



Surface Mount Chip Inductors

Steward's two-terminal surface mount chip inductors provide a cost effective solution for densely packed PC board designs. Our proprietary SMT construction yields rugged components with superior inductance versus frequency characteristics.

Features:

- Small footprint
- Economical
- Rugged construction
- Superior inductance vs. frequency characteristics
- Parts available in broad band and high frequency materials

Application:

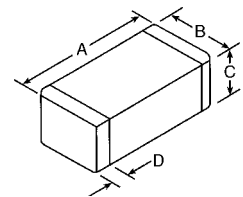
- RF and wireless communication
- Information technology equipment including; computers, telecommunications, radar detectors, automotive electronics, cellular phones, pagers, audio equipment, PDAs, keyless remote systems and low-voltage power supply modules
- Use in L-C filter configurations

Test Specifications:

- HP4396A (100KHz - 1.8 GHz) or HP8753 (to 6 GHz) Network/Spectrum Analyzer
- HP43961A Impedance Test Kit
- HP16192A Test Fixture or Inter-Continental Microwave custom fixtures
- HP16200A DC Bias Adapter
- Philips PM2811 DC Power Supply
- Ambient Temperature $23.5^{\circ}\text{C} \pm 2^{\circ}$
- Bandwidth 3 kHz
- Sweep Time 423 ms
- Inductance is rated at $\pm 10\%$ at rated frequency
- Board level components are rated up to a maximum of 75 volts
- Maximum current ratings are determined by testing to a maximum temperature rise of 40°C with continuous current
- Ambient operating temperature range: -55°C to $+125^{\circ}\text{C}$

STEWART PART NUMBERING SYSTEM

<u>IC</u>	<u>0603</u>	<u>D</u>	<u>470</u>	<u>R</u>	-	<u>00</u>
PRODUCT SERIES CODE	PART SIZE CODE	RATED CURRENT CODE	INDUCTANCE VALUE CODE	PACKAGING CODE		ADDITIONAL DESCRIPTION



Ferrite Chip Inductors					
PART NUMBER	Inductance (L) (nH)	Q (min)	Self-Resonant Frequency (MHz)	DCR MAX OHMS	RATED I MAX (continuous) mA
IC0603D470R-00	47.00	10	260	0.15	400
IC0603C680R-00	68.00	10	250	0.25	300
IC0603C820R-00	82.00	10	245	0.25	300
IC0603B101R-00	100.00	15	276	0.50	200
IC0603B121R-00	120.00	15	236	0.50	200
IC0603B151R-00	150.00	15	207	0.60	200
IC0603B181R-00	180.00	15	190	0.60	200
IC0603A221R-00	220.00	15	173	0.80	100
IC0603A271R-00	270.00	15	157	0.80	100
IC0603A331R-00	330.00	15	144	0.85	100
IC0603A391R-00	390.00	15	127	1.00	100
IC0603A471R-00	470.00	15	121	1.35	75
IC0603A561R-00	560.00	15	110	1.55	75
IC0603A681R-00	680.00	15	104	1.70	75
IC0603A821R-00	820.00	15	98	2.10	50

Ferrite Chip Inductors					
PART NUMBER	Inductance (L) (nH)	Q (min)	Self-Resonant Frequency (MHz)	DCR MAX OHMS	RATED I MAX (continuous) mA
IC0603B102R-00	1,000.00	35	87	0.60	200
IC0603A122R-00	1,200.00	35	74	0.80	100
IC0603A152R-00	1,500.00	35	69	0.80	100
IC0603A182R-00	1,800.00	35	64	0.95	100
IC0603A222R-00	2,200.00	35	58	1.15	80
IC0603A272R-00	2,700.00	35	52	1.35	75
IC0603A332R-00	3,300.00	35	46	1.55	75
IC0603A392R-00	3,900.00	35	41	1.70	75
IC0603A472R-00	4,700.00	35	38	2.10	50
IC0805C470R-00	47.00	15	320	0.20	300
IC0805C560R-00	56.00	15	300	0.20	300
IC0805C680R-00	68.00	15	280	0.20	300
IC0805C820R-00	82.00	15	255	0.20	300
IC0805B101R-00	100.00	20	279	0.30	250
IC0805B121R-00	120.00	20	253	0.30	250

Ferrite Chip Inductors					
PART NUMBER	Inductance (L) (nH)	Q (min)	Self-Resonant Frequency (MHz)	DCR MAX OHMS	RATED I MAX (continuous) mA
IC0805B151R-00	150.00	20	230	0.40	250
IC0805B181R-00	180.00	20	213	0.40	250
IC0805B221R-00	220.00	20	196	0.50	250
IC0805B271R-00	270.00	20	173	0.50	250
IC0805B331R-00	330.00	20	167	0.55	250
IC0805B391R-00	390.00	25	156	0.65	200
IC0805B471R-00	470.00	25	144	0.65	200
IC0805A561R-00	560.00	25	133	0.75	150
IC0805A681R-00	680.00	25	121	0.80	150
IC0805A821R-00	820.00	25	115	1.00	150
IC0805B102R-00	1,000.00	45	87	0.40	250
IC0805B122R-00	1,200.00	45	75	0.50	250
IC0805B152R-00	1,500.00	45	69	0.50	250
IC0805B182R-00	1,800.00	45	64	0.60	250
IC0805B222R-00	2,200.00	45	78	0.65	200
IC0805A272R-00	2,700.00	45	52	0.75	150
IC0805A332R-00	3,300.00	45	48	0.80	150
IC0805A392R-00	3,900.00	45	44	0.90	150
IC0805A472R-00	4,700.00	45	41	1.00	150
IC0805A562R-00	5,600.00	50	37	0.90	150
IC0805A682R-00	6,800.00	50	34	1.00	150
IC0805A822R-00	8,200.00	50	30	1.10	100
IC0805A103R-00	10,000.00	50	28	1.15	100
IC0805A123R-00	12,000.00	50	26	1.25	100
IC0805A153R-00	15,000.00	30	22	0.80	150
IC0805A183R-00	18,000.00	30	21	0.90	150
IC0805A223R-00	22,000.00	30	19	1.10	100
IC0805A273R-00	27,000.00	30	17	1.15	100
IC0805A333R-00	33,000.00	30	15	1.25	100
IC1206D470R-00	47.00	20	320	0.15	400
IC1206D560R-00	56.00	20	300	0.15	400
IC1206D680R-00	68.00	20	280	0.15	400

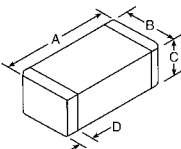
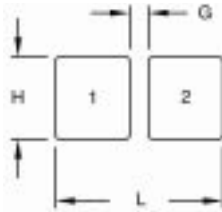
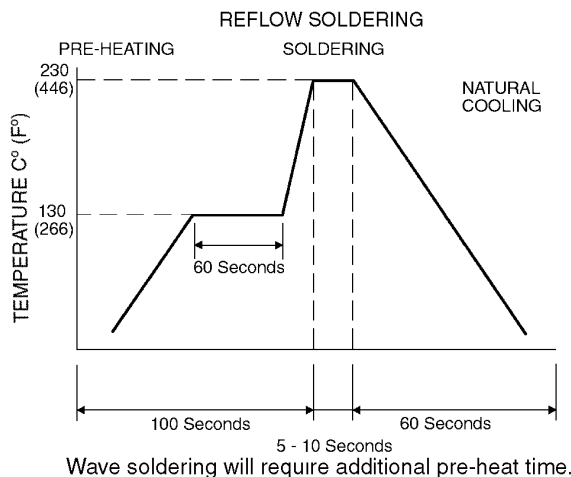
Ferrite Chip Inductors					
PART NUMBER	Inductance (L) (nH)	Q (min)	Self-Resonant Frequency (MHz)	DCR MAX OHMS	RATED I MAX (continuous) mA
IC1206D820R-00	82.00	20	255	0.15	400
IC1206C101R-00	100.00	20	271	0.25	300
IC1206B121R-00	100.00	20	253	0.30	250
IC1206B151R-00	150.00	20	230	0.30	250
IC1206B181R-00	180.00	20	213	0.40	250
IC1206B221R-00	220.00	20	196	0.40	250
IC1206B271R-00	270.00	20	173	0.50	250
IC1206B331R-00	330.00	20	167	0.60	250
IC1206B391R-00	390.00	25	156	0.50	250
IC1206B471R-00	470.00	25	144	0.60	250
IC1206B561R-00	560.00	25	133	0.75	200
IC1206A681R-00	680.00	25	121	0.80	150
IC1206B821R-00	820.00	25	115	0.90	150
IC1206B102R-00	1,000.00	45	87	0.40	250
IC1206B122R-00	1,200.00	45	75	0.50	250
IC1206B152R-00	1,500.00	45	69	0.50	250
IC1206B182R-00	1,800.00	45	64	0.50	250
IC1206B222R-00	2,200.00	45	58	0.60	250
IC1206B272R-00	2,700.00	45	52	0.60	250
IC1206B332R-00	3,300.00	45	48	0.70	200
IC1206A392R-00	3,900.00	45	44	0.80	150
IC1206A472R-00	4,700.00	45	41	0.90	150
IC1206B562R-00	5,600.00	50	37	0.70	200
IC1206A682R-00	6,800.00	50	34	0.80	150
IC1206A822R-00	8,200.00	50	30	0.90	150
IC1206A103R-00	10,000.00	50	28	1.00	150
IC1206A123R-00	12,000.00	50	26	1.05	100
IC1206B153R-00	15,000.00	35	22	0.70	200
IC1206B183R-00	18,000.00	35	21	0.70	200
IC1206A223R-00	22,000.00	35	19	0.90	150
IC1206A273R-00	27,000.00	35	17	0.90	150
IC1206A333R-00	33,000.00	35	15	1.05	100

High Frequency Chip Inductors (air cores)							
PART NUMBER	Inductance (L) (nH)	Q (Typical)		Self-Resonant Frequency (MHz)		DCR MAX OHMS	RATED I MAX (continuous) mA
		100MHz	800MHz	Min	Typ		
IH0402D1D5R-00	1.50	8	30	4,000	> 6,000	0.10	400
IH0402D1D8R-00	1.80	8	30	3,800	> 6,000	0.12	400
IH0402D2D2R-00	2.20	8	30	3,600	> 6,000	0.16	400
IH0402C2D7R-00	2.70	8	30	3,400	5,500	0.20	300
IH0402C3D3R-00	3.30	8	28	3,200	5,000	0.22	300
IH0402C3D9R-00	3.90	8	30	3,000	4,700	0.25	300
IH0402C4D7R-00	4.70	8	28	2,800	4,300	0.28	300
IH0402C5D6R-00	5.60	8	28	2,700	4,000	0.29	300
IH0402B6D8R-00	6.80	8	28	2,600	3,650	0.35	200
IH0402B8D2R-00	8.20	8	28	2,200	3,200	0.40	200
IH0402B100R-00	10.00	8	23	1,800	2,800	0.45	200
IH0603D1D5R-00	1.50	8	38	4,000	> 6,000	0.10	400
IH0603D1D8R-00	1.80	8	36	3,800	> 6,000	0.12	400
IH0603D2D2R-00	2.20	8	34	3,600	> 6,000	0.16	400
IH0603C2D7R-00	2.70	8	32	3,400	> 6,000	0.20	300
IH0603C3D3R-00	3.30	8	30	3,200	5,700	0.22	300
IH0603C3D9R-00	3.90	8	32	3,000	5,600	0.25	300
IH0603B4D7R-00	4.70	8	38	2,800	4,800	0.28	250
IH0603B5D6R-00	5.60	8	36	2,700	4,350	0.29	250
IH0603B6D8R-00	6.80	8	34	2,600	3,750	0.30	200
IH0603B8D2R-00	8.20	8	32	2,200	3,300	0.33	200
IH0603B100R-00	10.00	8	30	1,800	2,850	0.35	200
IH0603B120R-00	12.00	8	30	1,650	2,700	0.40	200
IH0603B150R-00	15.00	8	26	1,350	2,400	0.45	200
IH0603B180R-00	18.00	8	25	1,350	2,050	0.50	200
IH0603B220R-00	22.00	8	30	1,100	1,850	0.55	200
IH0603B270R-00	27.00	8	26	1,100	1,750	0.60	200
IH0603A330R-00	33.00	8	24	1,000	1,500	0.65	150
IH0603A390R-00	39.00	8	20	900	1,350	0.70	150
IH0603A470R-00	47.00	10	18	800	1,200	0.90	150
IH0603A560R-00	56.00	10	14	700	1,100	1.00	100
IH0805D1D5R-00	1.50	10	40	4,000	> 6,000	0.10	400
IH0805D1D8R-00	1.80	10	45	4,000	> 6,000	0.10	400
IH0805D2D2R-00	2.20	10	48	3,800	> 6,000	0.10	400

High Frequency Chip Inductors (air cores)							
PART NUMBER	Inductance (L) (nH)	Q (Typical)		Self-Resonant Frequency (MHz)		DCR MAX OHMS	RATED I MAX (continuous) mA
		100MHz	800MHz	Min	Typ		
IH0805D2D7R-00	2.70	10	36	3,600	> 6,000	0.10	400
IH0805D3D3R-00	3.30	10	56	3,400	> 6,000	0.13	400
IH0805D3D9R-00	3.90	10	54	3,200	5,400	0.15	400
IH0805C4D7R-00	4.70	10	50	3,000	4,500	0.20	300
IH0805C5D6R-00	5.60	10	53	2,800	4,000	0.23	300
IH0805C6D8R-00	6.80	10	51	2,600	3,650	0.25	300
IH0805C8D2R-00	8.20	10	53	2,200	3,000	0.28	300
IH0805B100R-00	10.00	10	45	1,800	2,500	0.30	250
IH0805B120R-00	12.00	10	48	1,650	2,450	0.35	250
IH0805B150R-00	15.00	10	48	1,350	2,000	0.40	200
IH0805B180R-00	18.00	10	43	1,350	1,750	0.45	200
IH0805B220R-00	22.00	15	47	1,100	1,700	0.50	200
IH0805B270R-00	27.00	15	38	1,100	1,550	0.55	200
IH0805B330R-00	33.00	15	35	1,000	1,350	0.60	200
IH0805A390R-00	39.00	15	40	900	1,300	0.65	150
IH0805A470R-00	47.00	15	33	850	1,200	0.70	150
IH0805A560R-00	56.00	15	*	750	1,150	0.75	150
IH0805A680R-00	68.00	15	*	700	1,000	0.80	150
IH0805A820R-00	82.00	15	*	600	850	0.90	150
IH0805A101R-00	100.00	15	*	500	730	1.00	100
IH0805A121R-00	120.00	15	*	450	650	1.30	75
IH0805A151R-00	150.00	15	*	400	550	1.50	50
IH0805A181R-00	180.00	15	*	350	500	1.80	25
IH0805B330R-00	33.00	15	35	1,000	1,350	0.60	200
IH0805A390R-00	39.00	15	40	900	1,300	0.65	150
IH0805A470R-00	47.00	15	33	850	1,200	0.70	150
IH0805A560R-00	56.00	15	*	750	1,150	0.75	150
IH0805A680R-00	68.00	15	*	700	1,000	0.80	150
IH0805A820R-00	82.00	15	*	600	850	0.90	150
IH0805A101R-00	100.00	15	*	500	730	1.00	100
IH0805A121R-00	120.00	15	*	450	650	1.30	75
IH0805A151R-00	150.00	15	*	400	550	1.50	50
IH0805A181R-00	180.00	15	*	350	500	1.80	25

* No 800 MHz Q data exists for the above parts where the resonant frequency is below the 800 MHz test point.

Chip Inductor General Specifications (EIA Standard)

Chip Size						Land Patterns for Reflow Soldering			
	Package Size	A	B	C	D		L **	G	H
	0402	1.01 ± 0.18 (0.040 ± 0.007)	0.50 ± 0.20 (0.020 ± 0.008)	0.50 ± 0.20 (0.020 ± 0.008)	0.30 MAX (0.012 MAX)		2.10 (0.083)	0.50 (0.020)	0.55 (0.022)
	0603	1.60 ± 0.15 (0.063 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.36 ± 0.15 (0.014 ± 0.006)		2.60 (0.102)	0.60 (0.023)	0.80 (0.031)
	0805	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)		3.00 (0.118)	1.00 (0.039)	1.00 (0.039)
	0805	2.00 ± 0.20 (0.079 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	1.25 ± 0.20 (0.049 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)		3.00 (0.118)	1.00 (0.039)	1.00 (0.039)
	1206	3.20 ± 0.20 (0.126 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)	1.10 ± 0.20 (0.043 ± 0.008)	0.51 ± 0.25 (0.020 ± 0.010)		4.40 (0.173)	2.20 (0.087)	1.40 (0.055)
Recommended Soldering Conditions						Equivalent Circuit			
 Wave soldering will require additional pre-heat time.									

** - For wave soldering, add 0.762mm (0.030") to the "L" dimension

Steward produces an extensive line of solution focussed ferrite products for Inductive and EMI Filtering Applications. Products include ferrite EMI cable cores, connector plates, unique common mode chokes, high current through hole and surface mount components, impedance chip beads, surface mount inductors, toroid inductor cores and ferrite powders. Please consult our web site or contact your nearest Steward office or representative for additional information.

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