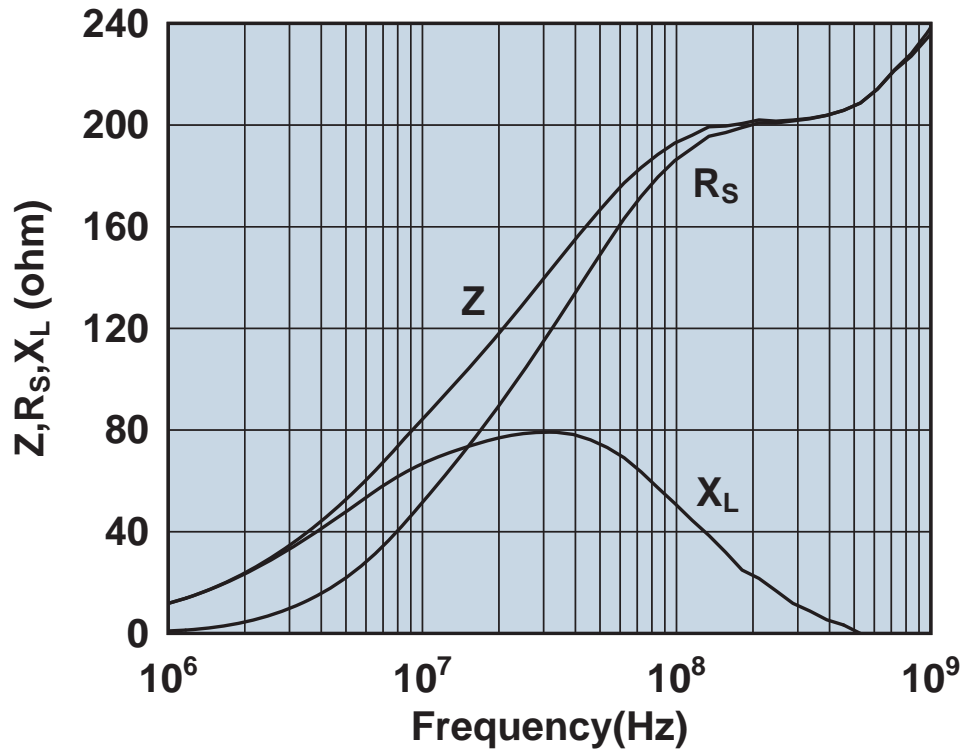


Impedance, reactance, and resistance vs. frequency.

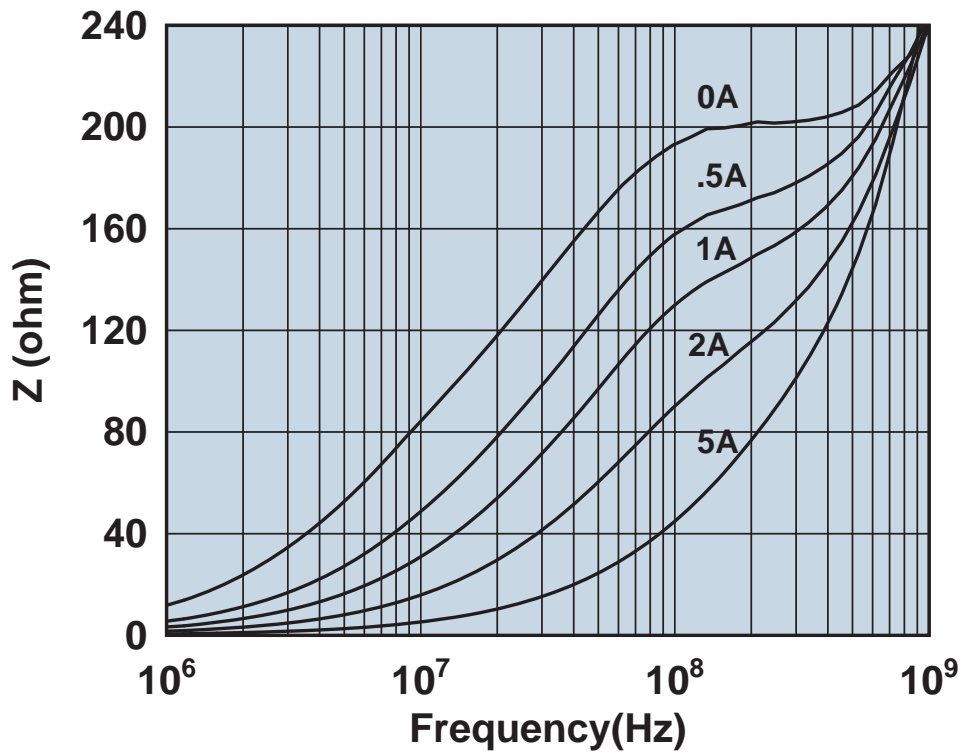


Impedance vs. frequency with dc bias.

2944780301

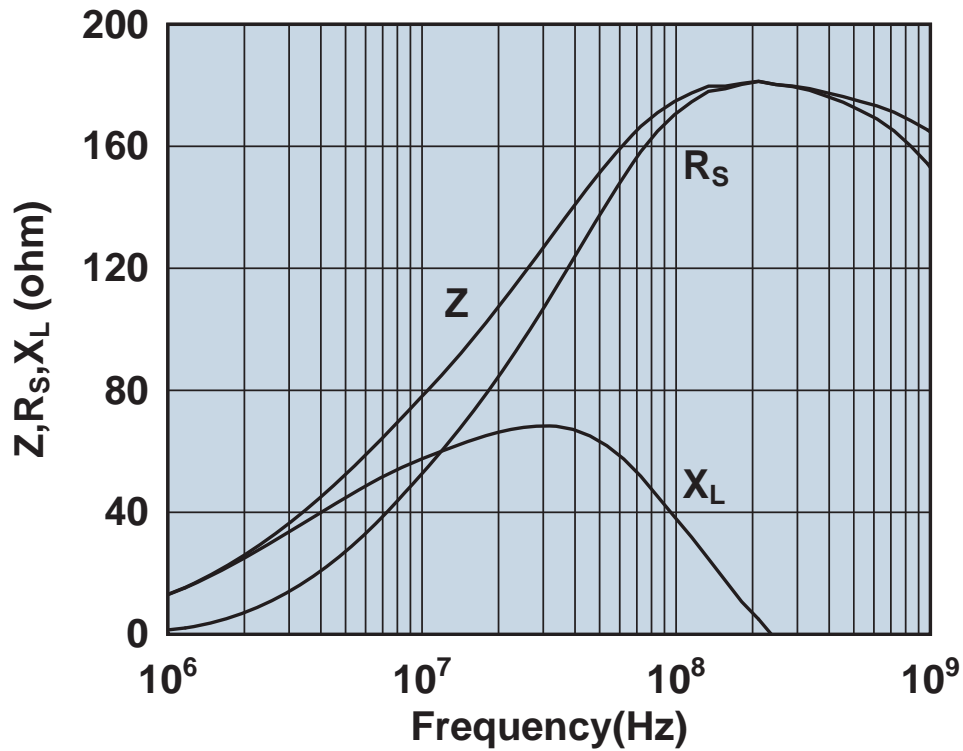


Impedance, reactance, and resistance vs. frequency.

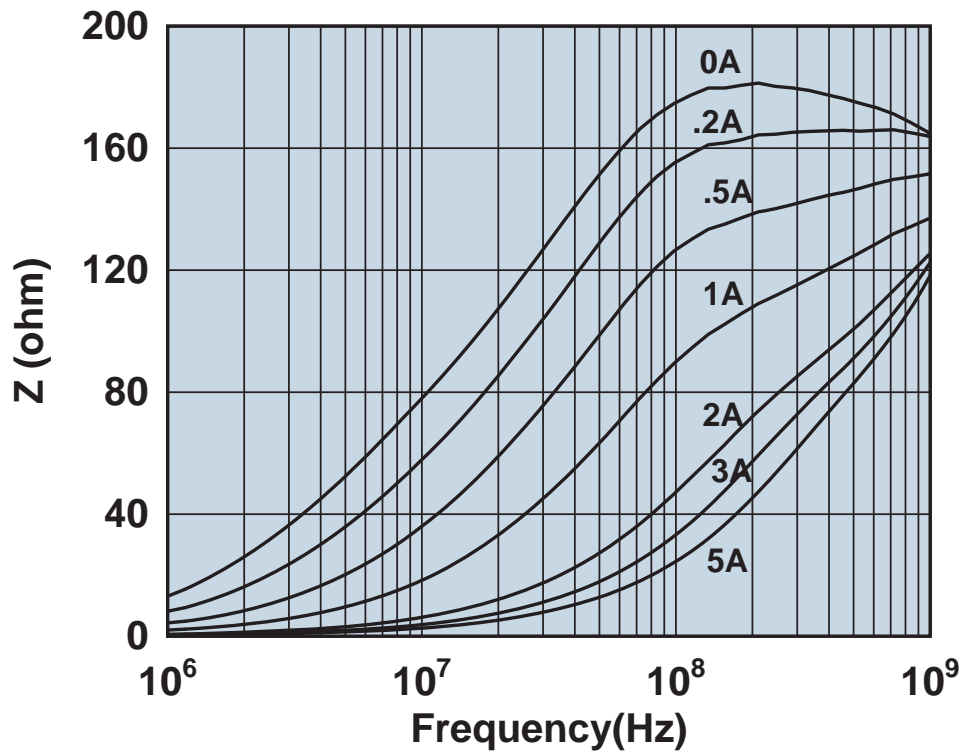


Impedance vs. frequency with dc bias.

2944786101

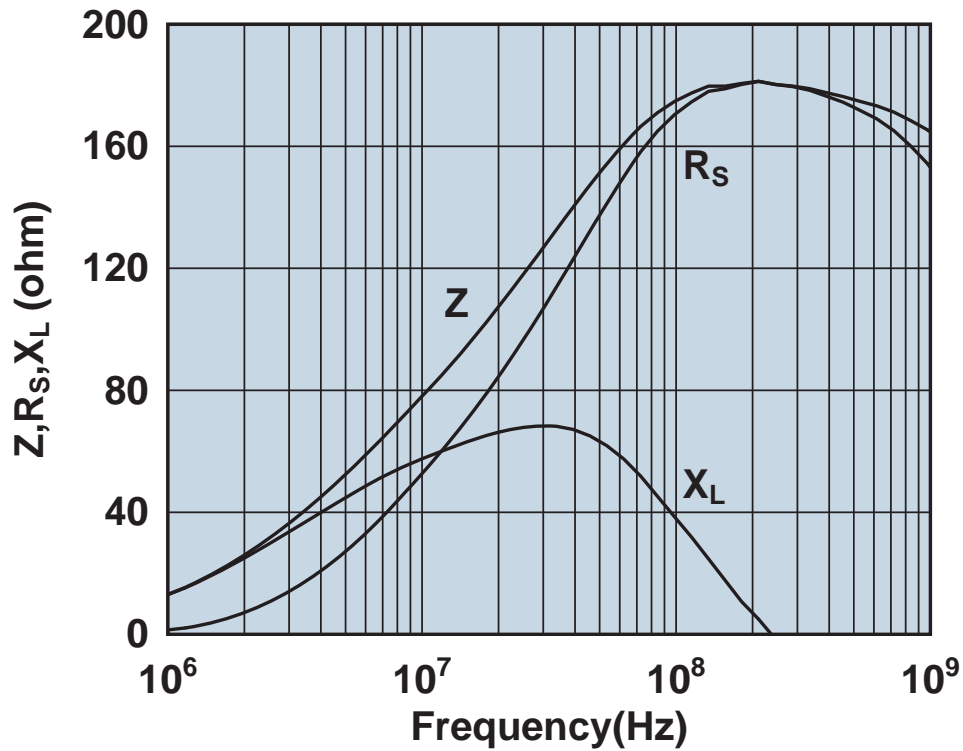


Impedance, reactance, and resistance vs. frequency.

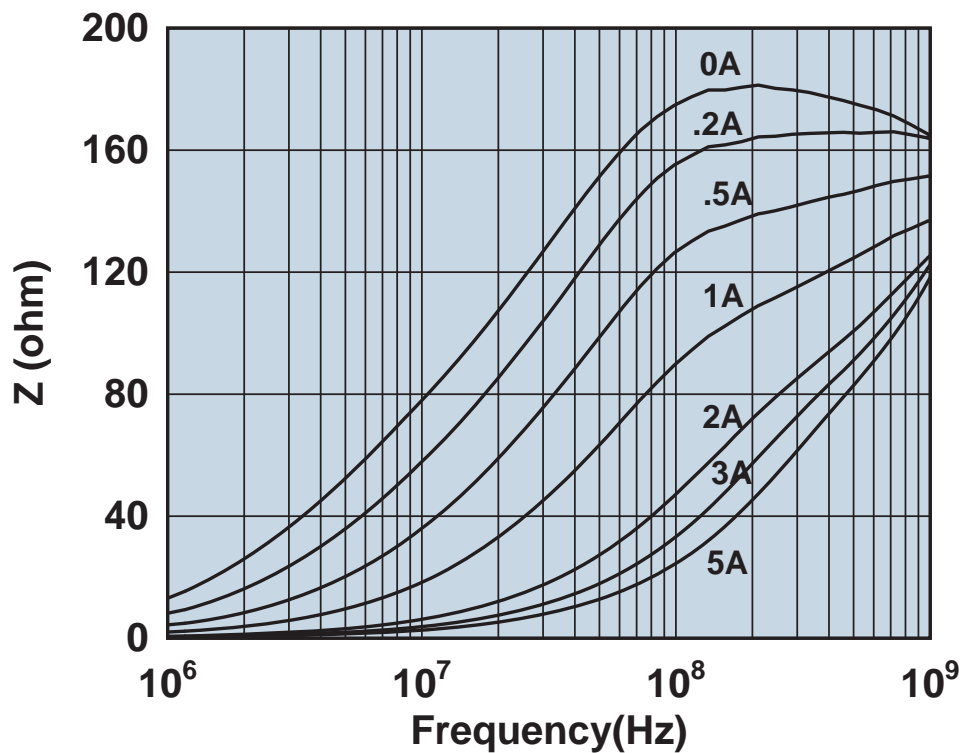


Impedance vs. frequency with dc bias.

2944788101



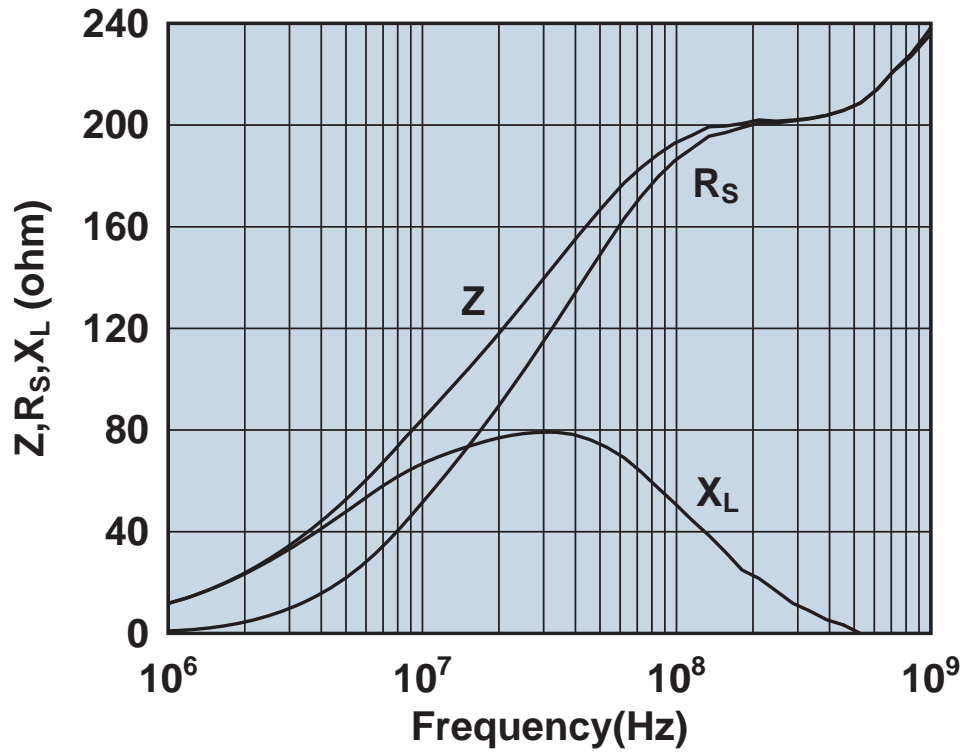
Impedance, reactance, and resistance vs. frequency.



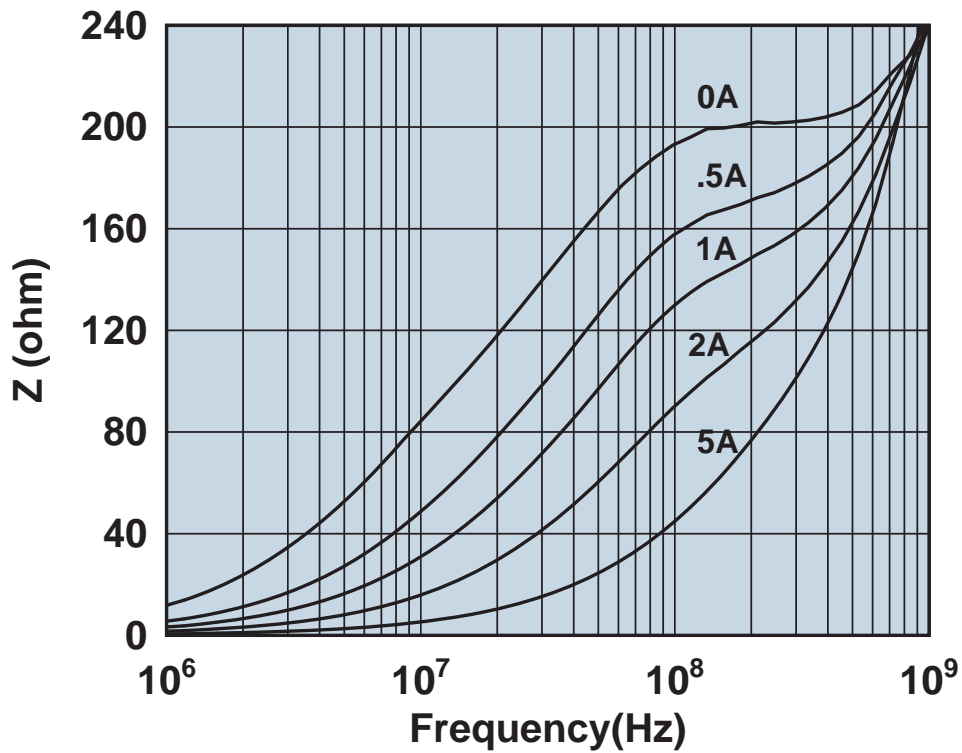
Impedance vs. frequency with dc bias.



2944788301

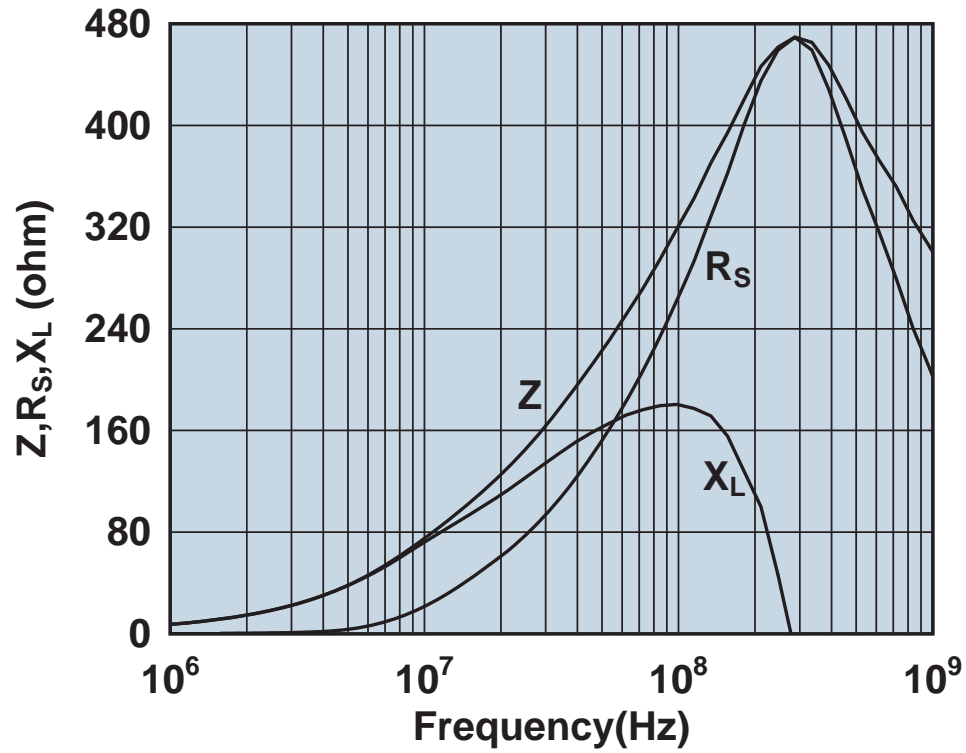


Impedance, reactance, and resistance vs. frequency.

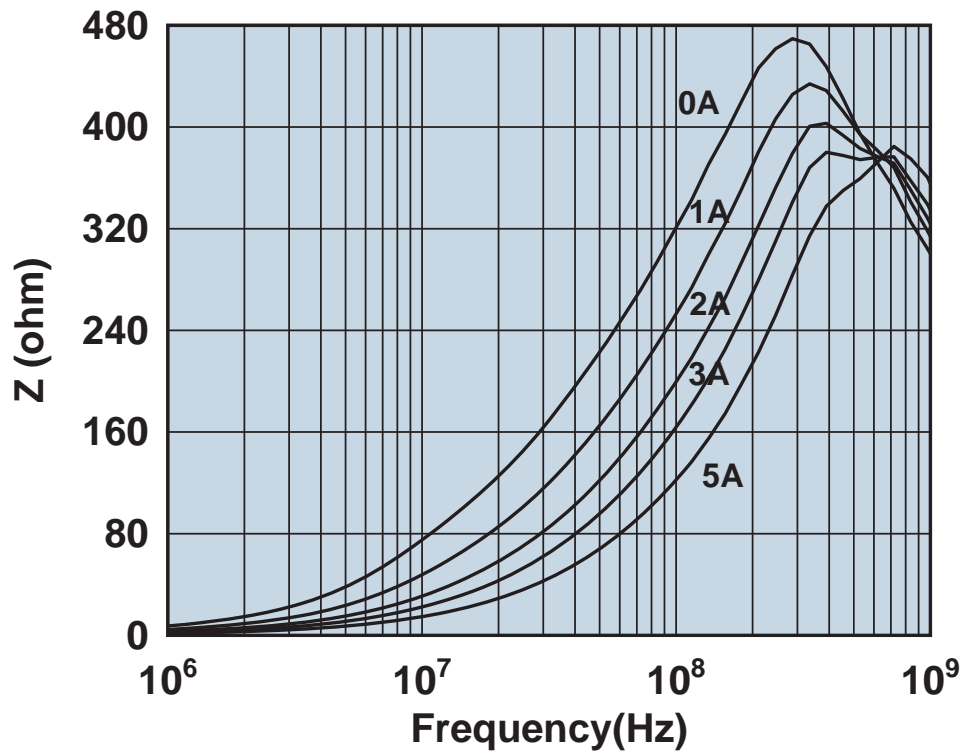


Impedance vs. frequency with dc bias.

2952770301

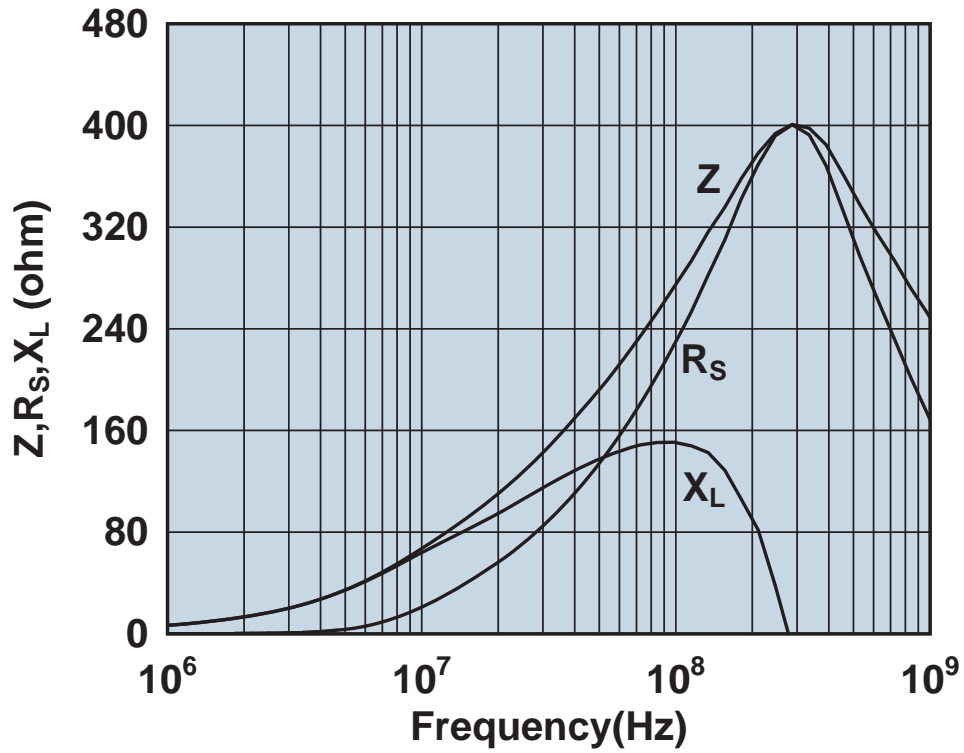


Impedance, reactance, and resistance vs. frequency.

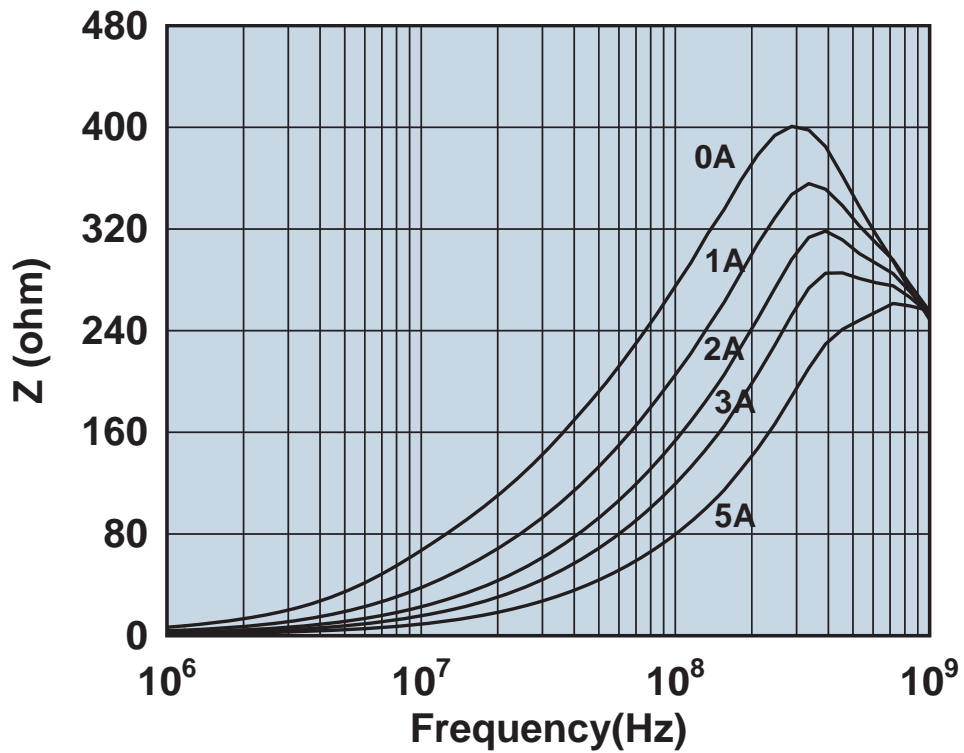


Impedance vs. frequency with dc bias.

2952776101

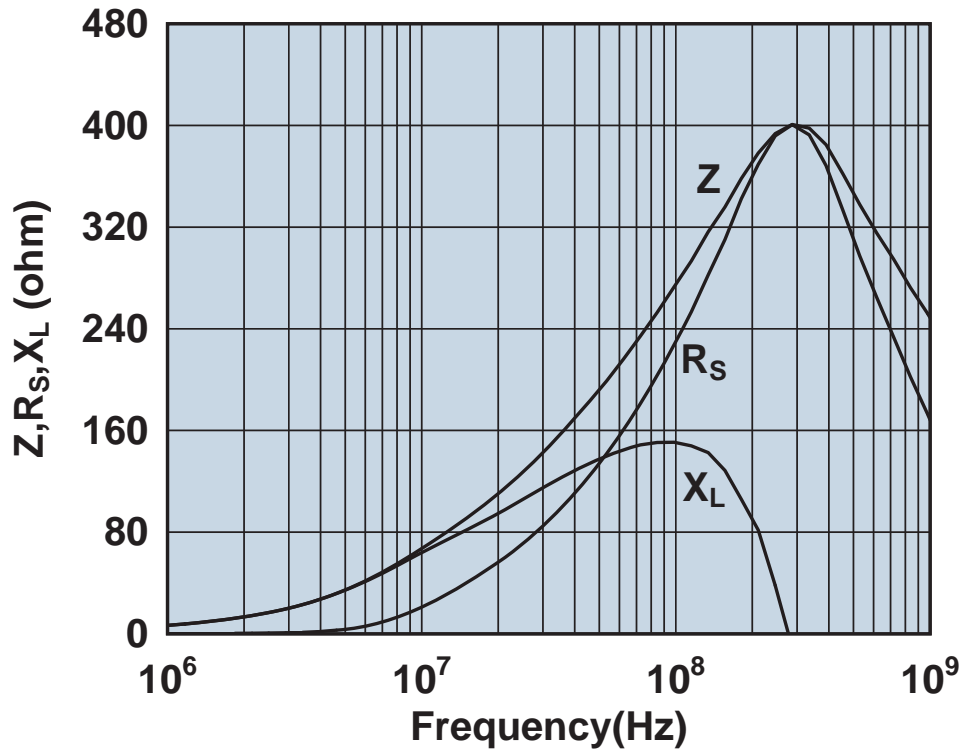


Impedance, reactance, and resistance vs. frequency.

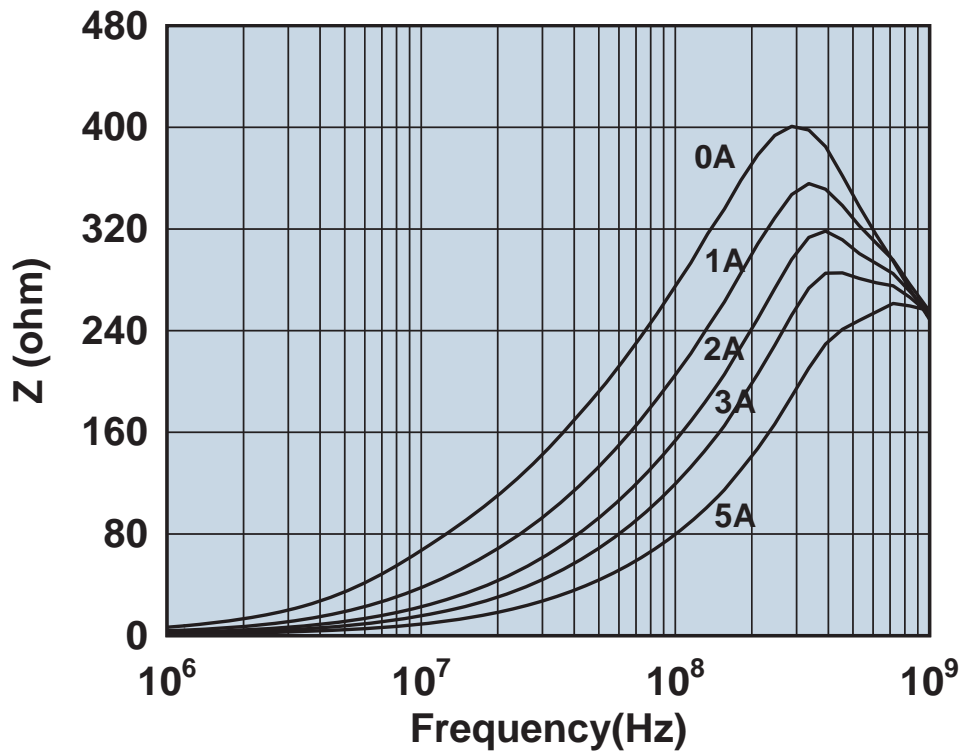


Impedance vs. frequency with dc bias.

2952778101

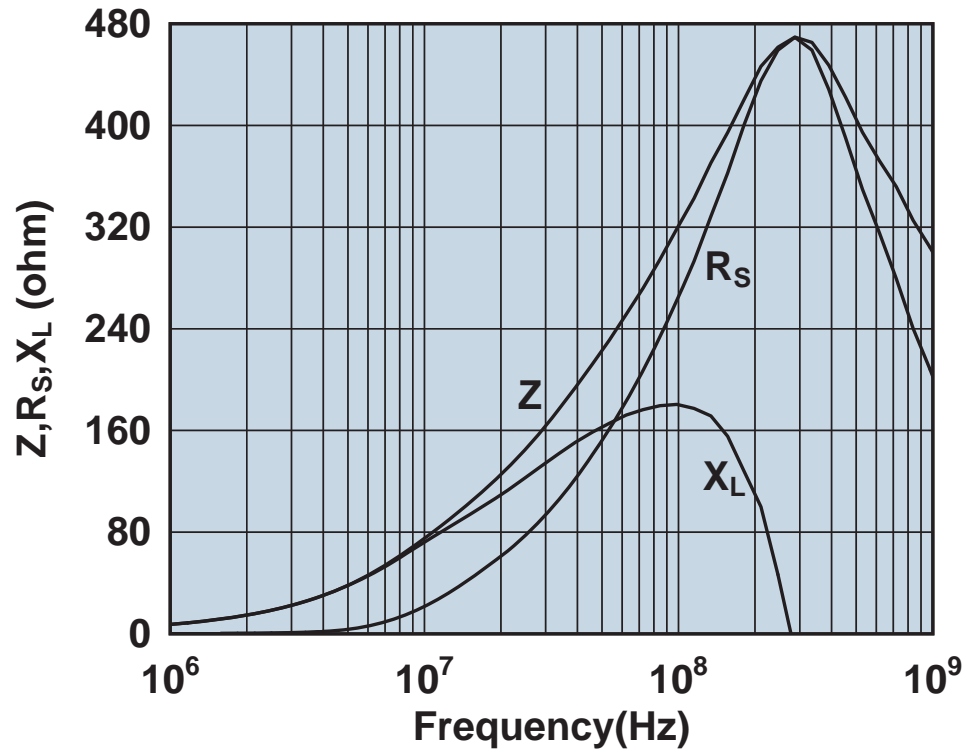


Impedance, reactance, and resistance vs. frequency.

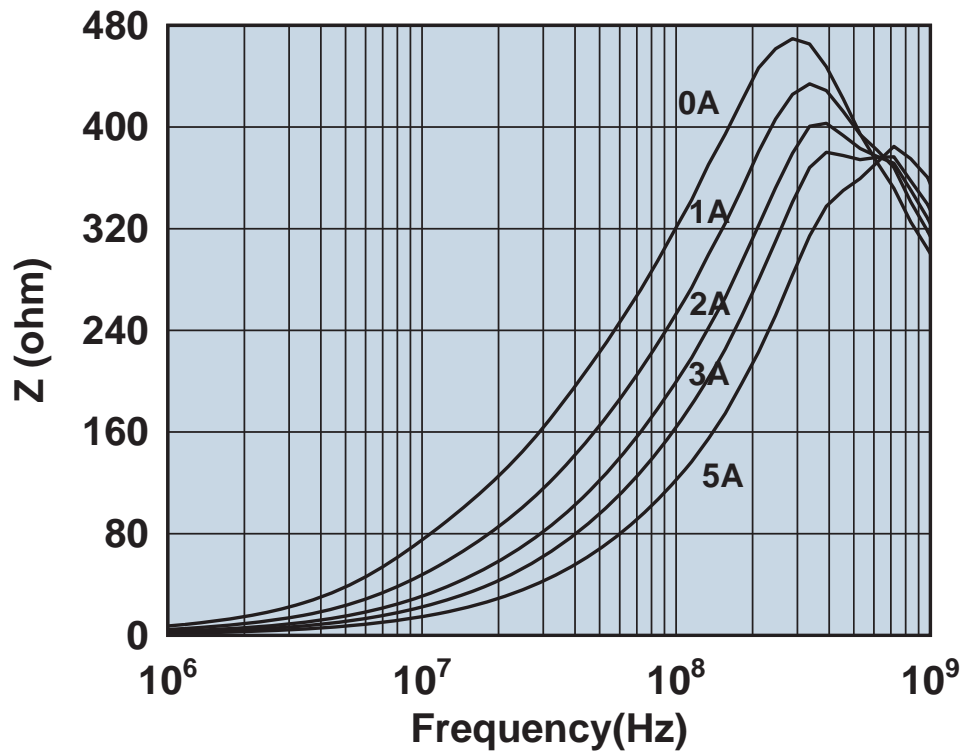


Impedance vs. frequency with dc bias.

2952778301

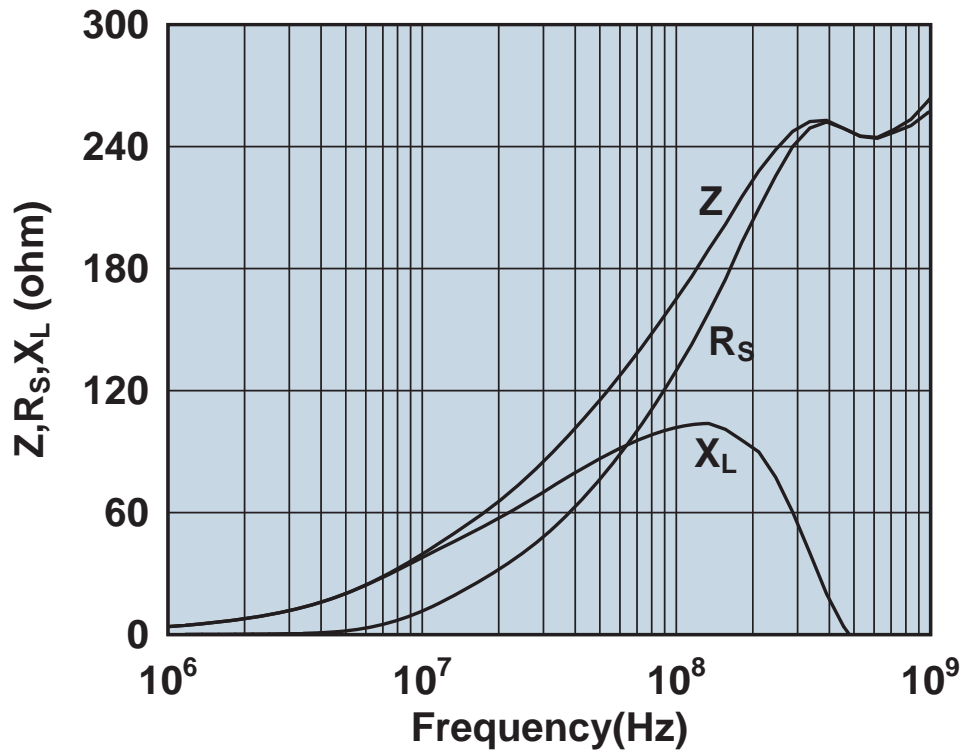


Impedance, reactance, and resistance vs. frequency.

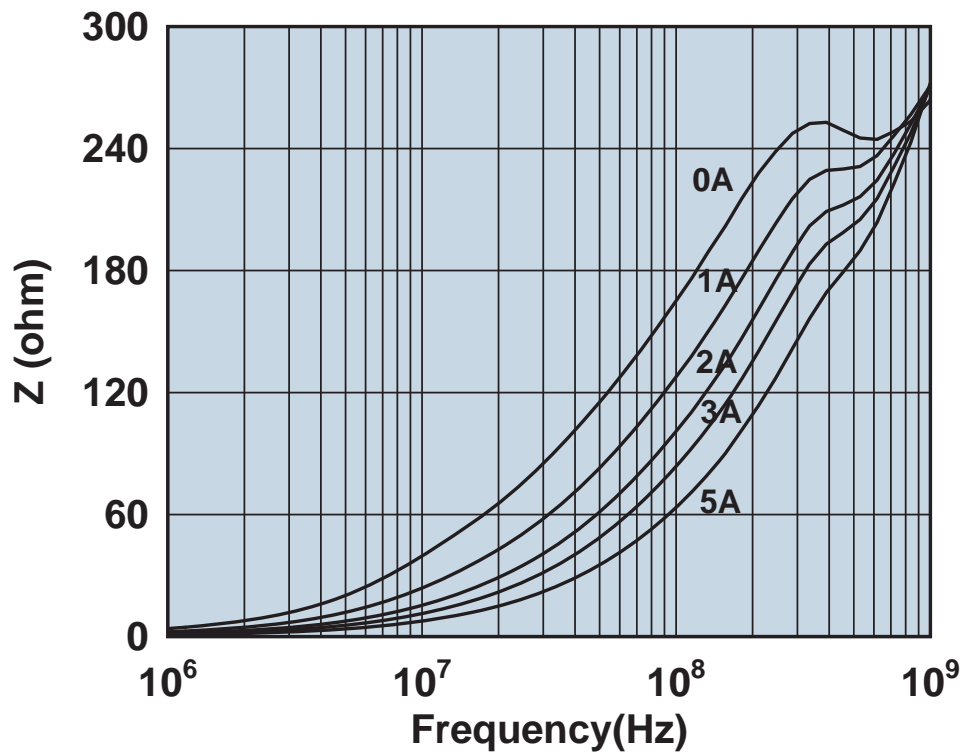


Impedance vs. frequency with dc bias.

2952780301

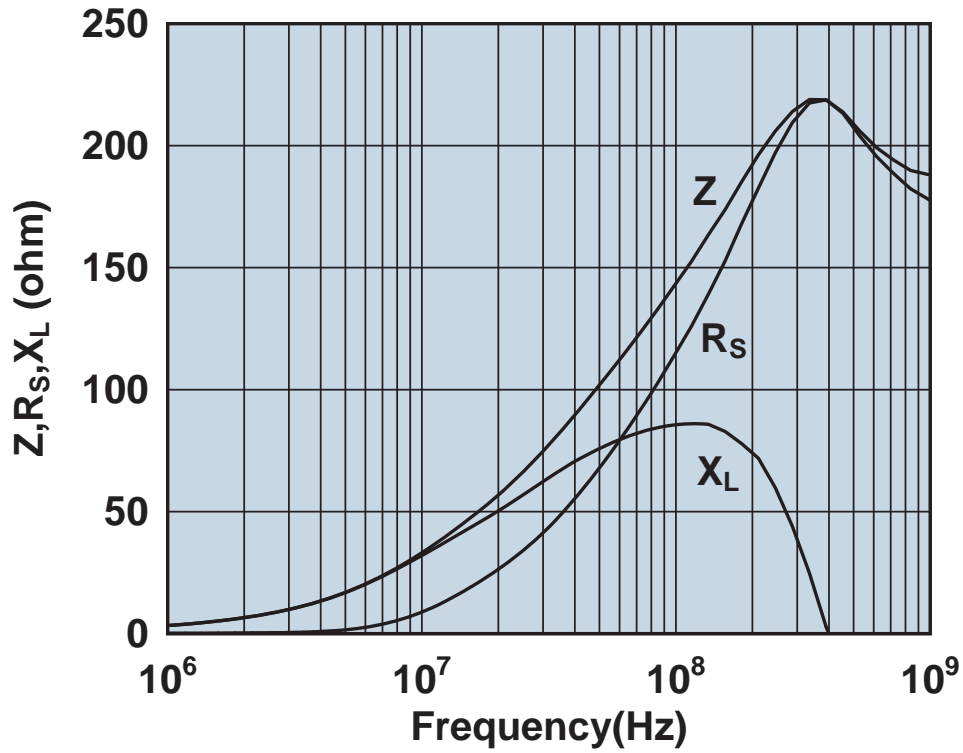


Impedance, reactance, and resistance vs. frequency.

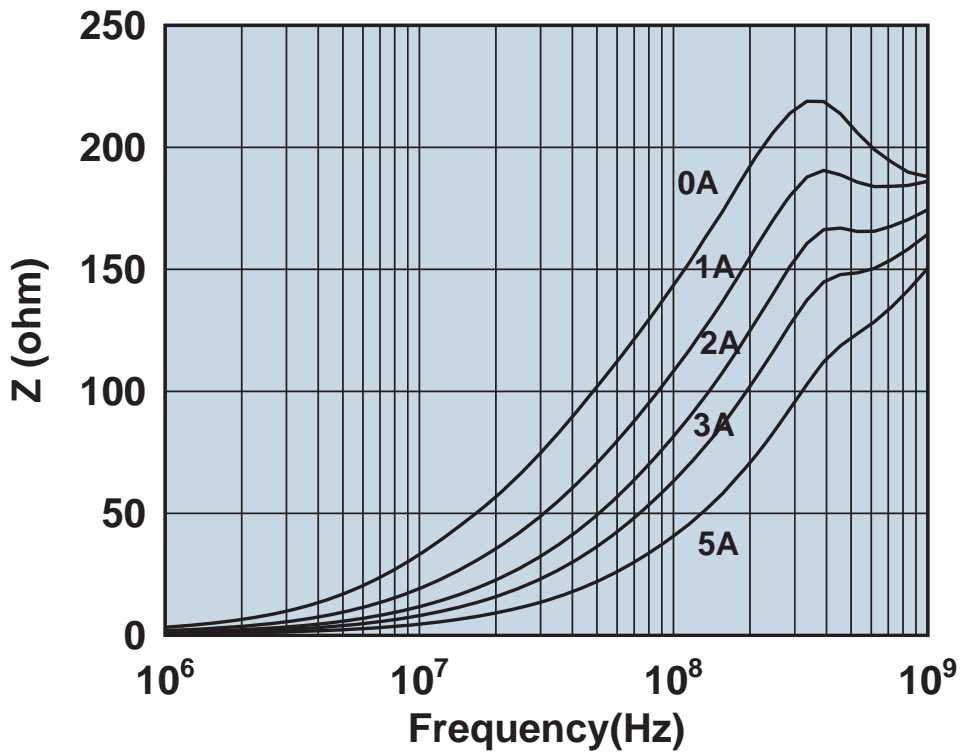


Impedance vs. frequency with dc bias.

2952786101

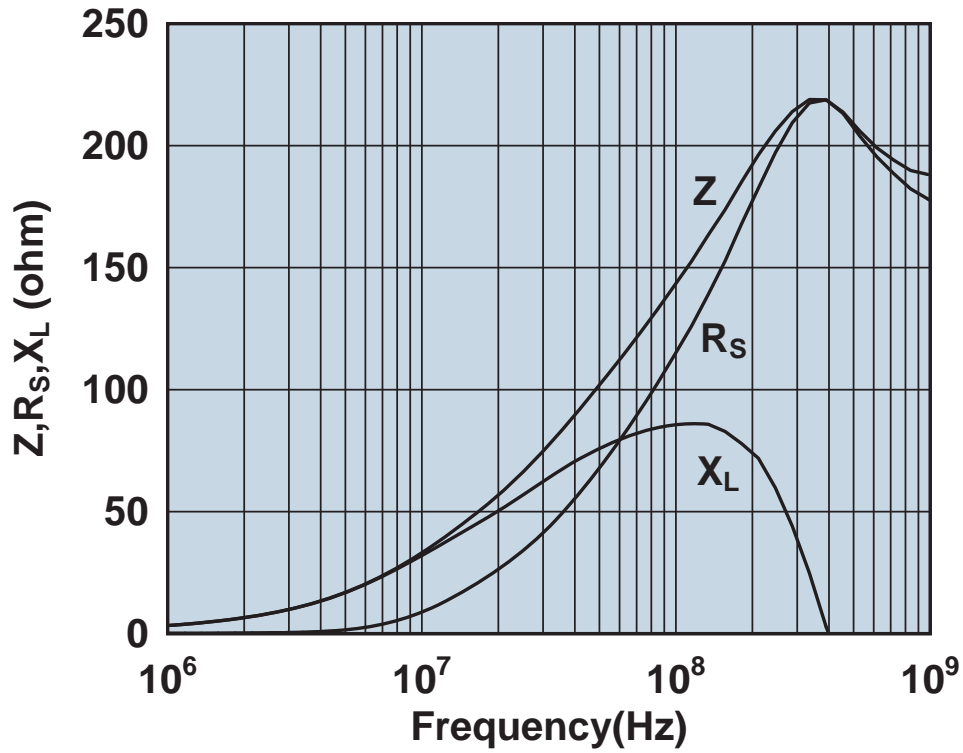


Impedance, reactance, and resistance vs. frequency.

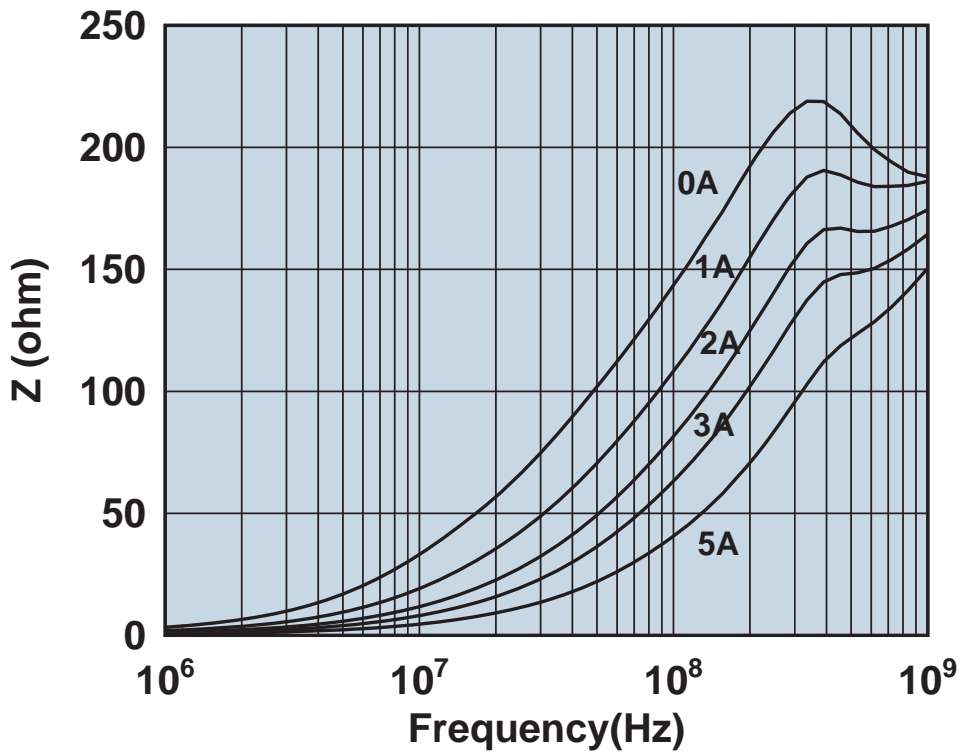


Impedance vs. frequency with dc bias.

2952788101



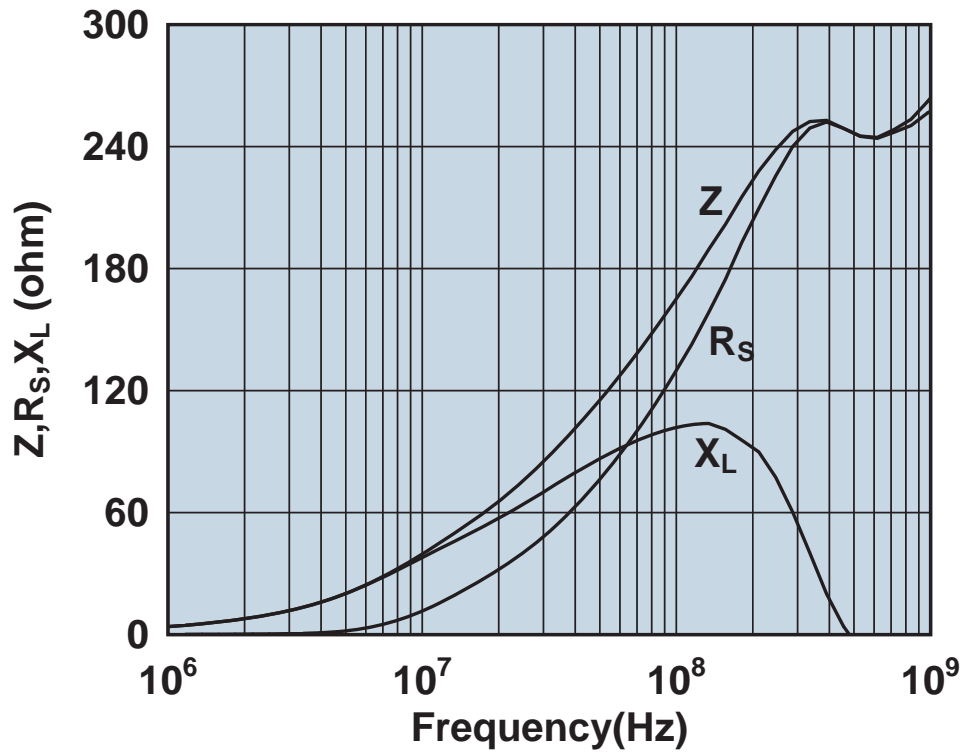
Impedance, reactance, and resistance vs. frequency.



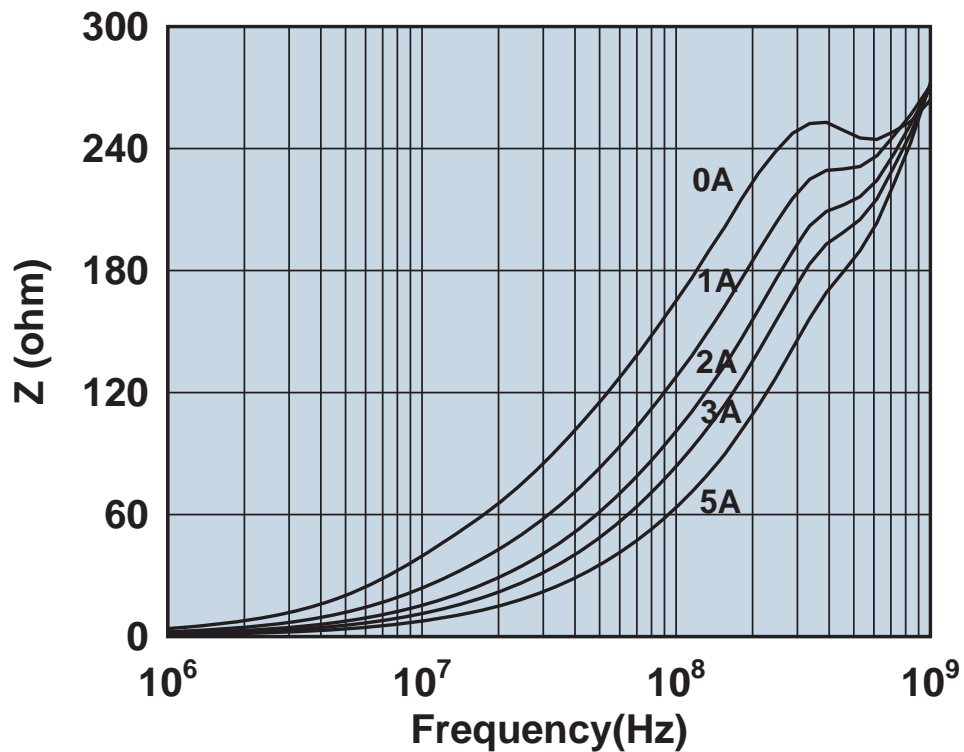
Impedance vs. frequency with dc bias.



2952788301

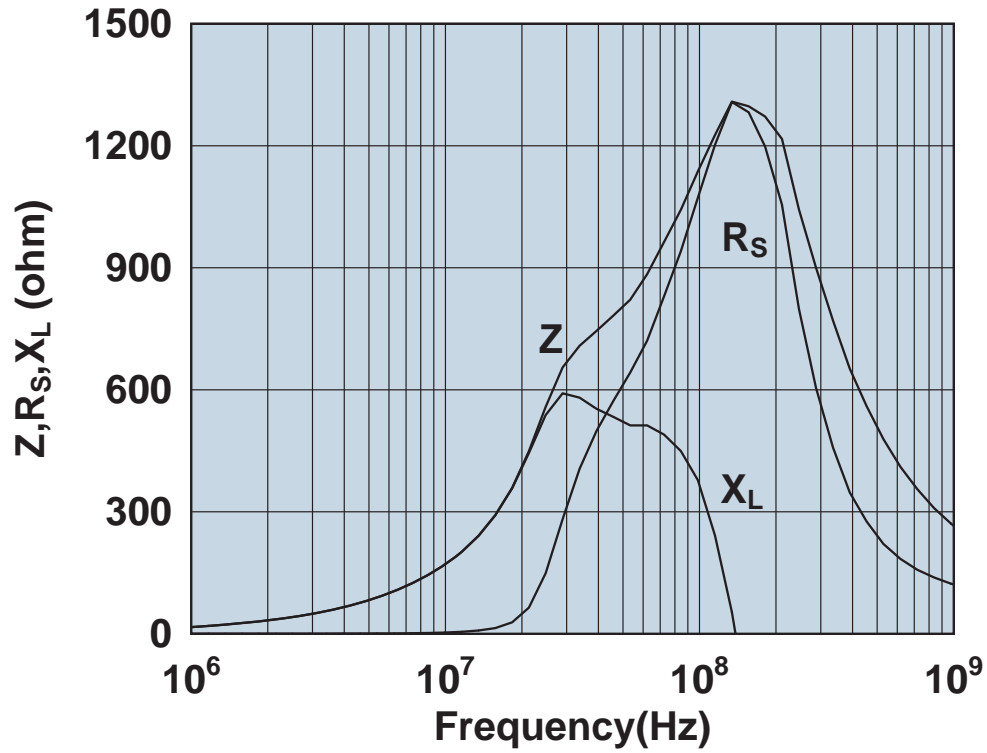


Impedance, reactance, and resistance vs. frequency.

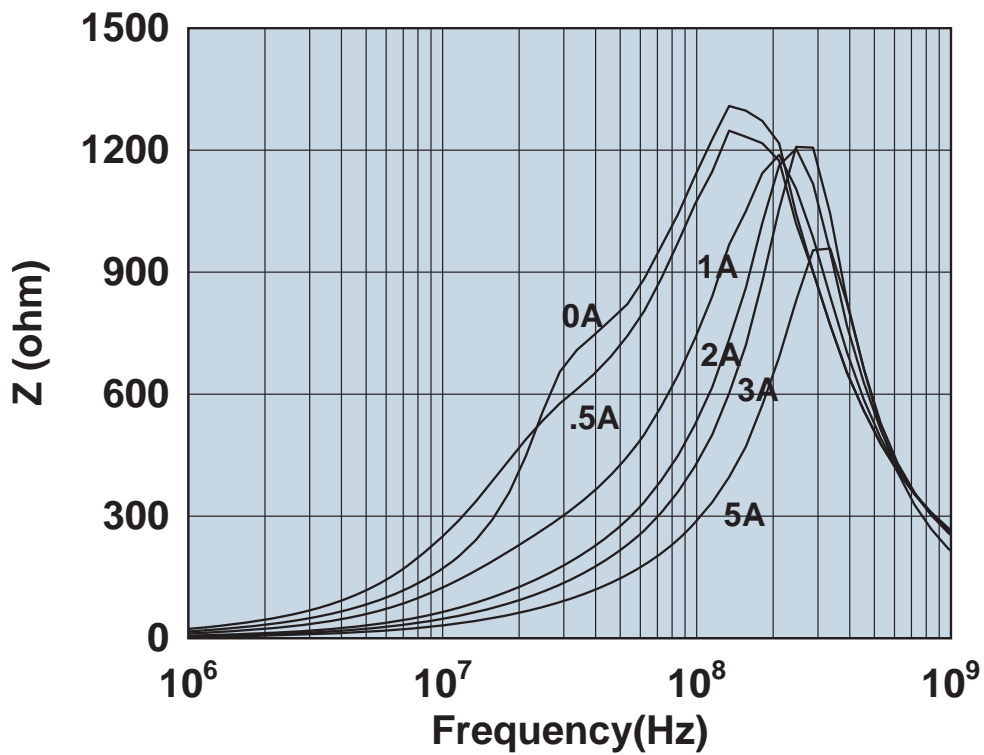


Impedance vs. frequency with dc bias.

2961666631

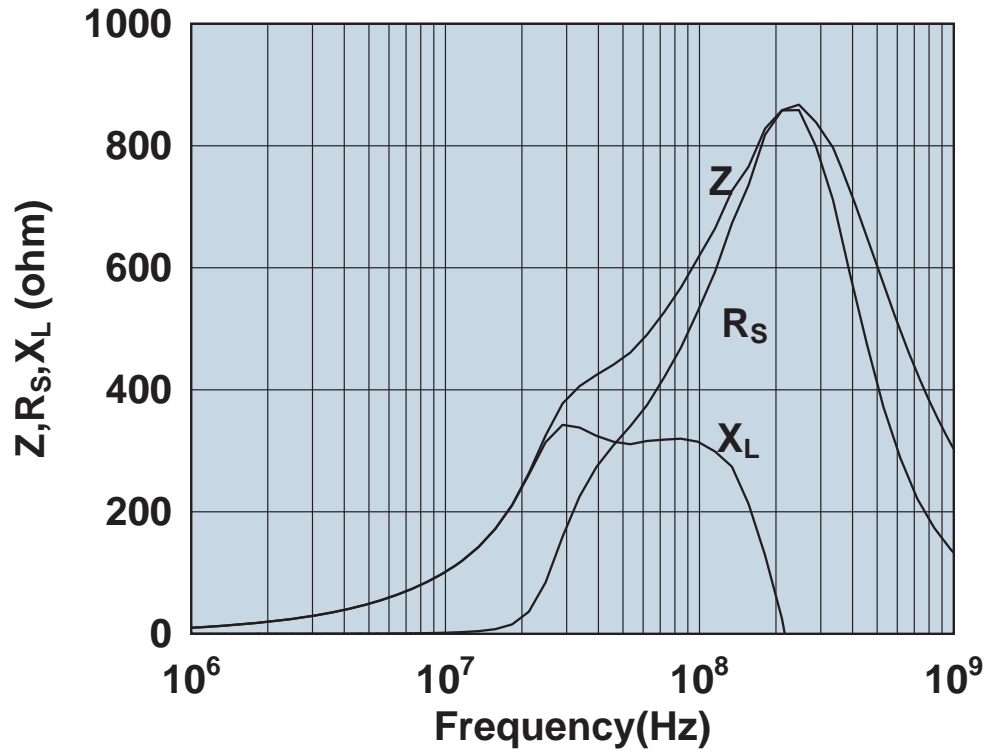


Impedance, reactance, and resistance vs. frequency.

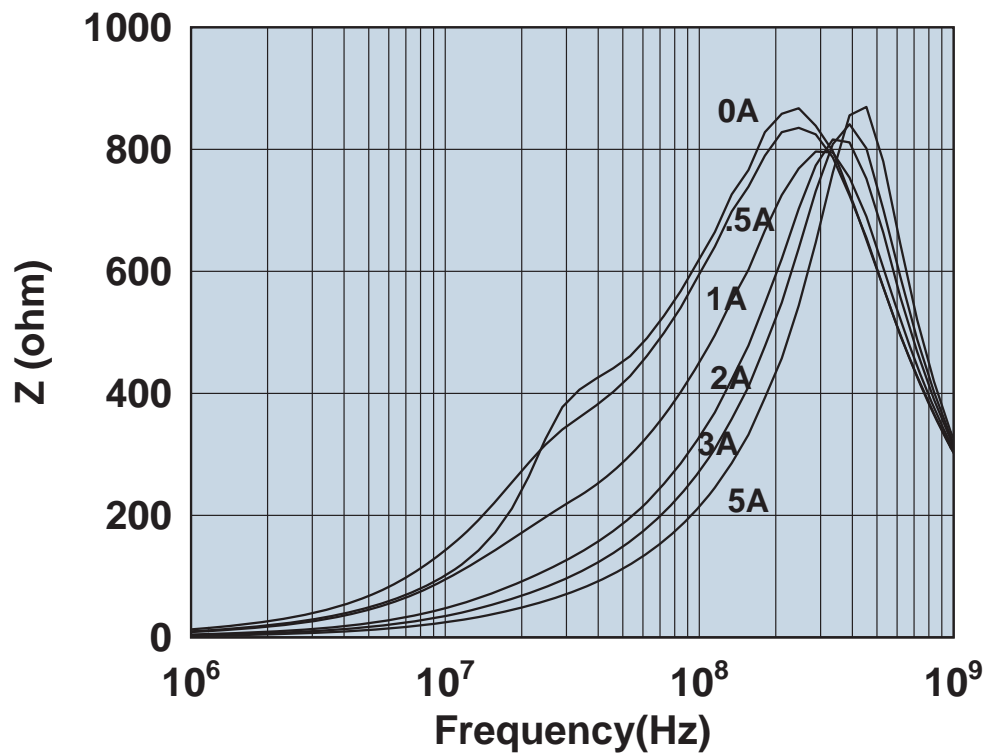


Impedance vs. frequency with dc bias.

2961666651

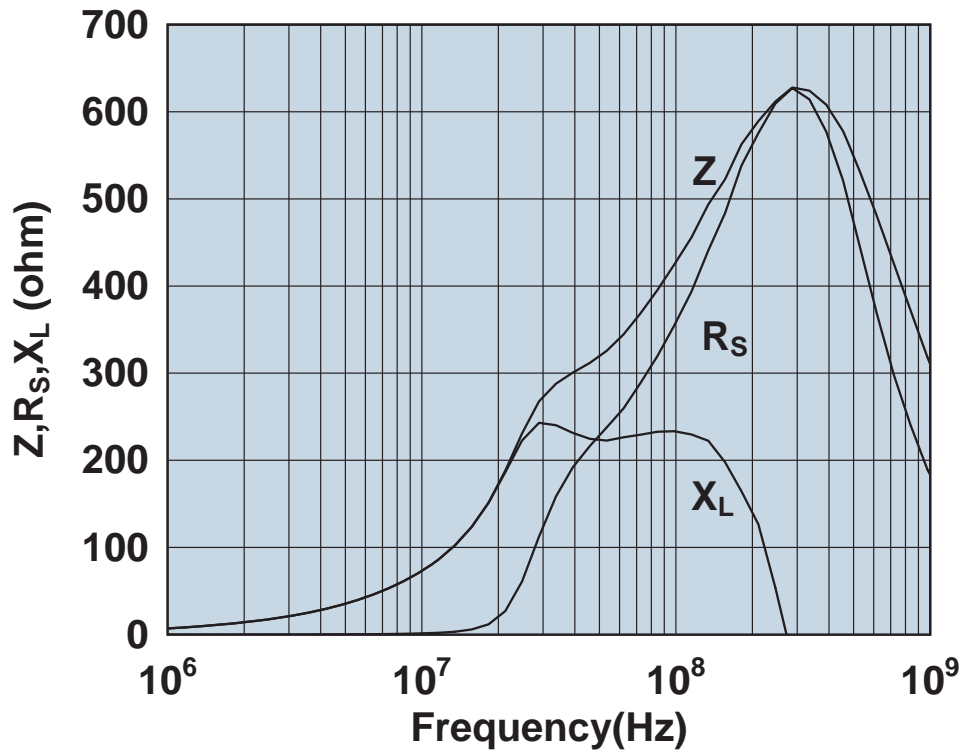


Impedance, reactance, and resistance vs. frequency.

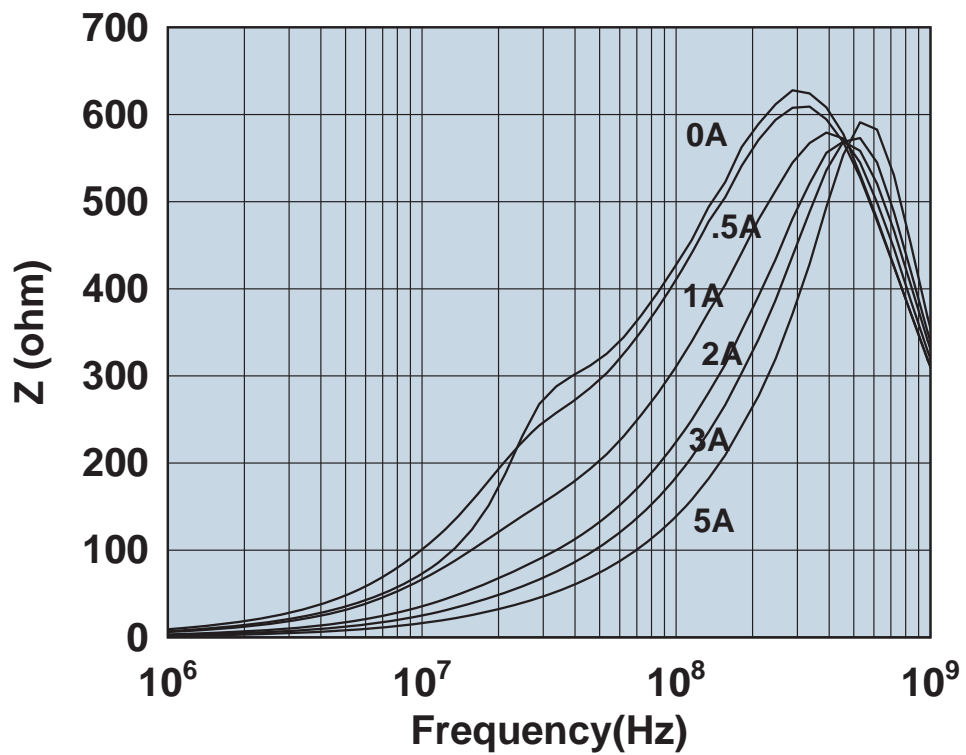


Impedance vs. frequency with dc bias.

2961666661

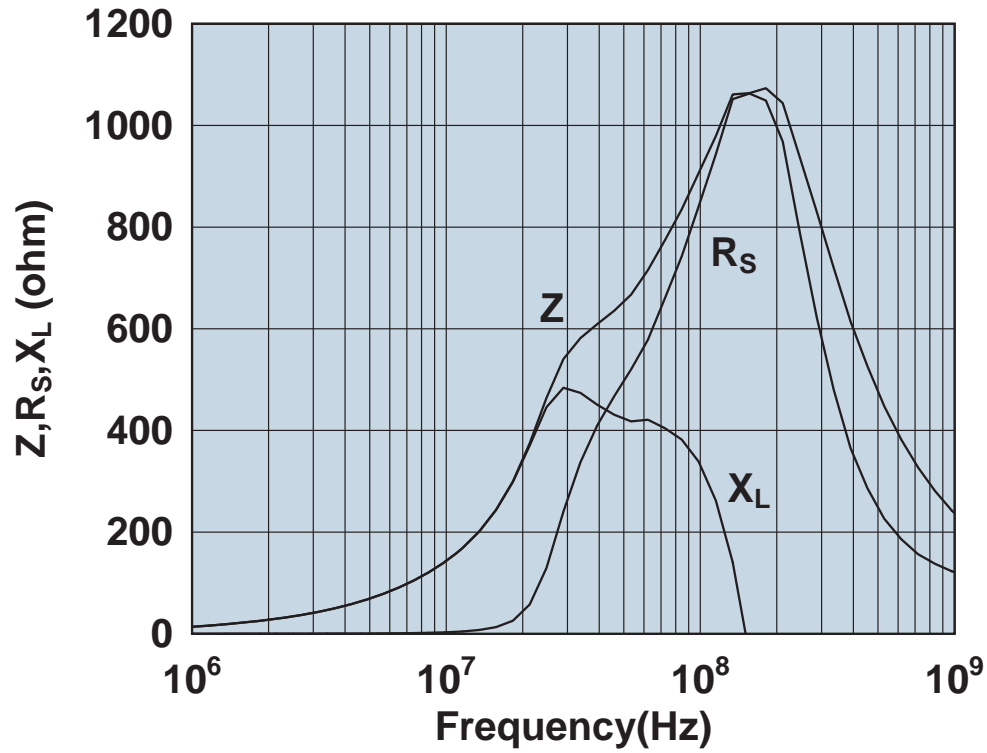


Impedance, reactance, and resistance vs. frequency.

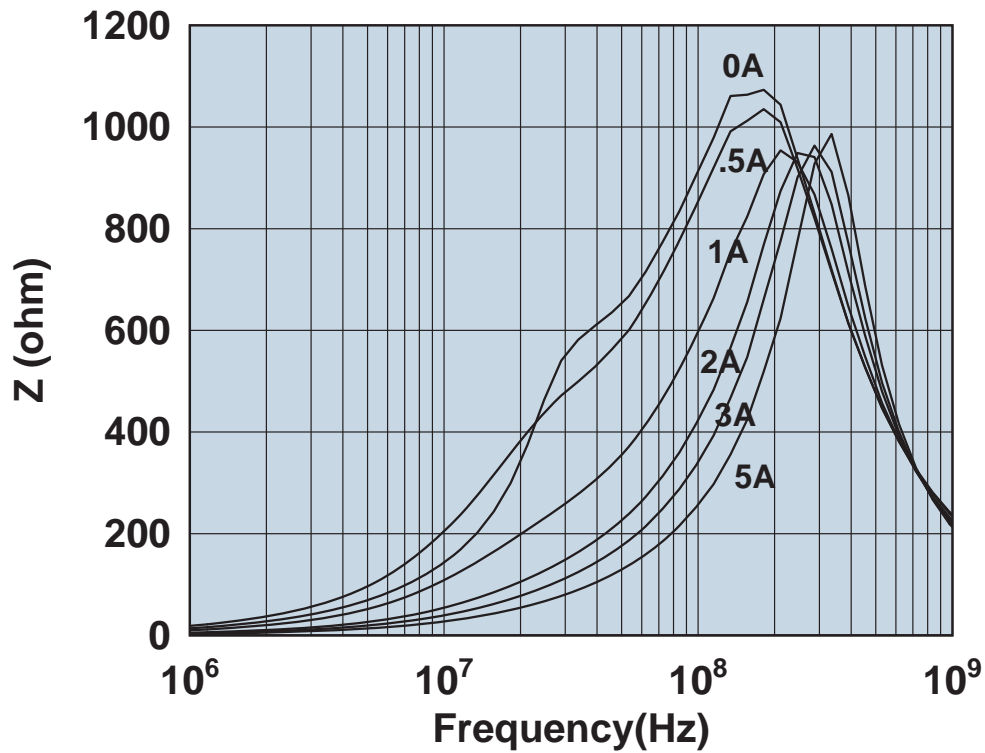


Impedance vs. frequency with dc bias.

2961666671

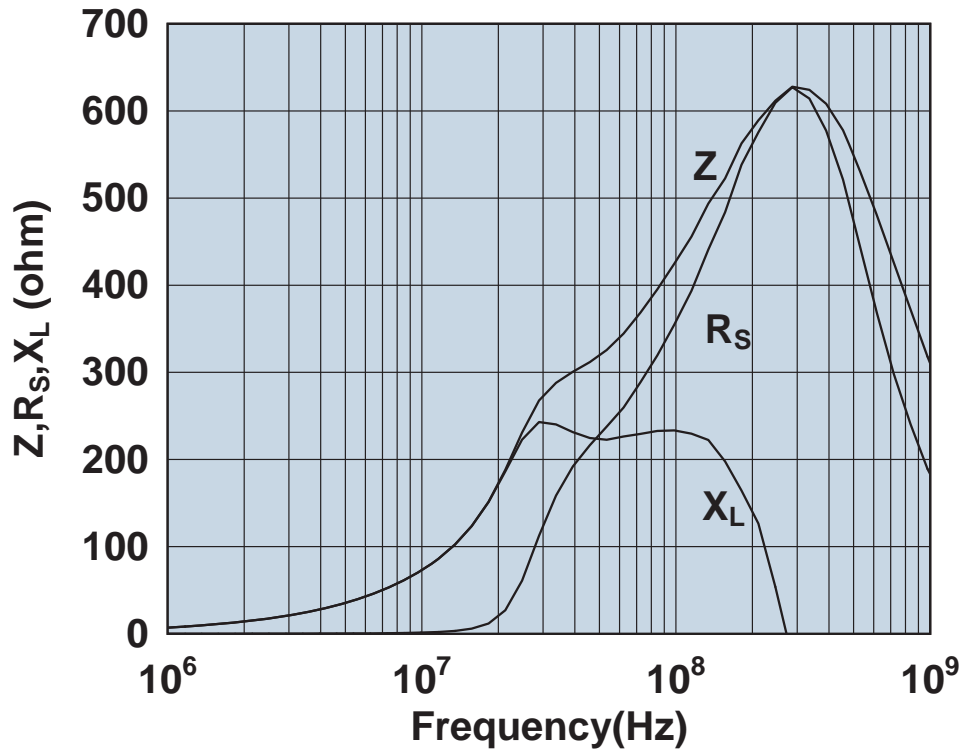


Impedance, reactance, and resistance vs. frequency.

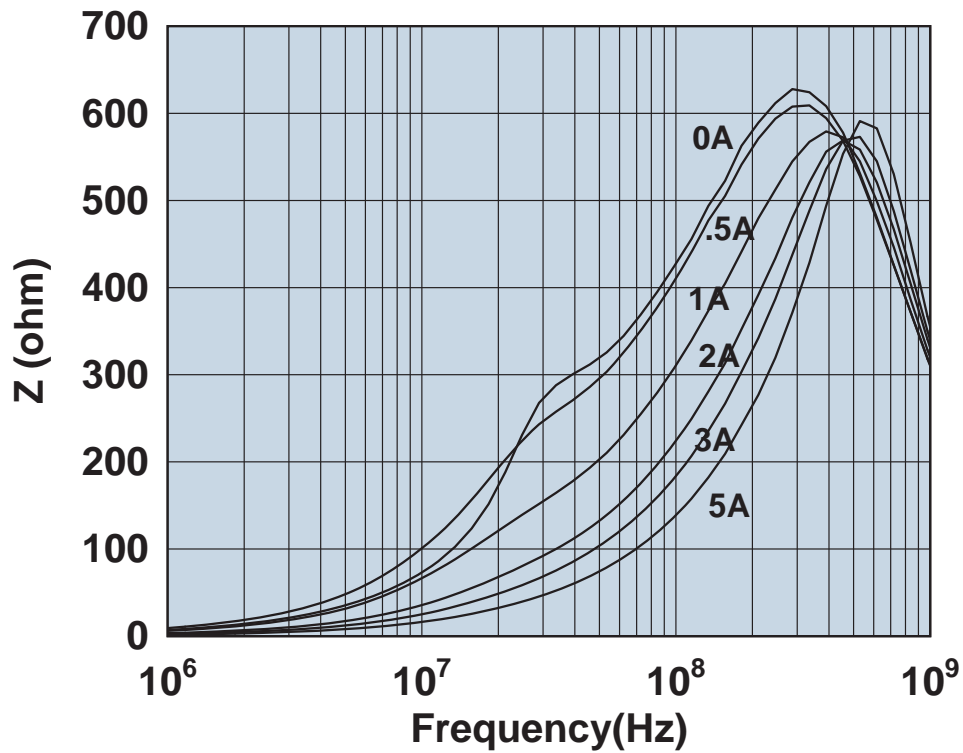


Impedance vs. frequency with dc bias.

2961666681



Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with dc bias.