RF Ceramic Chip Inductors

High frequency multi-layer chip inductors feature a monolithic body made of low loss ceramic and high conductivity metal electrodes to achieve optimal high frequency performance.

These RF chip inductors are compact in size and feature lead-free tin plated nickel barrier terminations and tape and reel packaging which makes them ideal for small size/high volume wireless applications.

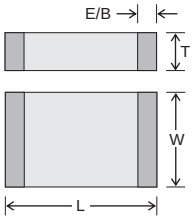
Applications

- CELL/PCS Modules
- Broadband Components
- RF Tranceivers
- Wireless LAN
- RFID
- Custom Applications

Product Range Summary

EIA SIZE (mm)	SIZE CODE	L RANGE	Q FACTOR (Min.)	SRF (Typ.)	TEMPERATURE
0201 (0603)	L-05	1.0 - 39 nH	4 (100 MHz)	>21 GHz (1.0 nH)	-40°C to + 100°C
0402 (1005)	L-07	1.0 - 120 nH	8 (100 MHz)	>21 GHz (1.0 nH)	-40°C to + 100°C
0603 (1608)	L-14	1.0 - 220 nH	12 (100 MHz)	>23 GHz (1.0 nH)	-40°C to + 100°C
0805 (2012)	L-15	1.5 - 680 nH	8 (100 MHz)	>21 GHz (1.5 nH)	-40°C to + 100°C

Mechanical Characteristics



	0201 (0603)		0402 (1005)		0603 (1608)		0805 (2012)	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm
Length	.024 ±.001”	(0.6 ±0.03)	.039 ±.004”	(1.00 ±.10)	.063 ±.006”	(1.60 ±.15)	.079 ±.008”	(2.00 ±.20)
Width	.012 ±.001”	(0.3 ±0.03)	.020 ±.004”	(0.50 ±.10)	.031 ±.006”	(0.80 ±.15)	.047 ±.008”	(1.20 ±.20)
Thickness	.012 ±.001”	(0.3 ±0.03)	.020 ±.004”	(0.50 ±.10)	.031 ±.006”	(0.80 ±.15)	.033 ±.008”	(0.85 ±.20)
End Band	.006 ±.002”	(0.15 ±0.05)	.009 ±.004”	(0.23 ±.10)	.012 ±.008”	(0.30 ±.20)	.020 ±.012”	(0.50 ±.30)

How to Order

L-	07	C	10N	J	V	6	T
DEVICE	SIZE	TYPE	VALUE	TOLERANCE	TERMINATION	MARKING	TAPE & REEL

DEVICE: Inductor

SIZE: 05 = 0201, 07 = 0402, 14 = 0603, 15 = 0805

TYPE: Ceramic

VALUE: See Table

TOLERANCE:

S = ± 0.3 nH	1.0 to 5.6 nH
J= ± 5%	6.8 nH and above
K = ± 10%	3.3 nH and above

TERMINATION: V = Ni/Sn

MARKING: 4 = No Marking, 6 = Orientation Mark

TAPE & REEL:

Size	Code	Tape	Reel	Qty
0201	T	Paper	7”	15,000
0402	T	Paper	7”	10,000
0603	E	Embossed	7”	4,000
0805	E	Embossed	7”	4,000

Part number written: L-07C10NJV6T

0201 Inductance Range / Electrical Characteristics

Part Number	Inductance	Tolerance	Q (Min.)	L/Q Freq.	Typical SRF	DC Resistance Max	Rated Current
L-05C1N0SV4T	1.0 nH	± 0.3 nH	4	100 MHz	>13000 MHz	0.12	300 mA
L-05C1N2SV4T	1.2 nH	± 0.3 nH	4	100 MHz	>13000 MHz	0.15	300 mA
L-05C1N5SV4T	1.5 nH	± 0.3 nH	4	100 MHz	>13000 MHz	0.18	300 mA
L-05C1N8SV4T	1.8 nH	± 0.3 nH	4	100 MHz	10500 MHz	0.22	300 mA
L-05C2N2SV4T	2.2 nH	± 0.3 nH	4	100 MHz	9500 MHz	0.26	300 mA
L-05C2N7SV4T	2.7 nH	± 0.3 nH	4	100 MHz	8500 MHz	0.32	300 mA
L-05C3N3@V4T	3.3 nH	± 0.3 nH ±10%	4	100 MHz	7500 MHz	0.38	300 mA
L-05C3N9@V4T	3.9 nH	± 0.3 nH ±10%	4	100 MHz	6800 MHz	0.45	300 mA
L-05C4N7@V4T	4.7 nH	± 0.3 nH ±10%	4	100 MHz	6000 MHz	0.50	300 mA
L-05C5N6@V4T	5.6 nH	± 0.3 nH ±10%	5	100 MHz	5500 MHz	0.60	300 mA
L-05C6N8#V4T	6.8 nH	±5% ±10%	5	100 MHz	4800 MHz	0.70	250 mA
L-05C8N2#V4T	8.2 nH	±5% ±10%	5	100 MHz	4600 MHz	0.90	250 mA
L-05C10N#V4T	10.0 nH	±5% ±10%	5	100 MHz	4000 MHz	1.20	250 mA
L-05C12N#V4T	12.0 nH	±5% ±10%	5	100 MHz	3500 MHz	1.30	250 mA
L-05C15N#V4T	15.0 nH	±5% ±10%	5	100 MHz	3000 MHz	1.40	250 mA
L-05C18N#V4T	18.0 nH	±5% ±10%	5	100 MHz	2500 MHz	1.50	200 mA
L-05C22N#V4T	22.0 nH	±5% ±10%	5	100 MHz	2200 MHz	1.80	200 mA
L-05C27N#V4T	27.0 nH	±5% ±10%	5	100 MHz	1800 MHz	2.00	200 mA
L-05C33N#V4T	33.0 nH	±5% ±10%	5	100 MHz	1500 MHz	2.30	200 mA
L-05C39N#V4T	39.0 nH	±5% ±10%	5	100 MHz	1400 MHz	2.50	200 mA

0402 Inductance Range / Electrical Characteristics

Part Number	Inductance	Tolerance	Q (Min.)	L/Q Freq.	Typical SRF	DC Resistance Max	Rated Current
L-07C1N0SV6T	1.0 nH	± 0.3 nH	8	100 MHz	>15000 MHz	0.12	300 mA
L-07C1N2SV6T	1.2 nH	± 0.3 nH	8	100 MHz	>15000 MHz	0.12	300 mA
L-07C1N5SV6T	1.5 nH	± 0.3 nH	8	100 MHz	>15000 MHz	0.13	300 mA
L-07C1N8SV6T	1.8 nH	± 0.3 nH	8	100 MHz	14000 MHz	0.14	300 mA
L-07C2N2SV6T	2.2 nH	± 0.3 nH	8	100 MHz	12000 MHz	0.16	300 mA
L-07C2N7SV6T	2.7 nH	± 0.3 nH	8	100 MHz	9500 MHz	0.17	300 mA
L-07C3N3@V6T	3.3 nH	± 0.3 nH ±10%	8	100 MHz	8500 MHz	0.19	300 mA
L-07C3N9@V6T	3.9 nH	± 0.3 nH ±10%	8	100 MHz	7000 MHz	0.22	300 mA
L-07C4N7@V6T	4.7 nH	± 0.3 nH ±10%	8	100 MHz	6000 MHz	0.24	300 mA
L-07C5N6@V6T	5.6 nH	± 0.3 nH ±10%	8	100 MHz	5400 MHz	0.27	300 mA
L-07C6N8#V6T	6.8 nH	±5% ±10%	8	100 MHz	5000 MHz	0.32	250 mA
L-07C8N2#V6T	8.2 nH	±5% ±10%	8	100 MHz	4600 MHz	0.40	250 mA
L-07C10N#V6T	10.0 nH	±5% ±10%	8	100 MHz	3700 MHz	0.45	250 mA
L-07C12N#V6T	12.0 nH	±5% ±10%	8	100 MHz	3200 MHz	0.50	250 mA
L-07C15N#V6T	15.0 nH	±5% ±10%	8	100 MHz	3100 MHz	0.60	250 mA
L-07C18N#V6T	18.0 nH	±5% ±10%	8	100 MHz	2900 MHz	0.65	200 mA
L-07C22N#V6T	22.0 nH	±5% ±10%	8	100 MHz	2100 MHz	0.80	200 mA
L-07C27N#V6T	27.0 nH	±5% ±10%	8	100 MHz	1900 MHz	0.90	200 mA
L-07C33N#V6T	33.0 nH	±5% ±10%	8	100 MHz	1600 MHz	1.00	200 mA
L-07C39N#V6T	39.0 nH	±5% ±10%	8	100 MHz	1400 MHz	1.20	150 mA
L-07C47N#V6T	47.0 nH	±5% ±10%	8	100 MHz	1200 MHz	1.30	150 mA
L-07C56N#V6T	56.0 nH	±5% ±10%	8	100 MHz	1100 MHz	2.00	150 mA
L-07C68N#V6T	68.0 nH	±5% ±10%	8	100 MHz	1000 MHz	2.20	100 mA
L-07C82N#V6T	82.0 nH	±5% ±10%	8	100 MHz	900 MHz	2.50	100 mA
L-07CR10#V6T	100 nH	±5% ±10%	8	100 MHz	850 MHz	2.50	100 mA
L-07CR12#V6T	120 nH	±5% ±10%	8	50 MHz	750 MHz	2.50	100 mA

0603 Inductance Range / Electrical Characteristics

Part Number	Inductance	Tolerance	Q (Min.)	L/Q Freq.	Typical SRF	DC Resistance Max	Rated Current
L-14C1N0SV4E	1.0 nH	± 0.3 nH	8	100 MHz	>17000 MHz	0.10	300 mA
L-14C1N2SV4E	1.2 nH	± 0.3 nH	8	100 MHz	>17000 MHz	0.10	300 mA
L-14C1N5SV4E	1.5 nH	± 0.3 nH	8	100 MHz	>17000 MHz	0.10	300 mA
L-14C1N8SV4E	1.8 nH	± 0.3 nH	8	100 MHz	13000 MHz	0.10	300 mA
L-14C2N2SV4E	2.2 nH	± 0.3 nH	8	100 MHz	12000 MHz	0.15	300 mA
L-14C2N7SV4E	2.7 nH	± 0.3 nH	8	100 MHz	8600 MHz	0.15	300 mA

@ = Choice of S or K Tolerance, # = J or K Tolerance

0603 CONTINUED

Part Number	Inductance	Tolerance		Q (Min.)	L/Q Freq.	Typical SRF	DC Resistance Max	Rated Current
L-14C3N3@V4E	3.3 nH	± 0.3 nH	±10%	8	100 MHz	6500 MHz	0.20	300 mA
L-14C3N9@V4E	3.9 nH	± 0.3 nH	±10%	8	100 MHz	6300 MHz	0.20	300 mA
L-14C4N7@V4E	4.7 nH	± 0.3 nH	±10%	8	100 MHz	5400 MHz	0.20	300 mA
L-14C5N6@V4E	5.6 nH	± 0.3 nH	±10%	8	100 MHz	4600 MHz	0.25	300 mA
L-14C6N8#V4E	6.8 nH	±5%	±10%	8	100 MHz	4500 MHz	0.30	300 mA
L-14C8N2#V4E	8.2 nH	±5%	±10%	8	100 MHz	3800 MHz	0.33	300 mA
L-14C10N#V4E	10.0 nH	±5%	±10%	8	100 MHz	3700 MHz	0.35	300 mA
L-14C12N#V4E	12.0 nH	±5%	±10%	8	100 MHz	3200 MHz	0.40	300 mA
L-14C15N#V4E	15.0 nH	±5%	±10%	8	100 MHz	2900 MHz	0.45	300 mA
L-14C18N#V4E	18.0 nH	±5%	±10%	10	100 MHz	2100 MHz	0.50	300 mA
L-14C22N#V4E	22.0 nH	±5%	±10%	10	100 MHz	2100 MHz	0.55	300 mA
L-14C27N#V4E	27.0 nH	±5%	±10%	10	100 MHz	2000 MHz	0.60	300 mA
L-14C33N#V4E	33.0 nH	±5%	±10%	10	100 MHz	1600 MHz	0.65	300 mA
L-14C39N#V4E	39.0 nH	±5%	±10%	10	100 MHz	1500 MHz	0.70	300 mA
L-14C47N#V4E	47.0 nH	±5%	±10%	12	100 MHz	1200 MHz	0.90	300 mA
L-14C56N#V4E	56.0 nH	±5%	±10%	12	100 MHz	1100 MHz	1.00	300 mA
L-14C68N#V4E	68.0 nH	±5%	±10%	12	100 MHz	1000 MHz	1.10	300 mA
L-14C82N#V4E	82.0 nH	±5%	±10%	12	100 MHz	850 MHz	1.20	300 mA
L-14CR10#V4E	100 nH	±5%	±10%	12	100 MHz	750 MHz	1.20	300 mA
L-14CR12#V4E	120 nH	±5%	±10%	8	50 MHz	700 MHz	1.30	300 mA
L-14CR15#V4E	150 nH	±5%	±10%	8	50 MHz	650 MHz	1.40	300 mA
L-14CR18#V4E	180 nH	±5%	±10%	8	50 MHz	550 MHz	1.50	300 mA
L-14CR22#V4E	220 nH	±5%	±10%	8	50 MHz	450 MHz	1.70	300 mA

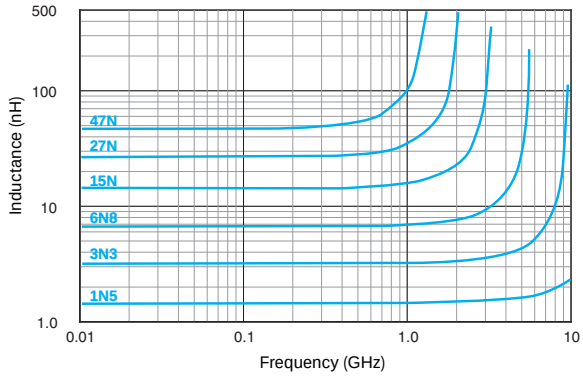
0805 INDUCTANCE RANGE / ELECTRICAL CHARACTERISTICS

Part Number	Inductance	Tolerance		Q (Min.)	L/Q Freq.	Typical SRF	DC Resistance Max	Rated Current
L-15C1N5SV4E	1.5 nH	± 0.3 nH		10	100 MHz	>6000 MHz	0.10	300 mA
L-15C1N8SV4E	1.8 nH	± 0.3 nH		10	100 MHz	>6000 MHz	0.10	300 mA
L-15C2N2SV4E	2.2 nH	± 0.3 nH		10	100 MHz	>6000 MHz	0.10	300 mA
L-15C2N7SV4E	2.7 nH	± 0.3 nH		12	100 MHz	>6000 MHz	0.12	300 mA
L-15C3N3@V4E	3.3 nH	± 0.3 nH	±10%	12	100 MHz	>6000 MHz	0.13	300 mA
L-15C3N9@V4E	3.9 nH	± 0.3 nH	±10%	12	100 MHz	5600 MHz	0.15	300 mA
L-15C4N7@V4E	4.7 nH	± 0.3 nH	±10%	12	100 MHz	5500 MHz	0.20	300 mA
L-15C5N6@V4E	5.6 nH	± 0.3 nH	±10%	12	100 MHz	4700 MHz	0.23	300 mA
L-15C6N8#V4E	6.8 nH	±5%	±10%	15	100 MHz	3900 MHz	0.25	300 mA
L-15C8N2#V4E	8.2 nH	±5%	±10%	15	100 MHz	3200 MHz	0.28	300 mA
L-15C10N#V4E	10.0 nH	±5%	±10%	15	100 MHz	3100 MHz	0.30	300 mA
L-15C12N#V4E	12.0 nH	±5%	±10%	15	100 MHz	2800 MHz	0.35	300 mA
L-15C15N#V4E	15.0 nH	±5%	±10%	15	100 MHz	2400 MHz	0.40	300 mA
L-15C18N#V4E	18.0 nH	±5%	±10%	15	100 MHz	2100 MHz	0.45	300 mA
L-15C22N#V4E	22.0 nH	±5%	±10%	15	100 MHz	2000 MHz	0.50	300 mA
L-15C27N#V4E	27.0 nH	±5%	±10%	15	100 MHz	1800 MHz	0.55	300 mA
L-15C33N#V4E	33.0 nH	±5%	±10%	15	100 MHz	1700 MHz	0.60	300 mA
L-15C39N#V4E	39.0 nH	±5%	±10%	18	100 MHz	1400 MHz	0.65	300 mA
L-15C47N#V4E	47.0 nH	±5%	±10%	18	100 MHz	1200 MHz	0.70	300 mA
L-15C56N#V4E	56.0 nH	±5%	±10%	18	100 MHz	1000 MHz	0.75	300 mA
L-15C68N#V4E	68.0 nH	±5%	±10%	18	100 MHz	900 MHz	0.80	300 mA
L-15C82N#V4E	82.0 nH	±5%	±10%	18	100 MHz	900 MHz	0.85	300 mA
L-15CR10#V4E	100 nH	±5%	±10%	18	100 MHz	700 MHz	0.90	300 mA
L-15CR12#V4E	120 nH	±5%	±10%	13	50 MHz	600 MHz	0.95	300 mA
L-15CR15#V4E	150 nH	±5%	±10%	13	50 MHz	500 MHz	1.00	300 mA
L-15CR18#V4E	180 nH	±5%	±10%	13	50 MHz	430 MHz	1.10	300 mA
L-15CR22#V4E	220 nH	±5%	±10%	12	50 MHz	400 MHz	1.20	300 mA
L-15CR27#V4E	270 nH	±5%	±10%	12	50 MHz	340 MHz	1.30	300 mA
L-15CR33#V4E	330 nH	±5%	±10%	12	50 MHz	320 MHz	1.50	300 mA
L-15CR39#V4E	390 nH	±5%	±10%	10	50 MHz	270 MHz	1.60	300 mA
L-15CR47#V4E	470 nH	±5%	±10%	10	50 MHz	250 MHz	1.80	300 mA
L-15CR56#V4E	560 nH	±5%	±10%	10	50 MHz	230 MHz	2.50	300 mA
L-15CR68#V4E	680 nH	±5%	±10%	10	50 MHz	180 MHz	3.00	300 mA

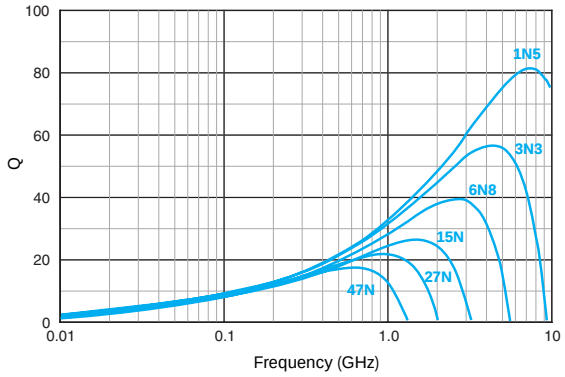
"@ = Choice of S or K Tolerance, # = J or K Tolerance"

RF Characteristics Characteristics (Typical)

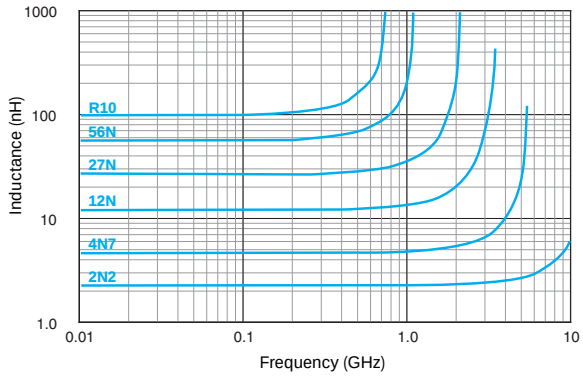
INDUCTANCE VS FREQUENCY: SIZE 0402



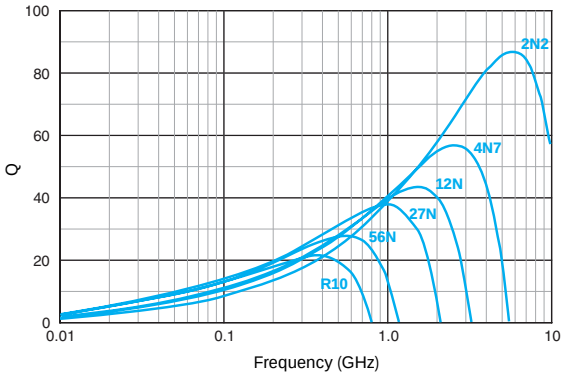
Q VS FREQUENCY: SIZE 0402



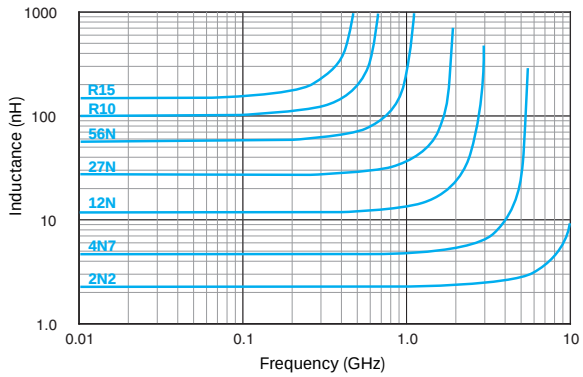
INDUCTANCE VS FREQUENCY: SIZE 0603



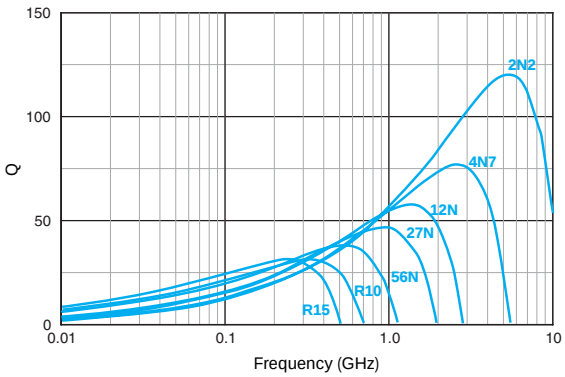
Q VS FREQUENCY: SIZE 0603



INDUCTANCE VS FREQUENCY: SIZE 0805



Q VS FREQUENCY: SIZE 0805



Mechanical & Environmental Characteristics

	SPECIFICATION	TEST PARAMETERS
SOLDERABILITY:	Solder coverage 75% of electrodes L=±10% Q=± 20%	Preheat 120±20°C for 1 min. Dip 230±10°C for 3±1 sec.
RESISTANCE TO SOLDERING:	No apparent damage Solder coverage 75% L=±10% Q=± 20%	Preheat 120±20°C for 1 min. Dip 260±10°C for 10±1 sec.
THERMAL SHOCK:	No apparent damage L=±10% Q=± 20%	100 cycles: 30±3 minutes @ +100°C then 30±3 min. @ -40°C
LIFE TEST:	No apparent damage L=±10% Q=± 20%	1000 ±48 Hours @ +85±2°C, rated current (1-2 hour recovery)
HUMIDITY RESISTANCE:	Inductance change: 2% or .5pF Max	1000 ±48 Hours @ +40±2°C, 90-95% relative humidity, rated current (1-2 hour recovery)
TERMINAL ADHESION:	Termination should not pull off. Ceramic should remain undamaged.	Lateral pull force: 0201 1.0Lbs 0402 1.6Lbs For 0603 2.2Lbs For 0805 4.4Lbs
PCB DEFLECTION:	No mechanical damage.	Glass Epoxy PCB: 1 mm deflection