EMI Filtering & RF Inductors

CATALOGUE

Laird TECHNOLOGIES®

Innovative **Technology**
for a **Connected** World

www.lairdtech.com

ABOUT **LAIRD TECHNOLOGIES**

Laird Technologies designs and manufactures customized, performance-critical products for wireless and other advanced electronics applications.

The company is a global market leader in the design and supply of electromagnetic interference (EMI) shielding, thermal management products, mechanical actuation systems, signal integrity components, and wireless antennae solutions, as well as radio frequency (RF) modules and systems.

Laird Technologies is the world leader in the design and manufacture of customized, performance-critical products for wireless and other advanced electronics applications. Laird Technologies partners with its customers to customize product solutions for applications in many industries including:

- Network Equipment
- Handsets
- Telecommunications
- Data Transfer & Information Technology
- Computers
- Automotive Electronics
- Aerospace
- Defense
- Medical Equipment
- Consumer Electronics
- Industrial

Laird Technologies offers its customers unique product solutions, dedication to research and development, as well as a seamless network of manufacturing and customer support facilities across the globe.

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RoHS

All parts listed in this catalog are lead free and RoHS compliant.

Notice

Laird products or subcomponents are not specifically designed or tested by Laird for use in any medical applications, surgical applications, medical device manufacturing, or any similar procedure or process requiring approval, testing, or certification by the United States food and drug administration or other similar Governmental entity. Applications with unusual environmental requirements such as military, medical, life-support or Life-sustaining equipment are specifically not recommended without additional testing for such application.

PART NUMBER
NOMENCLATURE EXPLANATION

PART NUMBERING SYSTEM

HZ	0402	A	601	R	-10
Product Series Code	EIA Size Code	Rated Current Code	Impedance (Z) or Inductance (L)	Packing Code	Additional Description
HI = High Current Chip Beads (≥3,000 mA) **MI** = Mid Current Chip Beads (≥1,000 mA to <3,000 mA) **LI** = Low Current Chip Beads (<1,000 mA, <400 Ω Z) **HZ** = High Impedance Chip Beads (<1,000 mA, >400 Ω Z) **HF** = High Frequency Chip Beads **LF** = Low Frequency Chip Beads **HR** = High Bias Retention Chip Beads (>3,000 mA) **CC** = CAN-Bus Common Mode **CM** = Common Mode Choke **CF** = Small Size (0805, 0504) Monolithic Common Mode Choke **DA** = Multilines Array Chip Array **IC** = Ferrite Chip Inductor **CCI** = Ceramic Chip Inductor	0201 2545 0402 2722 0504 3032 0603 3312 0805 3322 1206 3421 1210 3822 1612 4440 1806 4545 1812 4732 1922 5022 2021 5441 2220 6032 2520	A < 100 mA B = 200 mA C = 300 mA D = 400 mA E = 500 mA F = 600 mA G = 700 mA H = 800 mA I = 900 mA J = 1,000 mA K = 1,500 mA L = 2,000 mA M = 2,500 mA N = 3,000 mA O = 3,500 mA P = 4,000 mA Q = 4,500 mA R = 5,000 mA S = 5,500 mA T = 6,000 mA U = 7,000 mA V = 8,000 mA W = 9,000 mA X = 10,000 mA Y = 15,000 mA Z ≥ 20,000 mA	First two numbers are Significant Digits. The last number indicates how many zeros are added to the significant digits. Impedance Examples: 100 = 10 OHMS 101 = 100 OHMS 102 = 1,000 OHMS 202 = 2,000 OHMS 060 = 6 OHMS Inductance Examples: (For IC Series) 470 = 47 nH 471 = 470 nH 472 = 4,700 nH 473 = 47,000 nH Inductance Examples: (For CCI series) 0N3 = 0.3 nH 1N2 = 1.2 nH 12N = 12 nH R12 = 120 nH R22 = 220 nH	B: Bulk Standard Thru-Hole Packaging R : Tape&Reel Standard SMT Package	-10 = Lead Free Standard Catalog Part -11 to -99 = Non-Standard or Custom Part -1☐ = Tolerance Code

PART NUMBERING SYSTEM

29	F	0818	-1	S	R	-10
Material Type	Product Type Code	Part Size Code	Minor Dimension Code	Board Mounting Style	Packaging Code	Additional Part Description
28 & 29 = Broad Band Material 35 = Low Freq. Material	C = Choke L = Axial Leaded Bead F = Assembled Part	Unique Part Identifier or Significant Dimension	Height or Length Variation	S = Surface Mount T= Thru - Hole	O = Bulk Standard R = Tape & Reel Standard SMT Package	-10 = Lead Free Standard Catalog Part -11 to -99 = Non Standard or Custom Part

TEST CONDITIONS

Operation temperature: -40°C ~ +125°C (If no parts are specifically defined)

Visit www.lairdtech.com for additional and the most up-to-date information and for other board level part families not included in this catalog. All data charts are available by contacting your local Laird Technologies office.

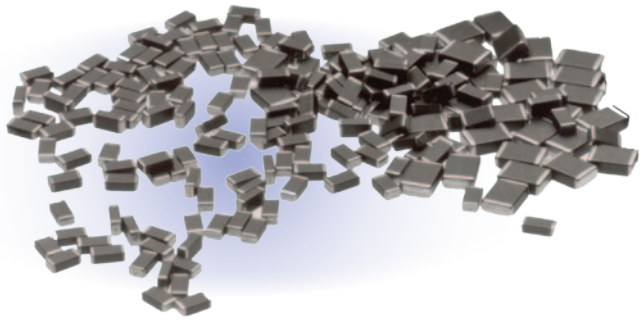
A revolutionary new SPICE model for EMI ferrite chip beads in now available from Laird Technologies. This new design aid includes the de-rating effects of DC bias currents providing much greater accuracy for better designs the first time. This chip bead SPICE model is available by contacting your local Laird Technologies office.

Note: Most current ratings (I MAX) are based upon a 40°C temperature rise during continuous operation.
Parts have no polarity.

FERRITE EMI CHIP BEADS

FEATURES

- Up to 10 Amps (I MAX) continuous operating capability
- Monolithic construction with small footprint and high reliability
- Excellent retention under bias
- Economical
- Broad range of sizes (from EIA 0201 up to 3312)
- For power line, low frequency and high frequency signal lines



www.atd-elektronik.cz
www.atd-shop.com

RoHS

PART NUMBERING SYSTEM

HZ	0402	A	601	R	-10
Product Series Code	EIA Size Code	Rated Current Code	Impedance Value Code	Packing Code	Additional Description

FOR SIGNAL LINE

METRIC PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
0603	LI0201C330R-10	7	33	113	153	171	1,646	0.5	300
0603	LI0201C560R-10	11	56	186	252	268	1,347	0.6	300
0603	LI0201B800R-10	31	80	195	224	225	978	0.8	200
0603	LI0201C800R-10	18	80	335	428	434	903	0.6	300
0603	LI0201E800R-10	41	80	119	116	120	605	0.5	500
0603	LI0201B121R-10	39	120	247	269	275	800	0.8	200
0603	LI0201C121R-10	59	120	189	182	190	630	0.7	300
0603	LI0201B241R-10	81	240	586	321	619	390	1	200
0603	HZ0201A601R-10	304	600	590	334	752	220	1.5	100
1005	LI0402E190R-10	6	19	43	56	59	1,519	0.1	500
1005	LI0402C220R-10	9	22	30	31	31	830	0.2	300
1005	LI0402E300R-10	9	30	50	57	58	1,195	0.3	500
1005	LI0402C470R-10	15	47	76	90	92	1,402	0.15	300
1005	LI0402E600R-10	29	60	90	57	97	801	0.3	500
1005	LI0402B800R-10	32	80	220	224	243	769	0.8	200
1005	LI0402D121R-10	40	120	205	195	213	682	0.4	400
1005	LI0402C221R-10	72	220	443	243	453	440	0.35	300
1005	LI0402B301R-10	96	300	454	351	549	374	0.8	200
1005	HZ0402A601R-10	182	600	600	300	965	241	1	100
1005	HZ0402B102R-10	225	1,000	489	222	1,116	182	1	200
1005	HZ0402A152R-10	400	1,500	441	200	1,500	143	2	50
1608	LI0603E470R-10	17	47	83	91	91	1,000	0.1	500
1608	LI0603G800R-10	32	80	100	91	100	500	0.2	700
1608	LI0603G121R-10	52	120	156	113	177	389	0.2	700
1608	LI0603E151R-10	61	150	197	131	209	331	0.25	500
1608	LI0603B201R-10	70	200	340	210	362	420	0.4	200
1608	LI0603G221R-10	98	220	279	168	283	251	0.3	700
1608	LI0603D301R-10	144	300	286	165	389	261	0.35	400
1608	HZ0603B471R-10	94	470	560	253	1060	240	0.85	200
1608	HZ0603C601R-10	232	600	360	171	775	168	0.45	300
1608	HZ0603C651R-10	296	650	954	652	960	400	0.6	300
1608	HZ0603B751R-10	302	750	437	198	863	137	0.6	200
1608	HZ0603B102R-10	453	1,000	380	200	1,000	100	0.6	200

FOR SIGNAL LINE

METRIC PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
1608	HZ0603B112R-10	515	1,100	1,300	850	1,539	288	0.8	200
1608	HZ0603A152R-10	552	1,500	1,062	503	2,306	190	0.9	100
1608	HZ0603C152R-10	319	1,500	462	190	1,493	135	0.6	300
1608	HZ0603A182R-10	610	1,800	1,070	500	2,420	180	1.5	50
1608	HZ0603A222R-10	195	2,200	375	175	3,051	122	1.5	100
1608	HZ0603A252R-10	791	2,500	1,014	501	3,065	149	1.5	50
2012	LI0805G201R-10	100	200	221	128	272	250	0.3	700
2012	LI0805G301R-10	124	300	248	146	350	205	0.2	700
2012	HZ0805G471R-10	221	470	286	150	572	149	0.2	700
2012	HZ0805E601R-10	277	600	304	151	696	155	0.3	500
2012	HZ0805D102R-10	280	1,000	328	168	1,268	113	0.3	400
2012	MI0805J102R-10	195	1,000	226	108	1,112	120	0.15	1,000
2012	HZ0805D152R-10	289	1,500	333	166	1,525	110	0.4	400
2012	HZ0805C202R-10	350	2,000	300	150	2,000	100	0.5	300
2012	HZ0805B222R-10	648	2,200	419	213	2,200	100	0.8	200
2012	LF0805A252R-10	1,162	2,553	5,138	1,267	5,138	25	1.25	100
2012	HZ0805B272R-10	400	2,700	400	150	2,900	88	0.8	200
3216	LF1206E152R-10	38	150	823	950	1,564	57	0.3	500
3216	LF1206C202R-10	70	300	1,673	915	2,505	41	0.5	300
3216	HZ1206E601R-10	296	600	202	103	674	75	0.3	500
3216	HZ1206C202R-10	1,673	915	180	100	2,505	41	0.5	300
3216	HZ1206E152R-10	823	950	188	57	1,564	57	0.3	500
3216	HZ1206D102R-10	201	1,000	185	100	1,000	100	0.4	400
3216	LF1206A302R-10	1,143	2,743	4,434	740	5,650	19	1.05	100

FOR POWER LINE

METRIC PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
0603	LI0201C330R-10	7	33	113	153	171	1,646	0.5	300
0603	LI0201C560R-10	11	56	186	252	268	1,347	0.6	300
0603	LI0201B800R-10	31	80	195	224	225	978	0.8	200
0603	LI0201C800R-10	18	80	335	428	434	903	0.6	300
0603	LI0201E800R-10	41	80	119	116	120	605	0.5	500
0603	LI0201B121R-10	39	120	247	269	275	800	0.8	200
0603	LI0201C121R-10	59	120	189	182	190	630	0.7	300
0603	LI0201B241R-10	81	240	586	321	619	390	1	200
1005	LI0402E190R-10	6	19	43	56	59	1,519	0.1	500
1005	LI0402C220R-10	9	22	30	31	31	830	0.2	300
1005	LI0402E300R-10	9	30	50	57	58	1,195	0.3	500
1005	LI0402C470R-10	15	47	76	90	92	1,402	0.15	300
1005	LI0402E600R-10	29	60	90	57	97	801	0.3	500
1005	LI0402E750R-10	30	75	92	92	93	710	0.1	500
1005	LI0402B800R-10	32	80	220	224	243	769	0.8	200
1005	LI0402D121R-10	40	120	205	195	213	682	0.4	400
1005	MI0402K121R-10	52	120	160	132	160	500	0.13	1500
1005	LI0402C221R-10	72	220	443	243	453	440	0.35	300
1005	LI0402B301R-10	96	300	454	351	549	374	0.8	200
1005	HZ0402B102R-10	225	1,000	489	222	1,116	182	1	200

FOR POWER LINE

METRIC PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
1608	MI0603K300R-10	12	30	43	45	45	1,000	0.09	1,500
1608	LI0603E470R-10	17	47	83	91	91	1,000	0.1	500
1608	MI0603J600R-10	25	60	91	92	95	700	0.1	1,000
1608	HI0603P600R-10	25	60	85	85	100	750	0.03	4,000
1608	MI0603J680R-10	35	68	106	99	110	650	0.1	1,000
1608	LI0603G800R-10	32	80	100	91	100	500	0.2	700
1608	LI0603G121R-10	52	120	156	113	177	389	0.2	700
1608	MI0603M121R-10	55	120	169	138	170	420	0.05	2,500
1608	LI0603E151R-10	61	150	197	131	209	331	0.25	500
1608	LI0603B201R-10	70	200	340	210	362	420	0.4	200
1608	LI0603G221R-10	98	220	279	168	283	251	0.3	700
1608	MI0603L221R-10	107	220	219	121	240	280	0.05	2,000
1608	LI0603D301R-10	144	300	286	165	389	261	0.35	400
1608	MI0603L301R-10	50	300	225	120	410	200	0.1	2,000
1608	HZ0603B471R-10	94	470	560	253	1060	240	0.85	200
1608	MI0603J471R-10	203	470	398	181	580	210	0.2	1000
1608	HZ0603C601R-10	232	600	360	171	775	168	0.45	300
1608	MI0603J601R-10	225	600	400	200	620	150	0.2	1,000
1608	HZ0603C651R-10	296	650	954	652	960	400	0.6	300
1608	HZ0603B751R-10	302	750	437	198	863	137	0.6	200
1608	HZ0603B102R-10	453	1,000	380	200	1,000	100	0.6	200
1608	HZ0603B112R-10	515	1,100	1,300	850	1,539	288	0.8	200
1608	HZ0603C152R-10	319	1,500	462	190	1,590	135	0.6	300
2012	MI0805K110R-10	5	11	18	19	20	1,000	0.06	1,500
2012	HI0805Q310R-10	12	31	42	44	45	800	0.025	4,500
2012	LI0805H400R-10	18	40	70	76	76	1000	0.15	800
2012	MI0805K400R-10	19	40	60	63	69	903	0.05	1,500
2012	LI0805H750R-10	31	75	128	130	132	769	0.15	800
2012	HI0805R800R-10	38	80	70	38	100	200	0.01	5,000
2012	LI0805H121R-10	53	120	170	114	170	340	0.15	800
2012	HI0805O121R-10	61	120	140	80	167	270	0.02	3,500
2012	LI0805H151R-10	73	150	207	150	210	400	0.15	800
2012	LI0805G201R-10	100	200	221	128	272	250	0.3	700
2012	MI0805M221R-10	100	220	274	115	287	260	0.05	2,500
2012	LI0805G301R-10	124	300	248	146	350	205	0.2	700
2012	MI0805L301R-10	135	300	271	147	350	200	0.06	2,000
2012	MI0805L331R-10	148	330	264	143	197	393	0.06	2000
2012	HZ0805G471R-10	221	470	286	150	572	149	0.2	700
2012	HZ0805E601R-10	277	600	304	151	696	155	0.3	500
2012	MI0805K601R-10	280	600	240	120	723	130	0.1	1,500
2012	HZ0805D102R-10	280	1,000	328	168	1,268	113	0.3	400
2012	MI0805J102R-10	195	1,000	226	108	1,112	120	0.15	1,000
2012	HZ0805D152R-10	289	1,500	333	166	1,525	110	0.4	400
2012	HZ0805C202R-10	350	2,000	300	150	2,000	100	0.5	300
3216	MI1206K260R-10	12	26	44	46	46	1,000	0.06	1,500
3216	MI1206K310R-10	12	31	37	41	41	1,000	0.045	1,500
3216	HI1206T500R-10	19	50	66	70	70	1,000	0.01	6,000
3216	HI1206N800R-10	38	80	120	129	130	800	0.035	3,000
3216	MI1206K900R-10	44	90	142	150	154	867	0.08	1,500
3216	HI1206N101R-10	41	100	144	145	150	600	0.035	3,000
3216	LI1206H121R-10	53	120	144	135	145	422	0.15	800
3216	HI1206P121R-10	56	120	130	105	142	300	0.03	4,000
3216	LI1206H151R-10	73	150	173	123	182	241	0.15	800
3216	HI1206T161R-10	71	160	220	127	229	251	0.018	6,000
3216	MI1206L391R-10	100	390	160	90	460	130	0.05	2,000
3216	MI1206L501R-10	210	500	150	82	500	100	0.06	2,000
3216	HZ1206E601R-10	296	600	202	103	674	75	0.3	500

FERRITE EMI CHIP BEADS

FOR POWER LINE

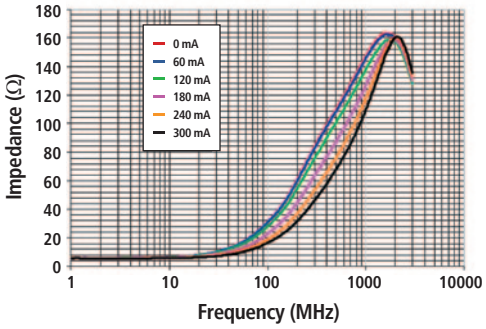
METRIC PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
3216	MI1206K601R-10	300	600	250	130	650	80	0.08	1,500
3216	MI1206L601R-10	296	600	116	59	660	79	0.08	2000
3216	HZ1206D102R-10	201	1,000	185	100	1,000	100	0.4	400
3216	HZ1206E152R-10	823	950	188	57	1,564	57	0.3	500
3216	LF1206E152R-10	38	150	823	950	1,564	57	0.3	500
3216	HZ1206C202R-10	1,673	915	180	100	2,505	41	0.5	300
3216	LF1206C202R-10	70	300	1,673	915	2,505	41	0.5	300
3225	MI1210K600R-10	30	60	90	95	105	900	0.035	1,500
4131	HI1612X560R-10	23	56	75	79	79	1,000	0.004	10,000
4516	HI1806T600R-10	28	60	87	92	92	1,000	0.01	6,000
4516	LI1806E800R-10	28	80	117	117	117	1,000	0.3	500
4516	MI1806J800R-10	34	78	114	118	119	903	0.03	1,000
4516	HI1806N910R-10	42	91	140	150	150	1,000	0.03	3,000
4516	LI1806E101R-10	45	100	157	164	166	966	0.3	500
4516	LI1806C151R-10	60	150	219	222	223	871	0.5	300
4516	HZ1806K102R-10	60	1,000	160	80	1,390	135	0.15	1500
4532	HI1812T800R-10	30	80	97	107	107	1,000	0.01	6,000
4532	HI1812V101R-10	45	100	136	134	139	800	0.01	8,000
4532	LI1812D121R-10	55	120	182	184	186	738	0.4	400
4532	MI1812K121R-10	45	120	162	170	175	900	0.055	1,500
5620	HI2220T101R-10	50	100	148	152	160	600	0.006	6,000
5620	HI2220R151R-10	60	150	230	196	230	500	0.015	5,000
5620	HI2220P171R-10	78	170	256	237	256	500	0.03	4,000
5620	HI2220R181R-10	80	180	263	234	270	400	0.02	5,000
5620	HI2220P251R-10	100	250	172	91	390	200	0.015	4,000
5620	HI2220P271R-10	110	270	360	250	390	300	0.035	4,000
5620	HI2220R301R-10	100	300	190	100	380	200	0.02	5,000
5620	HI2220Q401R-10	100	400	159	99	450	150	0.03	4,500
5620	HI2220P551R-10	180	550	670	343	850	300	0.035	4,000
5620	HI2220P601R-10	220	600	184	106	600	100	0.025	4,000
5620	HR2220P601R-10	200	600	150	75	600	100	0.025	4,000
5620	HI2220P701R-10	200	700	140	90	700	100	0.025	4,000
5620	HR2220V701R-10	198	700	120	62	760	91	0.01	8000
5620	HR2220V801R-10	150	800	125	75	910	90	0.01	8,000
8531	HI3312X101R-10	39	100	160	172	172	1,000	0.004	10,000

4 LINES CHIP BEAD ARRAY

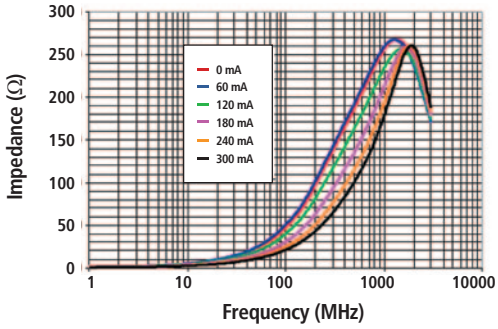
METRIC PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
3216	DA1206E300R-10	10	30	55	56	56	1,000	0.3	500
3216	DA1206D600R-10	15	60	115	132	133	1,103	0.2	400
3216	DA1206C121R-10	39	120	181	151	211	559	0.2	300
3216	DA1206D301R-10	94	300	437	245	437	500	0.4	400
3216	DA1206B601R-10	180	600	475	230	761	214	0.35	200
3216	DA1206B102R-10	275	1,000	520	240	1,129	175	0.8	200

0201 Chip Bead Impedance Under DC Bias

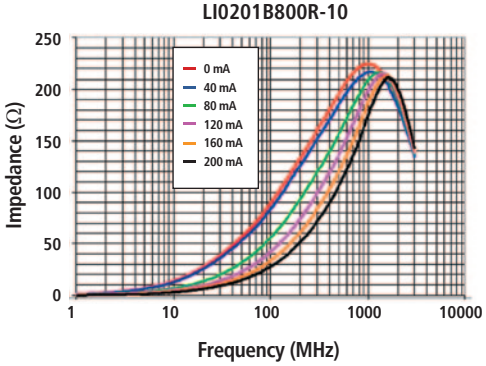
LI0201C330R-10



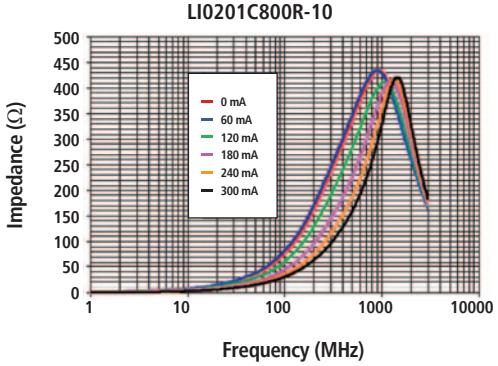
LI0201C560R-10



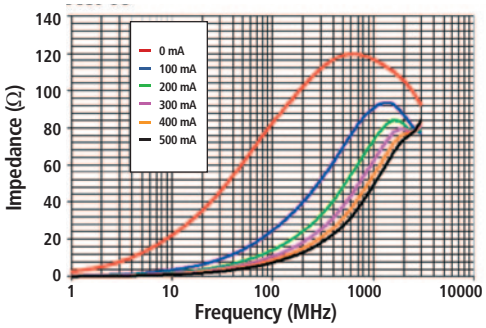
LI0201B800R-10



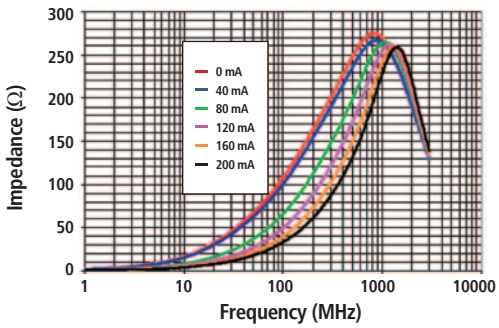
LI0201C800R-10



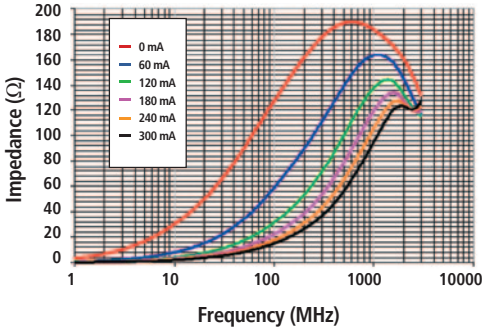
LI0201E800R-10



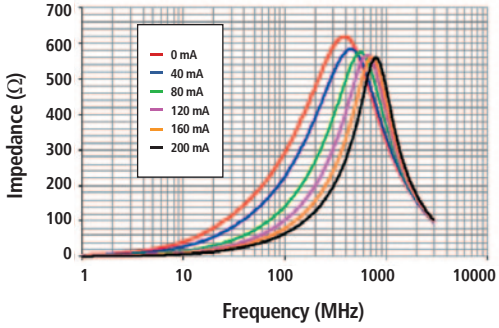
LI0201B121R-10



LI0201C121R-10

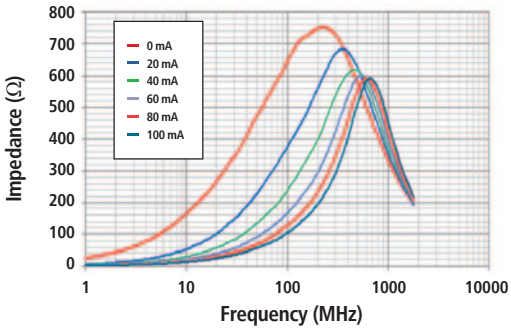


LI0201B241R-10

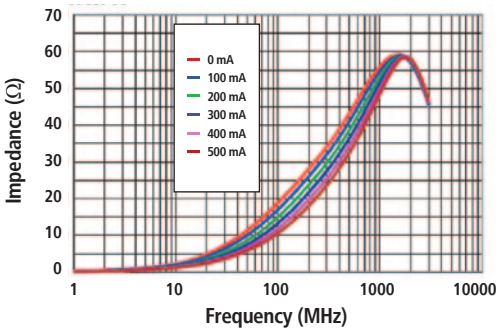


0201/0402 Chip Bead Impedance Under DC Bias

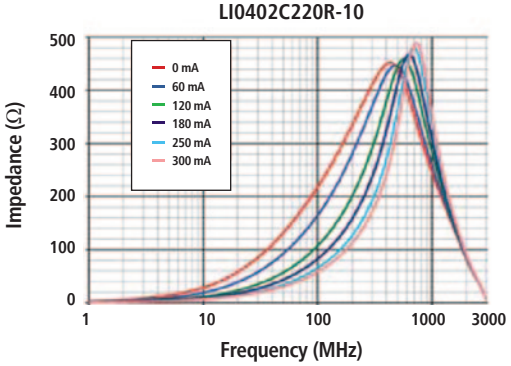
HZ0201A601R-10



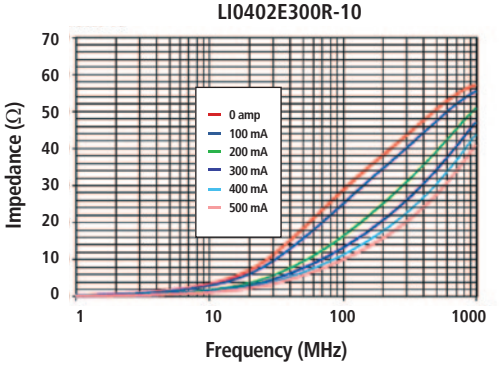
LI0402E190R-10



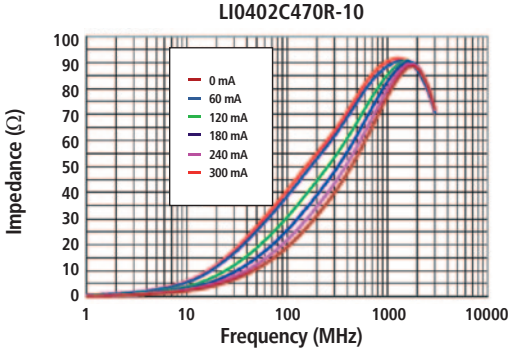
LI0402C220R-10



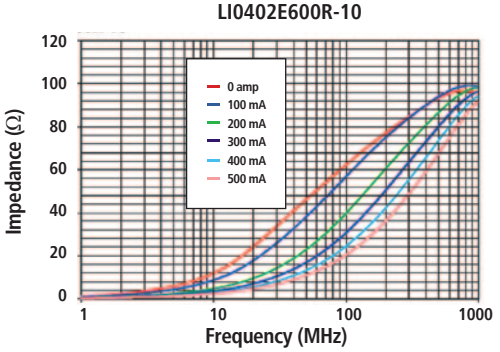
LI0402E300R-10



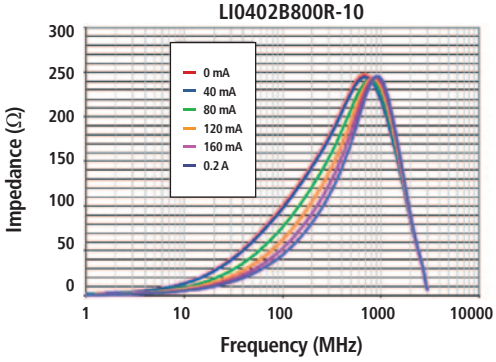
LI0402C470R-10



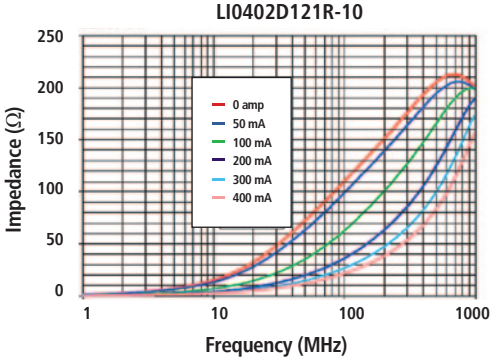
LI0402E600R-10



LI0402B800R-10

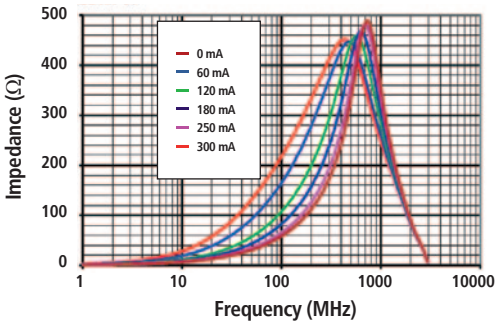


LI0402D121R-10

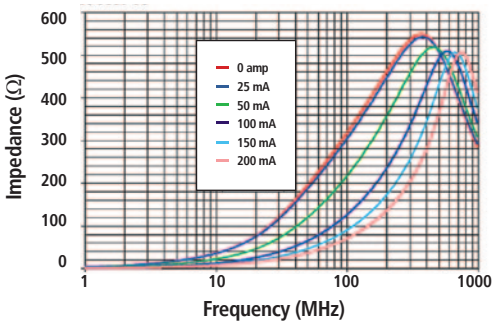


0402/0603 Chip Bead Impedance Under DC Bias

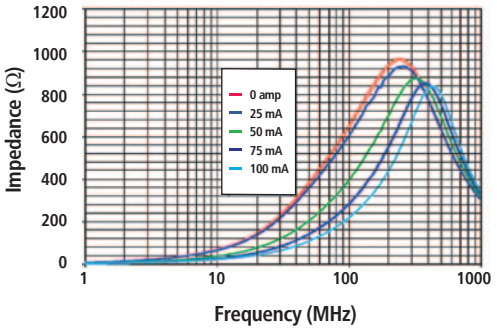
LI0402C221R-10



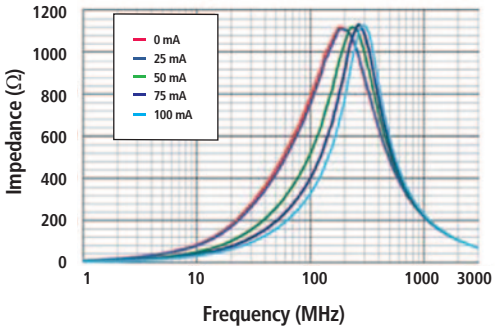
LI0402B301R-10



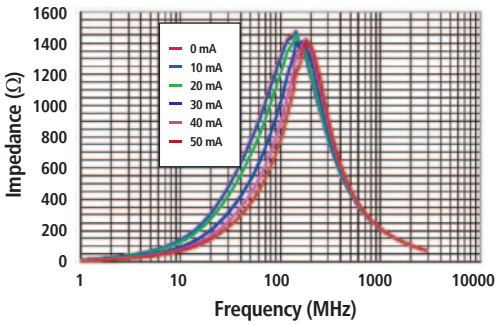
HZ0402A601R-10



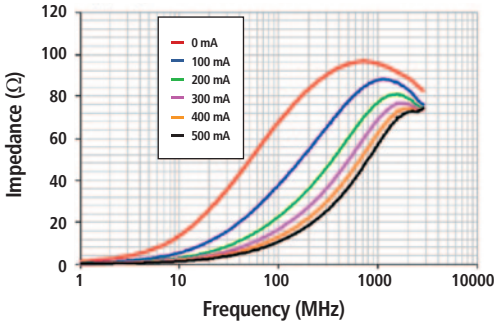
HZ0402B102R-10



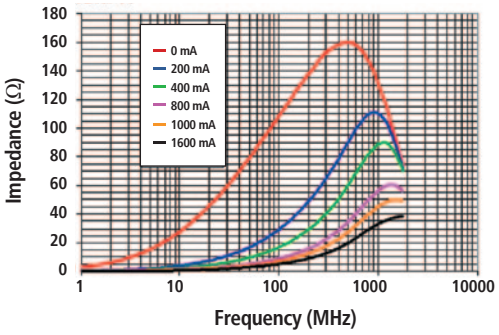
HZ0402A152R-10



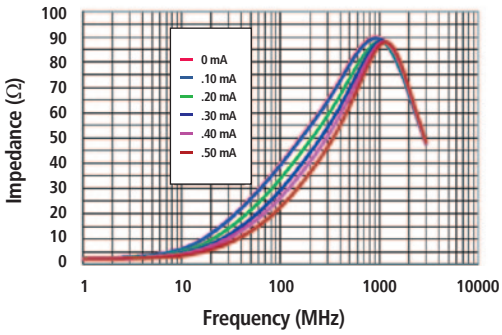
LI0402E750R-10



MI0402K121R-10

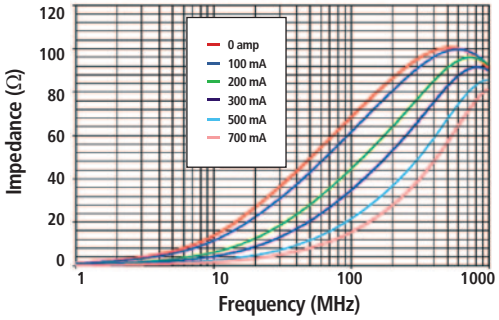


LI0603E470R-10



0603 Chip Bead Impedance Under DC Bias

LI0603G800R-10



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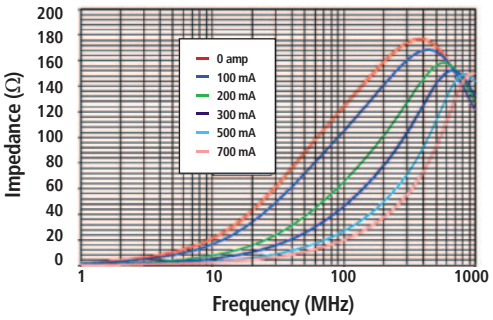
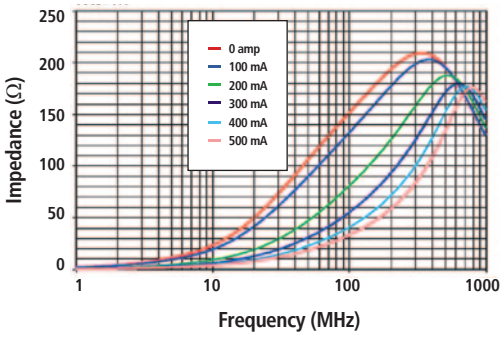
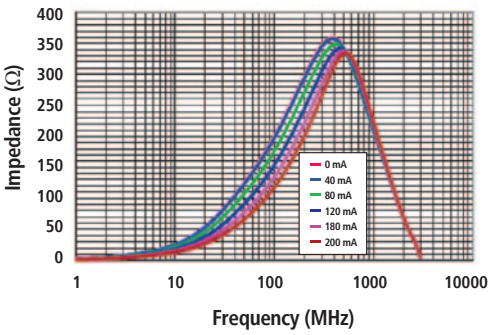


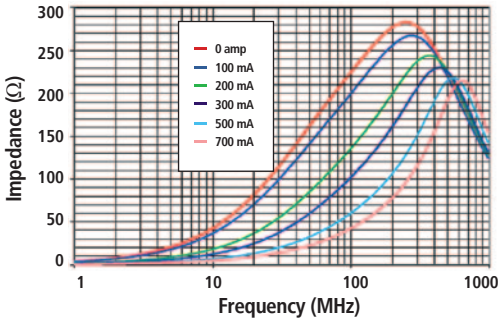
LI0603E151R-10



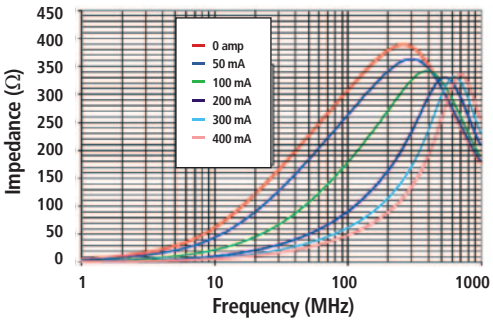
LI0603B201R-10



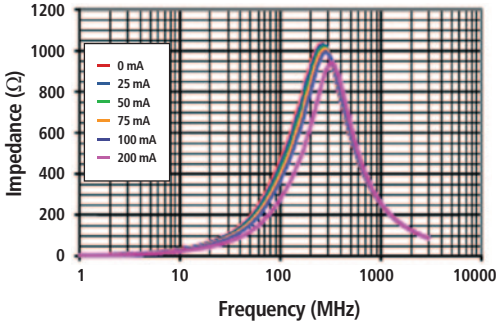
LI0603G221R-10



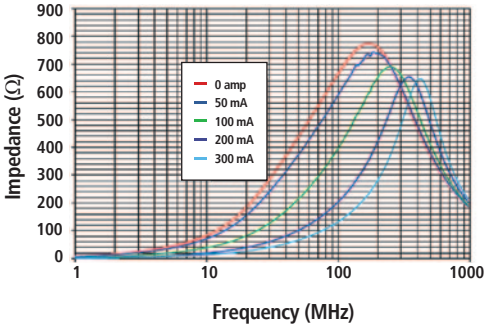
LI0603D301R-10



HZ0603B471R-10

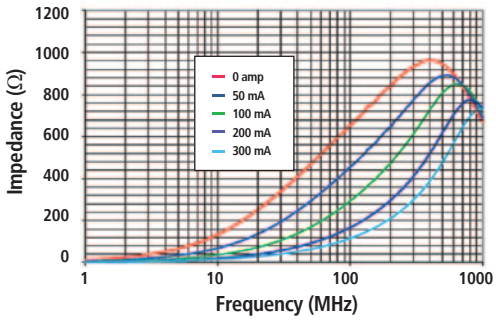


HZ0603C601R-10

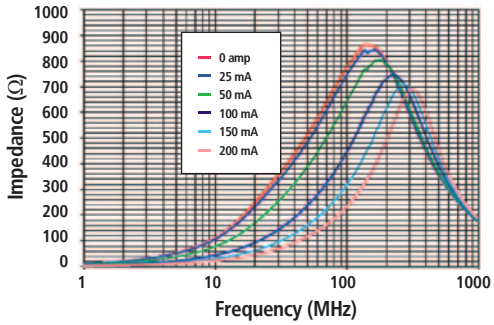


0603 Chip Bead Impedance Under DC Bias

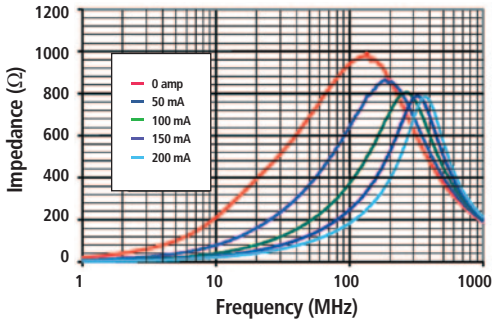
HZ0603C651R-10



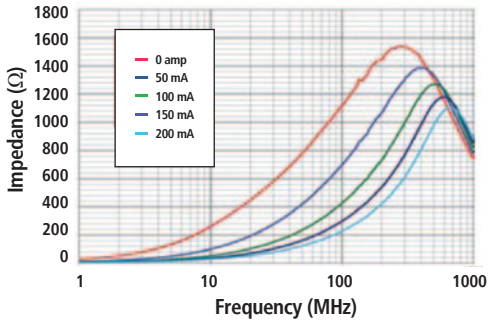
HZ0603B751R-10



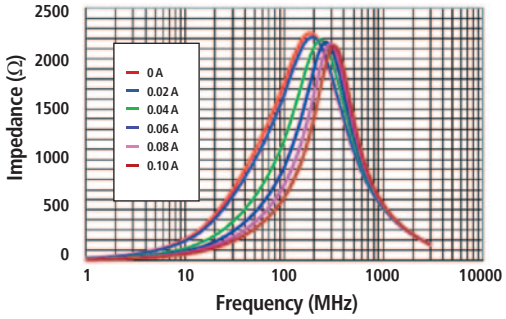
HZ0603B102R-10



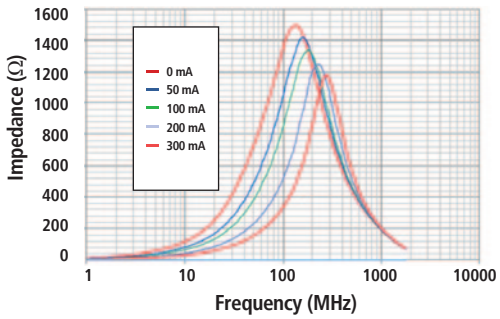
HZ0603B112R-10



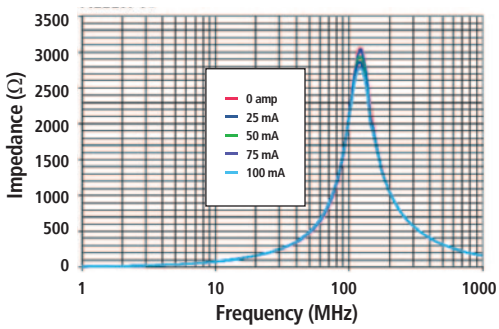
HZ0603A152R-10



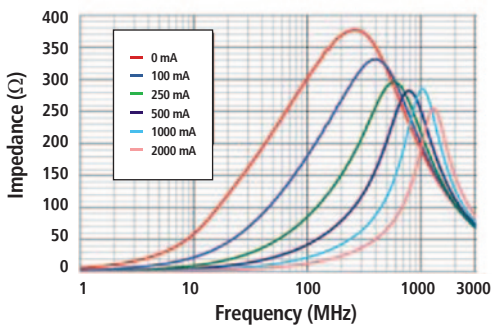
HZ0603C152R-10



HZ0603A222R-10

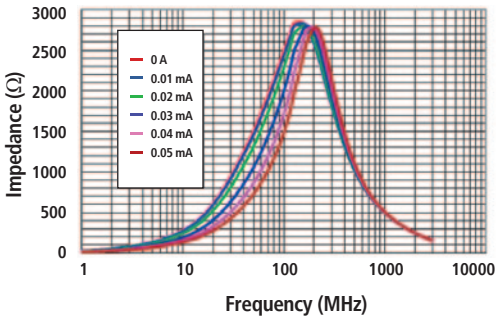


MI0603L301R-10

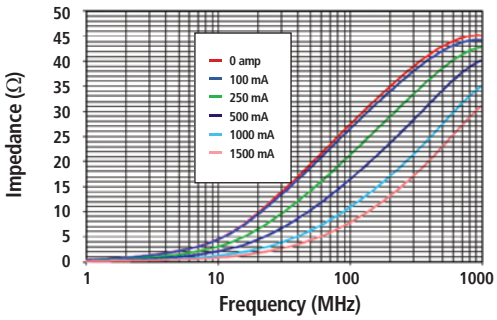


0603 Chip Bead Impedance Under DC Bias

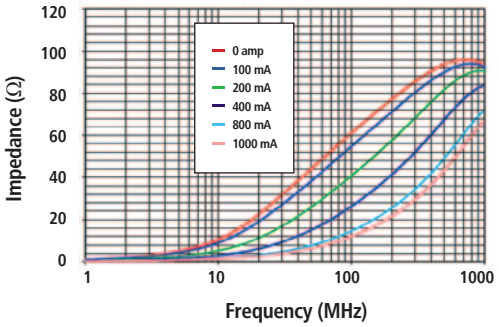
HZ0603A252R-10



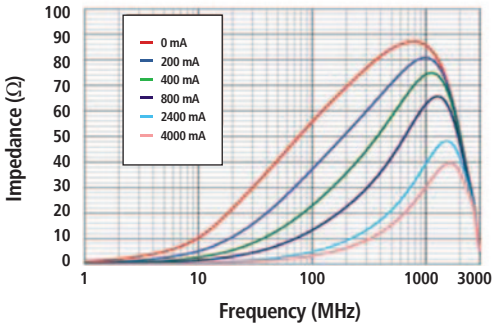
MI0603K300R-10



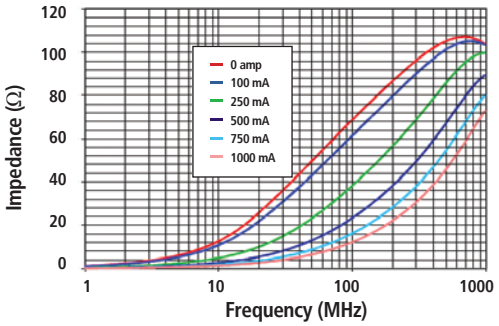
MI0603J600R-10



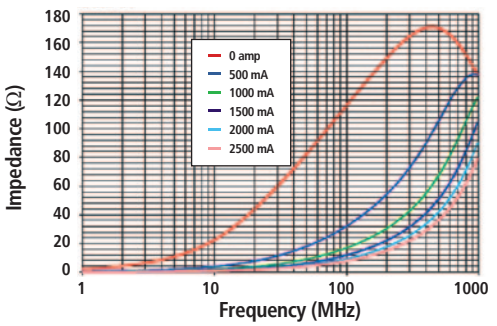
HI0603P600R-10



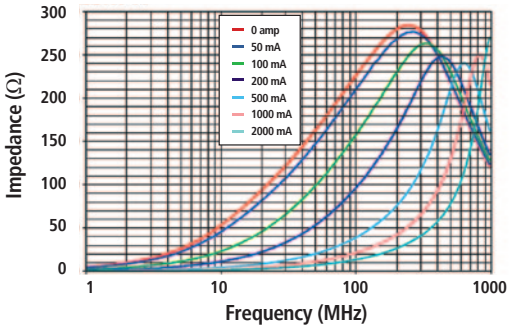
MI0603J680R-10



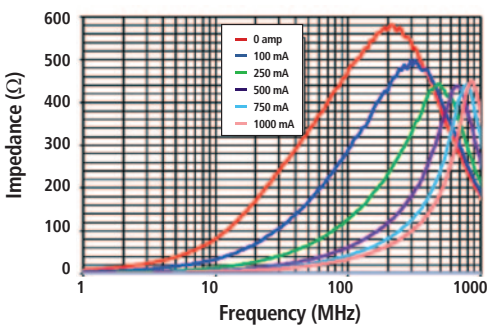
MI0603M121R-10



MI0603L221R-10

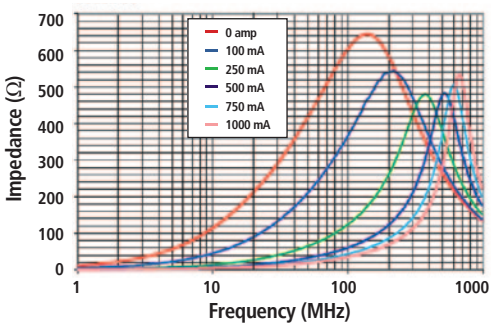


MI0603J471R-10

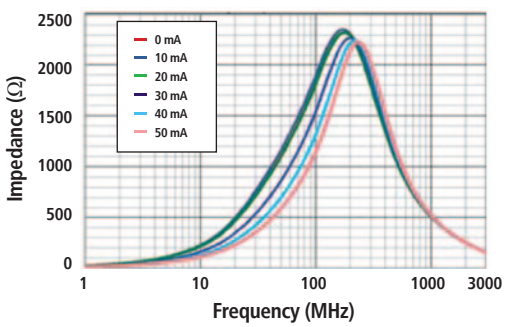


0603/0805 Chip Bead Impedance Under DC Bias

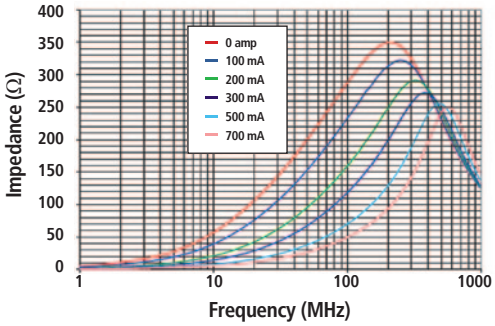
MI0603J601R-10



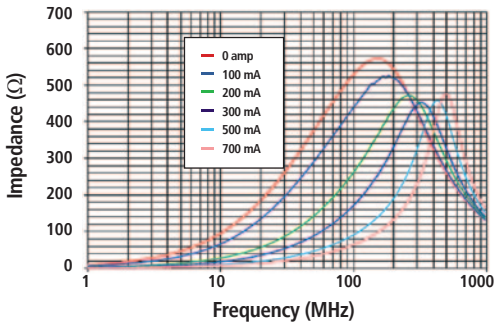
HZ0603A182R-10



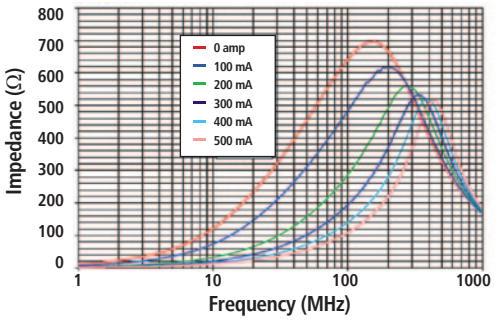
LI0805G301R-10



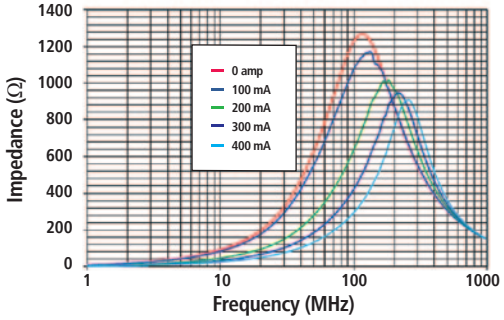
HZ0805G471R-10



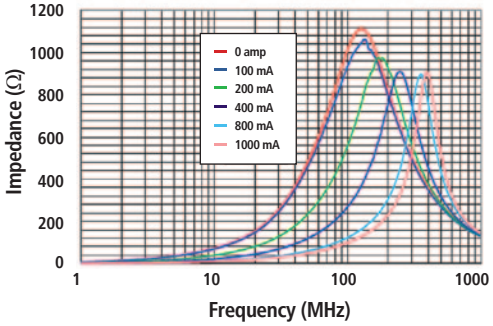
HZ0805E601R-10



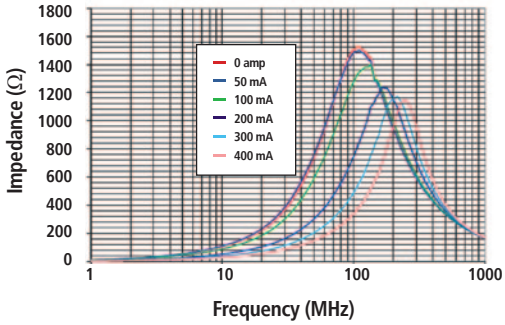
HZ0805D102R-10



MI0805J102R-10

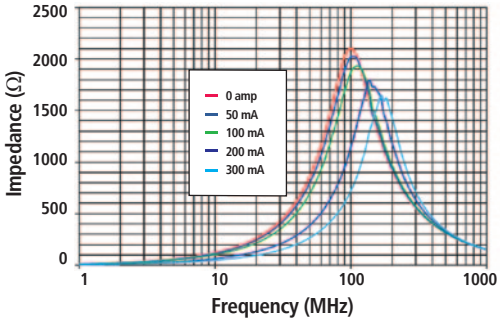


HZ0805D152R-10

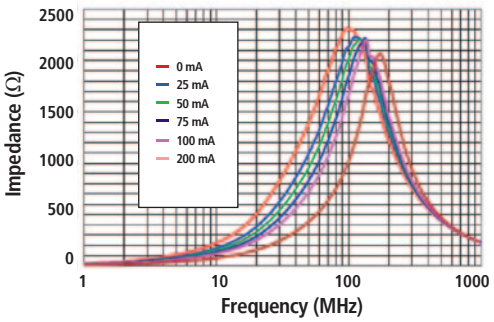


0805 Chip Bead Impedance Under DC Bias

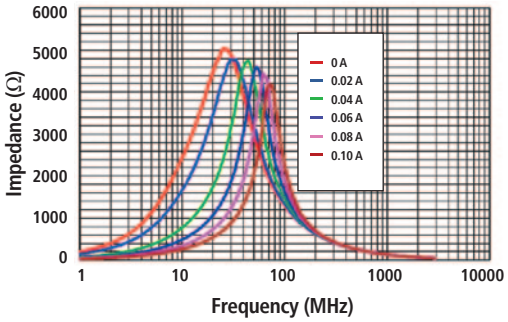
HZ0805C202R-10



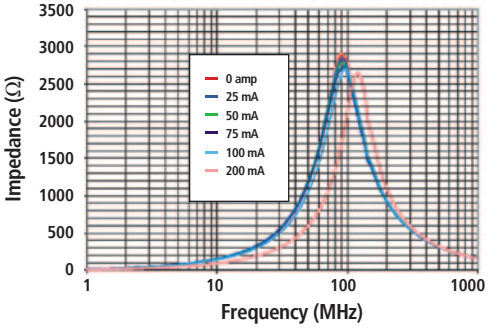
HZ0805B222R-10



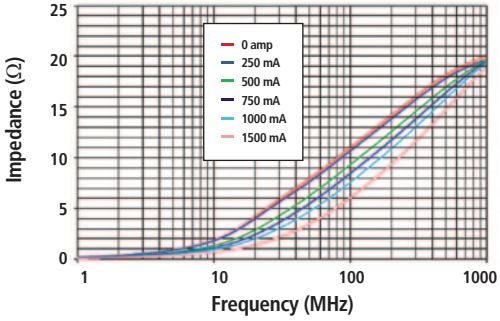
LF0805A252R-10



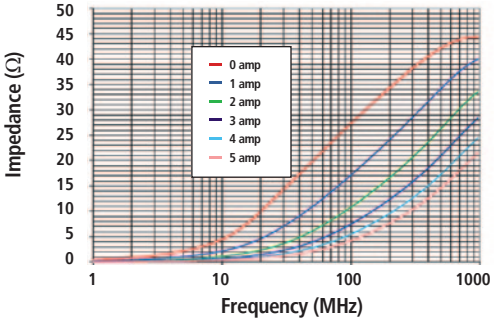
HZ0805B272R-10



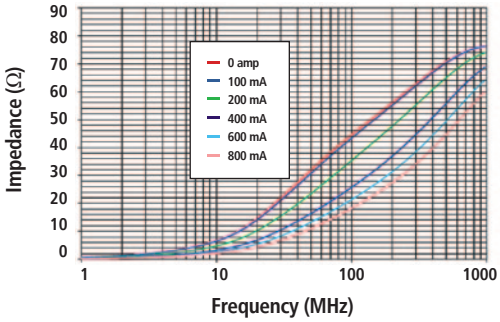
MI0805K110R-10



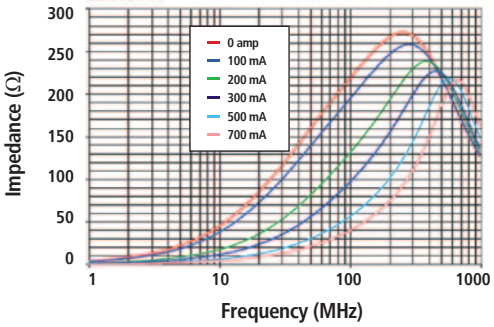
HI0805Q310R-10



LI0805H400R-10

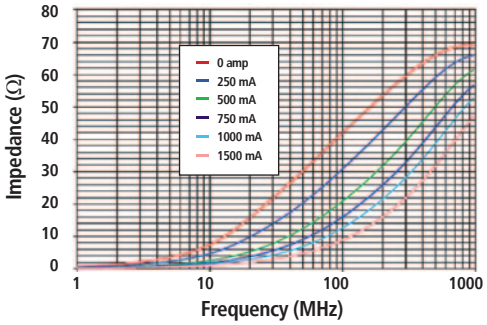


LI0805G201R-10

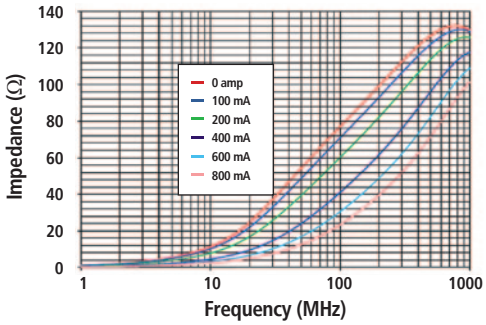


0805 Chip Bead Impedance Under DC Bias

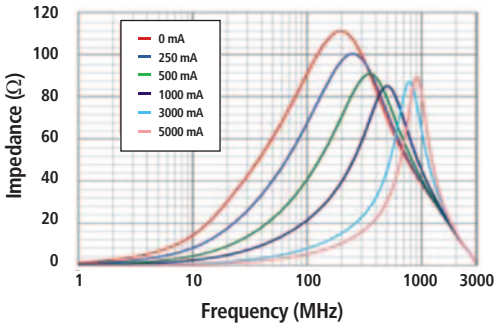
MI0805K400R-10



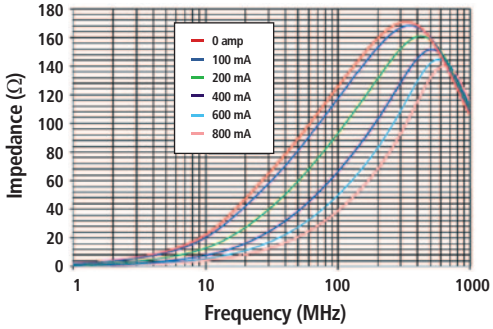
LI0805H750R-10



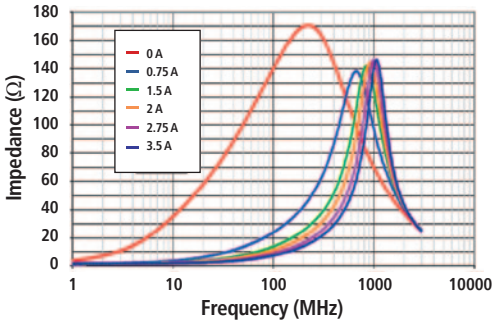
HI0805R800R-10



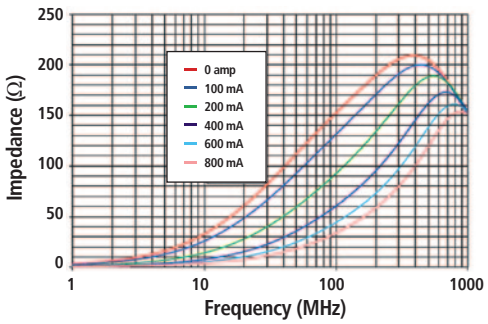
LI0805H121R-10



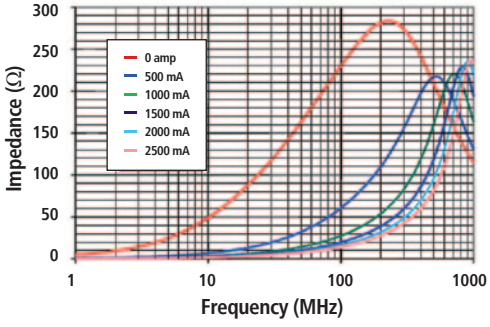
HI0805O121R-10



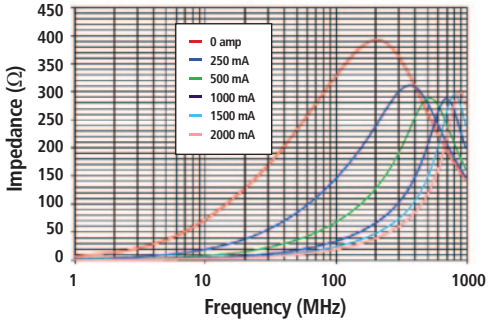
LI0805H151R-10



MI0805M221R-10

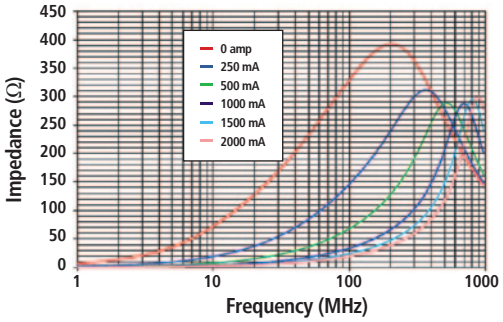


MI0805L301R-10

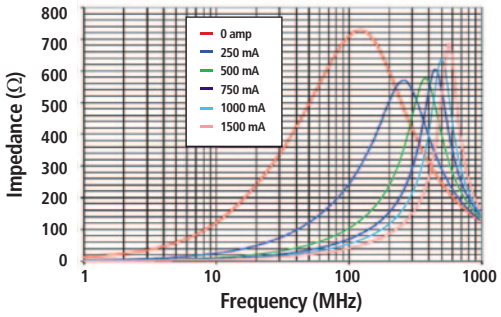


0805/1206 Chip Bead Impedance Under DC Bias

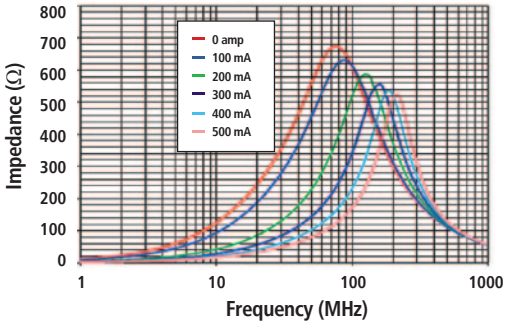
MI0805L331R-10



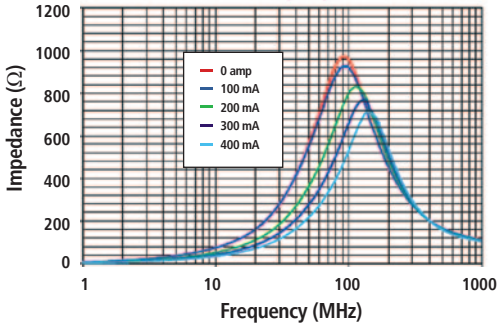
MI0805K601R-10



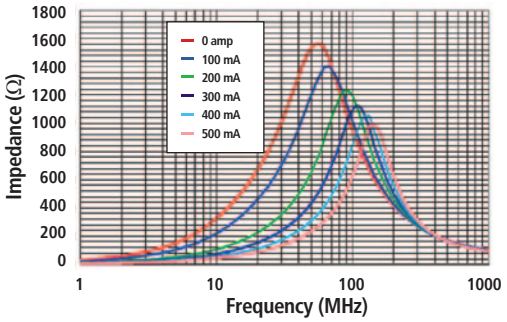
HZ1206E601R-10



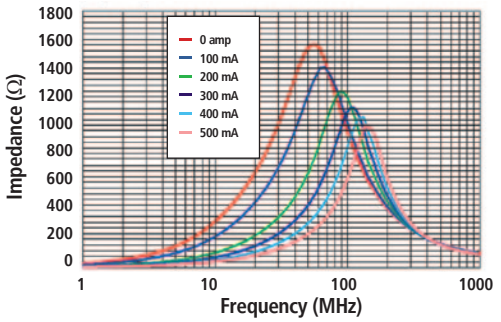
HZ1206D102R-10



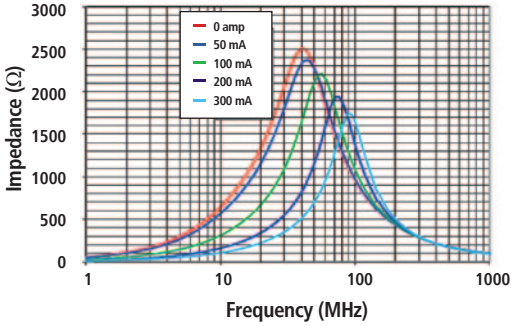
HZ1206E152R-10



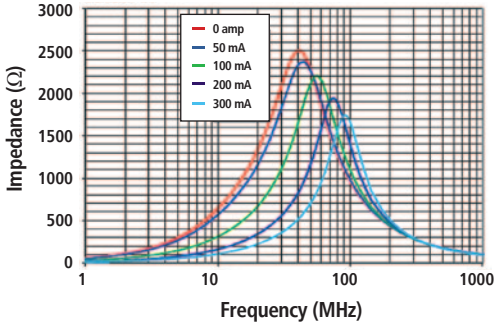
LF1206E152R-10



HZ1206C202R-10

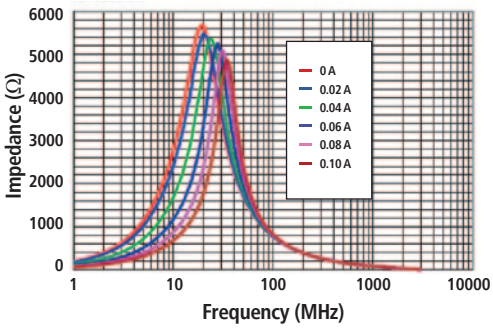


LF1206C202R-10

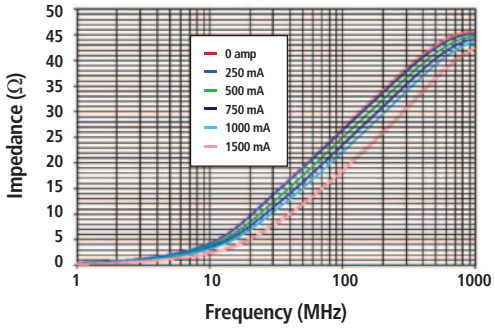


1206 Chip Bead Impedance Under DC Bias

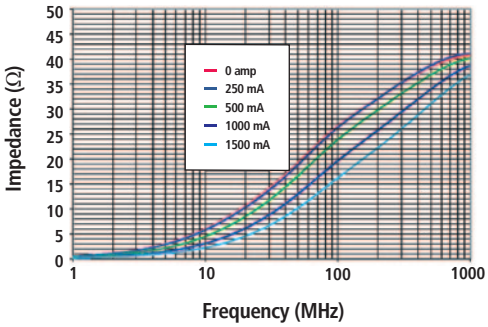
LF1206A302R-10



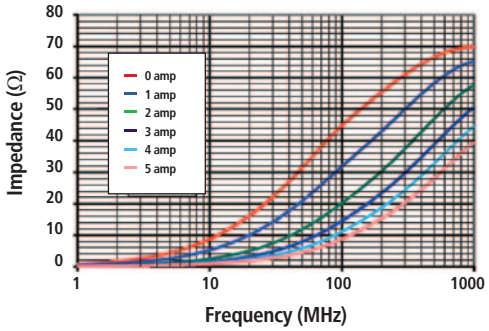
MI1206K260R-10



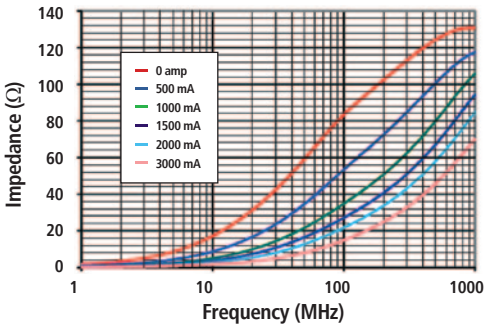
MI1206K310R-10



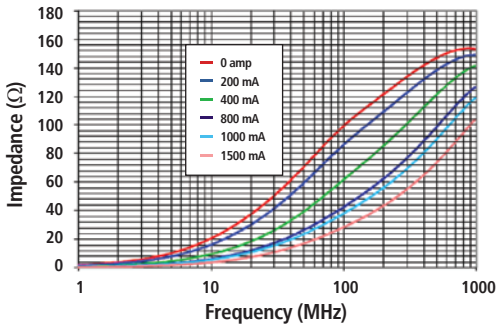
HI1206T500R-10



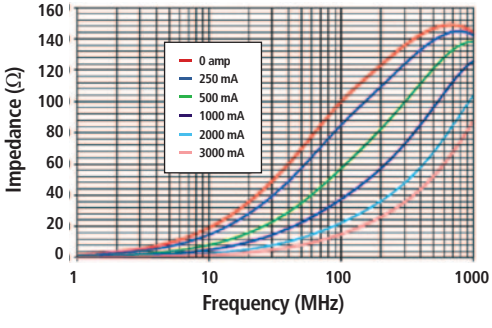
HI1206N800R-10



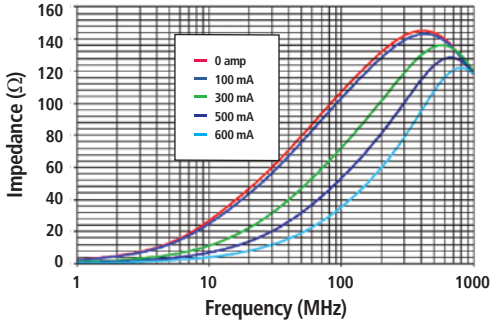
MI1206K900R-10



HI1206N101R-10

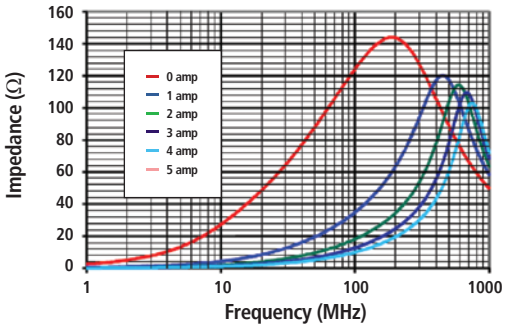


LI1206H121R-10

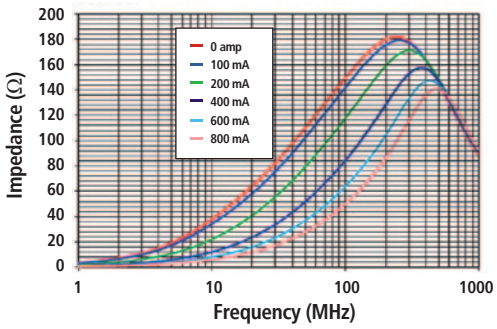


1206/1210 Chip Bead Impedance Under DC Bias

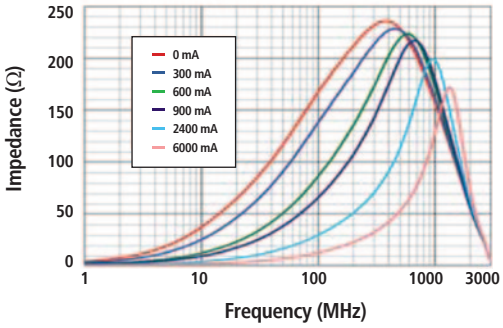
HI1206P121R-10



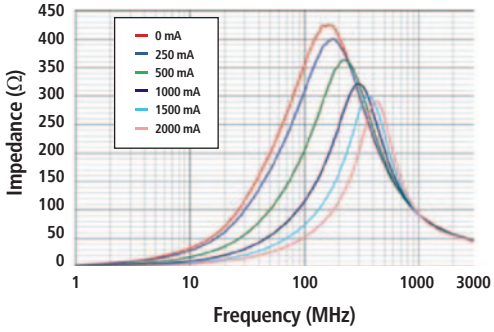
LI1206H151R-10



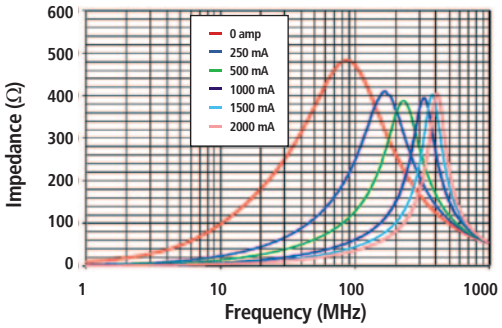
HI1206T161R-10



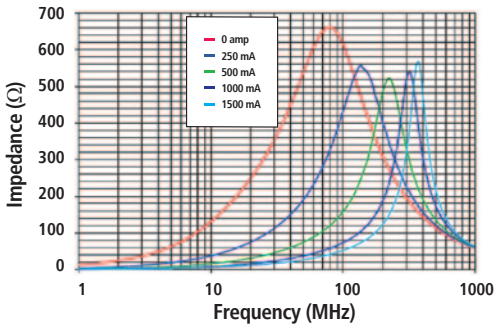
MI1206L391R-10



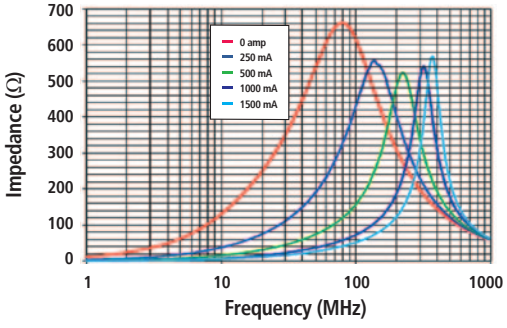
MI1206L501R-10



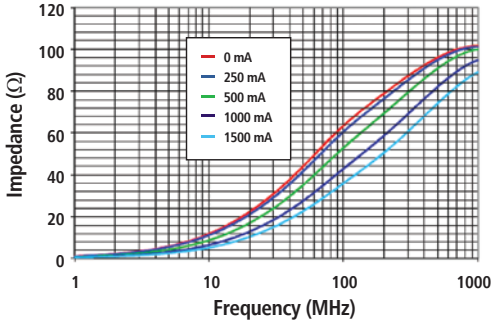
MI1206K601R-10



MI1206L601R-10

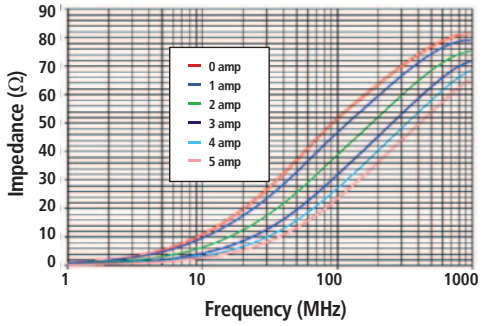


MI1210K600R-10

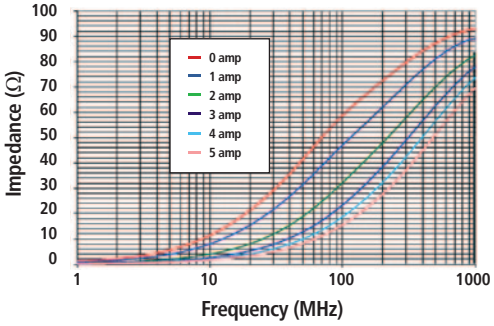


1612/1806 Chip Bead Impedance Under DC Bias

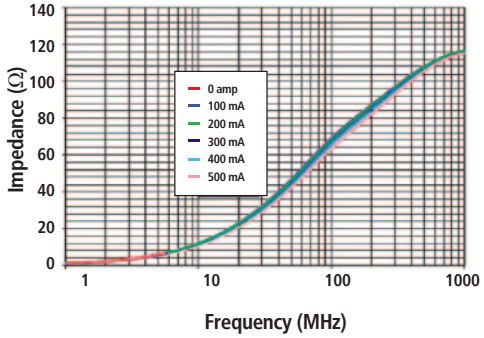
HI1612X560R-10



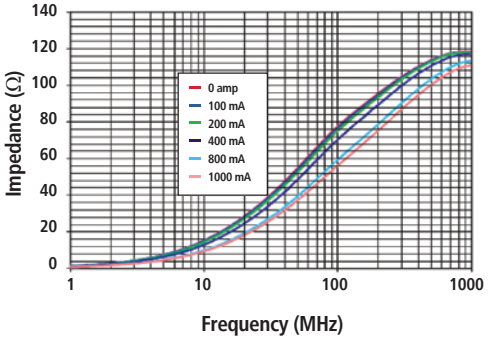
HI1806T600R-10



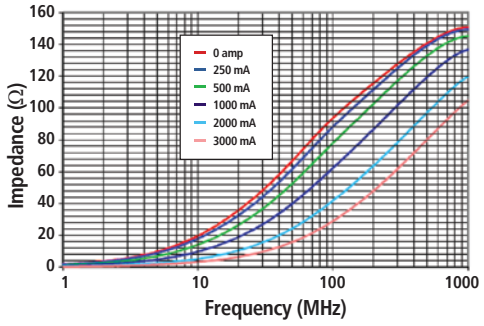
LI1806E800R-10



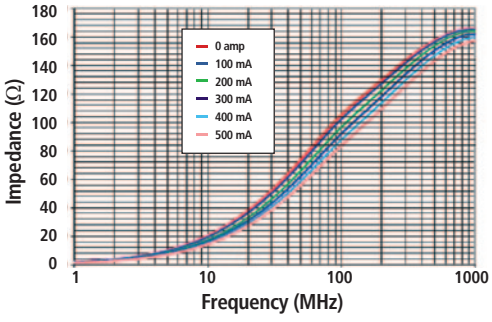
MI1806J800R-10



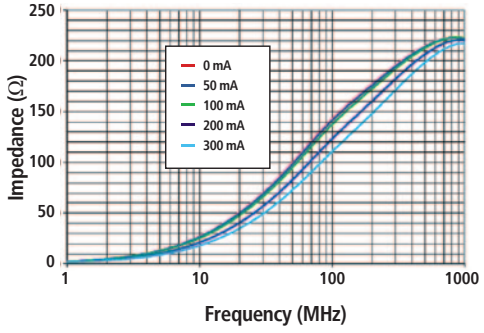
HI1806N910R-10



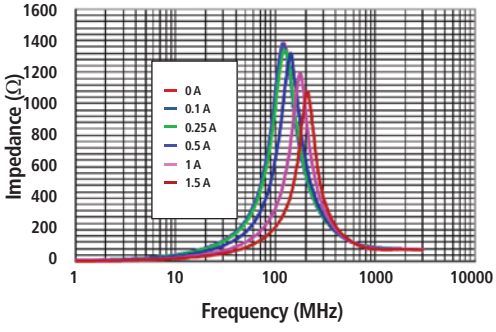
LI1806E101R-10



LI1806C151R-10

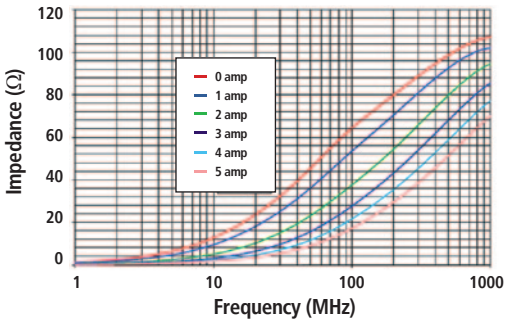


HZ1806K102R-10

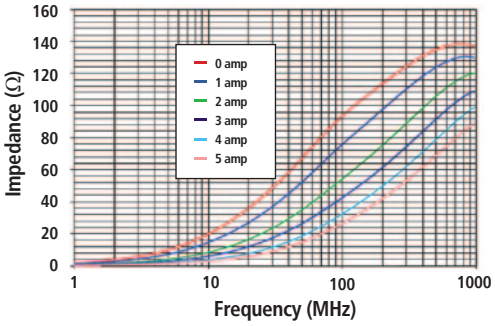


1812/2220 Chip Bead Impedance Under DC Bias

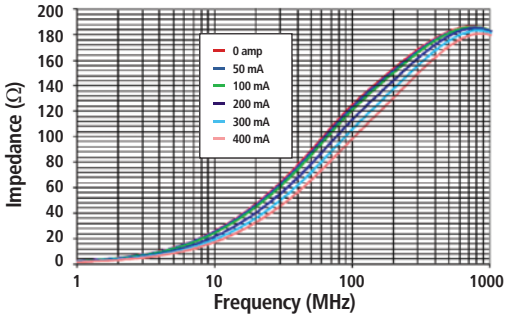
HI1812T800R-10



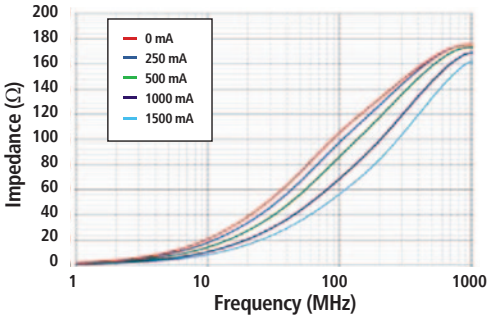
HI1812V101R-10



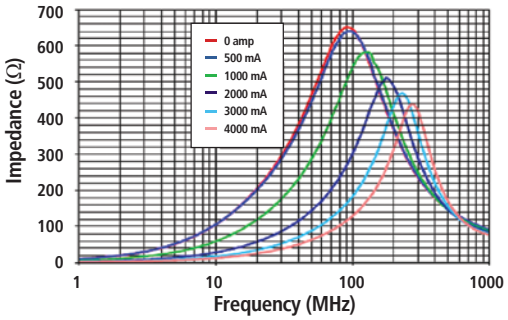
LI1812D121R-10



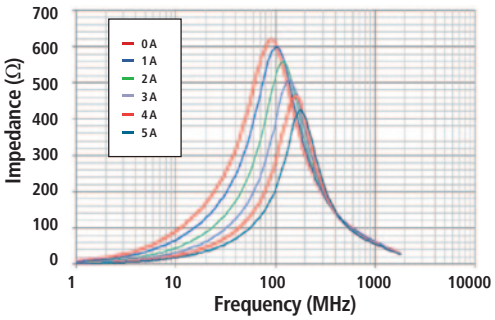
MI1812K121R-10



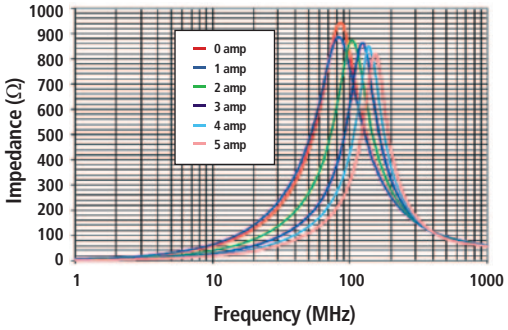
HI2220P601R-10



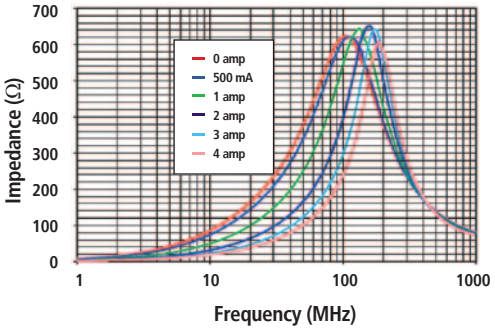
HR2220V701R-10



HR2220V801R-10

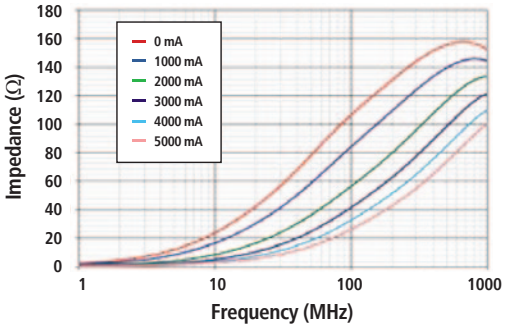


HR2220P601R-10



2220 Chip Bead Impedance Under DC Bias

HI2220T101R-10



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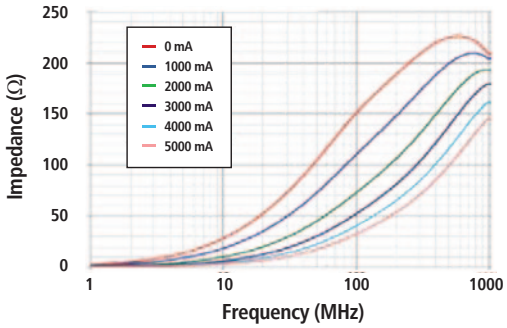

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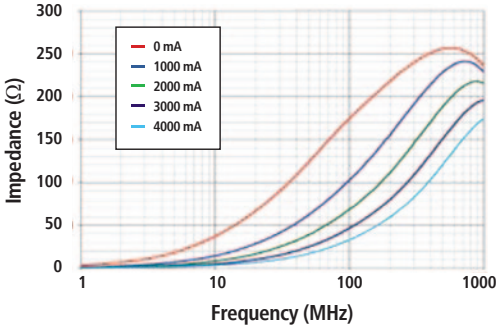

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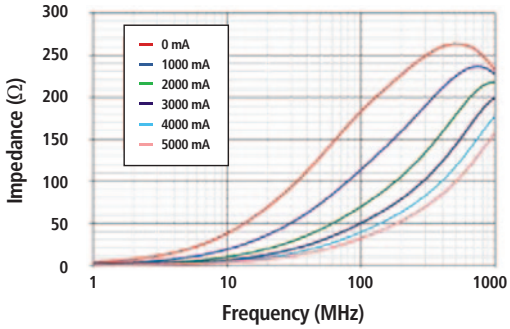

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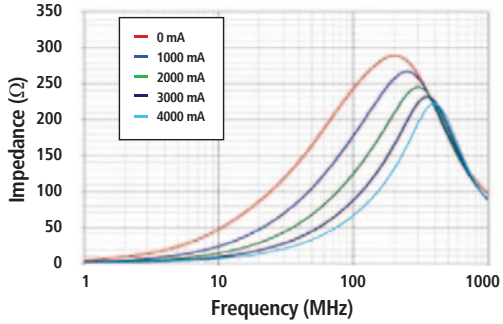

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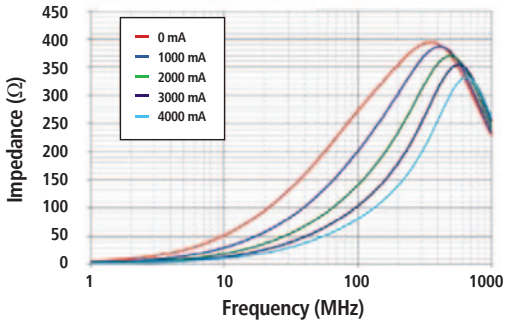
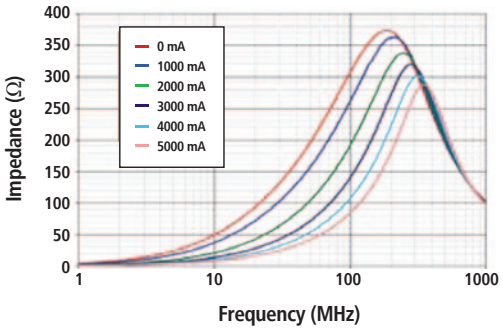


2220/3312 Chip Bead Impedance Under DC Bias

HI2220R301R-10



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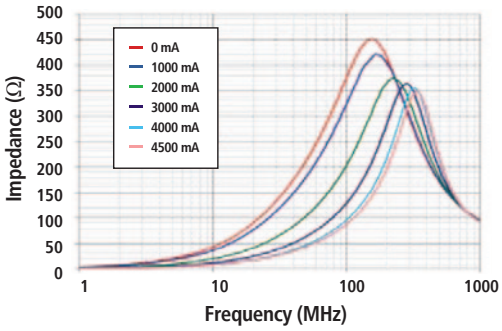

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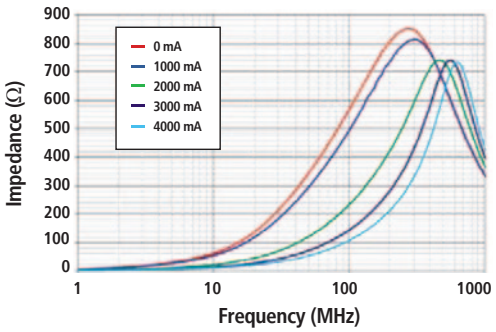

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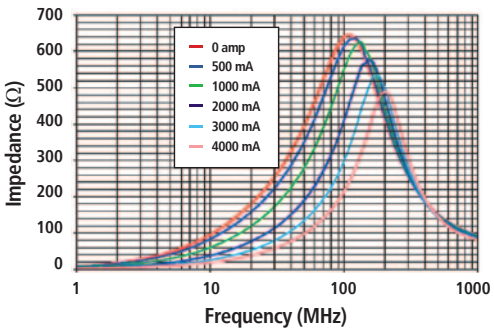
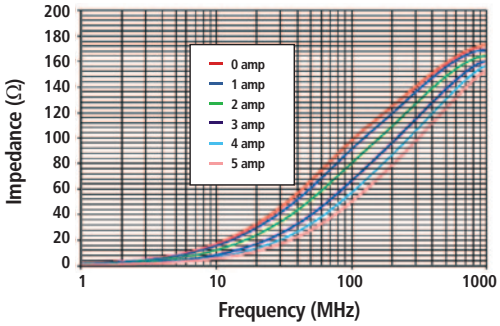
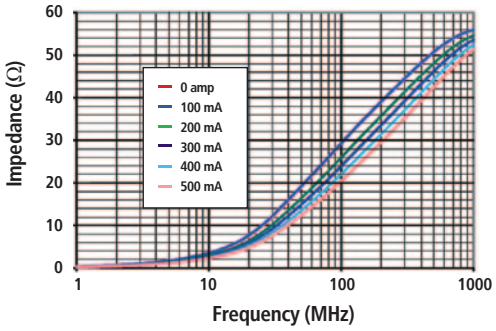


HI3312X101R-10

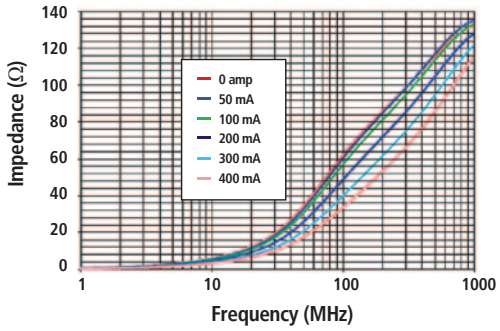


4 Line Array Impedance Under DC Bias

DA1206E300R-10



DA1206D600R-10



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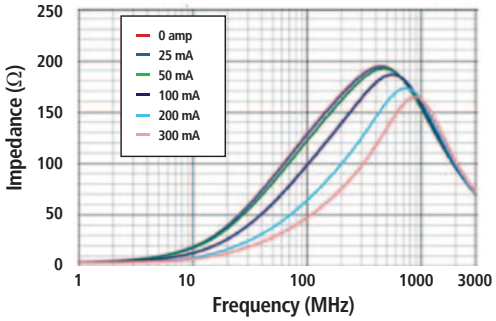

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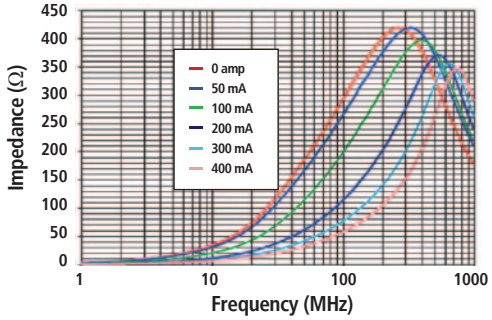

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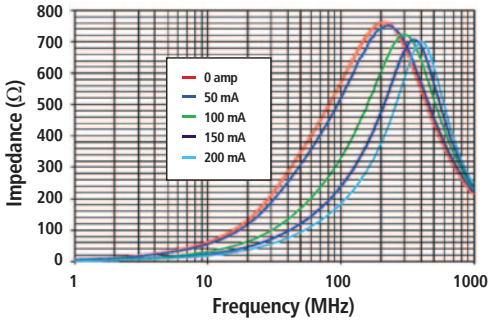

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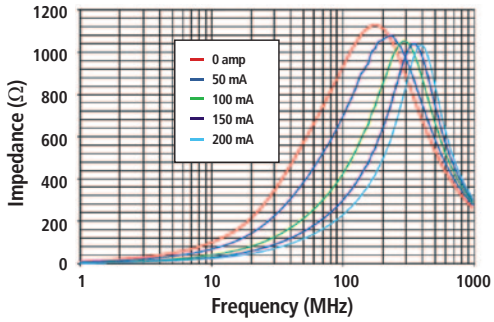


FERRITE EMI SMT
BEAD ASSEMBLIES

FEATURES

- 10 Amps continuous operating current capability
- Very low RDC
- Broadband (28F) and (35F) parts available
- Lead free and RoHS compliant

RoHS

PART NUMBERING SYSTEM

28	F	0121	-0	S	R	-10
Material Code	Product Code (EIA)	EIA Size Code	Selected Dimension Code	Additional Description	Packing Code	Additional Description

SMT BEAD ASSEMBLIES - POWER LINE

METRIC PKG. SIZE	EIA PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
			Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
4131	1612	28F0121-0SR-10	30	48	53	53	54	800	0.00075	10,000
8531	3312	28F0121-1SR-10	60	96	115	114	117	833	0.001	10,000
8545	3318	28F0181-1SR-10	72	115	123	123	125	900	0.001	10,000

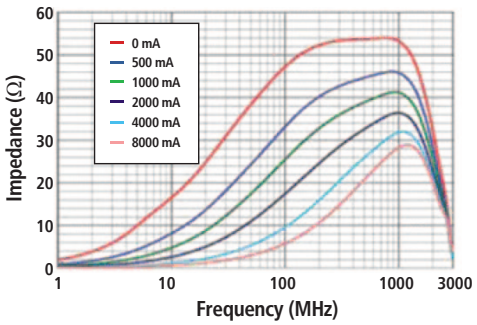
LOW FREQUENCY BEAD ASSEMBLIES - POWER LINE

METRIC PKG. SIZE	EIA PKG. SIZE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
			Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
4131	1612	35F0121-0SR-10	17	41	48	47	49	13	0.00075	10,000
8531	3312	35F0121-1SR-10	35	82	102	90	104	17	0.001	10,000

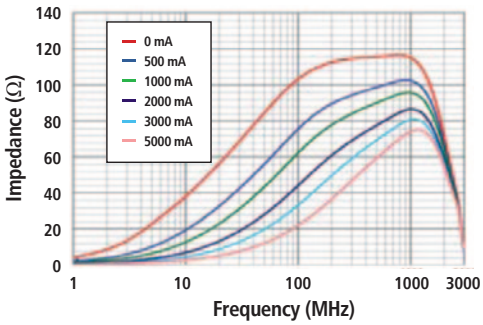
FERRITE EMI SMT
BEAD ASSEMBLIES

SMT Bead Assemblies Impedance Under DC Bias

28F0121-0SR-10



28F0121-1SR-10



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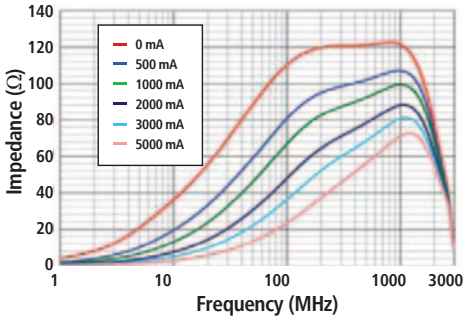

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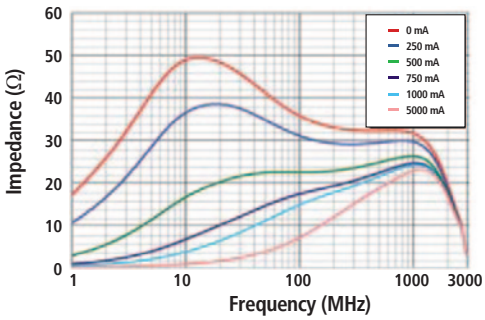

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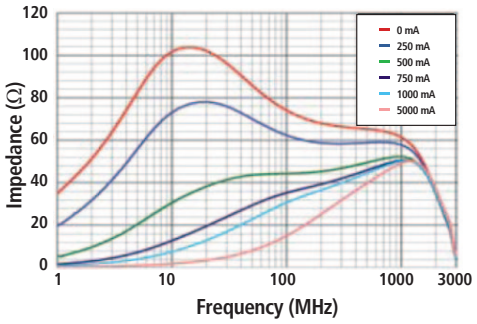
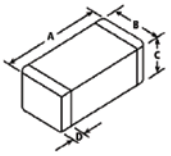
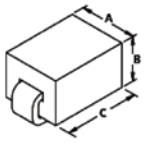


FERRITE EMI SMT
BEAD ASSEMBLIES

DIMENSION

METRIC (EIA) PKG. SIZE	A mm (INCHES)	B mm (INCHES)	C* mm (INCHES)	D mm (INCHES)	MONOLITHIC CHIP BEAD
0603 (0201)	0.60 (0.023)	0.30 (0.011)	0.30 (0.011)	0.15 (0.006)	
1005 (0402)	1.01 (0.040)	0.50 (0.020)	0.50 (0.020)	0.30 (0.012)	
1608 (0603)	1.60 (0.063)	0.80 (0.031)	0.80 (0.031)	0.36 (0.014)	
2010 (0804)	2.00 (0.079)	1.00 (0.039)	0.50 (0.020)	0.025 (0.010)	
2012 (0805)	2.00 (0.079)	1.25 (0.049)	0.90 (0.035)	0.51 (0.020)	
3216 (1206)	3.20 (0.126)	1.60 (0.063)	1.10 (0.043)	0.51 (0.020)	
3225 (1210)	3.20 (0.126)	2.50 (0.098)	1.40 (0.055)	0.46 (0.018)	
4030 (1612)	4.06 (0.160)	3.05 (0.120)	2.28 (0.090)	0.46 (0.018)	
4516 (1806)	4.50 (0.177)	1.60 (0.063)	1.60 (0.063)	0.51 (0.020)	
4532 (1812)	4.50 (0.177)	3.20 (0.126)	1.40 (0.055)	0.46 (0.018)	
5650 (2220)	5.59 (0.220)	5.08 (0.200)	3.45 (0.136)	0.76 (0.030)	
8530 (3312)	8.50 (0.335)	3.05 (0.120)	2.28 (0.090)	0.51 (0.020)	
PART NUMBER	**A mm (INCHES)**	**B mm (INCHES)**	**C* mm (INCHES)**	**D mm (INCHES)**	**FERRITE SMT BEAD ASSEMBLIES**
_ _ F0121-0SR	3.05 (0.120)	2.54 (0.100)	4.06 (0.160)	- -	
_ _ F0121-1SR	3.05 (0.120)	2.54 (0.100)	8.51 (0.335)	- -	
_ _ F0181-0SR	4.57 (0.180)	2.54 (0.100)	8.51 (0.335)	- -	

*C Dimension (height) may vary with current and impedance rating requirements. Refer to part print for specific dimensions. Parts have no polarity.

COMMON MODE AND DIFFERENTIAL MODE EXPLANATION

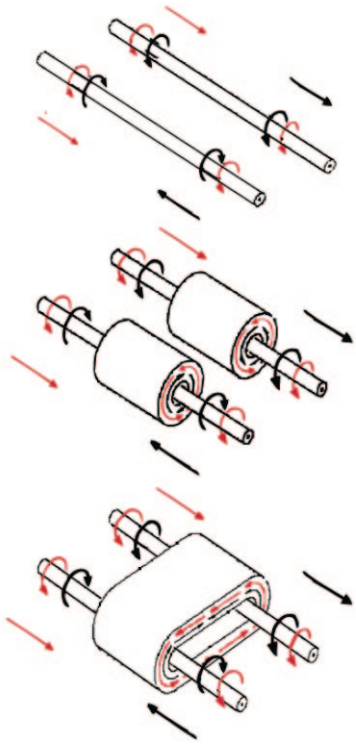
Common mode chokes are the ideal components for EMI filtering of power and signal lines. These components withstand high DC currents without degradation of filtering performance that can occur with differential mode filters like small chip beads. Stable common mode chokes allow most signals to pass unaffected, yet filter the noise (EMI) from these circuits.

Switch mode power supplies are required for most advanced electronics and harmonics of the switch mode power supply can escape the power supply as EMI. Also, the power delivery circuit often creates opportunities for unintended common mode current loops to form in the end product even when using a "certified" or "regulation compliant" power supply. Installation of a common mode choke to the supply output can significantly reduce this common mode energy flow and help insure product performance and EMI regulatory compliance. Small ferrite chip beads or inductors are degraded by the power supply output. However, common mode chokes continue their high performance regardless of the high power currents that might flow or spike in the circuit.

Modern systems are frequently an interconnection of functional blocks and connections made by cables or wiring harnesses. These interconnections often present the opportunity for common mode current loops between devices that can lead to EMI regulatory failure. The addition of a common mode choke before the connector filters these common mode currents while allowing the desired signals to pass unaffected. The result is effective communication between devices, reliable product and system operation and product EMI regulatory compliance.

Most well-designed power and signal circuits present no EMI that is caused from intended currents. As an example, at 30 MHz, a pair of traces or wires 1 m long, separated by 1.3 mm, requires over 20 mA differential current imbalance to exceed 100 uV/m radiation 3 meters away. However, unintended, unforeseen common mode currents can exceed 100 uV/m radiation with only 8 uA common mode current flow! Suppression of these tiny common mode currents is often crucial to assuring EMI regulatory compliance and reliable product performance. Ferrite common mode chokes operate by acting on the magnetic fields surrounding a pair of conductors.

Black arrows represent differential (normal) mode. Red arrows represent common mode.



Two conductors used in a standard "differential" transmission circuit create magnetic fields surrounding the conductors. These magnetic fields flow around the conductors in the directions depicted by the black arrows.

Likewise, common mode currents generate magnetic fields surrounding the conductors. The red arrows depict the common mode current path and the associated flux paths around the wires.

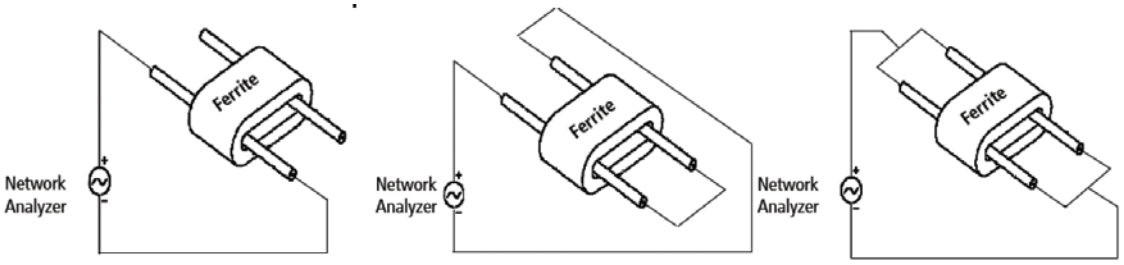
The same two wires shown above have been fitted above with two separate ferrite EMI cores in a differential-mode configuration with one core per line. In this application, each core must contain the total magnetic flux resulting from both the differential mode (intended) current and the common mode (unintended) by the intended current. Differential mode filters (like small chip beads) are not stable under significant load.

The same two wires have now been fitted with a ferrite EMI core in a common mode configuration; a single core with both lines through a common opening in the core. The differential mode (black) fields in the core are now equal and opposite, which yields a net flux seen by the core of approximately zero. Saturation is no longer an issue, and a much smaller ferrite core/choke can be used. The field from the common mode noise (red arrows) is additive and is the only remaining flux to be inflected by the core. The common mode choke configuration applies to both cable cores and board level components. Common Mode Chokes are stable under load.

COMMON MODE CHOKE FAMILY

PART SERIES	SPECIAL FEATURES	EIA PACKAGE SIZE	IMPEDANCE (Z) Ω @ 100 MHZ	RATED I MAX (CONTINUOUS) mA	PEAK IMPEDANCE (Z) FREQUENCY	# OF SINGLE LINE PAIRS OR CHOKES
CM Beads	High Current, Small Package, High Frequency"	1812-3322	33-110	4,000-10,000	800 MHz to 2.3 GHz	1
CM 05	USB 2.0, Low Normal Mode Z	0805	90-370	100-400	1 GHz - 1.4 GHz	1
CH 05	HDMI High Speed Signal	0805	90	400	2000	1
CF Beads	Normal Signal, Small Package	0504-0805	67-220	300-400	180-583	1
CM 21	High Current, Low Profile	2021-3421	33-60	15,000	1GHz	1
CM 22 Array	Firewire, Gigabit Ethernet	2722-5022	45-200	5,000	200 MHz - 3 GHz	2,3,4
CM 32 Array	High Current, High Frequency	3032- 6032	120-300	8,000	150 MHz - 2 GHz	2,3,4
CM 40 Array	High Current, Low to High Frequency	3440-5740	170	20,000	1 GHz	1,2
CM 41	Ultra High Current, Low to High Frequency	5441	90-160	75,000	600 MHz - 700 MHz	1
CM 44	3 Line Power	4440	110	20,000	500 MHz	3
CM 45	2 & 4 Line Power	2545-4545	130-170	10,000	500 MHz - 1 GHz	1,2
LF CM	Low Frequency	1812-5740	100-3500	200-20,000	3 MHz - 80 MHz	1

IMPEDANCE TEST FOR COMMON MODE CHOKES



Open Mode **Normal/Differential Mode** **Common Mode**

Open-Mode Impedance Measurement - The open-mode impedance characterizes the impedance of only a single conductor in the ferrite common mode choke.

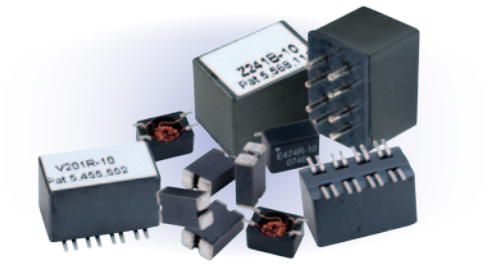
Normal (Differential) Mode Impedance Measurement – The normal mode impedance characterizes the impedance presented by the common mode choke to the normal (differential) signals present in the circuit. The test circuit represents the forward and return paths through the device.

Common Mode Impedance Measurement - The common mode impedance characterizes the impedance presented by the choke to the unintended common mode currents that might flow in the circuit and cause EMI failures. Since this current flows in both conductors, it is necessary to short the conductors on each side of the choke so that test current flows equally through both conductors.

COMMON MODE CHOKES

FEATURES

- Monolithic construction up to 10 Amps
- Wire wound SMT and through hole structure rated current up to 75 Amps
- Low DCR with small package
- Stable performance under load bias
- Excellent impedance vs frequency feature
- Small size and high reliability
- For power, low frequency and high frequency signal lines
- For USB, HDMI, 1394, DVI, S-ATA, LVDS signal line applications
- Suitable for power saving especially for portable application



PART NUMBERING SYSTEM

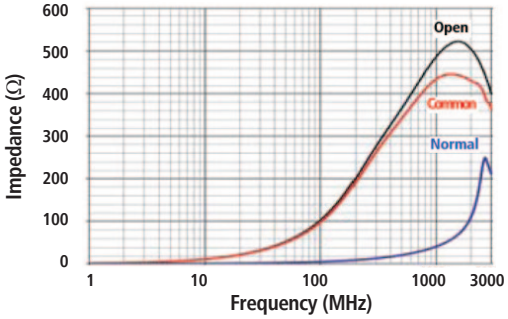
CM	0805	D	900	R	-10
Product Series Code	EIA Size Code	Rated Current Code	Inductance Value Code	Packing Code	Additional Description

HIGH SPEED SERIAL INTERFACE COMMON MODE CHOKE

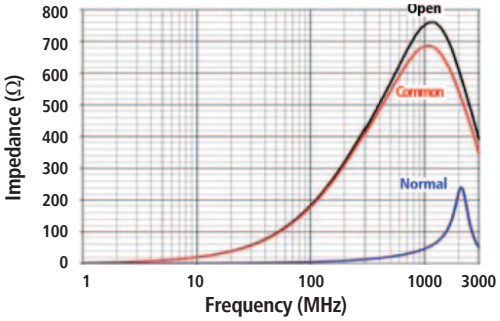
APPLICATION	TYPE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) (mA)
			Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
USB2.0/LVDS	Wire-wound (For 2 lines)	CM0805D900R-10	24	90	340	435	445	1405	0.3	400
		CM0805C161R-10	49	160	540	684	684	1000	0.35	300
		CM0805C221R-10	57	220	570	720	724	1147	0.4	300
		CM0805A371R-10	186	370	730	878	878	1000	0.5	100
		CM0805C601R-10	265	600	1080	1227	1264	782	0.375	250
HDMI/DVI/SATA		CH0805D900R-10	48	90	249	339	494	2000	0.3	400
USB/Signal Line	Multi-layer (For 2 lines)	CF0504C900R-10	28	90	210	148	217	583	0.6	300
		CF0504C121R-10	33	120	250	145	250	500	0.6	300
		CF0805D670R-10	24	67	196	98	166	510	0.4	400
		CF0805D900R-10	32	90	210	106	220	435	0.4	400
		CF0805D121R-10	36	120	240	103	260	397	0.4	400
		CF0805D181R-10	48	180	123	42	277	210	0.5	400
		CF0805C221R-10	50	220	109	33	296	180	0.5	300

COMMON MODE CHOKES

CM0805D900R-10



CM0805C161R-10



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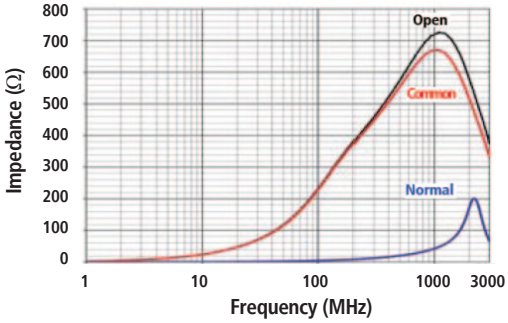

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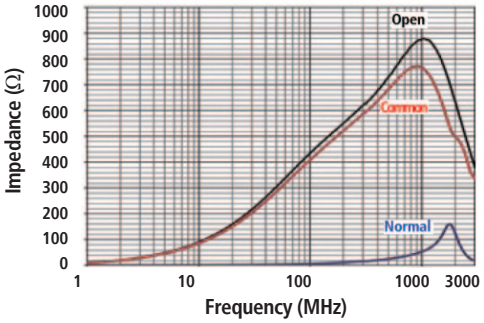

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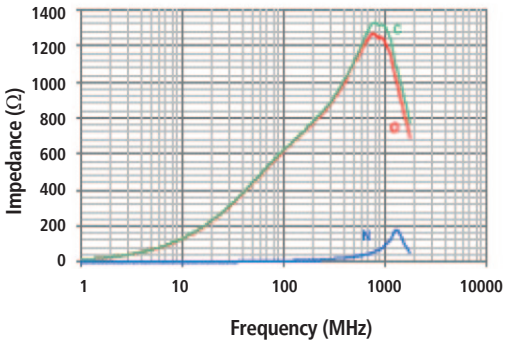
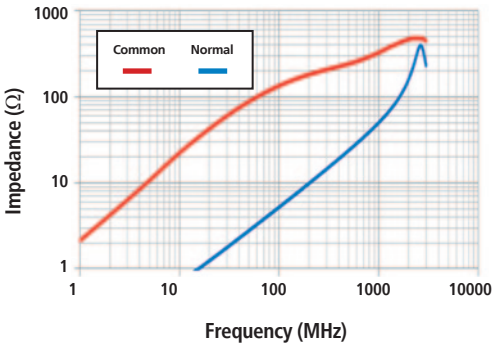
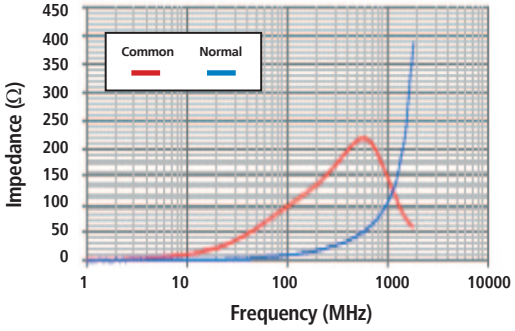


CH0805D900R-10



CF0504C900R-10



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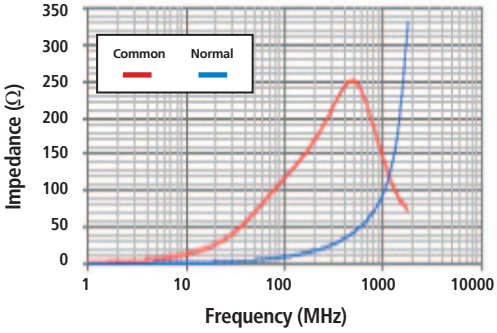
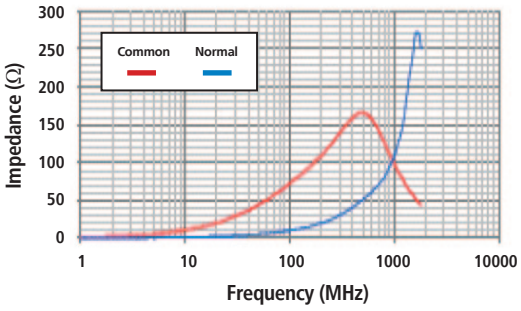


COMMON MODE CHOKES

CF0805D670R-10



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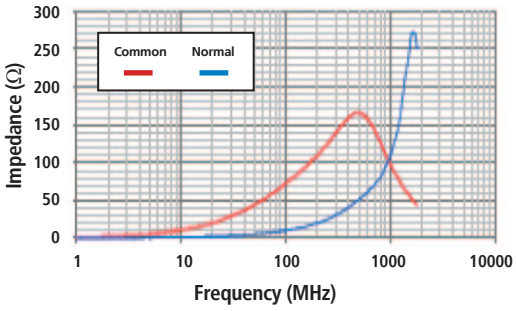

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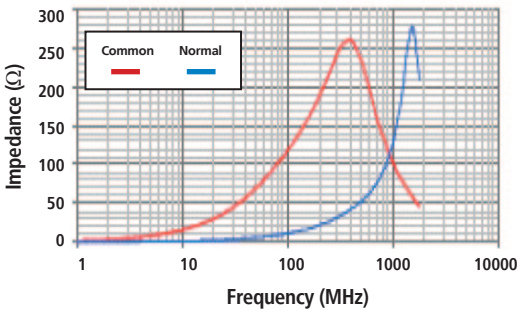

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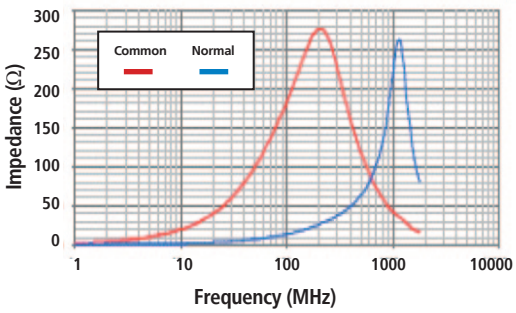
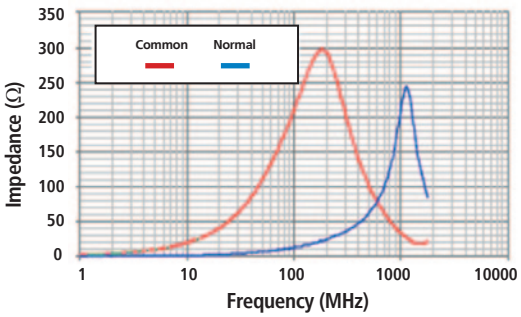
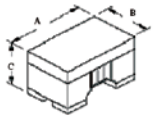
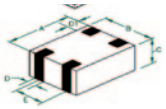
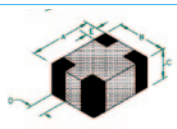


CF0805C221R-10



DIMENSION

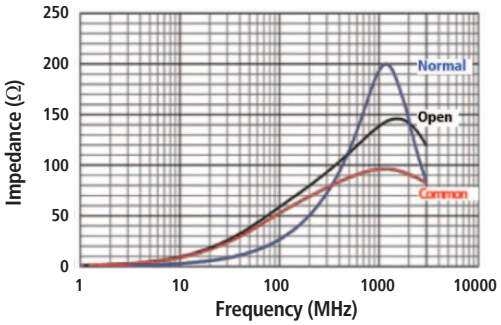
PART NUMBER	EIA PKG SIZE	METRIC PKG SIZE	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	D mm (INCHES)	D1 mm (INCHES)	E mm (INCHES)	
CM0805 CH0805	0805	2012	2.00 (0.079)	1.20 (0.047)	1.20 (0.047)	–	–	–	
CF0504	0504	1210	1.25 (0.049)	1.00 (0.039)	0.82 (0.032)	0.30 (0.012)	0.20 (0.008)	0.50 (0.020)	
CF0805	0805	2012	2.00 (0.079)	1.25 (0.049)	1.00 (0.039)	0.30 (0.012)	–	0.40 (0.016)	

POWER LINES COMMON MODE CHOKE

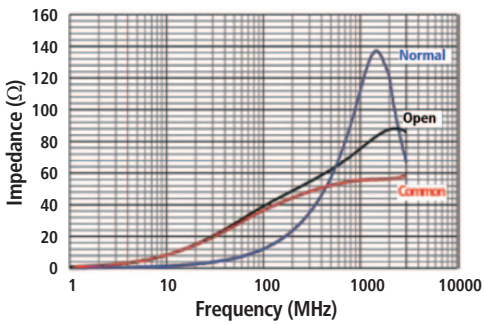
APPLICATION	TYPE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) (mA)
			Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
Power Lines	Multilayer (For 2 lines)	CM1812X330R-10	18	33	62	74	88	2359	0.003	10,000
		CM1812R600R-10	22	60	112	138	146	1519	0.001	5,000
		CM1922X330R-10	14	33	64	86	93	1783	0.003	10,000
		CM3312R111R-10	44	110	168	165	170	800	0.005	5,000
		CM3322P400R-10	13	40	121	185	251	1931	0.03	4,000
		CM3322U610R-10	26	61	123	170	191	1581	0.009	7,000
		CM3322X630R-10	26	63	114	152	165	1459	0.008	10,000
	Surface Mount (For 2 lines)	CM2021Y330R-10	18	33	52	61	62	1100	0.0008	15,000
		CM3421Y600R-10	39	60	96	110	110	1000	0.0008	15,000
	Thru-Hole (For 2 lines)	CM3440Z171B-10	116	170	189	202	202	1000	0.001	20,000
	Thru-Hole (For 4 lines)	CM5740Z171B-10	116	170	189	202	202	1000	0.001	20,000
	Surface Mount (For 2 lines)	CM3440Z171R-10	116	170	189	202	202	1000	0.001	20,000
	Surface Mount (For 4 lines)	CM5740Z171R-10	116	170	189	202	202	1000	0.001	20,000
	Surface Mount (For 3 lines)	CM4440Z111R-10	79	110	122	117	122	500	0.001	20,000
	Thru-Hole (For 2 lines)	CM5441Z101B-10	79	100	188	183	204	682	0.0003	30,000 mA @ 25°C Temp Rise
		CM5441Z161B-10	112	160	261	146	263	457	0.0003	70,000 mA @ 30 °C Temp Rise

COMMON MODE CHOKES

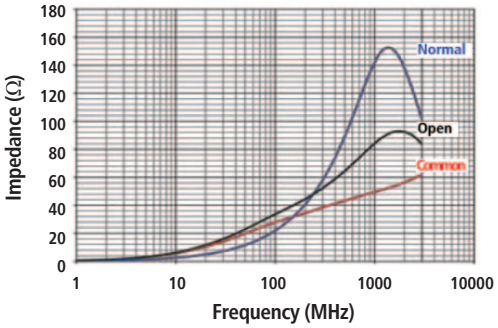
CM1812R600R-10



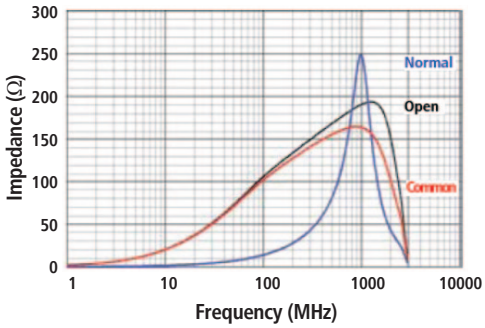
CM1812X330R-10



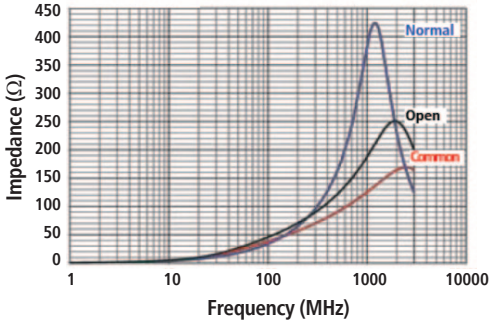
CM1922X330R-10



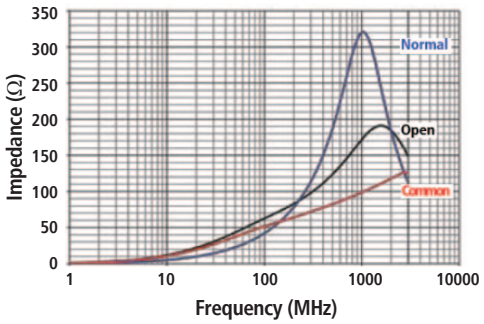
CM3312R111R-10



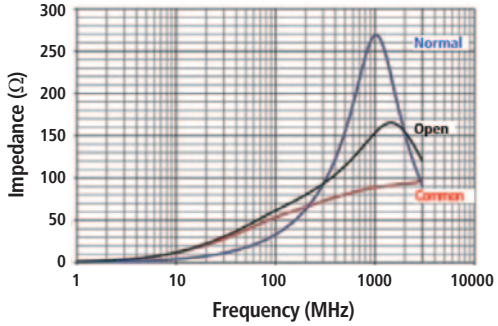
CM3322P400R-10



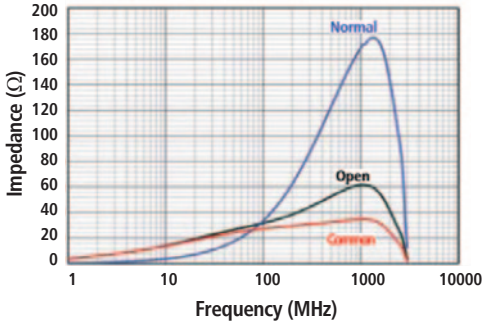
CM3322U610R-10



CM3322X630R-10

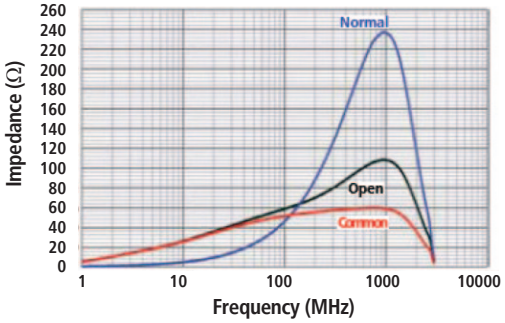


CM2021Y330R-10

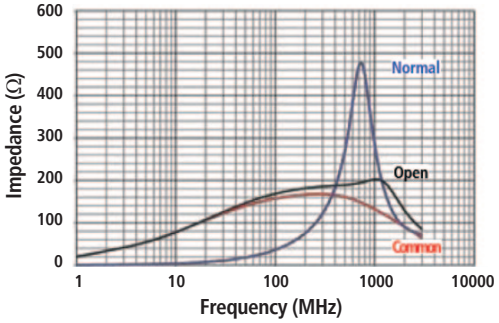


COMMON MODE CHOKES

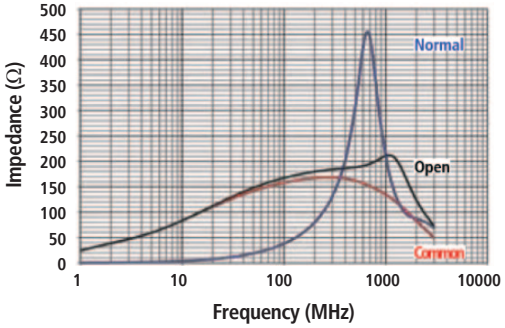
CM3421Y600R-10



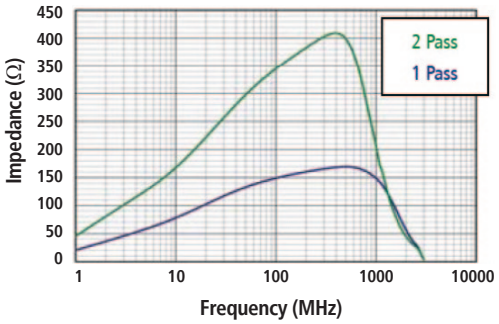
CM3440Z171B-10 CM3440Z171R-10



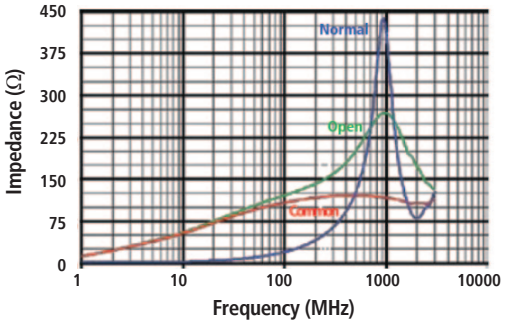
CM5740Z171B-10 CM5740Z171R-10



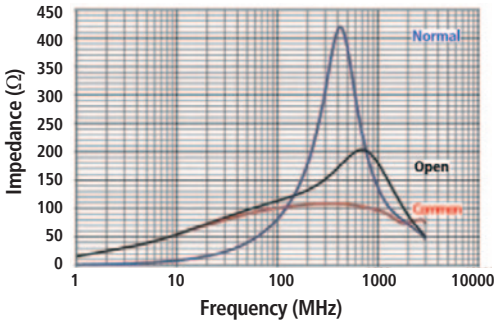
CM5740Z171B-10 CM5740Z171R-10



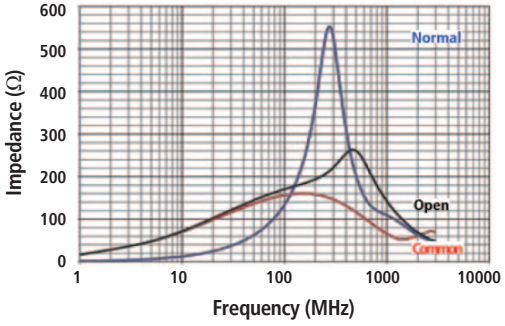
CM4440Z111R-10



CM5441Z101B-10 CM5441Z101B-13

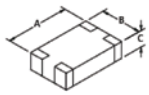
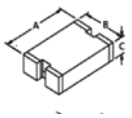
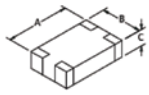
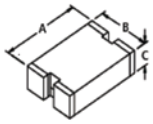
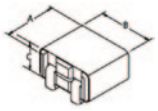


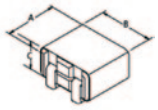
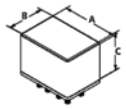
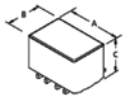
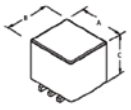
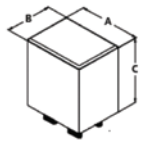
CM5441Z161B-10 CM5441Z161B-13



COMMON MODE CHOKES

DIMENSION

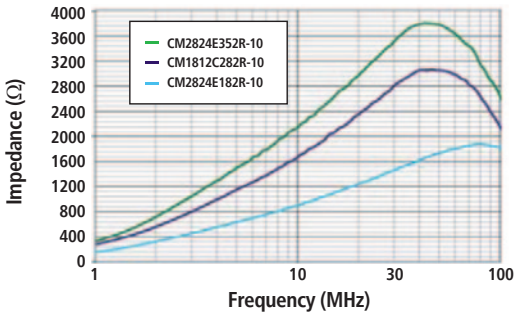
PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
CM1812R600R-10	4.57 (0.180)	3.05 (0.120)	2.36 (0.093)	
CM1812X330R-10	4.57 (0.180)	3.05 (0.120)	1.60 (0.063)	
CM1922X330R-10	4.70 (0.185)	5.60 (0.220)	2.85 (0.112)	
CM3312R111R-10	8.50 (0.335)	3.05 (0.120)	2.36 (0.093)	
CM3322P400R-10	8.50 (0.335)	5.60 (0.220)	2.10 (0.083)	
CM3322U610R-10	8.50 (0.335)	5.60 (0.220)	2.10 (0.083)	
CM3322X630R-10	8.50 (0.335)	5.60 (0.220)	2.85 (0.112)	
CM2021Y330R-10	5.00 (0.197)	5.60 (0.220)	2.85 (0.112)	

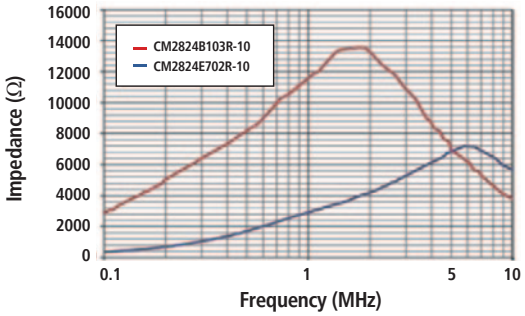
PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
CM3421Y600R-10	8.68 (0.342)	5.60 (0.220)	2.85 (0.112)	
CM3440Z171B-10	8.51 (0.335)	10.03 (0.395)	9.32 (0.367)	
CM3440Z171R-10	8.51 (0.335)	10.03 (0.395)	9.32 (0.367)	
CM5740Z171B-10	14.48 (0.570)	10.03 (0.395)	9.32 (0.367)	
CM5740Z171R-10	14.48 (0.570)	10.03 (0.395)	9.32 (0.367)	
CM4440Z111R-10	11.05 (0.435)	10.03 (0.395)	9.32 (0.367)	
CM5441Z101B-10	13.72 (0.540)	10.41 (0.410)	10.52 (0.414)	
CM5441Z161B-10	13.72 (0.540)	10.41 (0.410)	15.24 (0.600)	

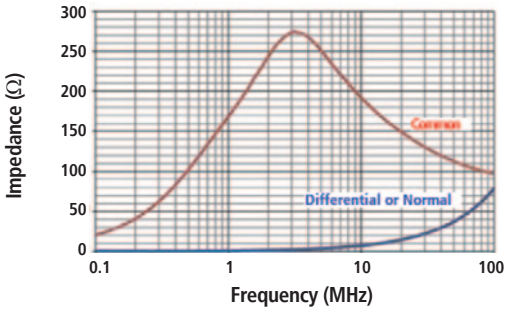
LOW FREQUENCY
COMMON MODE CHOKES

APPLICATION	TYPE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) (mA)
			Z @ 1 MHZ	Z @ 4 MHZ	Z @ 10 MHZ	Z @ 100 MHZ				
Signal/ Power Line	Surface Mount (For 2 lines)	CM1812C282R-10	370	1100	1900	2800	3500	50	0.5	200
		CM2824B103R-10	10000	8900	3980	400	13200	2	1.3	400
		CM2824E182R-10	200	570	920	1800	1920	80	0.26	800
		CM2824E352R-10	350	1400	2100	3500	3950	45	0.3	800
	Thru-Hole (For 4 lines)	CM2824E702R-10	3000	7000	5800	800	7200	6	0.26	700
		CM5740Z241B-10	170 (2 Turns)	240 (2 Turns)	173 (2 Turns)	100 (2 Turns)	276 (2 Turns)	3 (2 Turns)	0.0013	20,000

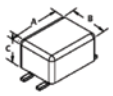
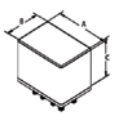
Impedance (Z) versus Frequency







DIMENSION

PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
CM1812C282R-10	5.00 (0.197)	3.50 (0.138)	5.55 (0.140)	
CM2824B103R-10	7.50 (0.295)	5.50 (0.217)	3.80 (0.150)	
CM2824E182R-10	7.50 (0.295)	5.50 (0.217)	3.80 (0.150)	
CM2824E352R-10	7.50 (0.295)	5.50 (0.217)	3.80 (0.150)	
CM2824E702R-10	7.50 (0.295)	5.50 (0.217)	3.80 (0.150)	
CM5740Z241B-10	14.40 (0.570)	10.03 (0.395)	9.32 (0.387)	

COMMON MODE ARRAYS

APPLICATION FOR POWER LINES

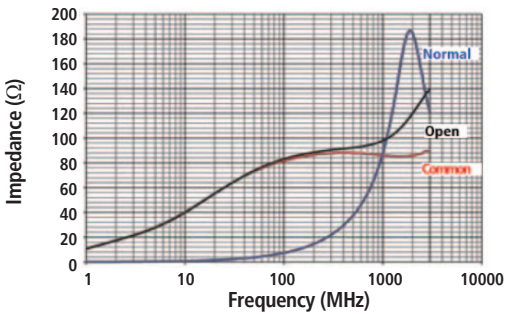
TYPE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) (mA)
		Z @ 25 MHZ	Z @ 100 MHZ	Z @ 500 MHZ	Z @ 1 GHZ				
Surface Mount (For 4 lines)	CM2722R800R-10	60	80	92	98	140	3000	0.02	5,000
	CM2722R151R-10	113	150	165	165	168	1783	0.02	5,000
	CM2722R201R-10	141	200	202	187	206	272	0.02	5,000
Surface Mount (For 6 lines)	CM3822R800R-10	63	80	97	105	151	3000	0.02	5,000
	CM3822R151R-10	108	150	170	169	172	1646	0.02	5,000
	CM3822R201R-10	140	200	207	187	213	218	0.02	5,000
Surface Mount (For 8 lines)	CM5022R800R-10	61	80	95	102	150	3000	0.02	5,000
	CM5022R151R-10	112	150	165	167	177	2092	0.02	5,000
	CM5022R201R-10	144	200	206	188	210	306	0.02	5,000
Surface Mount (For 4 lines)	CM3032V121R-10	80	120	130	140	169	200	0.01	8,000
	CM3032V201R-10	143	200	210	199	214	319	0.01	8,000
	CM3032V301R-10	211	300	280	224	307	214	0.01	8,000
Surface Mount (For 6 lines)	CM4732V201R-10	152	200	218	187	229	241	0.01	8,000
	CM4732V301R-10	217	300	250	172	328	168	0.01	8,000
Surface Mount (For 8 lines)	CM6032V201R-10	140	200	219	213	219	500	0.01	8,000
	CM6032V301R-10	240	300	258	170	346	149	0.01	8,000
Thru-Hole (For 2 lines)	CM2545X171B-10	108	170	210	180	210	500	0.01	10,000
Surface Mount (For 2 lines)	CM2545X171R-10	108	170	210	180	210	500	0.01	10,000
Thru-Hole (For 4 lines)	CM4545Z131B-10	65	130	267	256	288	682	0.01	10,000
Surface Mount (For 4 lines)	CM4545Z131R-10	65	130	267	256	288	682	0.01	10,000

PART NUMBER	# OF CHOKES	TYPICAL IMPEDANCE (Ω) FOR MULTIPLE PASS BOARD LAYOUT OPTIONS											
		ONE PASS			TWO PASS			THREE PASS			FOUR PASS		
		100 MHZ	500 MHZ	1 GHZ	100 MHZ	500 MHZ	1 GHZ	100 MHZ	500 MHZ	1 GHZ	100 MHZ	500 MHZ	1 GHZ
CM2722R800R-10	2	80	92	98	174	190	173	-	-	-	-	-	-
CM2722R151R-10	2	150	165	165	292	311	222	-	-	-	-	-	-
CM2722R201R-10	2	200	202	187	433	362	187	-	-	-	-	-	-
CM3822R800R-10	3	80	97	105	174	190	173	304	334	257	-	-	-
CM3822R151R-10	3	150	170	169	292	311	222	490	448	226	-	-	-
CM3822R201R-10	3	200	207	187	433	362	187	670	470	208	-	-	-
CM5022R800R-10	4	80	95	102	174	190	173	304	334	257	389	446	283
CM5022R151R-10	4	150	165	167	292	311	222	490	448	226	674	535	229
CM5022R201R-10	4	200	206	188	433	362	187	670	470	208	945	499	212
CM3032V121R-10	2	120	130	140	266	284	241	-	-	-	-	-	-
CM3032V201R-10	2	200	210	199	432	300	175	-	-	-	-	-	-
CM3032V301R-10	2	300	280	224	631	251	156	-	-	-	-	-	-
CM4732V201R-10	3	200	218	187	491	317	182	771	331	194	-	-	-
CM4732V301R-10	3	300	250	172	684	258	156	967	278	172	-	-	-
CM6032V201R-10	4	200	219	213	472	313	179	737	315	193	995	358	250
CM6032V301R-10	4	300	258	170	681	266	161	926	273	167	1075	317	300

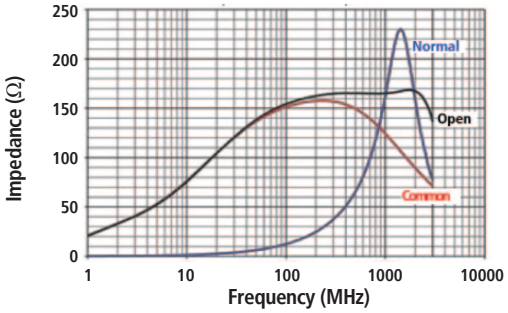
COMMON MODE ARRAYS

Part Impedence

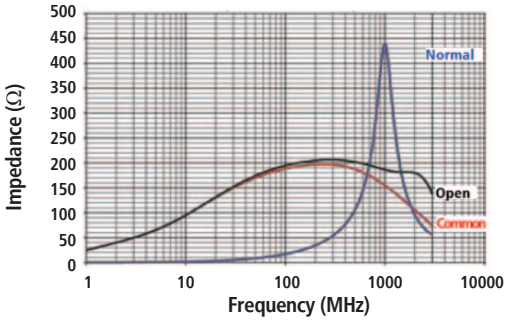
CM2722R800R-10, CM3822R800R-10, CM5022R800R-10



CM2722R151R-10M, CM3822R151R-10, CM5022R151R-10

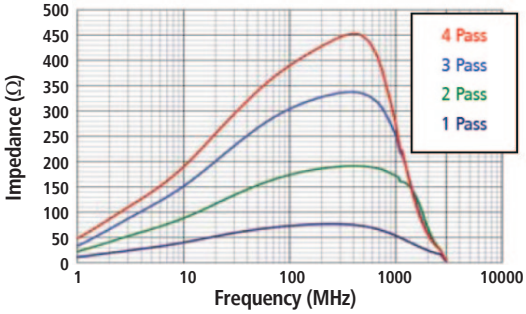


CM2722R201R-10, CM3822R201R-10, CM5022R201R-10

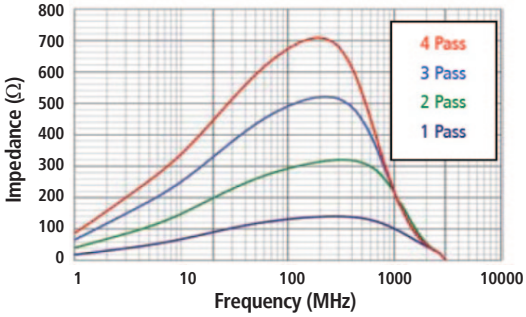


Multi-Pass Impedence (for multiple pass board layout options)

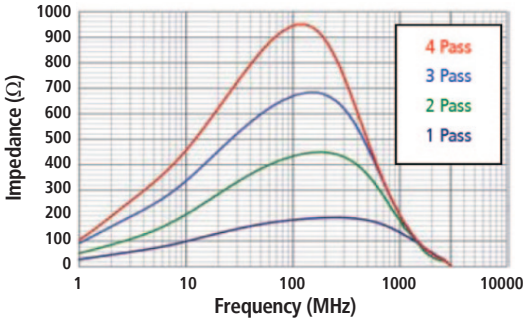
CM2722R800R-10, CM3822R800R-10, CM5022R800R-10



CM2722R151R-10M, CM3822R151R-10, CM5022R151R-10



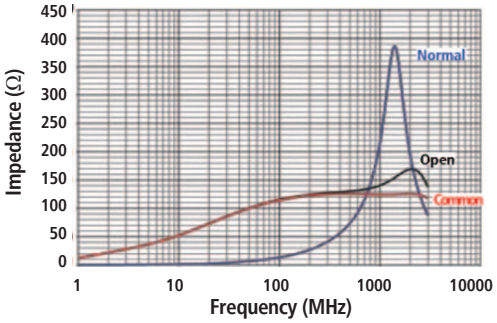
CM2722R201R-10, CM3822R201R-10, CM5022R201R-10



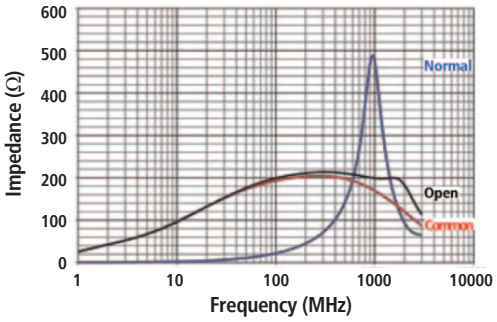
COMMON MODE ARRAYS

Part Impedence

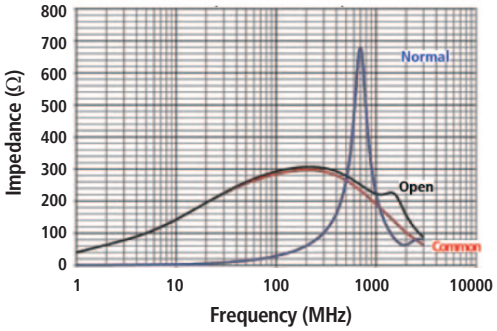
CM3032V121R-10



CM3032V201R-10, CM4732V201R-10, CM6032V201R-10

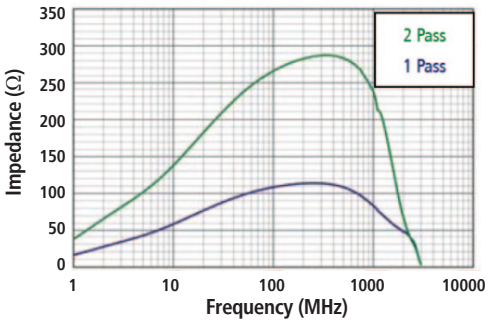


CM3032V301R-10, CM4732V301R-10, CM6032V301R-10

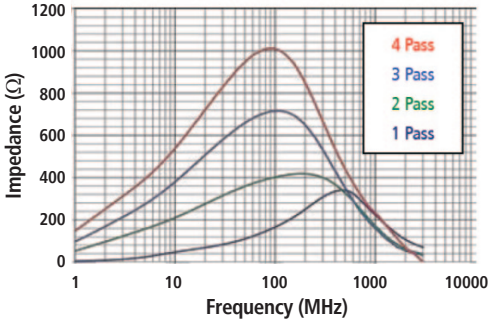


Multi-Pass Impedence (for multiple pass board layout options)

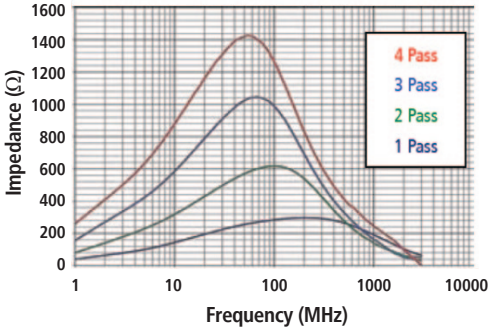
CM3032V121R-10



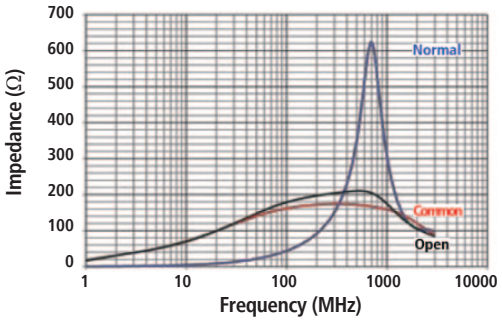
CM3032V201R-10, CM4732V201R-10, CM6032V201R-10



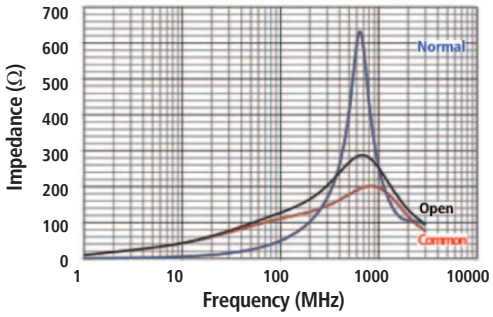
CM3032V301R-10, CM4732V301R-10, CM6032V301R-10



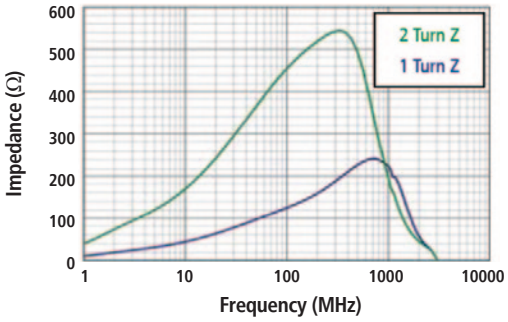
CM2545X171B-10, CM2545X171R-10



CM4545X131B-10, CM4545X131R-10

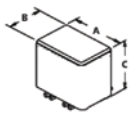
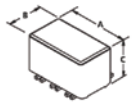
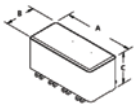
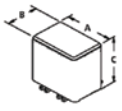


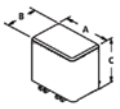
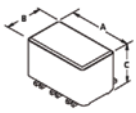
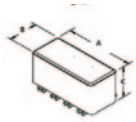
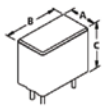
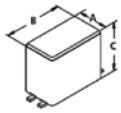
CM4545X131B-10, CM4545X131R-10,
Multi-Turn Impedance



COMMON MODE ARRAYS

DIMENSION

PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
CM2722R800R-10	6.99 (0.275)	5.72 (0.225)	4.32 (0.170)	
CM2722R151R-10	6.99 (0.275)	5.72 (0.225)	7.62 (0.300)	
CM2722R201R-10	6.99 (0.275)	5.72 (0.225)	9.53 (0.375)	
CM3822R800R-10	9.78 (0.385)	5.72 (0.225)	4.32 (0.170)	
CM3822R151R-10	9.78 (0.385)	5.72 (0.225)	7.62 (0.300)	
CM3822R201R-10	9.78 (0.385)	5.72 (0.225)	9.53 (0.375)	
CM5022R800R-10	12.57 (0.495)	5.72 (0.225)	4.32 (0.170)	
CM5022R151R-10	12.57 (0.495)	5.72 (0.225)	7.62 (0.300)	
CM5022R201R-10	12.57 (0.495)	5.72 (0.225)	9.53 (0.375)	
CM3032V121R-10	7.62 (0.300)	8.13 (0.320)	5.72 (0.225)	

PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
CM3032V201R-10	7.62 (0.300)	8.13 (0.320)	9.45 (0.372)	
CM3032V301R-10	7.62 (0.300)	8.13 (0.320)	14.48 (0.570)	
CM4732V201R-10	11.94 (0.470)	8.13 (0.320)	9.45 (0.372)	
CM4732V301R-10	11.94 (0.470)	8.13 (0.320)	14.48 (0.570)	
CM6032V201R-10	15.24 (0.600)	8.13 (0.320)	9.45 (0.372)	
CM6032V301R-10	15.24 (0.600)	8.13 (0.320)	14.48 (0.570)	
CM2545X171B-10	6.3 (0.248)	11.38 (0.448)	9.32 (0.367)	
CM2545X171R-10	6.3 (0.248)	11.38 (0.448)	9.32 (0.367)	
CM4545Z131B-10	11.38 (0.448)	11.38 (0.448)	9.32 (0.367)	
CM4545Z131R-11	11.38 (0.448)	11.38 (0.448)	9.32 (0.367)	

CAN-BUS COMMON MODE CHOKE SERIES

FEATURES

- Accurate current matching capability over a broad range of inductance values
- Sector wound coils at 25 & 51 µH to filter differential mode noise from the data signal.
- Low distortion
- Custom designs possible
- Open bottom case construction
- Small (1812) size parts are so available
- Surface Mount

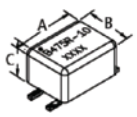
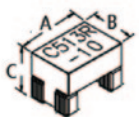
RoHS

HIGH SPEED SERIAL INTERFACE COMMON MODE CHOKE

TYPE	PART NUMBER	Lp IMPEDANCE (µH)				PEAK IMPEDANCE (Z)	L LEAKAGE (µH)	HI-POT (VAC) 0.5 mA 2 SEC	DCR TYPICAL (Ω)	Idc (mA)
		TEST CONDITION	MIN	NOM	MAX					
Surface Mount (For 2 lines)	CC1812C513R-10*	100 KHz / 50mV	35.7	51	66.3	3500 @40 MHz	2.6	250	0.5	200
	CC2824J502R-10	100 KHz / 50 mV	3.5	5	6.5	400 @ 500 MHz	0.05	250	0.1	1200
	CC2824E113R-10	100 KHz / 50mV	7.7	11	14.3	800 @ 200 MHz	0.05	250	0.12	800
	CC2824E253R-10	100 KHz / 50mV	17.5	25	32.5	2000 @ 100 MHz	1.5	250	0.13	800
	CC2824E513R-10*	100 KHz / 50mV	35	51	66.3	3800 @ 50 MHz	2	250	0.16	800
	CC2824E474R-10	100 KHz / 50mV	329	470	611	8600 @ 5 MHz	0.2	750	0.2	700
	CC2824E105R-10	100 KHz / 50mV	700	1000	1500	4250 @ 7 MHz	0.2	750	0.2	700
	CC2824D225R-10	10 KHz / 50mV	1540	2200	3300	5300 @ 5 MHz	0.25	750	0.4	500
	CC2824B475R-10	10 KHz / 50mV	3290	4700	7050	12300 @ 2 MHz	0.3	750	0.55	400

* Sector Wound

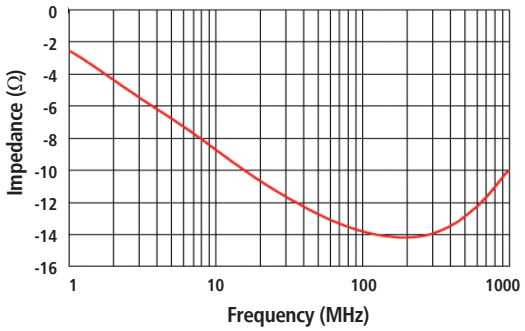
DIMENSION

PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
CC2824	7.50 MAX (0.295 MAX)	5.50 MAX (0.217 MAX)	3.80 MAX (0.150 MAX)	
CC1812	5.00 MAX (0.197 MAX)	3.50 MAX (0.138 MAX)	5.55 MAX (0.140 MAX)	

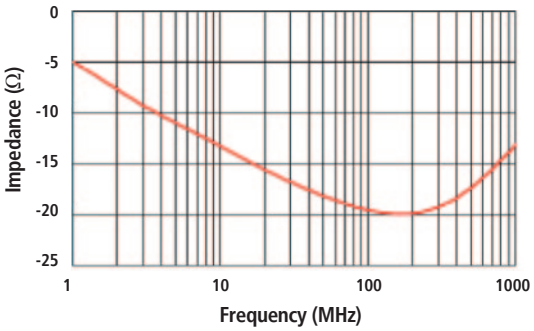
CAN-BUS COMMON MODE CHOKE SERIES

Typical Insertion Loss @ 50 Ω

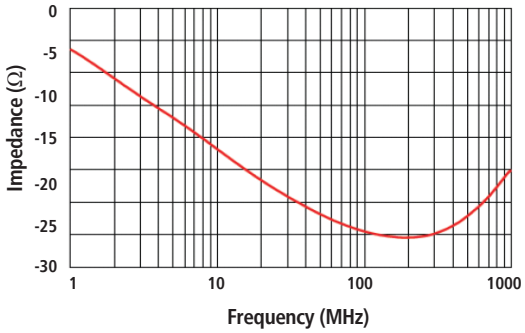
CC2824J502R-10



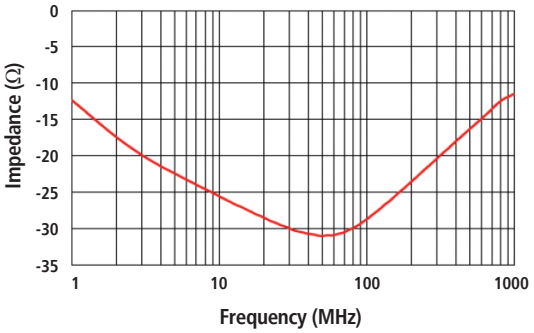
CC2824E113R-10



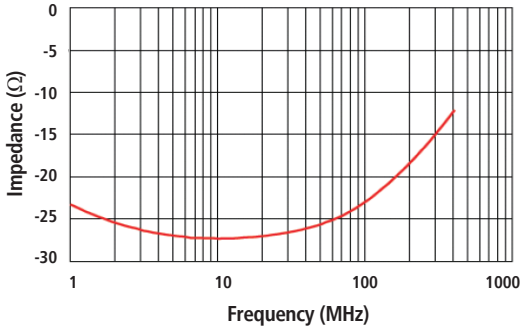
CC2824E253R-10



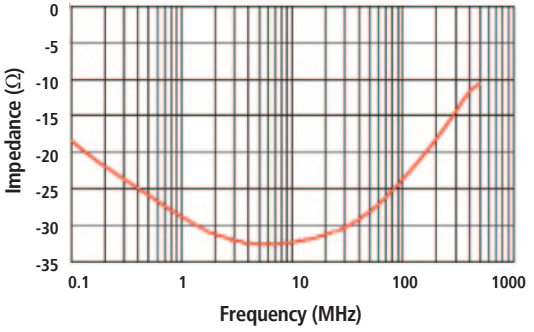
CC1812C513R-10, CC2824E513R-10



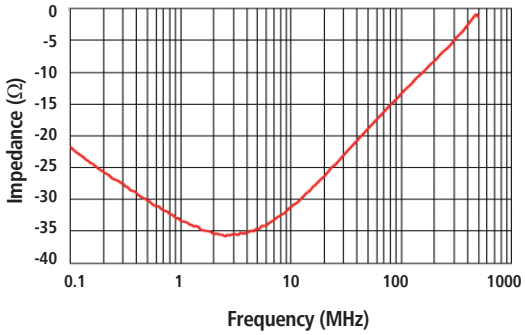
CC2824E471R-10



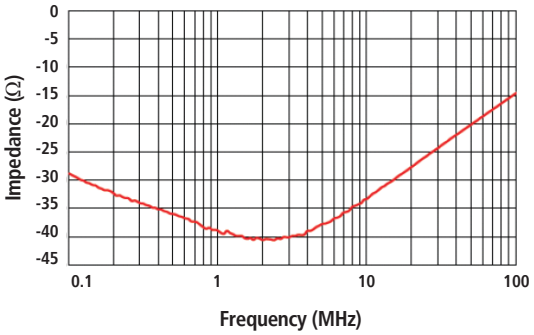
CC2824E105R-10



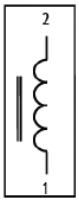
CC2824D225R-10



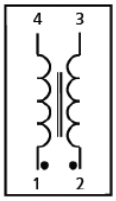
CC2824B475R-10



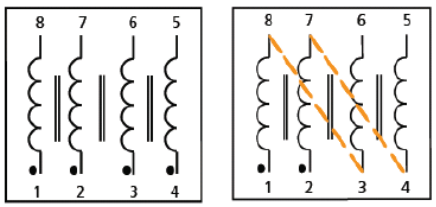
EMI Chip Beads, Chip Inductors



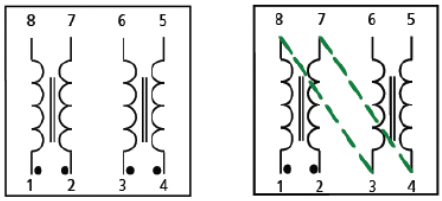
CM Beads, CM 05 / 21 / 40 / 41 / 45, LF CM, Can Bus



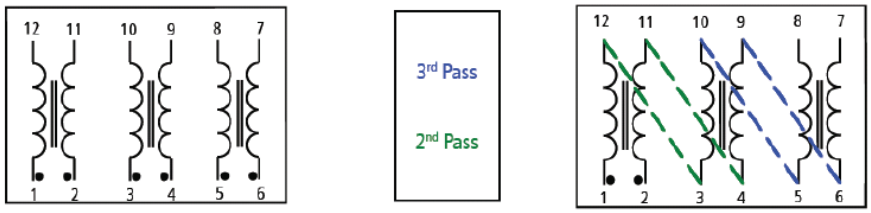
CM5740Z241B-10, CM 45 Array



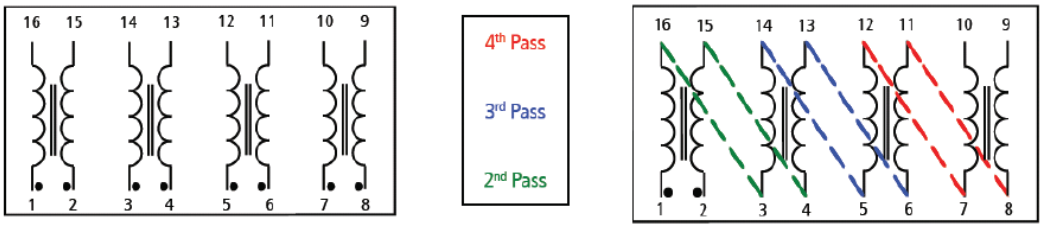
CM22 Array, CM 32 Array, CM 40 Array



CM22 Array, CM 32 Array



CM22 Array, CM 32 Array



EXPLANATION OF PASSES & TURNS

Multi-choke arrays can be electrically connected in the PC board to increase effective impedance. When the PCB circuits are configured, as shown above, such that individual side-by-side chokes within one array part are connected in series, the impedance is increased by a factor of the number of passes through the part. Since internal construction of Laird Technologies ferrite common mode chokes varies, Laird Technologies refers to this special installation configuration using the different terms of "pass" (additive) or "turn" (multiplicative).

When the term "pass" is used to describe series connections through a choke, each additional pass increases the impedance (Z) in proportion to the number of series PCB connections applied. Each additional "pass" adds a choke in series. If needed, it's an optional effective method of increasing impedance with an array.

When the term "turn" is used to describe series connection through a choke, each additional turn increases the impedance in proportion to the square of the number of series PCB connections applied. Each turn multiplies impedance.

Parts have no polarity.

COMMON MODE CHOKE SERIES

SORTED BY IMPEDANCE @ 100 MHZ OR 4 MHZ

PART NUMBER	TYPICAL Z Ω @ 25 MHZ	NOMINAL Z Ω @ 100 MHZ	TYPICAL Z Ω @ 500 MHZ	TYPICAL Z Ω @ 1 GHZ	TYPICAL PEAK IMPEDANCE (Ω)	TYPICAL PEAK IMPEDANCE FREQ. (MHZ)	DCR MAX (Ω)	RATED CONTINUOUS CURRENT (mA)	A (mm) LENGTH	B (mm) WIDTH	C (mm) HEIGHT
CM1812X330R-10	18	33	62	74	88	2359	0.003	10,000	4.57	3.05	1.60
CM1922X330R-10	14	33	64	86	93	1783	0.003	10,000	4.70	5.60	2.85
CM2021Y330R-10	18	33	52	61	62	1100	0.001	15,000	5.60	2.85	5.00
CM3322P400R-10	13	0	121	185	251	1931	0.03	4,000	8.50	5.60	2.10
CM1812R600R-10	22	60	112	138	146	1519	0.001	5,000	4.75	3.05	2.36
CM3421Y600R-10	39	60	96	110	110	1000	0.001	15,000	5.60	2.85	8.68
CM3322U610R-10	26	61	123	170	191	1581	0.009	7,000	8.50	5.60	2.10
CM3322X630R-10	26	63	114	152	165	1459	0.008	10,000	8.50	5.60	2.85
CF0805D670R-10	24	67	196	98	166	510	0.4	400	2.00	1.25	1.00
CM2722R800R-10	60	80	92	98	140	3000	0.02	5,000	6.99	5.72	4.32
CM3822R800R-10	64	80	97	105	151	3000	0.02	5,000	9.78	5.72	4.32
CM5022R800R-10	61	80	95	102	150	3000	0.02	5,000	12.57	5.72	4.32
CF0504C900R-10	28	90	210	148	217	583	0.6	300	1.25	1.00	0.82
CF0805D900R-10	32	90	210	106	220	435	0.4	400	2.00	1.25	1.00
CM0805D900R-10	24	90	340	435	445	1405	0.3	400	2.00	1.20	1.20
CH0805D900R-10	48	90	249	339	494	2000	0.3	400	2.00	1.20	1.20
CM5441Z101B-10	79	100	188	183	204	682	0.0008	75,000	13.72	10.41	10.52
CM5441Z101B-13	79	100	188	183	204	682	0.0008	75,000	13.72	10.41	10.52
CM4440Z111R-10	79	110	122	177	122	500	0.001	20,000	11.05	10.03	9.32
CM3312R111R-10	44	110	168	165	170	800	0.005	5,000	8.50	3.05	2.36
CF0504C121R-10	33	120	250	145	250	500	0.6	300	1.25	1.00	0.82
CF0805D121R-10	36	120	240	103	260	397	0.4	400	2.00	1.25	1.00
CM3032V121R-10	80	120	130	140	169	2010	0.01	8,000	7.62	8.13	5.72
CM4545Z131B-10	65	130	267	256	288	682	0.01	10,000	11.38	11.38	9.32
CM4545Z131R-10	65	130	267	256	288	682	0.01	10,000	11.38	11.38	9.32
CM5022R151R-10	113	150	165	167	177	2092	0.02	5,000	12.57	5.72	7.62
CM2722R151R-10	113	150	165	165	168	1783	0.02	5,000	6.99	5.72	7.62
CM3822R151R-10	107	150	170	169	172	1646	0.02	5,000	9.78	5.72	7.62
CM0805C161R-10	49	160	540	684	684	1000	0.35	300	2.00	1.20	1.20
CM5441Z161B-10	112	160	261	146	263	457	0.0008	75,000	13.72	10.41	15.24
CM5441Z161R-13	112	160	261	146	263	457	0.0008	75,000	13.72	10.41	15.24
CM3440Z171B-10	116	170	189	202	202	1000	0.001	20,000	8.51	10.03	9.32
CM3440Z171R-10	116	170	189	202	202	1000	0.001	20,000	8.51	10.03	9.32
CM5740Z171B-10	114	170	189	202	202	1000	0.001	20,000	14.48	10.03	9.32
CM5740Z171R-10	114	170	189	202	202	1000	0.001	20,000	14.48	10.03	9.32
CM2545X171B-10	108	170	210	180	210	500	0.01	10,000	6.30	11.38	9.32
CM2545X171R-10	108	170	210	180	210	500	0.01	10,000	6.30	11.38	9.32
CF0805D181R-10	48	180	123	42	277	210	0.5	400	2.00	1.25	1.00
CM6032V201R-10	140	200	219	213	219	500	0.01	8,000	15.24	8.13	9.45
CM3032V201R-10	143	200	210	199	214	319	0.01	8,000	7.62	8.13	9.45
CM5022R201R-10	142	200	206	188	210	306	0.02	5,000	12.57	5.72	9.53
CM2722R201R-10	142	200	202	187	206	272	0.02	5,000	6.99	5.72	9.53
CM4732V201R-10	152	200	218	187	229	241	0.01	8,000	11.94	8.13	9.45
CM3822R201R-10	141	200	207	187	213	218	0.02	5,000	9.78	5.72	9.53
CF0805C221R-10	50	220	109	33	296	180	0.5	300	2.00	1.25	1.00
CM0805C221R-10	57	220	570	720	724	1147	0.4	300	2.00	1.20	1.20
CM3032V301R-10	211	300	280	224	307	214	0.01	8,000	7.62	8.13	14.48
CM4732V301R-10	217	300	250	172	328	168	0.01	8,000	11.94	8.13	14.48
CM6032V301R-10	240	300	258	170	346	149	0.01	8,000	15.24	8.13	14.48
CM0805A371R-10	186	370	730	878	878	1000	0.5	100	2.00	1.20	1.20
Low Frequency Parts	@ 1 MHz	@ MHz	@ 10 MHz	@ 25 MHz	(Ohms)	(MHz)	(Ohms)	(mA)	(mm)	(mm)	(mm)
CM5740Z241B-10	170 (2 Turns)	240 (2 Turns)	173 (2 Turns)	140 (2 Turns)	276 (2 Turns)	3 (2 Turns)	0.001	20,000	14.48	10.03	9.32
CM2824E182R-10	200	570	920	1400	1920	80	0.26	800	7.50	5.50	3.80
CM1812C282R-10	370	1100	1900	2700	3500	50	0.5	200	5.00	3.50	5.55
CM2824E352R-10	350	1400	2100	3200	3950	45	0.3	800	7.50	5.50	3.80
CM2824E702R-10	3000	7000	5800	4800	7200	6	0.26	700	7.50	5.50	3.80
CM2824B103R-10	10000	8900	3980	1800	13200	2	1.3	400	7.50	5.50	3.80

COMMON MODE CHOKE SERIES

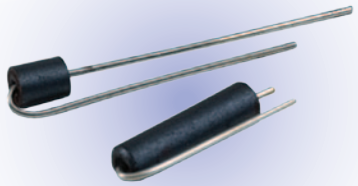
SORTED BY RATED CURRENT (AT CONTINUOUS OPERATION)

PART NUMBER	TYPICAL Z Ω @ 25 MHZ	NOMINAL Z Ω @ 100 MHZ	TYPICAL Z Ω @ 500 MHZ	TYPICAL Z Ω @ 1 GHZ	TYPICAL PEAK IMPEDANCE (Ω)	TYPICAL PEAK IMPEDANCE FREQ. (MHZ)	DCR MAX (Ω)	RATED CONTINUOUS CURRENT (mA)	A (mm) LENGTH	B (mm) WIDTH	C (mm) HEIGHT
CM0805A371R-10	186	370	730	878	878	1,000	0.5	100	2.00	1.20	1.20
CM0805C161R-10	49	160	540	684	684	1,000	0.35	300	2.00	1.20	1.20
CM0805C221R-10	57	220	570	720	724	1,147	0.4	300	2.00	1.20	1.20
CF0504C900R-10	28	90	210	148	217	583	0.6	300	1.25	1.00	0.82
CF0504C121R-10	33	120	250	145	250	500	0.6	300	1.25	1.00	0.82
CF0805C221R-10	50	220	109	33	296	180	0.5	300	2.00	1.25	1.00
CF0805D670R-10	24	67	196	98	166	510	0.4	400	2.00	1.25	1.00
CF0805D900R-10	32	90	210	106	220	435	0.4	400	2.00	1.25	1.00
CF0805D121R-10	36	120	240	103	260	397	0.4	400	2.00	1.25	1.00
CF0805D181R-10	48	180	123	42	277	210	0.5	400	2.00	1.25	1.00
CH0805D900R-10	48	90	249	339	494	2000	0.3	400	2.00	1.20	1.20
CM0805D900R-10	24	90	340	435	445	1,405	0.3	400	2.00	1.20	1.20
CM3322P400R-10	13	40	121	185	251	1,931	0.03	5000	8.50	5.60	2.10
CM1812R600R-10	22	60	112	138	146	1,519	0.001	5,000	4.75	3.05	2.36
CM2722R151R-10	113	150	165	165	168	1,783	0.02	5,000	6.99	5.72	7.62
CM2722R201R-10	142	200	202	187	206	272	0.02	5,000	6.99	5.72	9.53
CM2722R800R-10	60	80	92	98	140	3,000	0.02	5,000	6.99	5.72	4.32
CM3312R111R-10	44	110	168	165	170	800	0.005	5,000	8.50	3.05	2.36
CM3822R151R-10	107	150	170	169	172	1,646	0.02	5,000	9.78	5.72	7.62
CM3822R201R-10	141	200	207	187	213	218	0.02	5,000	9.78	5.72	9.53
CM3822R800R-10	64	80	97	105	151	3,000	0.02	5,000	9.78	5.72	4.32
CM5022R151R-10	113	150	165	167	177	2,092	0.02	5,000	12.57	5.72	7.62
CM5022R201R-10	142	200	206	188	210	306	0.02	5,000	12.57	5.72	9.53
CM5022R800R-10	61	80	95	102	150	3,000	0.02	5,000	12.57	5.72	4.32
CM3322U610R-10	26	61	123	170	191	1,581	0.009	7,000	8.50	5.60	2.10
CM3032V121R-10	80	120	130	140	169	2,010	0.01	8,000	7.62	8.13	5.72
CM3032V201R-10	143	200	210	199	214	319	0.01	8,000	7.62	8.13	9.45
CM3032V301R-10	211	300	280	224	307	214	0.01	8,000	7.62	8.13	14.48
CM4732V201R-10	152	200	218	187	229	241	0.01	8,000	11.94	8.13	9.45
CM4732V301R-10	217	300	250	172	328	168	0.01	8,000	11.94	8.13	14.48
CM6032V201R-10	140	200	219	213	219	500	0.01	8,000	15.24	8.13	9.45
CM6032V301R-10	240	300	258	170	346	149	0.01	8,000	15.24	8.13	14.48
CM1812X330R-10	18	33	62	74	88	2,359	0.003	10,000	4.57	3.05	1.60
CM1922X330R-10	14	33	64	86	93	1,783	0.003	10,000	4.70	5.60	2.85
CM2545X171B-10	108	170	210	180	210	500	0.01	10,000	6.30	11.38	9.32
CM2545X171R-10	108	170	210	180	210	500	0.01	10,000	6.30	11.38	9.32
CM3322X630R-10	26	63	114	152	165	1,459	0.008	10,000	8.50	5.60	2.85
CM4545Z131B-10	65	130	267	256	288	682	0.01	10,000	11.38	11.38	9.32
CM4545Z131R-10	65	130	267	256	288	682	0.01	10,000	11.38	11.38	9.32
CM2021Y330R-10	18	33	52	61	62	1,100	0.001	15,000	5.60	2.85	5.00
CM3421Y600R-10	39	60	96	110	110	1,000	0.001	15,000	5.60	2.85	8.68
CM3440Z171B-10	116	170	189	202	202	1,000	0.001	20,000	8.51	10.03	9.32
CM3440Z171R-10	116	170	189	202	202	1,000	0.001	20,000	8.51	10.03	9.32
CM4440Z111R-10	79	110	122	117	122	500	0.001	20,000	11.05	10.03	9.32
CM5740Z171B-10	114	170	189	202	202	1,000	0.001	20,000	14.48	10.03	9.32
CM5740Z171R-10	114	170	189	202	202	1,000	0.001	20,000	14.48	10.03	9.32
CM5441Z101B-10	79	100	188	183	204	682	0.0008	75,000	13.72	10.41	10.52
CM5441Z101B-13	79	100	188	183	204	682	0.0008	75,000	13.72	10.41	10.52
CM5441Z161B-10	112	160	261	146	263	457	0.0008	75,000	13.72	10.41	15.24
CM5441Z161B-13	112	160	261	146	263	457	0.0008	75,000	13.72	10.41	15.24
Low Frequency Parts	@ 1 MHz	@ MHz	@ 10 MHz	@ 25 MHz	(Ohms)	(MHz)	(Ohms)	(mA)	(mm)	(mm)	(mm)
CM1812C282R-10	370	1,100	1,900	2,700	3,500	50	0.5	200	5.00	3.50	5.55
CM2824B103R-10	10,000	8,900	3,980	1,800	13,200	2	1.3	400	7.50	5.50	3.80
CM2824E702R-10	3,000	7,000	5,800	4,800	7,200	6	0.26	700	7.50	5.50	3.80
CM2824E182R-10	200	570	920	1,400	1,920	80	0.26	800	7.50	5.50	3.80
CM2824E352R-10	350	1,400	2,100	3,200	3,950	45	0.3	800	7.50	5.50	3.80
CM5740Z241B-10	170 (2 Turns)	240 (2 Turns)	173 (2 Turns)	140 (2 Turns)	276 (2 Turns)	3 (2 Turns)	0.001	20,000	14.48	10.03	9.32

DIFFERENTIAL MODE EMI FILTERS

FEATURES

- Differential mode EMI filter, high current, thru-hole type
- Up to 5 Amps continuous operation current
- Low DCR
- For power lines application for LCD-TV, automotive, telecom, test equipment etc.



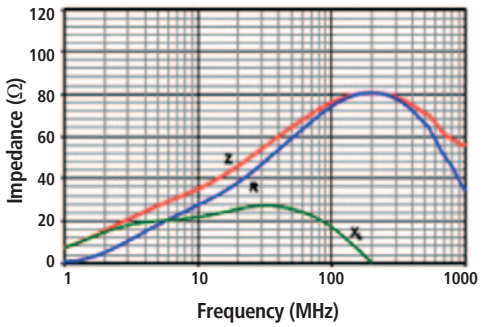
RoHS

PART NUMBERING SYSTEM

28	L	0138	-1	0	R	-10
Material Code	Product Code	EIA Size Code	Stated Dimension Code	Additional Description	Packing Code	Additional Description

TYPE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHz	Z @ 100 MHz	Z @ 500 MHz	Z @ 1 GHz				
Power Line Thru-Hole (Single Turn)	28L0138-10R-10	45	75	70	55	80	200	0.01	5,000
	28L0138-40R-10	99	135	180	80	138	200	0.01	5,000
	28L0138-50R-10	92	153	152	111	161	150	0.01	5,000
	28L0138-70R-10	123	220	180	110	220	100	0.01	5,000
	28L0138-80R-10	48	86	78	57	85	100	0.01	5,000
Power Line Thru-Hole (Multiple Turns)	28C0236-0BS-10	500	835	480	220	846	156	0.01	5,000
	28C0236-0BW-10	500	835	480	220	846	156	0.01	5,000
	28C0236-0DW-10	260	460	478	360	498	300	0.01	5,000
	28C0236-0EW-10	620	998	484	205	1010	140	0.01	5,000
	28C0236-0JW-10	620	998	484	205	1010	140	0.01	5,000

28L0138-10R-10



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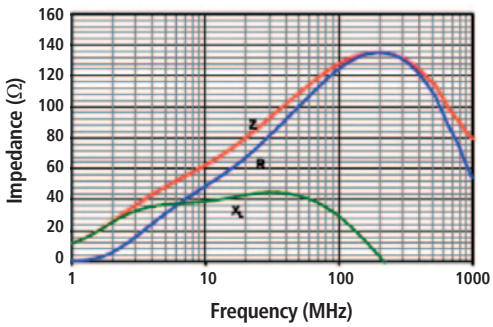
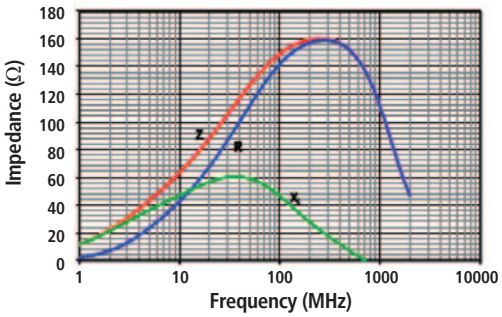


DIFFERENTIAL MODE EMI
FILTERS

28L0138-50R-10



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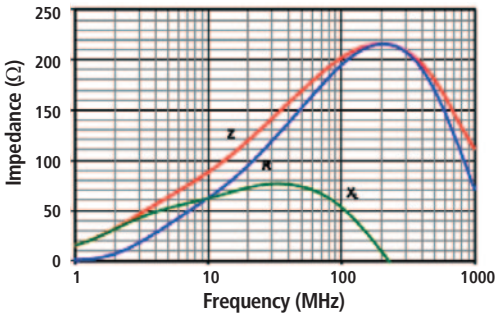
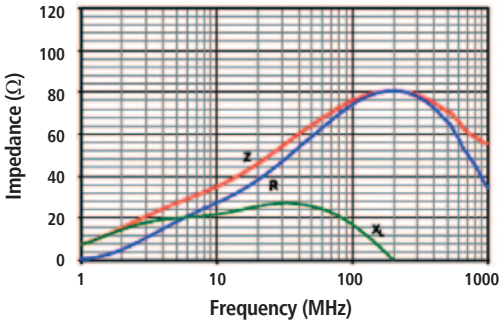


28L0138-80R-10



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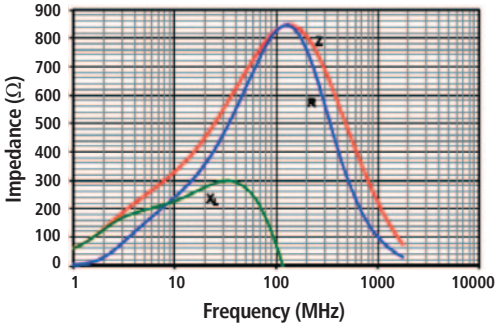

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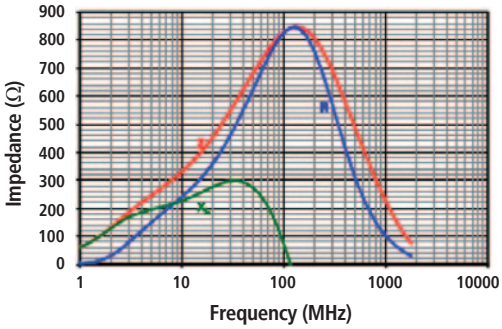
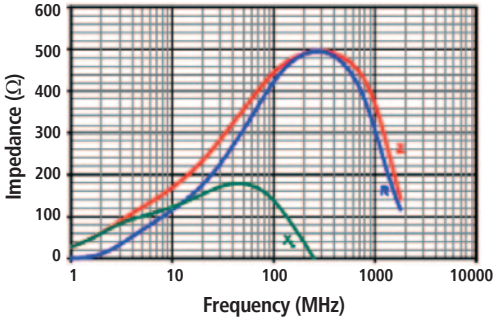
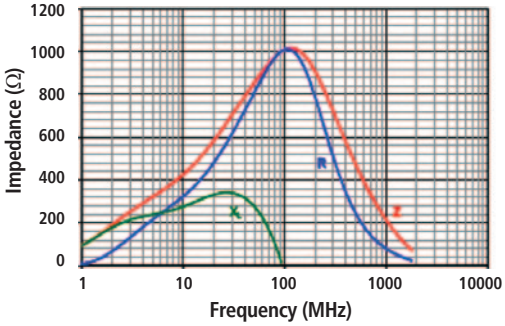


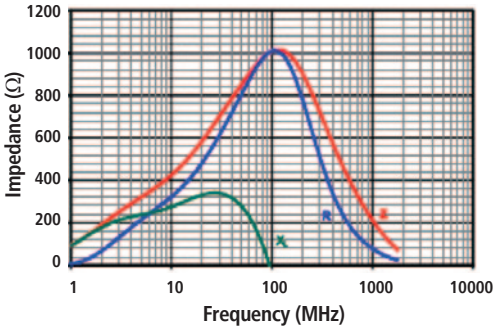
28C0236-0DW-10



28C0236-0EW-10

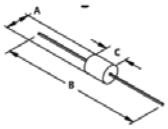


28C0236-0JW-10

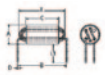
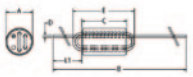
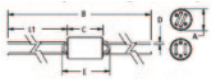
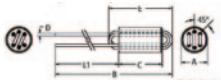
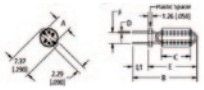


DIFFERENTIAL MODE EMI FILTERS

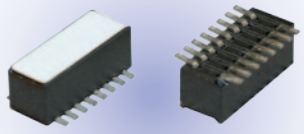
DIMENSION

PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
28L0138-10R-10	3.51 (0.138)	59.00 (2.323)	4.45 (0.175)	
28L0138-40R-10	3.51 (0.138)	59.00 (2.323)	8.89 (0.350)	
28L0138-50R-10	3.51 (0.138)	59.00 (2.323)	9.53 (0.375)	
28L0138-70R-10	3.51 (0.138)	59.00 (2.323)	13.97 (0.550)	
28L0138-80R-10	3.51 (0.138)	59.00 (2.323)	5.23 (0.206)	

DIMENSION

PART NUMBER	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	D mm (INCHES)	E mm (INCHES)	F mm (INCHES)	L1 mm (INCHES)	
28C0236-0BS-10	6.00 (0.236)	14.99 (0.590)	10.00 (0.394)	0.51 (0.020)	14.61 (0.575)	-	5.99 (0.236)	
28C0236-0BW-10	6.00 (0.236)	86.46 (3.404)	10.00 (0.394)	0.51 (0.020)	14.61 (0.575)	-	38.10 (1.500)	
28C0236-0DW-10	6.00 (0.236)	86.46 (3.404)	10.00 (0.394)	0.51 (0.020)	14.61 (0.575)	-	38.23 (1.505)	
28C0236-0EW-10	6.00 (0.236)	50.53 (1.989)	10.00 (0.394)	0.51 (0.020)	14.61 (0.575)	-	38.10 (1.500)	
28C0236-0JW-10	6.00 (0.236)	20.96 (0.825)	10.00 (0.394)	0.51 (0.020)	15.90 (0.626)	5.08 (0.200)	5.08 (0.200)	

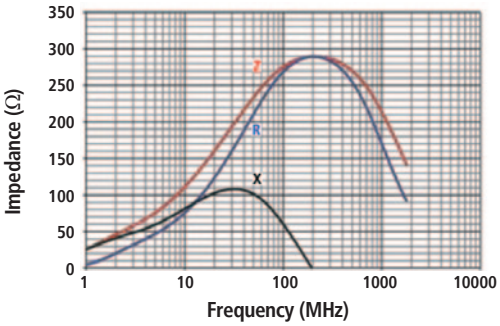
EMI FILTER ARRAYS



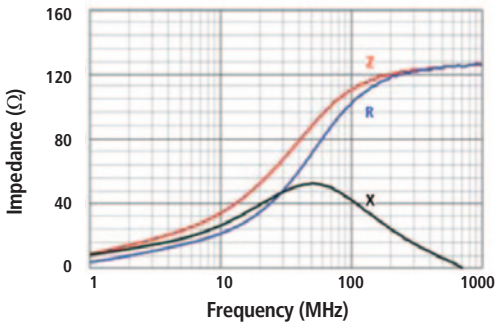
POWER LINE

TYPE	PART NUMBER	TYPICAL IMPEDANCE (Ω)				TYPICAL PEAK IMPEDANCE (Ω)	PEAK IMPEDANCE FREQUENCY (MHZ)	DCR MAX (Ω)	RATED I MAX (CONTINUOUS) mA
		Z @ 25 MHz	Z @ 100 MHz	Z @ 500 MHz	Z @ 1 GHz				
Thru-Hole (3 lines)	29F0303-0T0-10	180	266	278	215	288	200	0.01	8,000
Surface Mount (3 lines)	29F0318-1SR-10	70	119	119	118	119	500	0.01	6,000
Thru-Hole (3 lines)	29F0328-0T0-10	232	342	418	360	420	350	0.01	10,000
Surface Mount (3 lines)	29F0330-2SR-10	125	200	201	160	210	300	0.01	9,000
Surface Mount (4 lines)	29F0418-0SR-10	48	80	80	70	83	300	0.01	6,000
Surface Mount (4 lines)	29F0418-1SR-10	70	119	119	118	119	500	0.01	6,000
Thru-Hole (4 lines)	29F0428-0T0-10	225	342	390	350	400	300	0.01	10,000
Thru-Hole (4 lines)	29F0429-0T0-10	180	245	270	211	280	200	0.01	8,000
Surface Mount (4 lines)	29F0430-2SR-10	120	200	230	225	235	800	0.01	8,000
Surface Mount (4 lines)	29F0430-4SR-10	175	290	268	209	300	200	0.01	9,000
Thru-Hole (5 lines)	29F0528-0T0-10	232	342	418	360	420	350	0.01	10,000
Surface Mount (8 lines)	29F0818-0SR-10	48	75	80	70	83	370	0.01	6,000
Surface Mount (8 lines)	29F0818-1SR-10	70	119	119	118	119	500	0.01	6,000

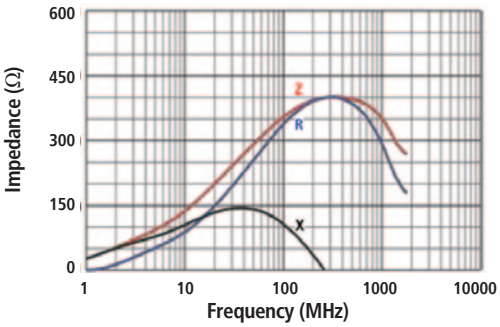
29F0303-0T0-10



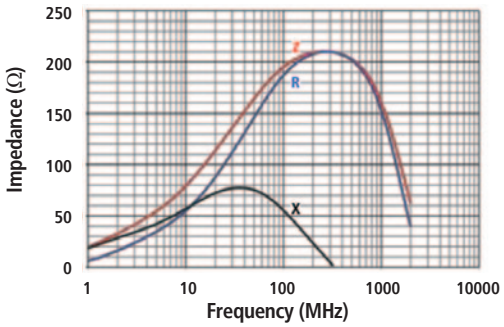
29F0318-1SR-10



29F0328-0T0-10, 29F0528-0T0-10

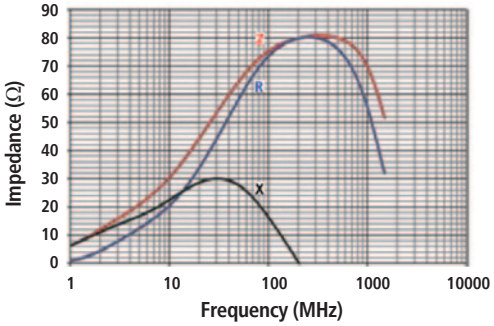


29F0330-2SR-10

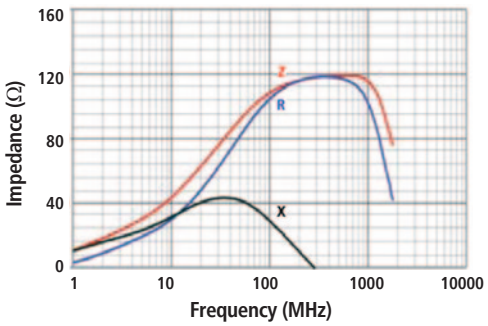


EMI FILTER
ARRAYS

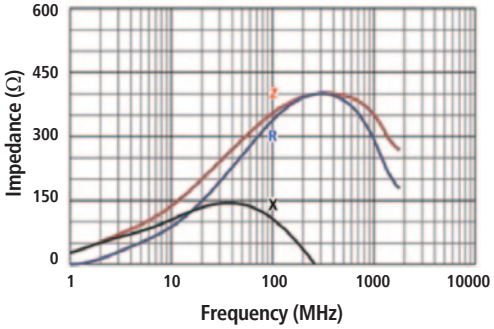
29F0418-0SR-10, 29F0818-0SR-10



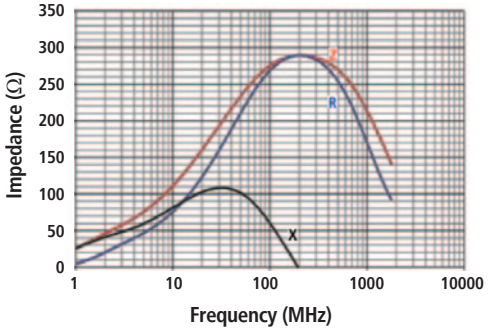
29F0418-1SR-10, 29F0818-1SR-10



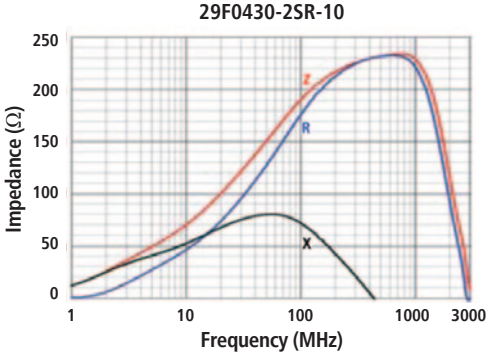
29F0428-0T0-10



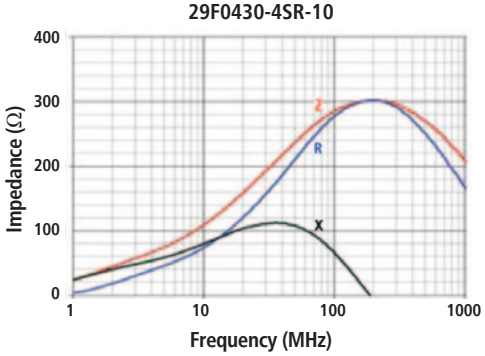
29F0429-0T0-10



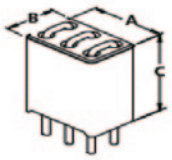
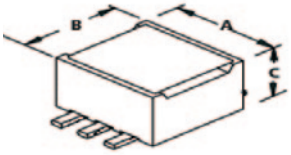
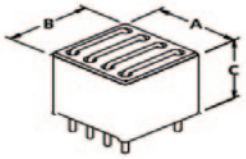
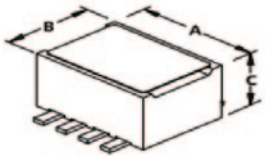
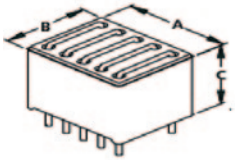
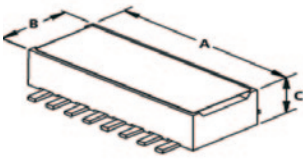
29F0430-2SR-10



29F0430-4SR-10



DIMENSION

PART NUMBER		# OF LINES	A mm (INCHES)	B mm (INCHES)	C mm (INCHES)	
29F0303-0T0-10	Thru-hole	3	7.62 (0.300)	5.08 (0.200)	10.44 (0.411)	
29F0328-0T0-10		3	8.34 (0.328)	10.88 (0.428)	10.57 (0.416)	
29F0318-1SR-10	Surface-Mount	3	4.83 (0.190)	4.50 (0.177)	4.19 (0.165)	
29F0330-2SR-10		3	8.33 (0.328)	10.87 (0.428)	6.35 (0.250)	
29F0428-0T0-10	Thru-hole	4	10.88 (0.428)	10.88 (0.428)	10.57 (0.416)	
29F0429-0T0-10		4	10.88 (0.428)	5.49 (0.216)	10.44 (0.411)	
29F0418-0SR-10	Surface-Mount	4	6.10 (0.240)	4.50 (0.177)	2.92 (0.115)	
29F0418-1SR-10		4	6.10 (0.240)	4.50 (0.177)	4.19 (0.165)	
29F0430-2SR-10		4	10.87 (0.428)	10.87 (0.428)	6.35 (0.250)	
29F0430-4SR-10		4	10.87 (0.428)	10.87 (0.428)	8.89 (0.350)	
29F0528-0T0-10	Thru-hole	5	13.42 (0.528)	10.88 (0.428)	10.57 (0.416)	
29F0818-0SR-10	Surface-Mount	8	11.43 (0.450)	4.50 (0.177)	2.92 (0.115)	
29F0818-1SR-10		8	11.43 (0.450)	4.50 (0.177)	4.19 (0.165)	

DIFFERENTIAL MODE FILTER
EQUIVALENT CIRCUITS

Diagram #1

Diagram #2

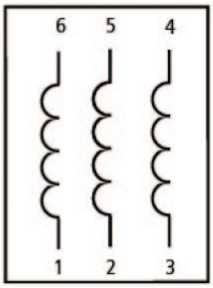


Diagram #3

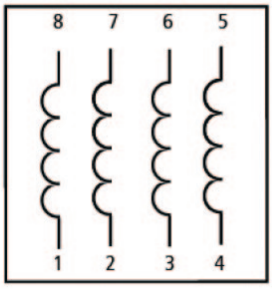


Diagram #4

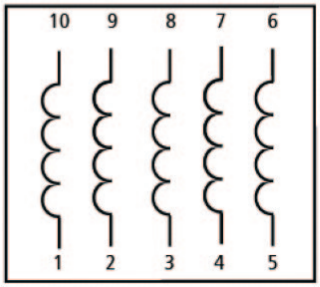
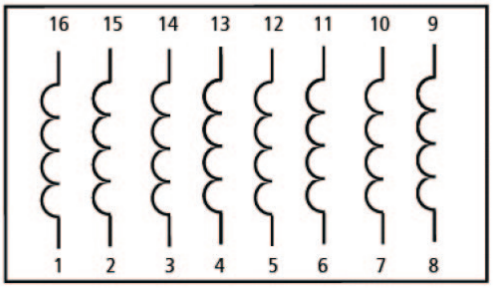


Diagram #5



FERRITE CHIP INDUCTORS

FEATURES

- Monolithic construction, small size
- High reliability
- Economical
- Broadband and high frequency available
- For RF and wireless communication, computers, telecommunications, automotive electronics etc.

RoHS

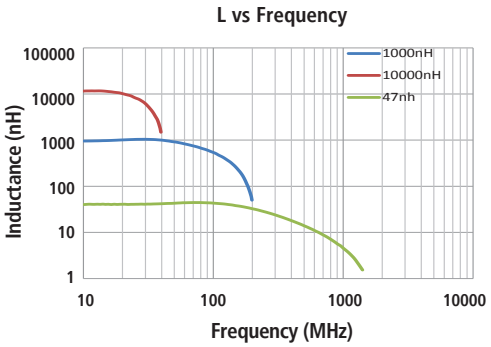
PART NUMBERING SYSTEM

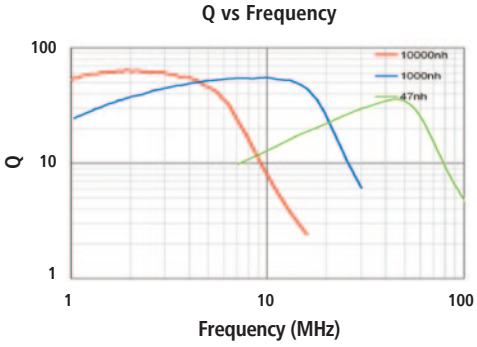
IC	0603	A	102	R	-10
Product Series Code	EIA Size Code	Rated Current Code	Inductance Value Code	Packing Code	Additional Description

METRIC PKG. SIZE	PART NUMBER	L (nH) ± 10%	Q (MIN)	TEST FREQ. L,Q (MHZ)	SELF-RESONANT FREQ. (MHZ)	DCR MAX (Ω)	RATED I MAX (mA)
1608	IC0603A102R-10	1,000	30	10	70	0.6	25
1608	IC0603A103R-10	10,000	30	2	17	2.55	15
1608	IC0603A182R-10	1,800	30	10	50	0.95	25
1608	IC0603A681R-10	680	15	25	80	1.7	35
1608	IC0603B181R-10	180	15	25	165	0.6	50
1608	IC0603B470R-10	47	10	50	260	0.3	200
1608	IC0603B820R-10	82	10	50	245	0.3	200
2012	IC0805A103R-10	10,000	45	2	24	1.15	15
2012	IC0805A153R-10	15,000	30	1	19	0.8	5
2012	IC0805A183R-10	18,000	30	1	18	0.9	5
2012	IC0805A223R-10	22,000	30	1	16	1.1	5
2012	IC0805A272R-10	2,700	45	10	45	0.75	30
2012	IC0805A333R-10	33,000	30	0.4	13	1.25	5
2012	IC0805A472R-10	4,700	45	10	35	1	30
2012	IC0805A681R-10	680	25	25	105	0.8	150
2012	IC0805A822R-10	8,200	45	4	26	1.1	15
2012	IC0805B101R-10	100	20	25	235	0.3	250
2012	IC0805B102R-10	1,000	45	10	75	0.4	50
2012	IC0805B182R-10	1,800	45	10	55	0.6	50
2012	IC0805B222R-10	2,200	45	10	50	0.65	30
2012	IC0805C470R-10	47	15	50	320	0.2	300
2012	IC0805C680R-10	68	15	50	280	0.2	300
3216	IC1206A103R-10	10,000	50	2	24	1	25
3216	IC1206A332R-10	3,330	45	10	41	0.7	50
3216	IC1206A333R-10	33,000	35	0.4	13	1.05	5
3216	IC1206A472R-10	4,700	45	10	35	0.9	50
3216	IC1206B153R-10	15,000	35	1	19	0.7	5
3216	IC1206B183R-10	18,000	35	1	21	0.7	5
3216	IC1206B331R-10	330	20	25	145	0.5	250
3216	IC1206B821R-10	820	25	25	100	0.9	150

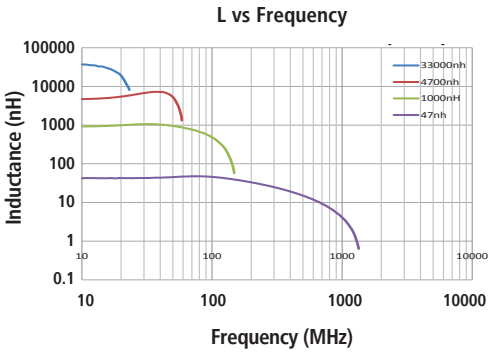
FERRITE CHIP
INDUCTORS

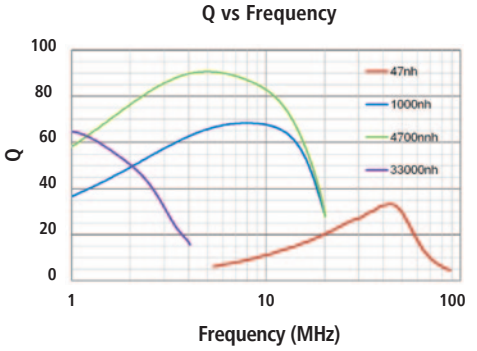
0603 Characteristics



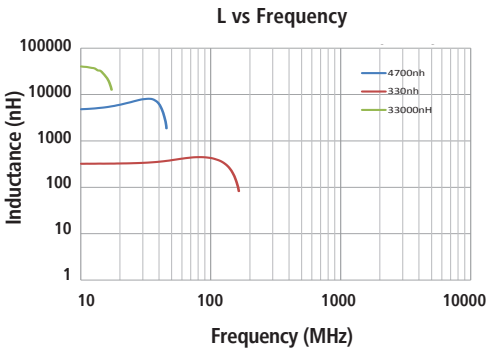


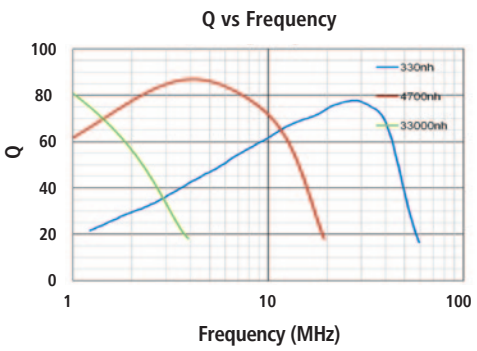
0805 Characteristics





1206 Characteristics

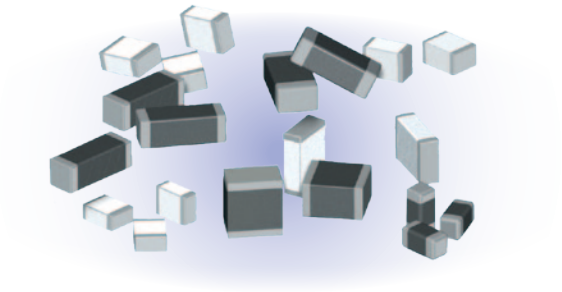




RF CERAMIC CHIP INDUCTORS

FEATURES

- Monolithic construction, small size
- High reliability
- Economical
- Broadband and high frequency available
- For RF and wireless communication, computers, telecommunications, automotive electronics etc
- Operation temperature:
  0201 and 0402 Size : -55°C ~ +125°C
  0603 Size : -40°C ~ +85°C



RoHS

PART NUMBERING SYSTEM

CCI	0201	B	0N3	R	-1□
Product Series Code	EIA Size Code	Rated Current Code	Inductance Value Code	Packing Code	Additional Description

METRIC PKG. SIZE	PART NUMBER	L (nH)	Q (MIN)	TEST FREQ. L,Q (MHZ)	Q (TYPICAL)			SELF-RESONANT FREQ. (MHZ)	DCR MAX (Ω)	RATED I MAX (mA)
					100 MHz	500 MHz	800 MHz			
0603	CCI0201B0N3R-1□	0.3	4	100	5	13	18	10000	0.07	250
0603	CCI0201B0N4R-1□	0.4	4	100	5	13	18	10000	0.07	250
0603	CCI0201B0N5R-1□	0.5	4	100	5	13	18	10000	0.08	250
0603	CCI0201B0N6R-1□	0.6	4	100	5	13	18	10000	0.08	250
0603	CCI0201B0N7R-1□	0.7	4	100	5	13	18	10000	0.09	250
0603	CCI0201B0N8R-1□	0.8	4	100	5	13	18	10000	0.10	250
0603	CCI0201B0N9R-1□	0.9	4	100	5	13	18	10000	0.10	250
0603	CCI0201B1N0R-1□	1.0	4	100	5	15	19	10000	0.14	250
0603	CCI0201B1N1R-1□	1.1	4	100	5	15	19	10000	0.14	250
0603	CCI0201B1N2R-1□	1.2	4	100	6	15	20	10000	0.14	250
0603	CCI0201B1N3R-1□	1.3	4	100	6	15	20	10000	0.14	250
0603	CCI0201B1N5R-1□	1.5	4	100	6	15	20	10000	0.18	230
0603	CCI0201B1N6R-1□	1.6	4	100	6	15	20	10000	0.18	230
0603	CCI0201B1N8R-1□	1.8	4	100	6	15	20	10000	0.19	200
0603	CCI0201B2N0R-1□	2.0	4	100	6	15	20	8800	0.20	200
0603	CCI0201B2N2R-1□	2.2	4	100	6	15	20	8800	0.22	200
0603	CCI0201B2N4R-1□	2.4	4	100	6	15	20	8300	0.24	200
0603	CCI0201B2N7R-1□	2.7	5	100	6	16	20	7700	0.25	200
0603	CCI0201A3N0R-1□	3.0	5	100	6	16	20	7200	0.28	180
0603	CCI0201A3N3R-1□	3.3	5	100	6	16	20	6700	0.30	180
0603	CCI0201A3N6R-1□	3.6	5	100	6	16	20	6400	0.30	170
0603	CCI0201A3N9R-1□	3.9	5	100	7	16	20	6000	0.30	170
0603	CCI0201A4N3R-1□	4.3	5	100	7	16	20	5700	0.40	150
0603	CCI0201A4N7R-1□	4.7	5	100	7	16	20	5300	0.40	150
0603	CCI0201A5N1R-1□	5.1	5	100	7	16	20	5000	0.40	150
0603	CCI0201A5N6R-1□	5.6	5	100	7	16	20	4200	0.40	150
0603	CCI0201A6N2R-1□	6.2	5	100	7	16	20	3800	0.44	150
0603	CCI0201A6N8R-1□	6.8	5	100	7	16	20	3500	0.50	150
0603	CCI0201A7N5R-1□	7.5	5	100	7	15	20	3300	0.53	150
0603	CCI0201A8N2R-1□	8.2	5	100	7	15	20	3200	0.55	150
0603	CCI0201A9N1R-1□	9.1	5	100	7	15	20	3000	0.62	150
0603	CCI0201A10NR-1□	10	5	100	7	15	19	2800	0.65	150

RF CERAMIC CHIP INDUCTORS

METRIC PKG. SIZE	PART NUMBER	L (nH)	Q (MIN)	TEST FREQ. L,Q (MHZ)	Q (TYPICAL)			SELF-RESONANT FREQ. (MHZ)	DCR MAX (Ω)	RATED I MAX (mA)
					100 MHz	500 MHz	800 MHz			
0603	CCI0201A12NR-1□	12	5	100	7	14	18	2400	0.70	100
0603	CCI0201A15NR-1□	15	5	100	7	14	18	2200	0.80	100
0603	CCI0201A18NR-1□	18	5	100	7	14	18	2100	0.90	100
0603	CCI0201A22NR-1□	22	5	100	7	14	18	1800	1.20	100
0603	CCI0201A27NR-1□	27	4	100	6	13	16	1800	1.80	50
0603	CCI0201A33NR-1□	33	4	100	6	12	14	1700	2.10	50
0603	CCI0201A39NR-1□	39	4	100	6	12	14	1500	2.40	50
1005	CCI0402C1N0R-1□	1.0	8	100	11	33	43	10000	0.12	300
1005	CCI0402C1N1R-1□	1.1	8	100	11	33	43	10000	0.12	300
1005	CCI0402C1N2R-1□	1.2	8	100	11	33	43	10000	0.12	300
1005	CCI0402C1N3R-1□	1.3	8	100	11	33	43	10000	0.13	300
1005	CCI0402C1N5R-1□	1.5	8	100	11	33	43	6000	0.13	300
1005	CCI0402C1N6R-1□	1.6	8	100	11	31	41	6000	0.14	300
1005	CCI0402C1N8R-1□	1.8	8	100	11	31	41	6000	0.14	300
1005	CCI0402C2N0R-1□	2.0	8	100	11	26	36	6000	0.16	300
1005	CCI0402C2N2R-1□	2.2	8	100	11	26	36	6000	0.16	300
1005	CCI0402C2N4R-1□	2.4	8	100	11	26	36	6000	0.17	300
1005	CCI0402C2N7R-1□	2.7	8	100	12	29	38	6000	0.17	300
1005	CCI0402C3N0R-1□	3.0	8	100	11	28	37	6000	0.19	300
1005	CCI0402C3N3R-1□	3.3	8	100	11	28	37	6000	0.19	300
1005	CCI0402C3N6R-1□	3.6	8	100	11	26	32	5000	0.22	300
1005	CCI0402C3N9R-1□	3.9	8	100	11	26	32	4000	0.22	300
1005	CCI0402C4N3R-1□	4.3	8	100	11	26	32	4000	0.24	300
1005	CCI0402C4N7R-1□	4.7	8	100	12	28	37	4000	0.24	300
1005	CCI0402C5N1R-1□	5.1	8	100	11	26	35	4000	0.27	300
1005	CCI0402C5N6R-1□	5.6	8	100	11	26	35	4000	0.27	300
1005	CCI0402C6N2R-1□	6.2	8	100	11	26	34	3900	0.32	300
1005	CCI0402C6N8R-1□	6.8	8	100	11	26	34	3900	0.32	300
1005	CCI0402C8N2R-1□	8.2	8	100	12	26	34	3500	0.37	300
1005	CCI0402C10NR-1□	10	8	100	11	25	31	3200	0.42	300
1005	CCI0402C12NR-1□	12	8	100	11	25	31	2600	0.50	300
1005	CCI0402C15NR-1□	15	8	100	11	24	30	2300	0.55	300
1005	CCI0402C18NR-1□	18	8	100	11	24	30	2000	0.65	300
1005	CCI0402C22NR-1□	22	8	100	12	24	30	1600	0.80	300
1005	CCI0402C27NR-1□	27	8	100	11	24	28	1400	0.90	300
1005	CCI0402B33NR-1□	33	8	100	12	23	26	1200	1.00	200
1005	CCI0402B39NR-1□	39	8	100	11	21	24	1100	1.20	200
1005	CCI0402B47NR-1□	47	8	100	11	21	23	900	1.30	200
1005	CCI0402B56NR-1□	56	8	100	12	21	21	750	1.40	200
1005	CCI0402A68NR-1□	68	8	100	11	19	19	750	1.40	180
1005	CCI0402A82NR-1□	82	8	100	10	19	16	600	1.60	150
1005	CCI0402AR10R-1□	100	8	100	10	18	-	600	1.60	150
1005	CCI0402AR12R-1□	120	8	100	11	15	-	600	1.60	150
1005	CCI0402AR15R-1□	150	8	100	11	14	-	550	2.40	140
1608	CCI0603J1N0R-1□	1.0	8	100	14	34	47	6000	0.10	1000
1608	CCI0603J1N2R-1□	1.2	8	100	13	32	49	6000	0.10	1000
1608	CCI0603J1N5R-1□	1.5	8	100	14	34	47	6000	0.10	1000
1608	CCI0603J1N8R-1□	1.8	8	100	17	40	55	6000	0.10	1000
1608	CCI0603J2N2R-1□	2.2	8	100	15	38	49	6000	0.10	1000
1608	CCI0603J2N7R-1□	2.7	10	100	14	37	48	6000	0.13	1000
1608	CCI0603J3N3R-1□	3.3	10	100	16	40	51	6000	0.13	1000
1608	CCI0603J3N9R-1□	3.9	10	100	14	36	48	6000	0.15	1000
1608	CCI0603J4N7R-1□	4.7	10	100	14	37	48	4000	0.20	1000
1608	CCI0603F5N6R-1□	5.6	10	100	14	36	46	4000	0.23	600
1608	CCI0603F6N8R-1□	6.8	10	100	15	37	48	4000	0.25	600

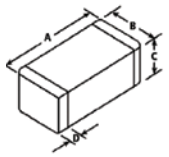
□ Tolerance: B= ± 0.1 nH C= ± 0.2 nH S= ± 0.3 nH G= ± 2 % J= ± 5 % K= ± 10 %

RF CERAMIC CHIP INDUCTORS

METRIC PKG. SIZE	PART NUMBER	L (nH)	Q (MIN)	TEST FREQ. L,Q (MHZ)	Q (TYPICAL)			SELF-RESONANT FREQ. (MHZ)	DCR MAX (Ω)	RATED I MAX (mA)
					100 MHz	500 MHz	800 MHz			
1608	CCI0603F8N2R-1□	8.2	10	100	16	39	50	3500	0.28	600
1608	CCI0603F10NR-1□	10	12	100	16	37	47	3200	0.30	600
1608	CCI0603F12NR-1□	12	12	100	15	36	45	2600	0.35	600
1608	CCI0603F15NR-1□	15	12	100	16	38	48	2300	0.40	600
1608	CCI0603F18NR-1□	18	12	100	17	38	47	2000	0.45	600
1608	CCI0603F22NR-1□	22	12	100	18	40	49	1600	0.50	600
1608	CCI0603F27NR-1□	27	12	100	18	40	47	1400	0.55	600
1608	CCI0603F33NR-1□	33	12	100	17	40	46	1200	0.60	600
1608	CCI0603E39NR-1□	39	12	100	19	40	46	1100	0.65	500
1608	CCI0603E47NR-1□	47	12	100	17	36	39	900	0.70	500
1608	CCI0603E56NR-1□	56	12	100	18	36	37	900	0.75	500
1608	CCI0603D68NR-1□	68	12	100	18	35	36	700	0.85	400
1608	CCI0603C82NR-1□	82	12	100	18	33	29	600	0.95	300
1608	CCI0603CR10R-1□	100	12	100	18	28	16	600	1.00	300
1608	CCI0603CR12R-1□	120	8	50	19	28	17	500	1.20	300
1608	CCI0603CR15R-1□	150	8	50	13	17	-	500	1.20	300
1608	CCI0603CR18R-1□	180	8	50	13	16	-	400	1.30	300
1608	CCI0603CR22R-1□	220	8	50	15	13	-	400	1.50	300
1608	CCI0603AR27R-1□	270	8	50	15	-	-	400	1.90	150
1608	CCI0603AR33R-1□	330	8	50	15	-	-	350	2.10	150

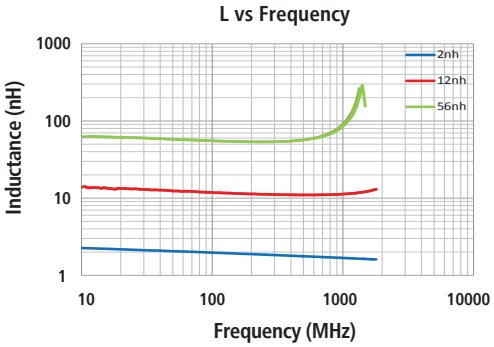
□ Tolerance: B= ± 0.1 nH C= ± 0.2 nH S= ± 0.3 nH G= ± 2 % J= ± 5 % K= ± 10 %

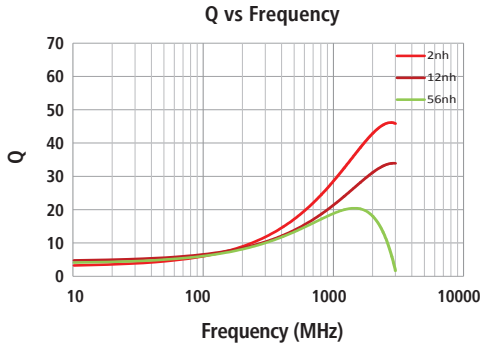
DIMENSION

METRIC (EIA) PKG. SIZE	A mm (INCHES)	B mm (INCHES)	C* mm (INCHES)	D mm (INCHES) MIN/MAX	MONOLITHIC CHIP INDUCTOR
0603 (0201)	0.60 (0.024)	0.30 (0.012)	0.30 (0.012)	0.10/0.20 (0.004/0.008)	
1005 (0402)	1.00 (0.040)	0.50 (0.020)	0.50(0.020)	0.10/0.30 (0.004/0.012)	
1608 (0603)	1.60 (0.063)	0.80 (0.031)	0.80 (0.031)	0.20/0.60 (0.008/0.024)	

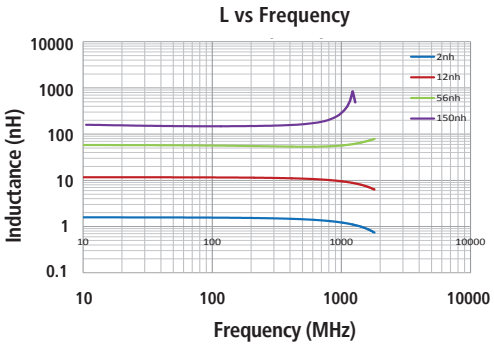
RF CERAMIC CHIP INDUCTORS

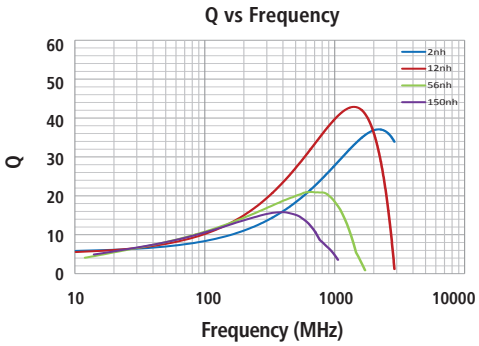
0201 Characteristics



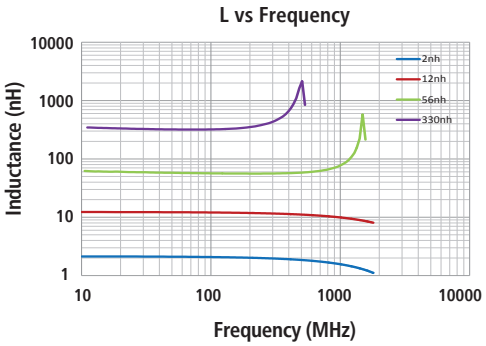


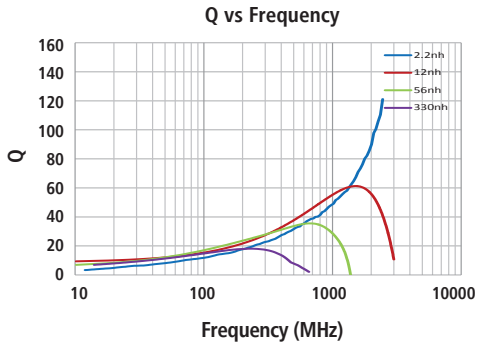
0402 Characteristics





0603 Characteristics





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