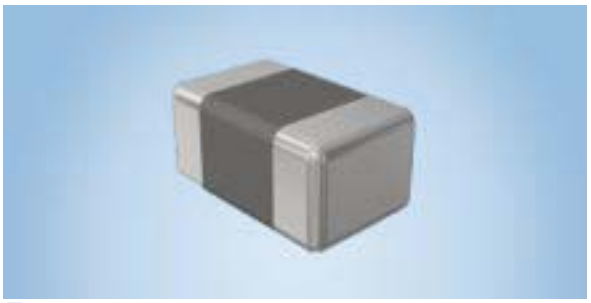


Low Current Ferrite Chip Beads

Steward's surface mount ferrite chips provide compact, cost effective EMI filtering for densely packed PCB designs. The small footprint enables placement very close to troublesome high frequency devices. Our proprietary SMT construction yields rugged components with superior impedance vs. frequency characteristics.

Features:

•Small footprint •Excellent retention under Bias •Rugged, monolithic construction •Superior impedance vs. frequency characteristics •Economical •Broad range of sizes (from 0402 up to 1812) •Broad range of impedance values and current ratings

Application:

•Filtering of power input pins and devices using high speed clocks •Filtering of low frequency input/output signals of shielded enclosures •High frequency filtering of medium speed clocks and video signals •Preventing oscillations in high frequency amplifiers •Data bus filtration •Discrete component filtration in power supplies

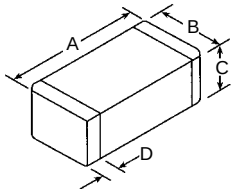
Test Specifications:

•Maximum current ratings are determined by testing to a maximum temperature rise of 40° C with continuous operating current •Board level components are rated up to a maximum of 75 volts

Tested with: •HP4396A (100KHz - 1.8 GHz) or HP8753 (to 6 GHz) Network/Spectrum Analyzer •HP43961A Impedance Test Kit •HP16192A Test Fixture or Inter-Continental Microwave custom fixtures •HP16200A DC Bias Adapter •Philips PM2811 DC Power Supply •Ambient Temperature 23.5°C ± 2° •Bandwidth 3 kHz •Sweep Time 423 ms •Impedance is rated at ± 25% @100MHz

PART NUMBERING SYSTEM

LI	0402	E	300	R	-	00
PRODUCT SERIES CODE	PART SIZE CODE	RATED CURRENT CODE	IMPEDANCE VALUE CODE	PACKAGING CODE		ADDITIONAL PART DESCRIPTION



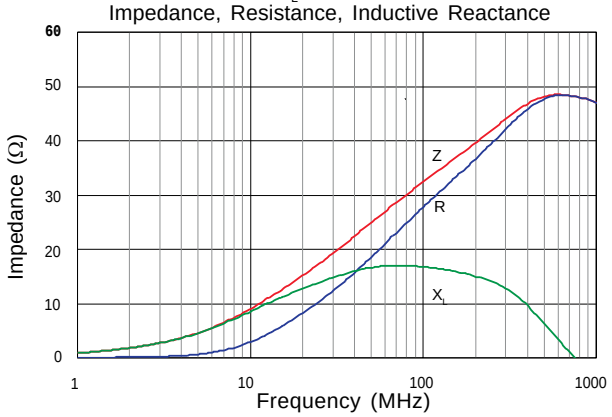
Ambient Operating Temperature Range: -55° C to +125° C

	PART NUMBER	A mm (inches)	B mm (inches)	C mm (inches)	D mm (inches)	IMPEDANCE (Z) TYPICAL OHMS @ 100MHz	500MHz	1GHz	DCR MAX OHMS	RATED I MAX (continuous) mA
	LI0402E300R-00	1.01 ± 0.18 (0.040 ± 0.007)	0.50 ± 0.20 (0.020 ± 0.008)	0.50 ± 0.20 (0.020 ± 0.008)	0.30 MAX (0.012 MAX)	30	65	68	0.300	500
*	LI0402E600R-00	1.01 ± 0.18 (0.040 ± 0.007)	0.50 ± 0.20 (0.020 ± 0.008)	0.50 ± 0.20 (0.020 ± 0.008)	0.30 MAX (0.012 MAX)	60	90	93	0.300	500
	LI0402D121R-00	1.01 ± 0.18 (0.040 ± 0.007)	0.50 ± 0.20 (0.020 ± 0.008)	0.50 ± 0.20 (0.020 ± 0.008)	0.30 MAX (0.012 MAX)	120	175	164	0.400	400
	LI0402B301R-00	1.01 ± 0.18 (0.040 ± 0.007)	0.50 ± 0.20 (0.020 ± 0.008)	0.50 ± 0.20 (0.020 ± 0.008)	0.30 MAX (0.012 MAX)	300	454	351	0.800	200
	LI0603G800R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	80	120	107	0.200	700
	LI0603G121R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	120	156	113	0.200	700
*	LI0603E151R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	150	205	160	0.250	500
	LI0603G221R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	220	279	168	0.300	700
	LI0603D301R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	300	286	165	0.350	400
	LI0805H400R-00	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	40	60	63	0.150	800
	LI0805H600R-00	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	60	78	75	0.150	800
*	LI0805H750R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	75	115	115	0.150	800
	LI0805H800R-00	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)	80	115	100	0.2	700

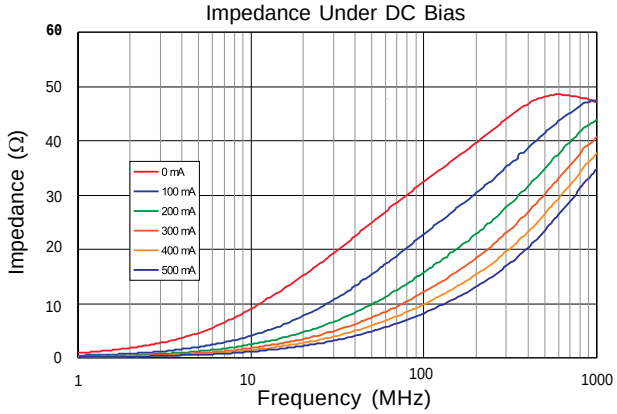
PART NUMBER	A mm (inches)	B mm (inches)	C mm (inches)	D mm (inches)	IMPEDANCE (Z) TYPICAL OHMS @ 100MHz	500MHz	1GHz	DCR MAX OHMS	RATED I MAX (continuous) mA
LI0805H121R-00	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	120	167	129	0.150	800
LI0805H151R-00	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	150	207	138	0.150	800
LI0805G301R-00	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	300	248	146	0.200	700
* LI1206E260R-00	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	26	43	50	0.200	700
* LI1206E520R-00	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	52	800	93	0150	800
LI1206H900R-00	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	90	142	156	0.150	800
LI1206H121R-00	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	120	144	135	0.150	800
LI1206H151R-00	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	150	173	123	0.150	800
LI1206G301R-00	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)	300	138	88	0.200	700
LI1806E800R-00	4.50 ± 0.254 (0.177 ± 0.010)	1.60 ± 0.254 (0.063 ± 0.010)	1.60 ± 0.254 (0.063 ± 0.010)	0.51 ± 0.25 (0.020 ± 0.010)	80	117	124	0.300	500
LI1806E101R-00	4.50 ± 0.254 (0.177 ± 0.010)	1.60 ± 0.254 (0.063 ± 0.010)	1.60 ± 0.254 (0.063 ± 0.010)	0.51 ± 0.25 (0.020 ± 0.010)	100	131	130	0.300	500
LI1806C151R-00	4.50 ± 0.254 (0.177 ± 0.010)	1.60 ± 0.254 (0.063 ± 0.010)	1.60 ± 0.254 (0.063 ± 0.010)	0.51 ± 0.25 (0.020 ± 0.010)	150	219	227	0.500	300
LI1812D121R-00	4.50 ± 0.254 (0.177 ± 0.010)	3.20 ± 0.254 (0.126 ± 0.010)	1.40 ± 0.254 (0.055 ± 0.010)	0.46 ± 0.20 (0.018 ± 0.008)	120	203	195	0.400	400

* See Steward web site at www.steward.com for the most recent performance curves.

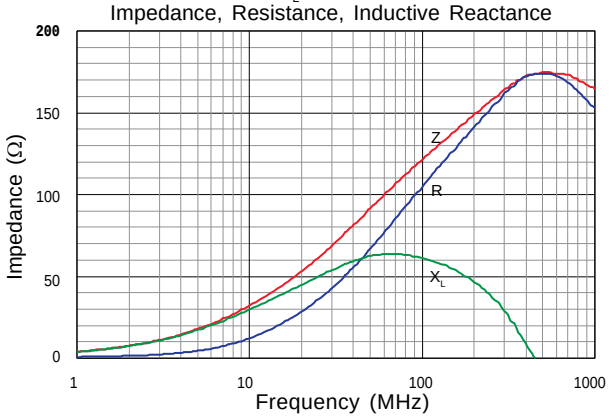
LI0402E300R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



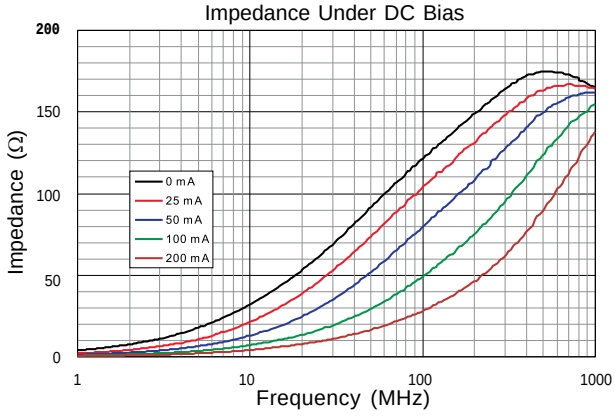
LI0402E300R-00
Z vs. Frequency
Impedance Under DC Bias



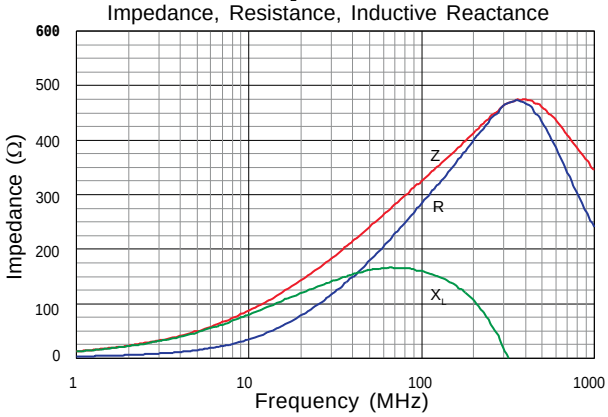
LI0402D121R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



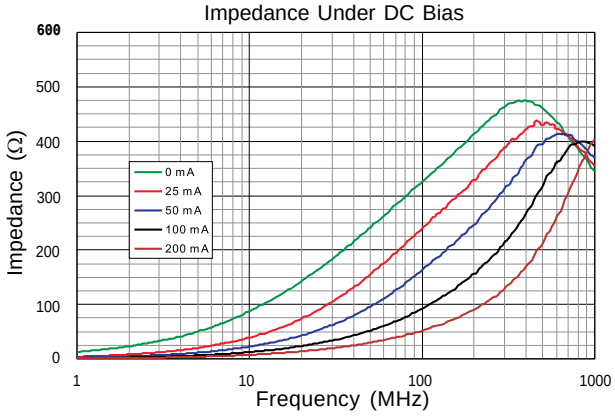
LI0402D121R-00
Z vs. Frequency
Impedance Under DC Bias



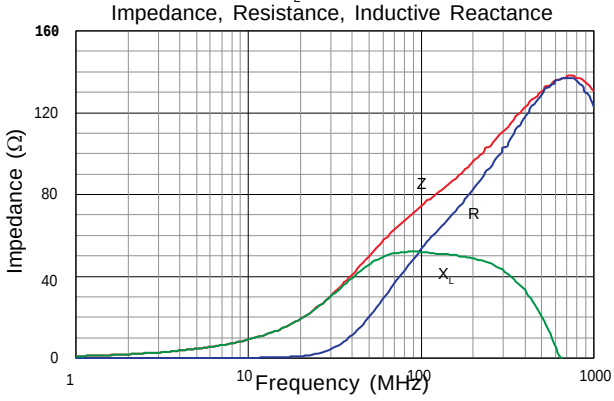
LI0402B301R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



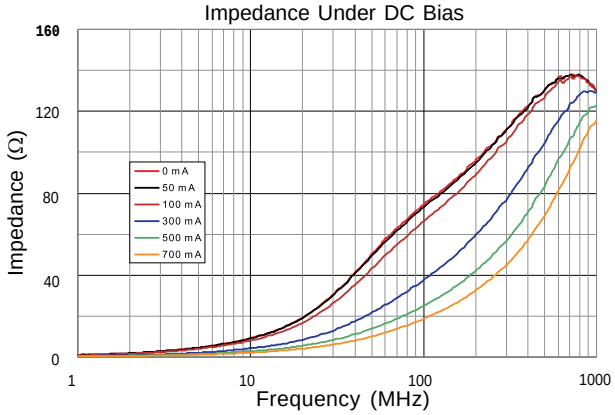
LI0402B301R-00
Z vs. Frequency
Impedance Under DC Bias



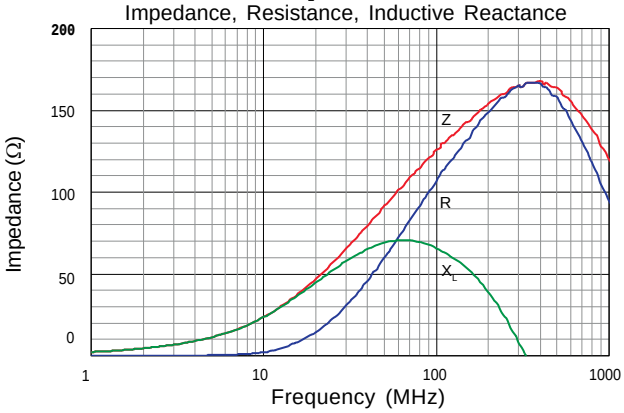
LI0603G800R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



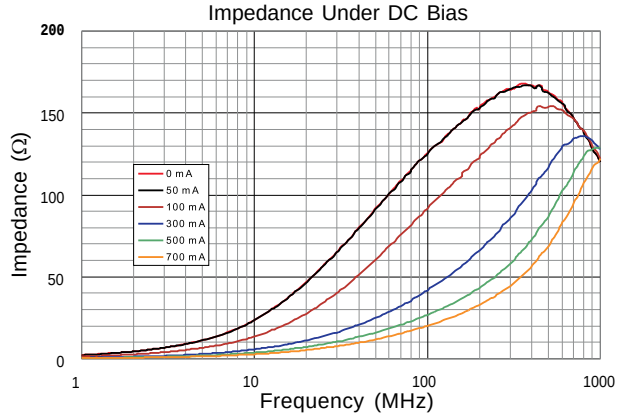
LI0603G800R-00
Z vs. Frequency
Impedance Under DC Bias



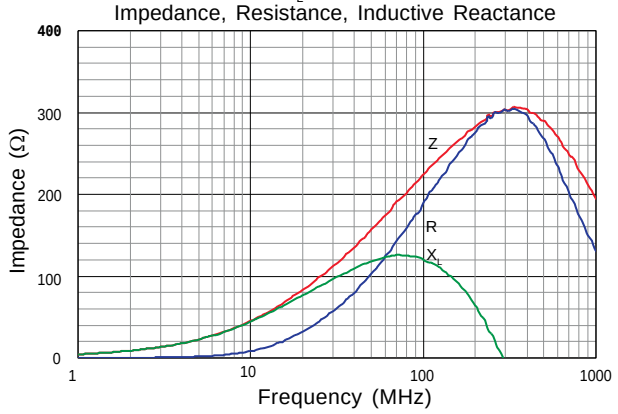
LI0603G121R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



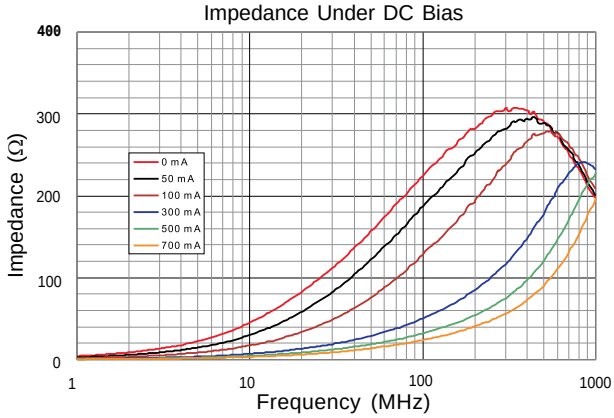
LI0603G121R-00
Z vs. Frequency
Impedance Under DC Bias



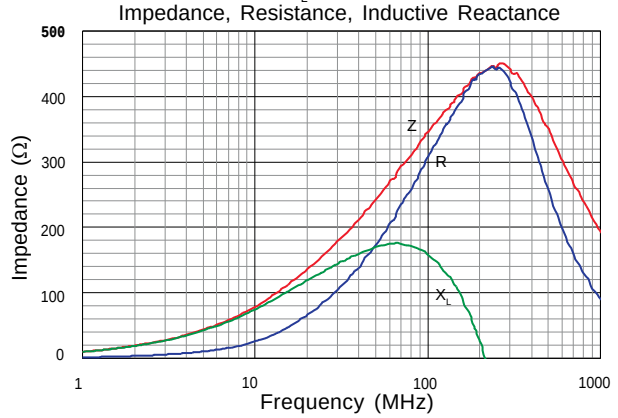
LI0603G221R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



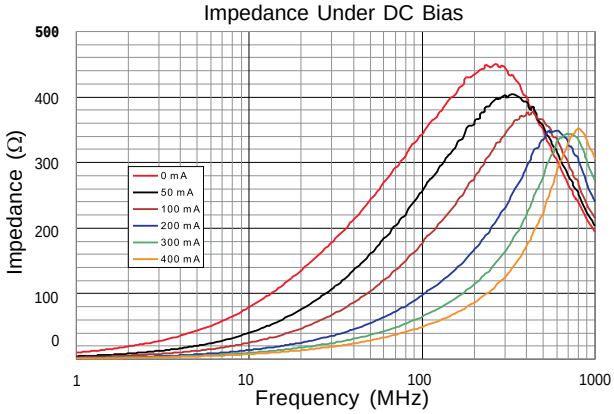
LI0603G221R-00
Z vs. Frequency
Impedance Under DC Bias



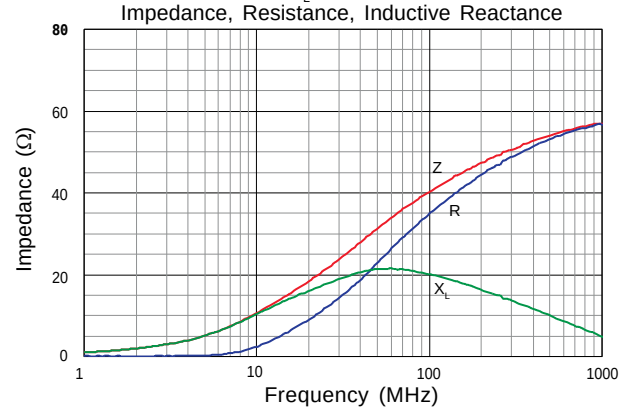
LI0603D301R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



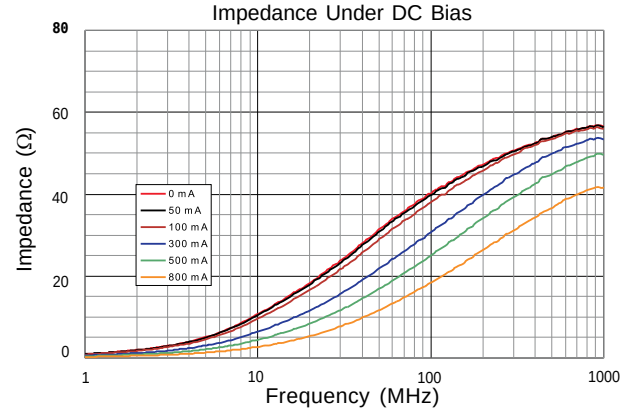
LI0603D301R-00
Z vs. Frequency
Impedance Under DC Bias



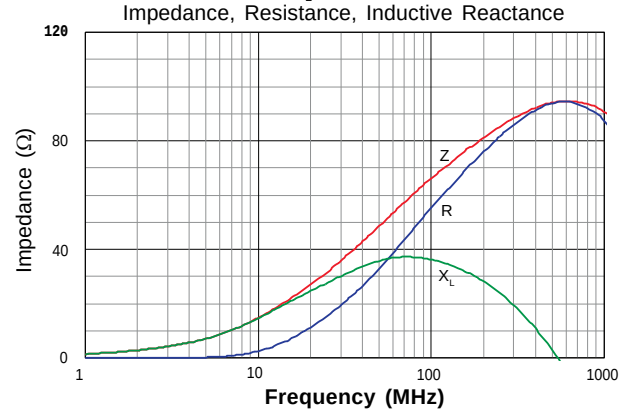
LI0805H400R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



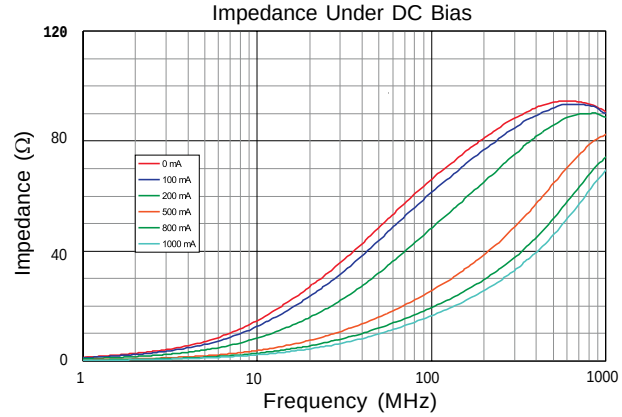
LI0805H400R-00
Z vs. Frequency
Impedance Under DC Bias



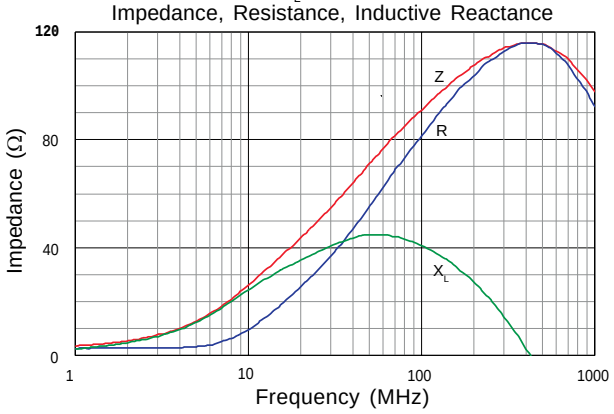
LI0805H600R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



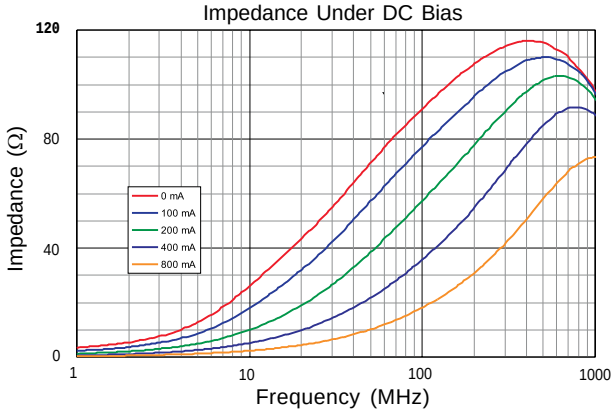
LI0805H600R-00
Z vs. Frequency
Impedance Under DC Bias



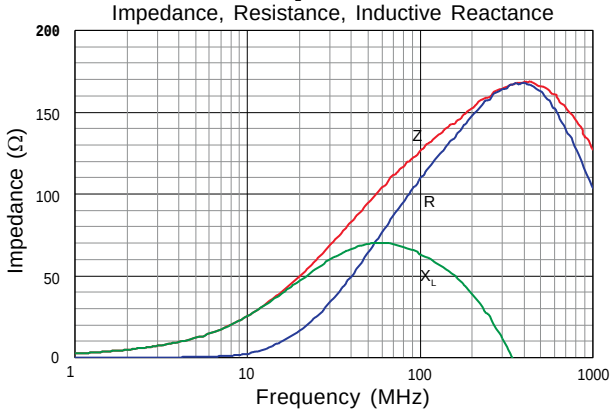
LI0805H800R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



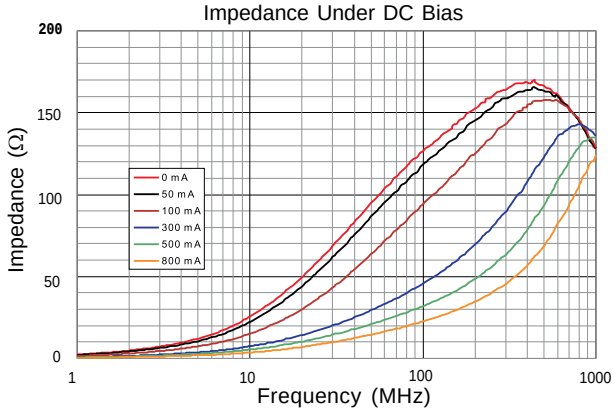
LI0805H800R-00
Z vs. Frequency
Impedance Under DC Bias



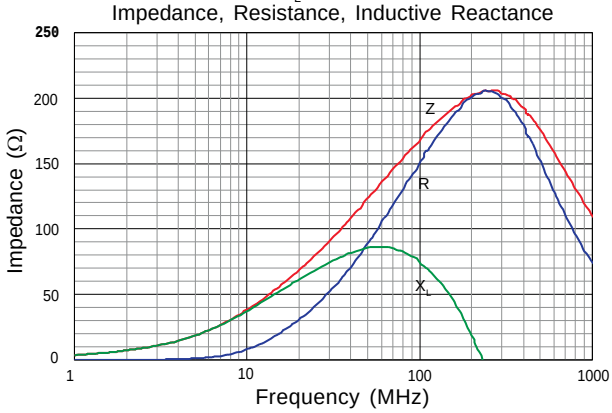
LI0805H121R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



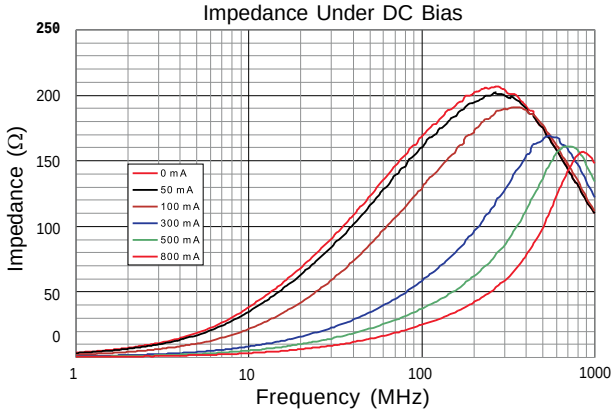
LI0805H121R-00
Z vs. Frequency
Impedance Under DC Bias



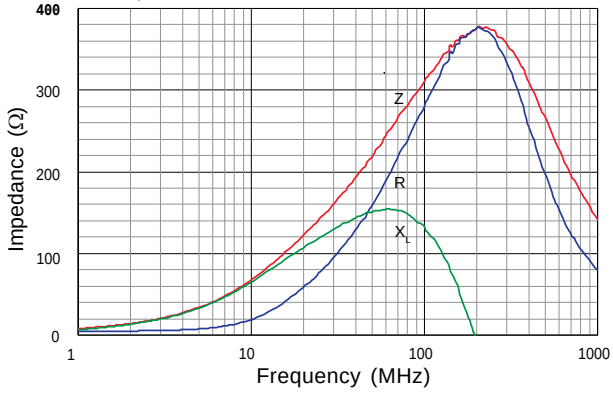
LI0805H151R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



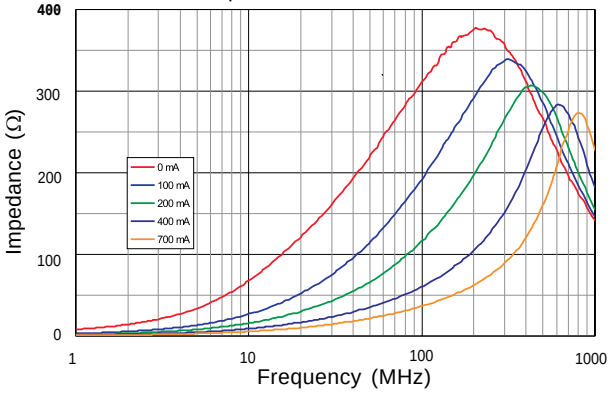
LI0805H151R-00
Z vs. Frequency
Impedance Under DC Bias



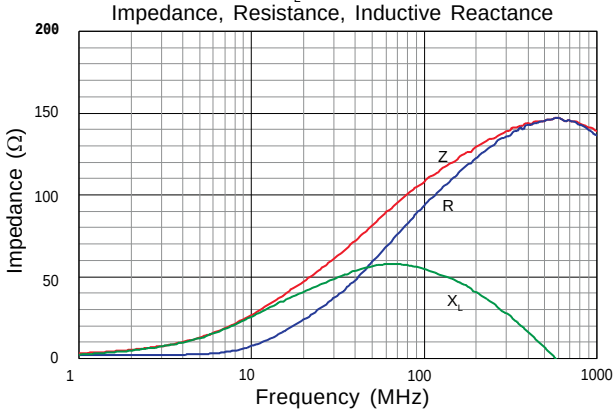
LI0805G301R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



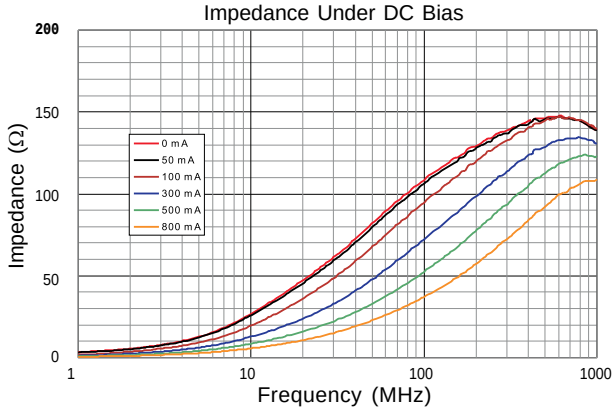
LI0805G301R-00
Z vs. Frequency
Impedance Under DC Bias



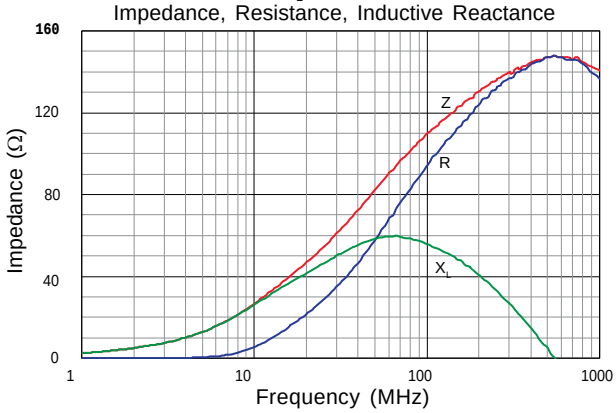
LI1206H900R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



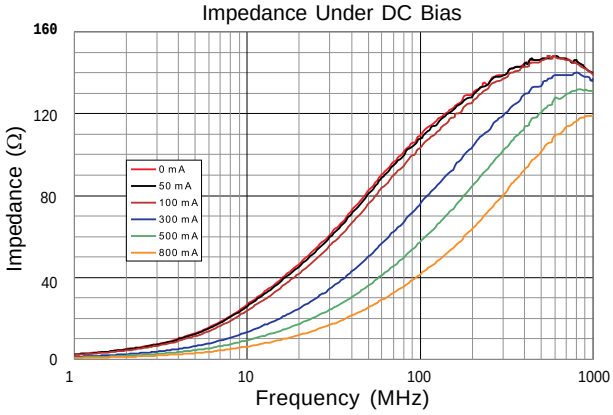
LI1206H900R-00
Z vs. Frequency
Impedance Under DC Bias



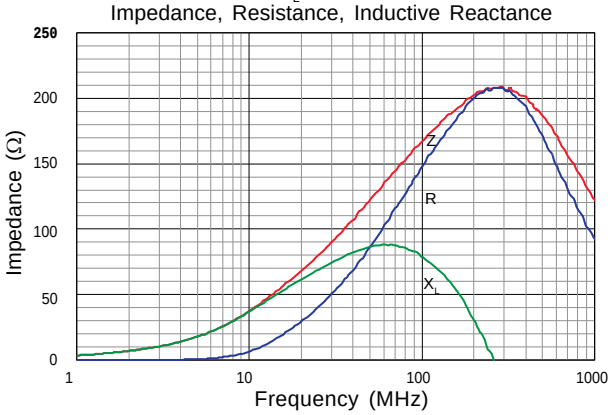
LI1206H121R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



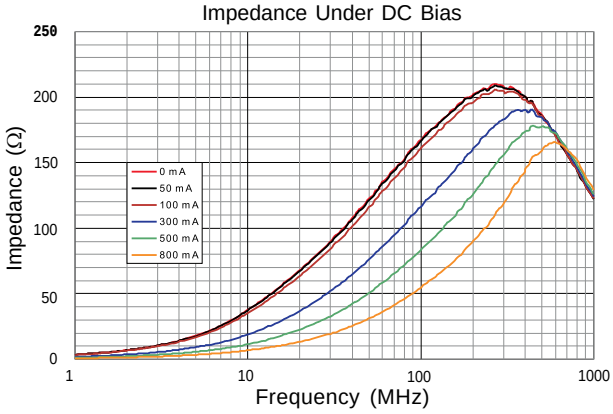
LI1206H121R-00
Z vs. Frequency
Impedance Under DC Bias



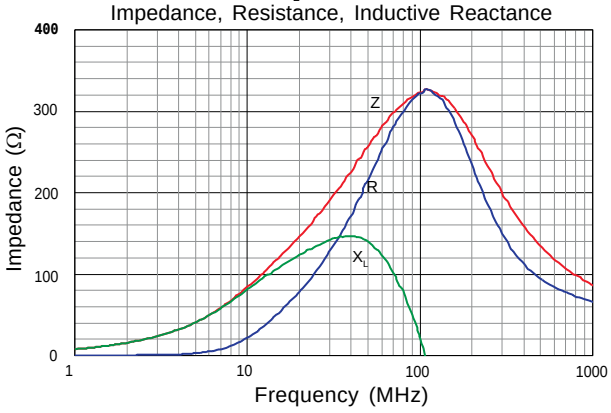
LI1206H151R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



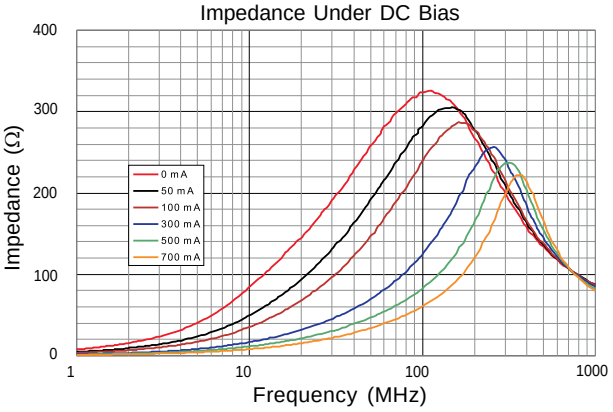
LI1206H151R-00
Z vs. Frequency
Impedance Under DC Bias



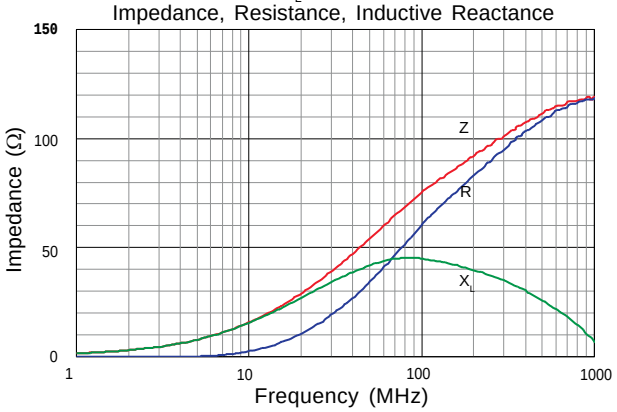
LI1206G301R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



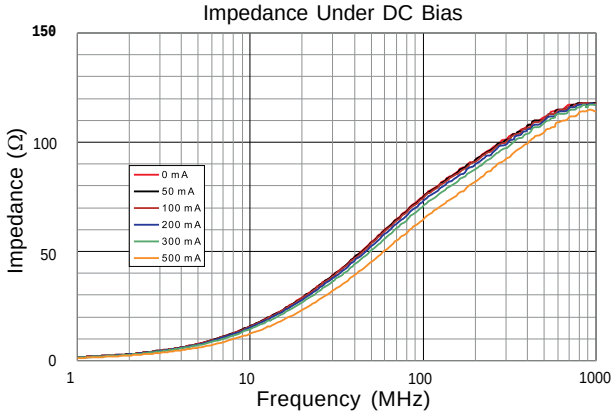
LI1206G301R-00
Z vs. Frequency
Impedance Under DC Bias



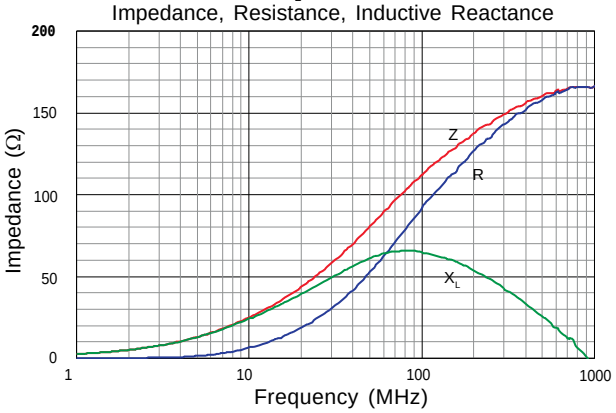
LI1806E800R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



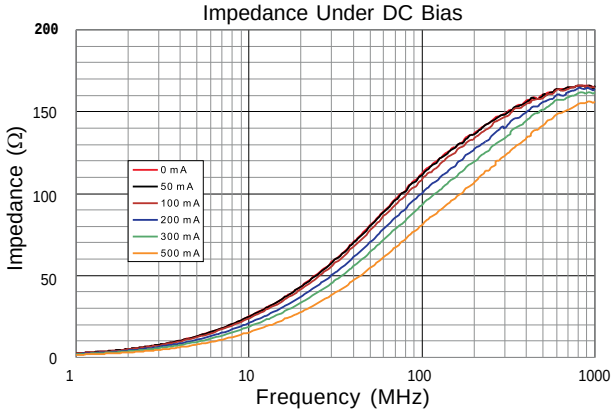
LI1806E800R-00
Z vs. Frequency
Impedance Under DC Bias



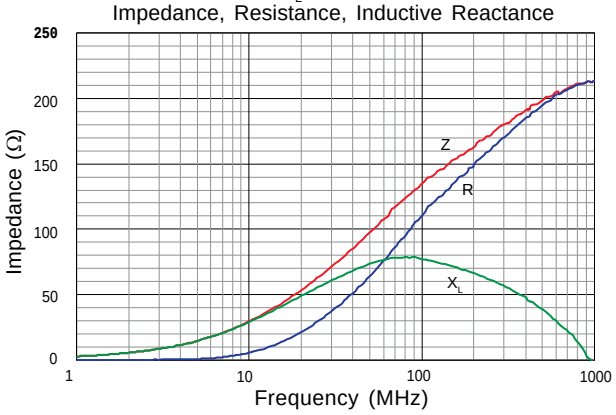
LI1806E101R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



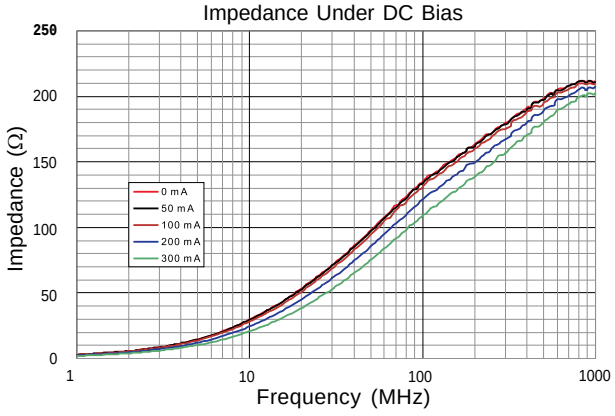
LI1806E101R-00
Z vs. Frequency
Impedance Under DC Bias



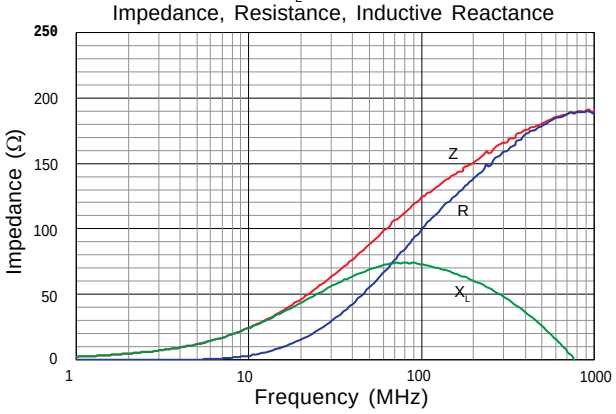
LI1806C151R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



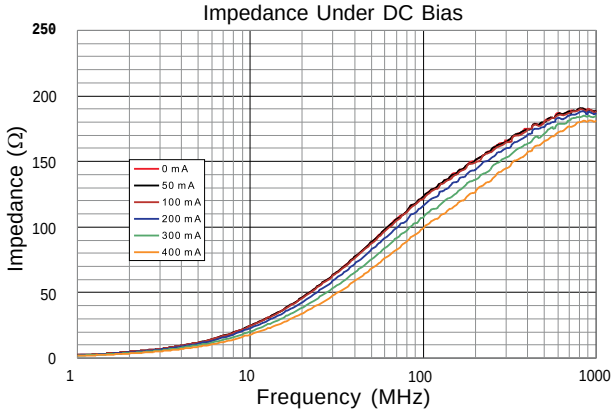
LI1806C151R-00
Z vs. Frequency
Impedance Under DC Bias



LI1812D121R-00
Z, R, X_L vs. Frequency
Impedance, Resistance, Inductive Reactance



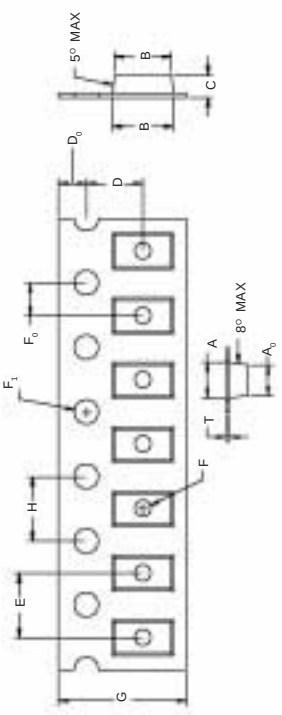
LI1812D121R-00
Z vs. Frequency
Impedance Under DC Bias

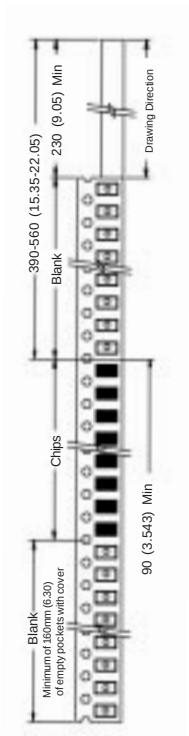


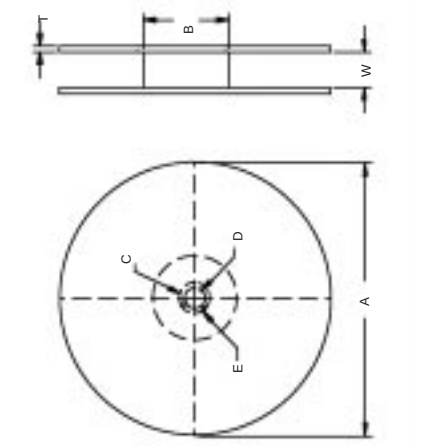
Tape & Reel Specifications

DA & LI Tape Specifications

P/N	A	A_0	B	B_0	C	D	D_0	E	F	F_0	F_1	G	H	T	Reel Size
DA1206	2.21 (0.087)	1.88 ± 0.10 (0.074 ± 0.004)	3.76 (0.148)	3.56 ± 0.10 (0.140 ± 0.004)	1.40 ± 0.10 (0.055 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.00 ± 0.25 (0.039 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	8.00 + 0.30 / - 0.10 (0.315 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.25 ± 0.013 (0.010 ± 0.0005)	13"
LI0402	1.20 (0.047)	1.60 ± 0.10 (0.063 ± 0.004)	1.80 (0.071)	1.15 ± 0.10 (0.045 ± 0.004)	0.85 ± 0.10 (0.033 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.00 ± 0.25 (0.039 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	8.00 + 0.30 / - 0.10 (0.315 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.25 ± 0.013 (0.010 ± 0.0005)	7"
LI0603	2.21 (0.087)	1.88 ± 0.10 (0.074 ± 0.004)	3.76 (0.148)	3.56 ± 0.10 (0.140 ± 0.004)	1.91 ± 0.10 (0.075 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.00 ± 0.25 (0.039 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	8.00 + 0.30 / - 0.10 (0.315 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.25 ± 0.013 (0.010 ± 0.0005)	7"
LI0805	1.85 (0.073)	1.55 ± 0.10 (0.061 ± 0.004)	2.49 (0.098)	2.31 ± 0.10 (0.091 ± 0.004)	1.30 ± 0.10 (0.051 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.00 ± 0.25 (0.039 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	8.00 + 0.30 / - 0.10 (0.315 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.25 ± 0.013 (0.010 ± 0.0005)	7"
LI1206	2.21 (0.087)	1.88 ± 0.10 (0.074 ± 0.004)	3.76 (0.148)	3.56 ± 0.10 (0.140 ± 0.004)	1.91 ± 0.10 (0.075 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.00 ± 0.25 (0.039 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	8.00 + 0.30 / - 0.10 (0.315 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.25 ± 0.013 (0.010 ± 0.0005)	7"
LI1210	3.33 (0.131)	2.90 ± 0.10 (0.114 ± 0.004)	3.87 (0.153)	3.61 ± 0.10 (0.142 ± 0.004)	1.52 ± 0.10 (0.060 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.00 ± 0.25 (0.039 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	8.00 + 0.30 / - 0.10 (0.315 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.25 ± 0.013 (0.010 ± 0.0005)	7"
LI1806	2.46 (0.097)	1.98 ± 0.10 (0.078 ± 0.004)	5.23 (0.206)	4.88 ± 0.10 (0.192 ± 0.004)	1.98 ± 0.10 (0.078 ± 0.004)	5.50 ± 0.05 (0.217 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.50 ± 0.25 (0.059 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	12.00 + 0.30 / - 0.10 (0.472 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.29 ± 0.013 (0.011 ± 0.0005)	7"
LI1812	3.99 (0.157)	3.51 ± 0.10 (0.138 ± 0.004)	5.08 (0.200)	4.78 ± 0.10 (0.188 ± 0.004)	1.73 ± 0.10 (0.068 ± 0.004)	5.50 ± 0.05 (0.217 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	8.00 ± 0.10 (0.315 ± 0.004)	1.50 ± 0.25 (0.059 ± 0.010)	2.00 ± 0.05 (0.079 ± 0.002)	1.50 ± 0.10 (0.059 ± 0.004)	12.00 + 0.30 / - 0.10 (0.472 + 0.012 / - 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	0.29 ± 0.013 (0.011 ± 0.0005)	13"







Reel Specifications	
A	330.0 / 178.0 ± 2.0 (13.00 / 7.00 ± 0.078)
B	95.0 ± 1.0 (3.74 ± 0.039)
C	13.0 ± 0.5 (0.51 ± 0.020)
D	21.0 ± 0.8 (0.82 ± 0.031)
E	2.0 ± 0.5 (0.08 ± 0.020)
W	8.0 ± 1.0 (0.32 ± 0.039)
T	1.0 (0.039)

STEWARD - U.S.A. • Telephone: 423/867-4100 • Fax 423/867-4102 • Internet: http://www.steward.com
SCOTLAND • Telephone: 44-(0)1-506-414200 • Fax 44-(0)1-506-410694
SINGAPORE • Telephone: (65)337-9667 • Fax (65)337-9686