Features

1. SMD type chip inductors utilizing monolithic structure provide highly reliable surface mount applications.
2. Superior Q characteristics is guaranteed over the wide frequency range to allow high frequency applications.
3. Terminal electrode has excellent solder heat resistance for soldering.

Applications

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

Ordering Information

CI	-	B	1608	-	120	-	K	J	T
(1)		(2)	(3)		(4)		(5)	(6)	(7)

(1) Series

(2) Material & design

(3) Dimensions
The first two digits : length(㎜)
The last two digits : width(㎜)

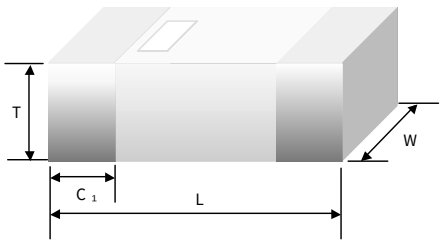
(4) Inductance
The first two digits are signigicant.
The last digit is the number of zeros following.
N : a decimal point placed between first two digits

(5) Tolerance
S : ± 0.3nH
J : ± 5%
K : ± 10%

(6) Termination
J : Nickel barrier

(7) Packing
B : Bulk Packing
T : Tape & Reel (Φ 178㎜ [7inches])
L : Tape & Reel (Φ 254㎜ [10inches])

Shape and Dimensions



unit : mm [inches]

Type	L	W	T	C
CI-□1005-	1.0±0.10 〔.039±.004〕	0.5±0.10 〔.020±.004〕	0.5±0.10 〔.020±.004〕	0.20±0.10 〔.008±.004〕
CI-□1608-	1.6±0.15 〔.063±.006〕	0.8±0.15 〔.031±.006〕	0.8±0.15 〔.031±.006〕	0.30±0.20 〔.012±.008〕
CI-□2012-	2.0±0.2 〔.079±.008〕	1.25±0.2 〔.049±.008〕	1.0±0.2 〔.047±.008〕	0.50±0.30 〔.020±.012〕

※ The polarity mark can be provided upon customer's request.

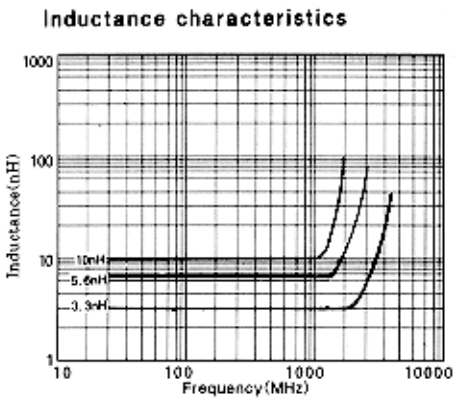
Specifications

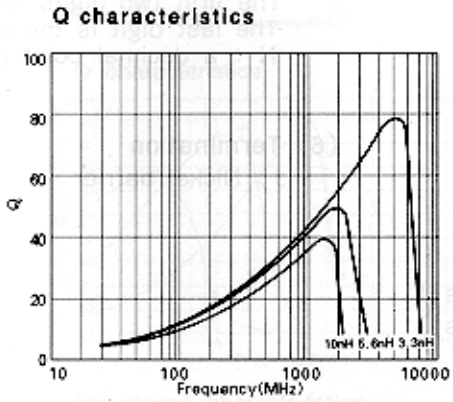
CI1005

Part No.	Inductance		Q 100㎒ min.	Q 800㎒ min.	Q 1.8㎓ min.	SRF (㎒) min.	SRF (㎒) typ.	DCR (mΩ) max.	Rated current (mA) max
	nH	Tolerance							
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□□□	10.0		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



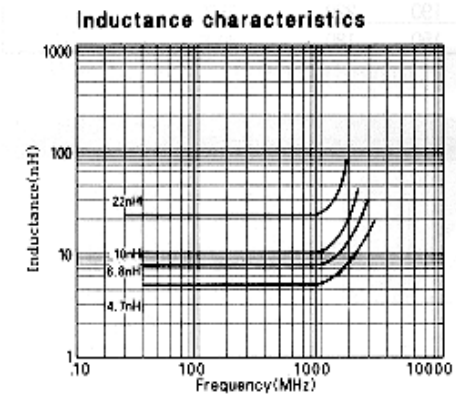


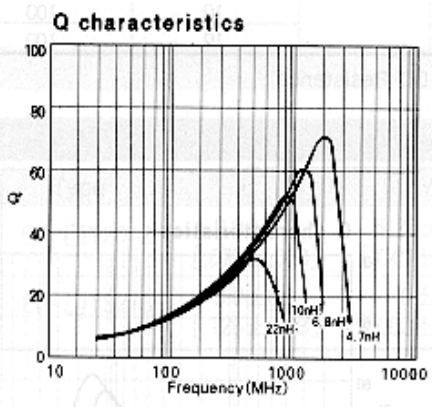
CI1608

Part No.	Inductance		Q	L, Q test	SRF (MHz)		DCR	Rated current
	nH	Tolerance	min.	frequency (MHz)	min.	typ.	(mΩ) max.	(mA) max
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	750	1100	1000	300
CI-B1608-680□□□	68		10	100	700	1000	1200	300
CI-B1608-820□□□	82		10	100	600	850	1500	300
CI-B1608-101□□□	100		10	100	600	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	350	500	2800	200
CI-B1608-271□□□	270		8	50	300	450	3100	200

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

Electrical characteristics



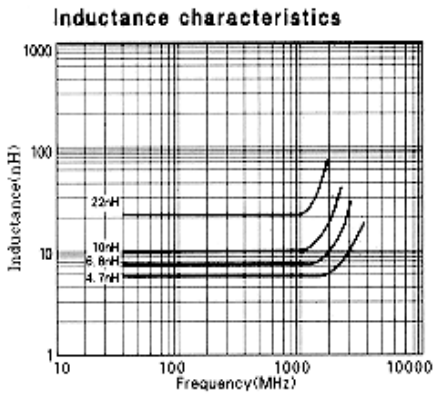


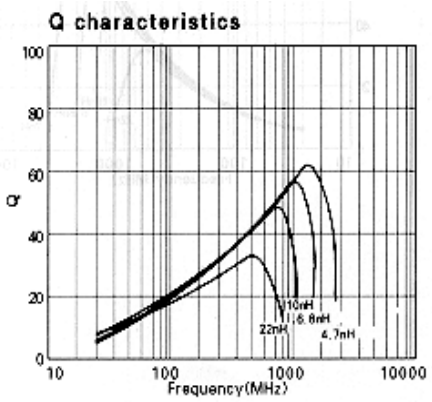
CI2012

Part No.	Inductance		Q	L, Q test	SRF (MHz)		DCR	Rated current
	nH	Tolerance	min.	frequency(MHz)	min.	typ.	(mΩ) max.	(mA) max.
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	± 5% ±10%	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	1300	650	300
CI-B2012-470□□□	47		15	100	850	1150	700	300
CI-B2012-560□□□	56		15	100	750	1050	750	300
CI-B2012-680□□□	68		15	100	700	1000	800	300
CI-B2012-820□□□	82		15	100	600	950	900	300
CI-B2012-101□□□	100		15	100	500	850	1000	300
CI-B2012-121□□□	120		15	50	450	730	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

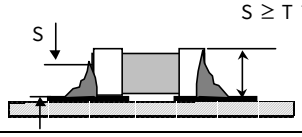
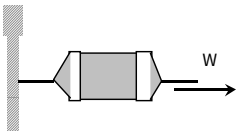
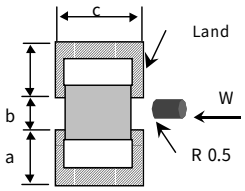
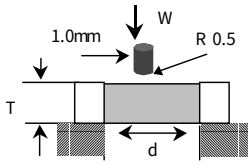
Electrical characteristics





RELIABILITY AND TEST CONDITIONS

CHIP CERAMIC INDUCTORS

ITEM		REQUIREMENTS 1005	REQUIREMENTS 1608	REQUIREMENTS 2012	TEST CONDITION
Operating temp. range		-55℃~+125℃			-
Storage temp. & humidity range		40℃ max. , 70% RH max.			at packing condition
Resistance to solder heat		1.No damage such as cracks should be caused in chip element. 2.More than 75% of the terminal electrode shall be covered with new solder. 3.Inductance change : ±within 5% 4.Quality factor change : ±within 30%			Preheat temperature : 100 to 150℃ Preheat time : 1min Solder temperature : 260 ±10℃ Dipping time : 10 ±0.5sec.
Solderability		1.More than 90% of the terminal electrode shall be covered with new solder. 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%			Preheat temperature : 100 to 150℃ Preheat time : 1min Solder temperature : 230 ±10℃ Dipping time : 3 ±1sec.
Reflow soldering		1.More than 50% of the terminal electrode shall be covered with new solder. S ≥ T * 0.5 			Preheat temperature : 150℃ Preheat time : 1min Solder temperature : 230℃ Soldering time : 10 sec. Max. (Reflow soldering profile)
Tensile strengh (Terminalstrength)		1.No mechanical damage Unit : Kgf(W)			
	W	-	1.0	2.0	
Adhension of Terminal electrode (Flexure strength)		1.No mechanical damage Unit : mm (a,b,c), Kgf(W)			
	a	-	1.0	1.0	
	b	-	0.8	1.0	
	c	-	1.3	1.3	
	W	-	2.0	4.0	
Body strength (Bending strength)		1.The body shall not be damaged by forces applied on the right. Unit : mm (d), Kgf(W)			
	d	-	1.3	1.3	
	W	-	2.0	3.0	

CHIP CERAMIC INDUCTORS

ITEM	REQUIREMENTS			TEST CONDITION
	1005	1608	2012	
Drop	1.No mechanical damae			Drop 10 times on a concrete Floor from a height of 91cm
Vibration	1.No mechanical damae			Frequency : 10~55~10Hz Amplitude : 1.52mm Direction and time : X,Y,Z directions for 2 hours
Thermal shock (Temperature cycle)	1.No mechanical damae 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%			Step1. –40 ±3℃ 30 ±3min. Step2. 85 ±3℃ 30 ±3min. Number of cycle : 100 times
Heat load resistance	1.No mechanical damae 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%			Temperature : 85 ±2℃ Applied current : rated current Time : 1,000 hours Measured at room ambient temperature after placing for 24 hours
Low temp. resistance	1.No mechanical damae 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%			Temperature : -40 ±5℃ Time : 1,000 hours Measured at room ambient temperature after placing for 24 hours
Humidity resistance	1.No mechanical damae 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%			Temperature : 40 ±2℃ Humidity : 90~95% RH Time : 500 hours Measured at room ambient temperature after placing for 24 hours
Humidity load resistance	1.No mechanical damae 2.Inductance change : ±within 5% 3.Quality factor change : ±within 30%			Temperature : 40 ±2℃ Humidity : 90~95% RH Applied current : rated current Time : 500 hours Measured at room ambient temperature after placing for 24 hours

■ PACKING

1. Label
   1) Part name.
   2) Lot No.
   3) Quantity.
   4) Manufacturer.

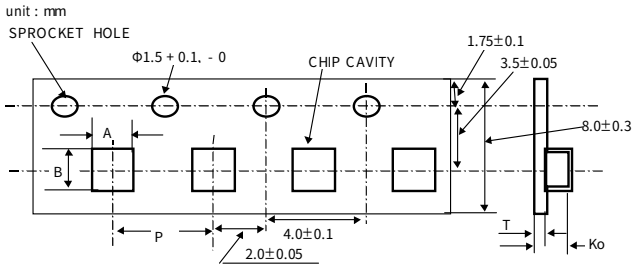
2. Standard quantity for packing

PCS

Type(EIA)	Packing	Tape & reel		Bulk
	Reel	Inner box	Carton box	Vinyl or Cassette
1005	10,000	100,000	400,000	As wanted
1608	4,000	40,000	160,000	
2012	3,000	30,000	120,000	

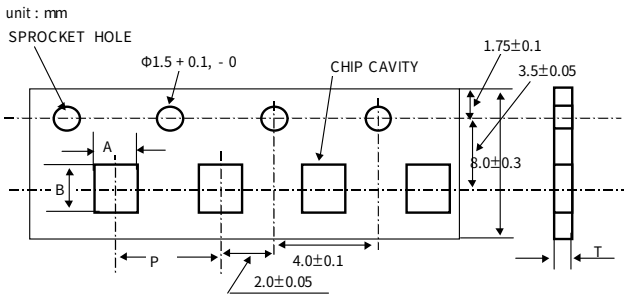
* Packing method can be changed, based on user`s request.

■ TAPE DIMENSION/ Embossing 8mm



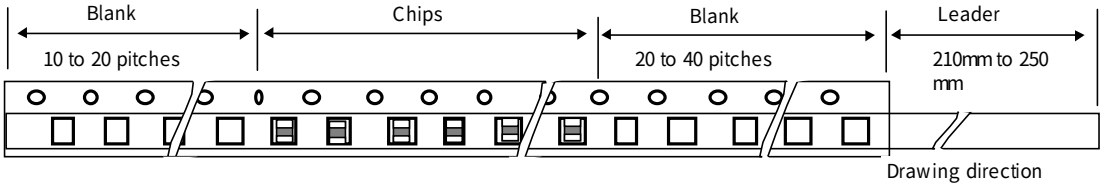
Type	A ± 0.1	B ± 0.1	P ± 0.1	K_0 ± 0.1	T (max.)
1608	1.00	1.80	4.0	0.95	0.3
2012	1.45	2.25	4.0	1.00	0.3

■ TAPE DIMENSION/ Paper



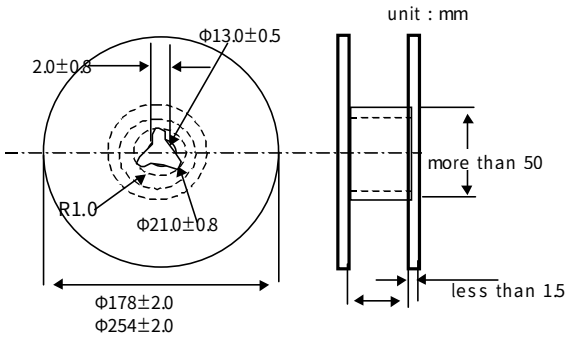
Type	A ± 0.1	B ± 0.1	P ± 0.1	T (max.)
1005	0.65	1.15	2.0	0.8
1608	1.00	1.80	2.0	1.1

■ LEADER AND BLANK PORTION



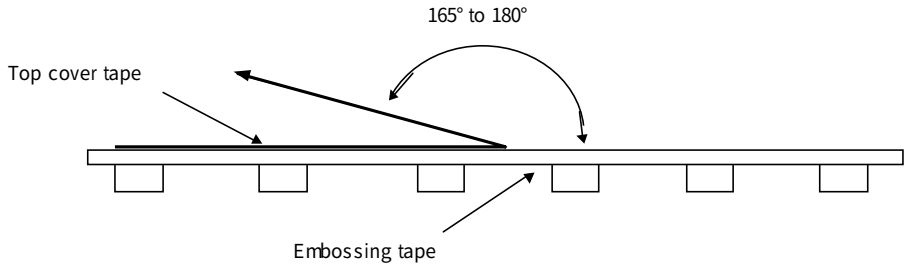
The pitch holes shift within ±0.3㎜ for cumulative 10 pitches

■ REEL DIMENSION



Type	W (㎜)
1005, 1608, 2012	9.0 ± 0.3

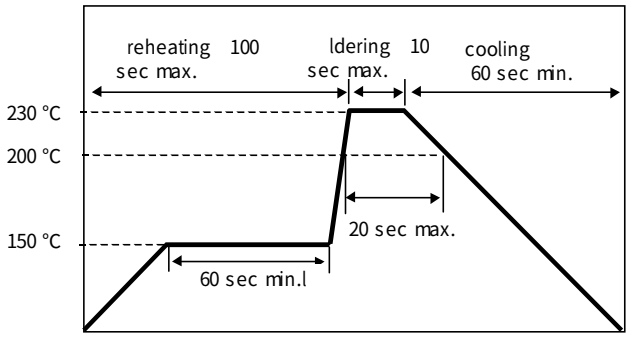
■ TOP COVER TAPE STRENGTH



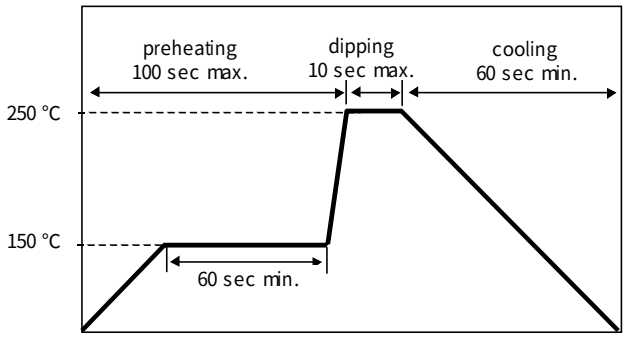
The force for tearing off top cover tape is 20 to 70 grams in the arrow direction

■ SOLDERING PROFILE

1. REFLOW SOLDERING



2. FLOW SOLDERING



3. MANUAL SOLDERING