

CHIP CERAMIC INDUCTORS

Features

1. SMD type chip inductors utilizing monolithic structure provide highly reliable surface mount application.
2. Superior Q characteristics is guaranteed over wide frequency range for high frequency applications.
3. Excellent solder heat resistance for soldering.
4. Lead Free (RoHS Compliant)

Applications

1. RF module of telecommunication products.
- cellular phone, cordless telephone etc.
2. GSM phone, PCS phone.
3. Computer communications, Radar detectors.
4. Automotive electronics, Keyless remote.

Ordering Information

$\frac{CI}{(1)}$ - $\frac{B}{(2)}$ $\frac{1608}{(3)}$ - $\frac{120}{(4)}$ $\frac{K}{(5)}$ $\frac{J}{(6)}$ $\frac{T}{(7)}$

(1) Series

(2) Material & Design

(3) Dimensions

First two digits : length(mm)
Last two digits : width(mm)

(4) Inductance

First two digits are values.
Last digit is the number of zeros.
N : a decimal point placed between first two digits.

(5) Tolerance

S : $\pm 0,3nH$
J : $\pm 5\%$
K : $\pm 10\%$.

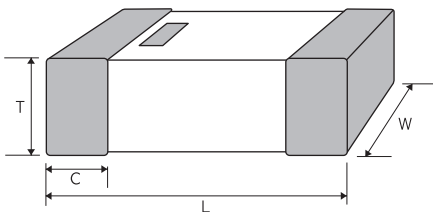
(6) Termination

J : Nickel barrier

(7) Packaging

B : Bulk Package
T : Tape & Reel (\varnothing 178mm [7 inches])
L : Tape & Reel (\varnothing 254mm [10 inches])

Shape and Dimensions



unit : mm[inches]

Type	L	W	T	C
CI-□0603-	0,6 \pm 0,03 [.024 \pm ,001]	0,3 \pm 0,03 [.012 \pm ,001]	0,3 \pm 0,03 [.012 \pm ,001]	0,15 \pm 0,05 [.006 \pm ,002]
CI-□1005-	1,0 \pm 0,10 [.039 \pm ,004]	0,5 \pm 0,10 [.020 \pm ,004]	0,5 \pm 0,10 [.020 \pm ,004]	0,20 \pm 0,10 [.008 \pm ,004]
CI-□1608-	1,6 \pm 0,15 [.063 \pm ,006]	0,8 \pm 0,15 [.031 \pm ,006]	0,8 \pm 0,15 [.031 \pm ,006]	0,30 \pm 0,20 [.012 \pm ,008]
CI-□2012-	2,0 \pm 0,20 [.079 \pm ,008]	1,25 \pm 0,20 [.049 \pm ,008]	1,0 \pm 0,20 [.039 \pm ,008]	0,50 \pm 0,30 [.020 \pm ,012]

*The polarity mark available upon request.

Specifications

CI0603

Part No.	Inductance		Q(min.)	Q(typ.)			SRF(MHz)	DCR (mΩ) max	Rated Current (mA) max.
	nH	Tolerance		100MHz	100MHz	800MHz			
CI-B0603-10N	1,0	±0.3nH	4	5	15	25	> 13000	200	300
CI-B0603-12N	1,2		4	5	15	25	> 13000	200	300
CI-B0603-15N	1,5		4	5	15	25	> 13000	300	300
CI-B0603-18N	1,8		4	5	15	25	> 13000	300	300
CI-B0603-22N	2,2		4	5	17	25	12500	350	300
CI-B0603-27N	2,7		4	5	17	25	11000	400	300
CI-B0603-33N	3,3		4	5	17	26	9600	450	300
CI-B0603-39N	3,9		4	5	17	26	8600	500	300
CI-B0603-47N	4,7		4	5	17	26	7600	550	300
CI-B0603-56N	5,6		4	5	17	26	6600	600	300
CI-B0603-68N	6,8	± 5%	4	6	18	25	5600	700	250
CI-B0603-82N	8,2		4	6	18	25	4900	800	250
CI-B0603-100	10		4	6	18	25	4200	900	250
CI-B0603-120	12		4	6	20	-	3000	1100	250
CI-B0603-150	15		4	6	20	-	2700	1200	250
CI-B0603-180	18		4	6	20	-	2400	1400	200
CI-B0603-220	22		4	6	20	-	2000	1700	200

Test Equipment & Fixture

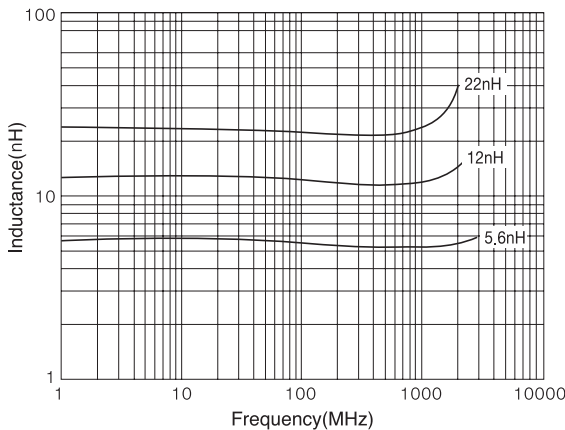
L, Q : RF Impedance Analyzer 4991A(Agilent), Test Fixture 16196C(Agilent)

SRF : Network Analyzer 8722ES (Agilent),

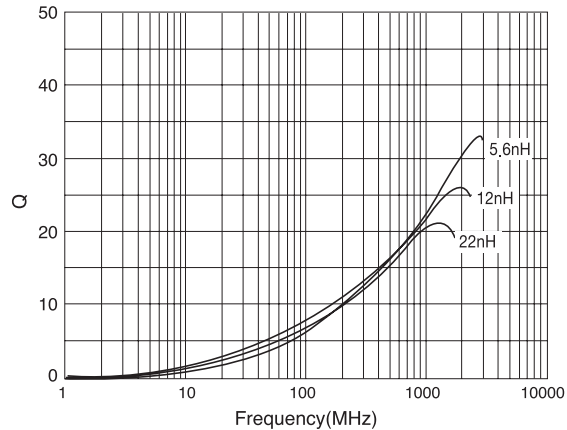
Rdc : TWA-161A, B

Electrical Characteristics

Inductance Characteristics



Q Characteristics



Specifications

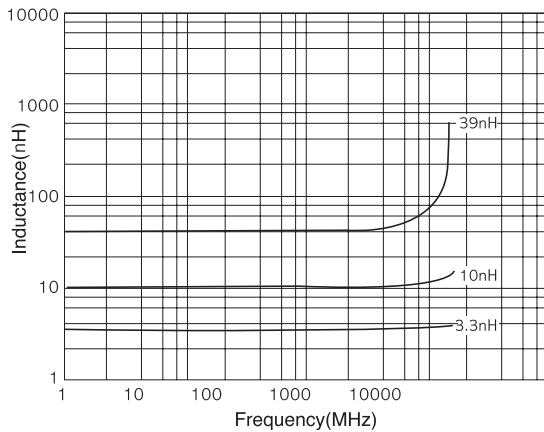
CI1005

Part No.	Inductance		Q 100MHz min.	Q 800MHz min.	Q 1.8GHz min.	SRF(MHz)		DCR (mΩ) max	Rated Current (mA) max.	
	nH	Tolerance				min.	typ.			
CI-B1005-10N□□□	1.0	±0.3nH	8	20	26	6000	13000	100	300	
CI-B1005-12N□□□	1.2		8	20	26	6000	10000	120	300	
CI-B1005-15N□□□	1.5		8	20	30	6000	10000	120	300	
CI-B1005-18N□□□	1.8		8	22	35	6000	9500	140	300	
CI-B1005-22N□□□	2.2		8	22	35	6000	9000	160	300	
CI-B1005-27N□□□	2.7		8	22	35	6000	9000	200	300	
CI-B1005-33N□□□	3.3		8	22	35	6000	8000	220	300	
CI-B1005-39N□□□	3.9		8	22	30	4000	6500	250	300	
CI-B1005-47N□□□	4.7		8	22	30	4000	5000	280	300	
CI-B1005-56N□□□	5.6		8	22	28	4000	5000	300	300	
CI-B1005-68N□□□	6.8		± 5%	8	22	28	3900	4400	350	300
CI-B1005-82N□□□	8.2			8	20	28	3600	4000	400	250
CI-B1005-100□□□	10	8		20	24	3200	3500	450	250	
CI-B1005-120□□□	12	8		20	24	2700	3500	500	200	
CI-B1005-150□□□	15	8		20	20	2300	3000	550	200	
CI-B1005-180□□□	18	8		20	15	2100	2600	650	200	
CI-B1005-220□□□	22	8		20	13	1900	2200	800	200	
CI-B1005-270□□□	27	8		17	-	1600	1900	900	200	
CI-B1005-330□□□	33	8		16	-	1300	1700	1100	200	
CI-B1005-390□□□	39	8		16	-	1200	1600	1200	100	
CI-B1005-470□□□	47	8		10	-	1000	1300	1300	100	
CI-B1005-560□□□	56	8		-	-	750	900	1400	100	
CI-B1005-680□□□	68	8	-	-	700	800	1400	100		
CI-B1005-820□□□	82	8	-	-	600	700	1600	100		
CI-B1005-101□□□	100	8	-	-	350	650	2000	100		

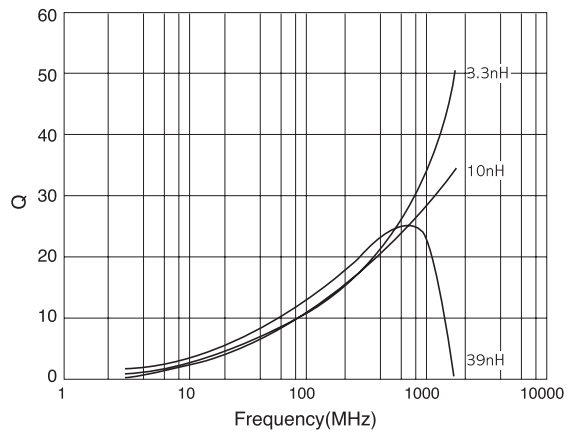
· SRF : Self-Resonant Frequency. · DCR : DC Resistance

Electrical Characteristics

Inductance Characteristics



Q Characteristics



Specifications

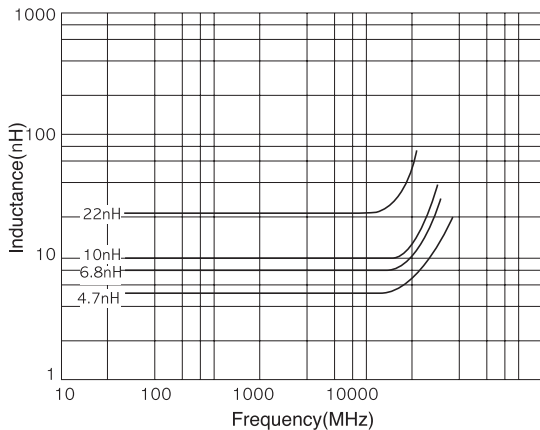
CI1608

Part No.	Inductance		Q min.	L,Q test frequency (MHz)	SRF(MHz)		DCR (mΩ) max	Rated Current (mA) max.	
	nH	Tolerance			min.	typ.			
CI-B1608-10N□□□	1.0	±0.3nH	8	100	4000	13000	100	300	
CI-B1608-12N□□□	1.2		8	100	4000	13000	100	300	
CI-B1608-15N□□□	1.5		8	100	4000	10000	100	300	
CI-B1608-18N□□□	1.8		8	100	3800	10000	120	300	
CI-B1608-22N□□□	2.2		8	100	3600	10000	160	300	
CI-B1608-27N□□□	2.7		8	100	3400	8000	200	300	
CI-B1608-33N□□□	3.3		10	100	3200	6000	220	300	
CI-B1608-39N□□□	3.9		10	100	3000	6000	250	300	
CI-B1608-47N□□□	4.7		10	100	2800	5000	280	300	
CI-B1608-56N□□□	5.6		10	100	2700	5000	290	300	
CI-B1608-68N□□□	6.8		± 5% ±10%	10	100	2600	4000	300	300
CI-B1608-82N□□□	8.2			10	100	2200	4000	330	300
CI-B1608-100□□□	10	10		100	1800	3000	350	300	
CI-B1608-120□□□	12	10		100	1650	2500	400	300	
CI-B1608-150□□□	15	10		100	1350	2000	450	300	
CI-B1608-180□□□	18	10		100	1350	2000	500	300	
CI-B1608-220□□□	22	10		100	1100	1800	550	300	
CI-B1608-270□□□	27	10		100	1100	1600	600	300	
CI-B1608-330□□□	33	10		100	1000	1400	650	300	
CI-B1608-390□□□	39	10		100	900	1300	700	300	
CI-B1608-470□□□	47	10		100	800	1300	900	300	
CI-B1608-560□□□	56	10		100	700	1100	1000	300	
CI-B1608-680□□□	68	10		100	650	1000	1200	300	
CI-B1608-820□□□	82	10		100	600	850	1500	300	
CI-B1608-101□□□	100	10		100	550	750	1700	300	
CI-B1608-121□□□	120	8		50	500	650	2000	250	
CI-B1608-151□□□	150	8		50	500	600	2400	200	
CI-B1608-181□□□	180	8		50	400	500	2700	200	
CI-B1608-221□□□	220	8	50	400	500	2800	200		
CI-B1608-271□□□	270	8	50	350	450	3100	200		

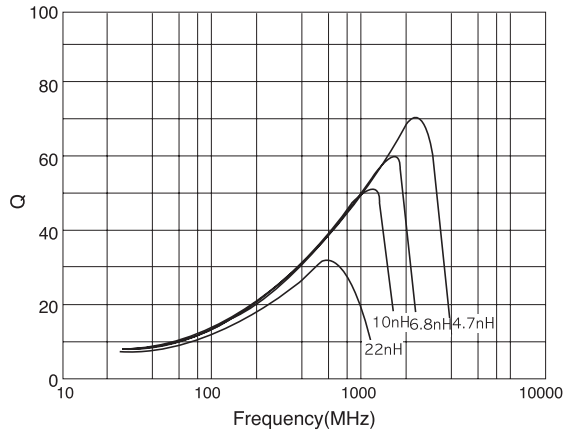
· SRF : Self-Resonant Frequency. · DCR : DC Resistance

Electrical Characteristics

Inductance Characteristics



Q Characteristics



Specifications

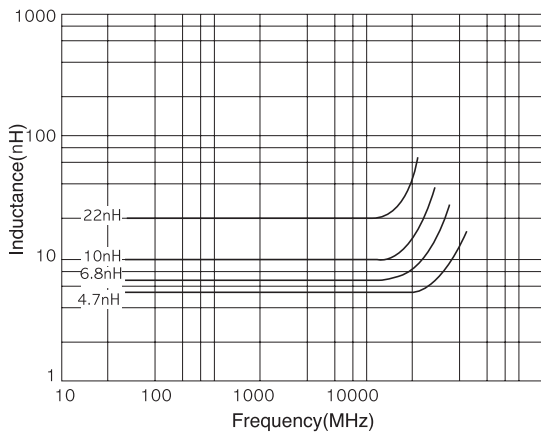
CI2012

Part No.	Inductance		Q min.	L, Q test frequency (MHz)	SRF(MHz)		DCR (mΩ) max	Rated Current (mA) max.
	nH	Tolerance			min.	typ.		
CI-B2012-10N□□□	1.0	±0.3nH	10	100	4000	12000	100	300
CI-B2012-12N□□□	1.2		10	100	4000	10000	100	300
CI-B2012-15N□□□	1.5		10	100	4000	10000	100	300
CI-B2012-18N□□□	1.8		10	100	4000	8000	100	300
CI-B2012-22N□□□	2.2		10	100	3800	8000	100	300
CI-B2012-27N□□□	2.7		10	100	3600	6000	100	300
CI-B2012-33N□□□	3.3		10	100	3400	6000	130	300
CI-B2012-39N□□□	3.9		10	100	3200	5400	150	300
CI-B2012-47N□□□	4.7		10	100	3000	4500	200	300
CI-B2012-56N□□□	5.6		10	100	2800	4000	230	300
CI-B2012-68N□□□	6.8		10	100	2600	3650	250	300
CI-B2012-82N□□□	8.2		10	100	2200	3000	280	300
CI-B2012-100□□□	10		10	100	1800	2500	300	300
CI-B2012-120□□□	12		10	100	1650	2450	350	300
CI-B2012-150□□□	15	10	100	1350	2000	400	300	
CI-B2012-180□□□	18	10	100	1350	1750	450	300	
CI-B2012-220□□□	22	15	100	1100	1500	500	300	
CI-B2012-270□□□	27	15	100	1100	1500	550	300	
CI-B2012-330□□□	33	15	100	900	1200	600	300	
CI-B2012-390□□□	39	15	100	900	1150	650	300	
CI-B2012-470□□□	47	15	100	850	1050	700	300	
CI-B2012-560□□□	56	15	100	750	1000	750	300	
CI-B2012-680□□□	68	15	100	700	950	800	300	
CI-B2012-820□□□	82	15	100	600	850	900	300	
CI-B2012-101□□□	100	15	100	500	730	1000	300	
CI-B2012-121□□□	120	15	50	450	630	1300	250	
CI-B2012-151□□□	150	15	50	400	570	1500	250	
CI-B2012-181□□□	180	15	50	350	510	1800	250	
CI-B2012-221□□□	220	10	50	330	450	2000	250	
CI-B2012-271□□□	270	10	50	300	410	2500	250	
CI-B2012-331□□□	330	10	50	270	370	3000	250	
CI-B2012-391□□□	390	10	50	220	330	3500	250	
CI-B2012-471□□□	470	10	50	180	280	4000	250	

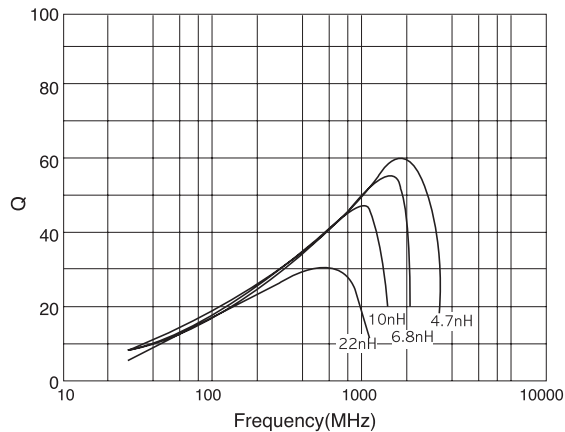
· SRF : Self-Resonant Frequency. · DCR : DC Resistance

Electrical Characteristics

Inductance Characteristics



Q Characteristics



* All specifications are subject to change without notice

CHIP FERRITE INDUCTORS

Features

1. Ideal for high density surface mount applications as magnetic shield eliminates crosstalk.
2. Highly reliable in wide temperature and humidity range. Superior Q characteristics in wide frequency.
3. Terminal electrode has excellent solder heat resistance.
4. Lead Free (RoHS Compliant)

Applications

1. Prevention of electromagnetic interference to signals on the secondary side of electronic equipment.

Ordering Information

$\frac{\text{FI}}{(1)}$ - $\frac{\text{A}}{(2)}$ $\frac{1608}{(3)}$ - $\frac{680}{(4)}$ $\frac{\text{K}}{(5)}$ $\frac{\text{J}}{(6)}$ $\frac{\text{T}}{(7)}$

(1) Series

(2) Material & Design

(3) Dimensions

First two digits : length(mm)
Last two digits : width(mm)

(4) Inductance

(5) Tolerance

K : $\pm 10\%$
M : $\pm 20\%$.

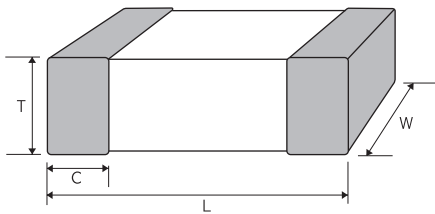
(6) Termination

J : Nickel barrier

(7) Packaging

B : Bulk Package
T : Tape & Reel (\varnothing 178mm [7 inches])
L : Tape & Reel (\varnothing 254mm [10 inches])

Shape and Dimensions



unit : mm[inches]

Type	L	W	T	C
FI-□1608-	1,6 \pm 0,15 [.063 \pm ,006]	0,8 \pm 0,15 [.031 \pm ,006]	0,8 \pm 0,15 [.031 \pm ,006]	0,30 \pm 0,20 [.012 \pm ,008]
FI-□2012-	2,0 \pm 0,2 [.079 \pm ,008]	1,25 \pm 0,2 [.049 \pm ,008]	0,85 \pm 0,2 [.033 \pm ,008]	0,50 \pm 0,30 [.020 \pm ,012]
	2,0 \pm 0,2 [.079 \pm ,008]	1,25 \pm 0,2 [.049 \pm ,008]	1,25 \pm 0,2 [.049 \pm ,008]	0,50 \pm 0,30 [.020 \pm ,012]
FI-□3216-	3,2 \pm 0,2 [.126 \pm ,008]	1,6 \pm 0,2 [.063 \pm ,008]	1,3 \pm 0,2 [.051 \pm ,008]	0,50 \pm 0,30 [.020 \pm ,012]

Specifications

FI1608

Part No.	Inductance		Q		L,Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated Current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-A1608-270□□□	0,027	±10% ±20%	10	45	50	260	350	90	60	200
FI-A1608-470□□□	0,047		10	45	50	260	320	150	100	200
FI-A1608-560□□□	0,056		10	45	50	255	300	200	90	200
FI-A1608-680□□□	0,068		10	45	50	250	290	200	90	200
FI-A1608-820□□□	0,082		10	45	50	245	280	250	120	200
FI-A1608-101□□□	0,10		15	30	25	240	270	250	140	200
FI-A1608-121□□□	0,12		15	30	25	205	260	300	150	200
FI-A1608-151□□□	0,15		15	30	25	180	250	350	180	200
FI-A1608-181□□□	0,18		15	30	25	165	220	400	190	200
FI-A1608-221□□□	0,22		15	30	25	150	200	400	190	200
FI-A1608-271□□□	0,27		15	30	25	136	190	500	270	200
FI-A1608-331□□□	0,33		15	30	25	125	180	550	280	150
FI-A1608-391□□□	0,39		15	30	25	110	170	600	300	150
FI-A1608-471□□□	0,47		15	30	25	105	160	700	390	150
FI-A1608-561□□□	0,56		15	30	25	95	150	900	500	150
FI-A1608-681□□□	0,68		15	30	25	80	140	900	500	150
FI-A1608-821□□□	0,82		15	30	25	75	130	1600	800	100
FI-B1608-102□□□	1,0		35	50	10	70	95	500	250	100
FI-B1608-122□□□	1,2		35	50	10	60	80	600	250	100
FI-B1608-152□□□	1,5		35	50	10	55	70	650	300	50
FI-B1608-182□□□	1,8	35	50	10	50	70	750	350	50	
FI-B1608-222□□□	2,2	35	50	10	45	60	900	450	50	
FI-B1608-272□□□	2,7	35	50	10	40	55	1000	600	50	

· SRF : Self-Resonant Frequency. · DCR : DC Resistance
 ※ Parts with other Inductance Tolerance('J' ±5%) available upon request.

FI2012

Part No.	Inductance		Q		L,Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated Current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-A2012-470□□□	0,047	±10% ±20%	20	60	50	320	400	100	50	300
FI-A2012-560□□□	0,056		20	60	50	300	380	150	80	300
FI-A2012-680□□□	0,068		20	60	50	280	350	200	80	300
FI-A2012-820□□□	0,082		20	60	50	255	320	200	80	300
FI-A2012-101□□□	0,10		25	50	25	235	300	200	90	250
FI-A2012-121□□□	0,12		25	50	25	220	280	200	65	250
FI-A2012-151□□□	0,15		25	50	25	200	250	200	60	250
FI-A2012-181□□□	0,18		25	50	25	185	230	200	100	250
FI-A2012-221□□□	0,22		25	50	25	170	220	250	100	250
FI-A2012-271□□□	0,27		25	50	25	150	200	300	150	250
FI-A2012-331□□□	0,33		25	50	25	145	180	300	150	250
FI-A2012-391□□□	0,39		30	50	25	135	170	400	190	200
FI-A2012-471□□□	0,47		30	50	25	125	160	400	190	200
FI-A2012-561□□□	0,56		30	50	25	115	150	400	280	150
FI-A2012-681□□□	0,68		30	50	25	105	135	500	300	150
FI-A2012-821□□□	0,82		30	50	25	100	125	600	350	150
FI-B2012-102□□□	1,0		45	75	10	75	105	300	120	100
FI-B2012-122□□□	1,2		45	75	10	65	95	400	140	100
FI-B2012-152□□□	1,5		45	75	10	60	85	400	140	100
FI-B2012-182□□□	1,8		45	75	10	55	75	400	160	100
FI-B2012-222□□□	2,2	45	80	10	50	70	400	200	50	
FI-B2012-272□□□	2,7	45	80	10	45	65	500	250	50	
FI-B2012-332□□□	3,3	45	80	10	40	55	500	270	50	
FI-B2012-392□□□	3,9	45	80	10	38	50	700	500	50	
FI-B2012-472□□□	4,7	45	80	10	35	48	1000	700	50	

· SRF : Self-Resonant Frequency. · DCR : DC Resistance
 ※ Parts with other Inductance Tolerance('J' ±5%) available upon request.

Specifications

FI2012

Part No.	Inductance		Q		L,Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated Current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-C2012-562□□□	5,6	±10% ±20%	50	60	4	32	45	500	250	50
FI-C2012-682□□□	6,8		50	60	4	29	40	600	330	25
FI-C2012-822□□□	8,2		50	60	4	26	36	700	380	25
FI-C2012-103□□□	10,0		50	60	2	24	33	800	450	25
FI-C2012-123□□□	12,0		50	60	2	22	30	800	470	25
FI-D2012-153□□□	15,0		30	40	1	19	27	600	400	15
FI-D2012-183□□□	18,0		30	40	1	18	25	700	450	15
FI-D2012-223□□□	22,0		30	40	1	16	22	800	500	5
FI-D2012-273□□□	27,0		30	40	1	14	20	900	550	5
FI-D2012-333□□□	33,0		30	40	0,4	13	18	1000	600	5

· SRF : Self-Resonant Frequency. · DCR : DC Resistance

FI3216

Part No.	Inductance		Q		L,Q test frequency (MHz)	SRF(MHz)		DCR(mΩ)		Rated Current (mA) max.
	μH	Tolerance	min.	typ.		min.	typ.	max.	typ.	
FI-A3216-470□□□	0,047	±10% ±20%	20	60	50	320	400	150	80	300
FI-A3216-560□□□	0,056		20	60	50	300	360	150	80	300
FI-A3216-680□□□	0,068		20	60	50	280	330	150	100	300
FI-A3216-820□□□	0,082		20	60	50	255	300	150	100	300
FI-A3216-101□□□	0,10		25	50	25	235	280	200	100	250
FI-A3216-121□□□	0,12		25	50	25	220	260	200	100	250
FI-A3216-151□□□	0,15		25	50	25	200	240	200	100	250
FI-A3216-181□□□	0,18		25	50	25	185	220	200	100	250
FI-A3216-221□□□	0,22		25	50	25	170	200	250	120	250
FI-A3216-271□□□	0,27		25	50	25	150	180	250	120	250
FI-A3216-331□□□	0,33		25	50	25	145	170	300	130	250
FI-A3216-391□□□	0,39		30	50	25	135	160	300	150	200
FI-A3216-471□□□	0,47		30	50	25	125	145	300	150	200
FI-A3216-561□□□	0,56		30	50	25	115	135	350	170	150
FI-A3216-681□□□	0,68		30	50	25	105	125	350	250	150
FI-A3216-821□□□	0,82		30	50	25	100	115	400	300	150
FI-B3216-102□□□	1,0		45	80	10	75	90	250	130	100
FI-B3216-122□□□	1,2		45	80	10	65	80	300	150	100
FI-B3216-152□□□	1,5		45	80	10	60	70	300	170	100
FI-B3216-182□□□	1,8		45	80	10	55	66	500	250	100
FI-B3216-222□□□	2,2		45	80	10	50	58	600	300	50
FI-B3216-272□□□	2,7		45	80	10	45	53	600	300	50
FI-B3216-332□□□	3,3		45	85	10	41	49	700	350	50
FI-B3216-392□□□	3,9		45	85	10	38	45	800	400	50
FI-B3216-472□□□	4,7		45	85	10	35	41	800	400	50
FI-C3216-562□□□	5,6		50	65	4	32	38	600	300	50
FI-C3216-682□□□	6,8		50	65	4	29	34	600	300	50
FI-C3216-822□□□	8,2		50	65	4	26	31	600	330	50
FI-C3216-103□□□	10,0		50	65	2	24	28	700	380	50
FI-C3216-123□□□	12,0		50	65	2	22	26	900	450	25
FI-C3216-153□□□	15,0		35	45	1	19	23	1100	550	25
FI-C3216-183□□□	18,0		35	45	1	18	21	1500	800	25
FI-C3216-223□□□	22,0		35	45	1	16	19	1500	800	25
FI-C3216-273□□□	27,0	35	45	1	14	17	1500	800	25	
FI-C3216-333□□□	33,0	35	45	0,4	13	16	1600	850	25	

· SRF : Self-Resonant Frequency. · DCR : DC Resistance

※ Test equipment : HP4291A + HP16192A

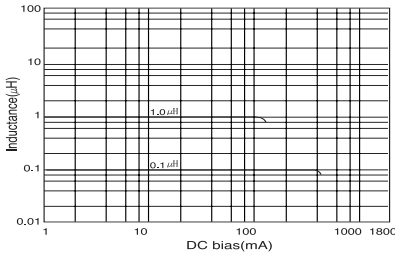
: HP4295A + HP16334A

※ Parts with other Inductance Tolerance('J' ±5%) available upon request.

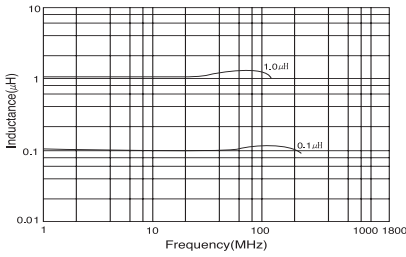
Electrical Characteristics

1608

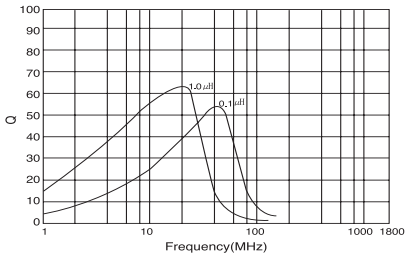
DC bias characteristics



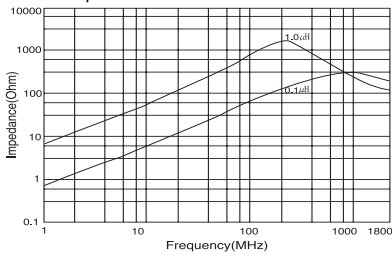
Inductance characteristics



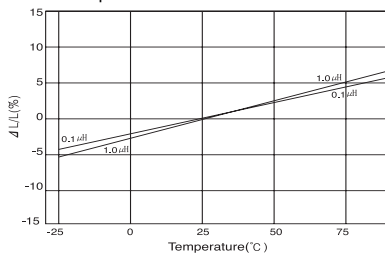
Q characteristics



Impedance characteristics

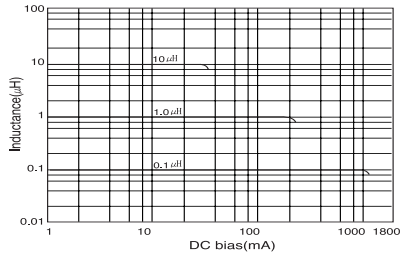


Temperature characteristics

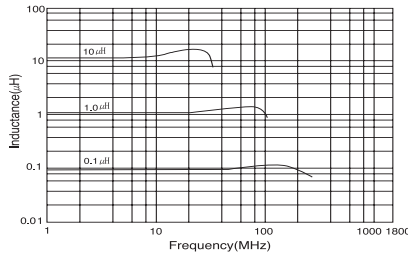


2012

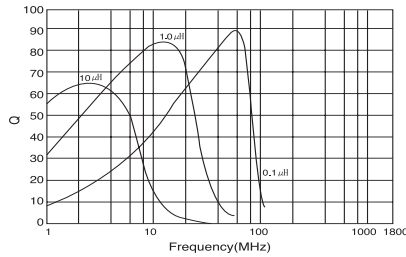
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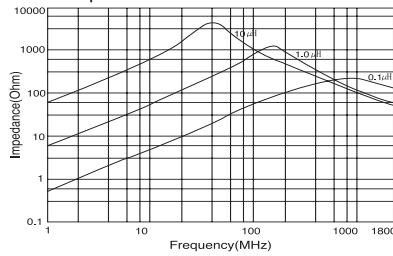
Inductance characteristics



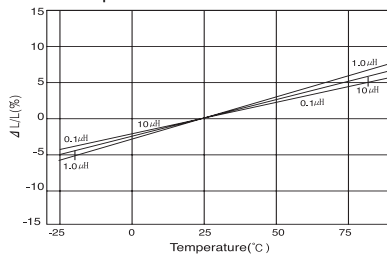
Q characteristics



Impedance characteristics

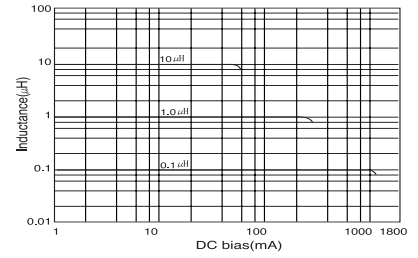


Temperature characteristics

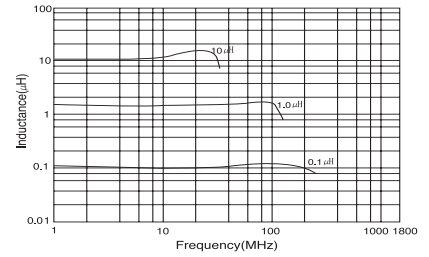


3216

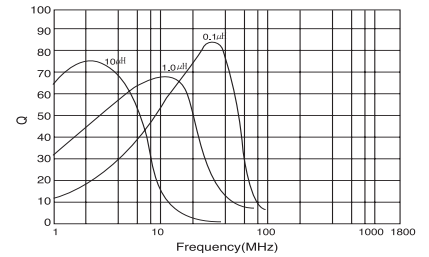
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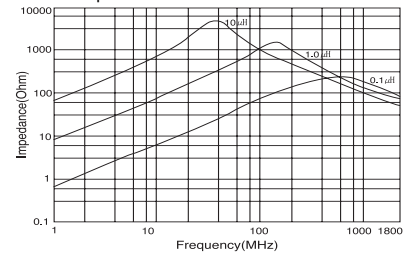
Inductance characteristics



Q characteristics



Impedance characteristics



Temperature characteristics

